

System Automation for z/OS
Version 3 Release 4

Operator's Commands



Note!

Before using this information and the product it supports, read the information in Appendix C, "Notices," on page 539.

This edition applies to IBM Tivoli System Automation for z/OS (5698-SA3), Version 3 Release 4, an IBM licensed program, and to all subsequent releases and modifications until otherwise indicated in new editions.

| This edition replaces SC34-2575-02.

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Accessibility

Publications for this product are offered in Adobe Portable Document Format (PDF) and should be compliant with accessibility standards. If you experience difficulties when using PDF files, you may view the information through the z/OS® Internet Library website or the z/OS Information Center. If you continue to experience problems, send an email to mhvrcfs@us.ibm.com or write to:

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Accessibility features help a user who has a physical disability, such as restricted mobility or limited vision, to use software products successfully. The major accessibility features in z/OS enable users to:

- Use assistive technologies such as screen readers and screen magnifier software
- Operate specific or equivalent features using only the keyboard
- Customize display attributes such as color, contrast, and font size

Using assistive technologies

Assistive technology products, such as screen readers, function with the user interfaces found in z/OS. Consult the assistive technology documentation for specific information when using such products to access z/OS interfaces.

Keyboard navigation of the user interface

Users can access z/OS user interfaces using TSO/E or ISPF. Refer to *z/OS TSO/E Primer*, *z/OS TSO/E User's Guide*, and *z/OS ISPF User's Guide Vol I* for information about accessing TSO/E and ISPF interfaces. These guides describe how to use TSO/E and ISPF, including the use of keyboard shortcuts or function keys (PF keys). Each guide includes the default settings for the PF keys and explains how to modify their functions.

z/OS information

z/OS information is accessible using screen readers with the BookServer or Library Server versions of z/OS books in the Internet library at:

<http://www.ibm.com/systems/z/os/zos/bkserv/>

Dotted decimal syntax diagrams

Syntax diagrams are provided in dotted decimal format for users accessing the Information Center using a screen reader. In dotted decimal format, each syntax element is written on a separate line. If two or more syntax elements are always present together (or always absent together), they can appear on the same line, because they can be considered as a single compound syntax element.

Each line starts with a dotted decimal number; for example, 3 or 3.1 or 3.1.1. To hear these numbers correctly, make sure that your screen reader is set to read out punctuation. All the syntax elements that have the same dotted decimal number (for example, all the syntax elements that have the number 3.1) are mutually exclusive alternatives. If you hear the lines 3.1 USERID and 3.1 SYSTEMID, you know that your syntax can include either USERID or SYSTEMID, but not both.

The dotted decimal numbering level denotes the level of nesting. For example, if a syntax element with dotted decimal number 3 is followed by a series of syntax elements with dotted decimal number 3.1, all the syntax elements numbered 3.1 are subordinate to the syntax element numbered 3.

Certain words and symbols are used next to the dotted decimal numbers to add information about the syntax elements. Occasionally, these words and symbols might occur at the beginning of the element itself. For ease of identification, if the word or symbol is a part of the syntax element, it is preceded by the backslash (\) character. The * symbol can be used next to a dotted decimal number to indicate that the syntax element repeats. For example, syntax element *FILE with dotted decimal number 3 is given the format 3 * FILE. Format 3* FILE indicates that syntax element FILE repeats. Format 3* * FILE indicates that syntax element * FILE repeats.

Characters such as commas, which are used to separate a string of syntax elements, are shown in the syntax just before the items they separate. These characters can appear on the same line as each item, or on a separate line with the same dotted decimal number as the relevant items. The line can also show another symbol giving information about the syntax elements. For example, the lines 5.1*, 5.1 LASTRUN, and 5.1 DELETE mean that if you use more than one of the LASTRUN and DELETE syntax elements, the elements must be separated by a comma. If no separator is given, assume that you use a blank to separate each syntax element.

If a syntax element is preceded by the % symbol, this indicates a reference that is defined elsewhere. The string following the % symbol is the name of a syntax fragment rather than a literal. For example, the line 2.1 %OP1 means that you should refer to separate syntax fragment OP1.

The following words and symbols are used next to the dotted decimal numbers:

- ? means an optional syntax element. A dotted decimal number followed by the ? symbol indicates that all the syntax elements with a corresponding dotted decimal number, and any subordinate syntax elements, are optional. If there is only one syntax element with a dotted decimal number, the ? symbol is displayed on the same line as the syntax element, (for example 5? NOTIFY). If there is more than one syntax element with a dotted decimal number, the ? symbol is displayed on a line by itself, followed by the syntax elements that are

optional. For example, if you hear the lines 5 ?, 5 NOTIFY, and 5 UPDATE, you know that syntax elements NOTIFY and UPDATE are optional; that is, you can choose one or none of them. The ? symbol is equivalent to a bypass line in a railroad diagram.

- ! means a default syntax element. A dotted decimal number followed by the ! symbol and a syntax element indicates that the syntax element is the default option for all syntax elements that share the same dotted decimal number. Only one of the syntax elements that share the same dotted decimal number can specify a ! symbol. For example, if you hear the lines 2? FILE, 2.1! (KEEP), and 2.1 (DELETE), you know that (KEEP) is the default option for the FILE keyword. In this example, if you include the FILE keyword but do not specify an option, default option KEEP will be applied. A default option also applies to the next higher dotted decimal number. In this example, if the FILE keyword is omitted, default FILE(KEEP) is used. However, if you hear the lines 2? FILE, 2.1, 2.1.1! (KEEP), and 2.1.1 (DELETE), the default option KEEP only applies to the next higher dotted decimal number, 2.1 (which does not have an associated keyword), and does not apply to 2? FILE. Nothing is used if the keyword FILE is omitted.
- * means a syntax element that can be repeated 0 or more times. A dotted decimal number followed by the * symbol indicates that this syntax element can be used zero or more times; that is, it is optional and can be repeated. For example, if you hear the line 5.1* data area, you know that you can include one data area, more than one data area, or no data area. If you hear the lines 3*, 3 HOST, and 3 STATE, you know that you can include HOST, STATE, both together, or nothing.

Notes:

1. If a dotted decimal number has an asterisk (*) next to it and there is only one item with that dotted decimal number, you can repeat that same item more than once.
 2. If a dotted decimal number has an asterisk next to it and several items have that dotted decimal number, you can use more than one item from the list, but you cannot use the items more than once each. In the previous example, you could write HOST STATE, but you could not write HOST HOST.
 3. The * symbol is equivalent to a loop-back line in a railroad syntax diagram.
- + means a syntax element that must be included one or more times. A dotted decimal number followed by the + symbol indicates that this syntax element must be included one or more times; that is, it must be included at least once and can be repeated. For example, if you hear the line 6.1+ data area, you must include at least one data area. If you hear the lines 2+, 2 HOST, and 2 STATE, you know that you must include HOST, STATE, or both. Similar to the * symbol, the + symbol can only repeat a particular item if it is the only item with that dotted decimal number. The + symbol, like the * symbol, is equivalent to a loop-back line in a railroad syntax diagram.

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3. Visit the Contact z/OS web page at <http://www.ibm.com/systems/z/os/zos/webqs.html>
4. Mail the comments to the following address:
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Include the following information:

- Your name and address
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- The publication title and order number:
IBM Tivoli System Automation for z/OS V3R40 Operators Guide
SC34-2649-00
- The topic and page number related to your comment
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- Contact your IBM service representative
- Call IBM technical support
- Visit the IBM zSeries support web page at www.ibm.com/systems/z/support/.

About This Book

This document provides detailed information and reference material for operating IBM Tivoli® System Automation for z/OS (SA z/OS).

Throughout this publication references to MVS™ refer either to MVS/ESA, or to the MVS element of z/OS.

Who Should Use This Book

This information is intended primarily for operators and system programmers. It may also be useful for others, for example, help desk personnel and customer engineers.

Where to Find More Information

The System Automation for z/OS Library

Table 1 shows the information units in the System Automation for z/OS library:

Table 1. System Automation for z/OS Library

Title	Order Number
<i>IBM Tivoli System Automation for z/OS Planning and Installation</i>	SC34-2645
<i>IBM Tivoli System Automation for z/OS Customizing and Programming</i>	SC34-2644
<i>IBM Tivoli System Automation for z/OS Defining Automation Policy</i>	SC34-2646
<i>IBM Tivoli System Automation for z/OS User's Guide</i>	SC34-2647
<i>IBM Tivoli System Automation for z/OS Messages and Codes</i>	SC34-2648
<i>IBM Tivoli System Automation for z/OS Operator's Commands</i>	SC34-2649
<i>IBM Tivoli System Automation for z/OS Programmer's Reference</i>	SC34-2650
<i>IBM Tivoli System Automation for z/OS Product Automation Programmer's Reference and Operator's Guide</i>	SC34-2643
<i>IBM Tivoli System Automation for z/OS TWS Automation Programmer's Reference and Operator's Guide</i>	SC34-2651
<i>IBM Tivoli System Automation for z/OS End-to-End Automation Adapter</i>	SC34-2652
<i>IBM Tivoli System Automation for z/OS Monitoring Agent Configuration and User's Guide</i>	SC34-2653

The System Automation for z/OS books are also available on CD-ROM as part of the following collection kit:

IBM Online Library z/OS Software Products Collection (SK3T-4270)

SA z/OS Home Page

For the latest news on SA z/OS, visit the SA z/OS home page at http://www.ibm.com/systems/z/os/zos/features/system_automation

Related Product Information

You can find books in related product libraries that may be useful for support of the SA z/OS base program by visiting the z/OS Internet Library at <http://www.ibm.com/systems/z/os/zos/bkserv>

Using LookAt to look up message explanations

LookAt is an online facility that lets you look up explanations for most of the IBM messages you encounter, as well as for some system abends and codes. Using LookAt to find information is faster than a conventional search because in most cases LookAt goes directly to the message explanation.

You can use LookAt from these locations to find IBM message explanations for z/OS elements and features, z/VM[®], z/VSE[®], and Clusters for AIX[®] and Linux:

- The Internet. You can access IBM message explanations directly from the LookAt Website at www.ibm.com/systems/z/os/zos/bkserv/lookat/index.html
- Your z/OS TSO/E host system. You can install code on your z/OS or z/OS.e systems to access IBM message explanations using LookAt from a TSO/E command line (for example: TSO/E prompt, ISPF, or z/OS UNIX System Services).
- Your Microsoft Windows workstation. You can install LookAt directly from the *z/OS Collection* (SK3T-4269) or the *z/OS and Software Products DVD Collection* (SK3T-4271) and use it from the resulting Windows graphical user interface (GUI). The command prompt (also known as the DOS > command line) version can still be used from the directory in which you install the Windows version of LookAt.
- Your wireless handheld device. You can use the LookAt Mobile Edition from www.ibm.com/systems/z/os/zos/bkserv/lookat/lookatm.html with a handheld device that has wireless access and an Internet browser (for example: Internet Explorer for Pocket PCs, Blazer or Eudora for Palm OS, or Opera for Linux handheld devices).

You can obtain code to install LookAt on your host system or Microsoft Windows workstation from:

- A CD-ROM in the *z/OS Collection* (SK3T-4269).
- The *z/OS and Software Products DVD Collection* (SK3T-4271).
- The LookAt Website (click **Download** and then select the platform, release, collection, and location that suit your needs). More information is available in the LOOKAT.ME files available during the download process.

Summary of Changes for SC34-2649-00

This document contains information previously presented in System Automation for z/OS V3R3.0 Operator's Commands, SC34-2575-02.

New Information

The following information and commands have been introduced:

System Operations

INGCFG

The INGCFG command for clearing workitem history for resources is added. See "INGCFG" on page 107.

INGRUN

The INGRUN command allows runmode options to be set for a system and resources. This command and the related concept of "Runmode" provides for switching from one environment to another, such as a normal mode to a disaster recovery mode. See "INGRUN" on page 210.

Processor Operations

Ensemble Commands

A new chapter is added containing a description of all command extensions for ISQECMD, that make up the Ensemble command set. This command set can be used to activate/deactivate Blades and Virtual Servers or to query the settings of the various objects. See Chapter 7, "Ensemble Commands," on page 471.

ISQECMD

The ISQECMD command shell is used to issue Processor Operations ensemble commands for managing zEnterprise™ Ensemble and zBX (Blade Center Extension) resources. See "ISQECMD" on page 342.

ISQROUTE

The ISQROUTE command allows you to route a command to a control task. See "ISQROUTE" on page 349.

ISQXCON command

The ISQXCON command allows you to manage Processor operations connections. See "ISQXCON" on page 372.

POWERMOD command

The POWERMOD command allows you to query and change the power mode of a CPC. See "POWERMOD" on page 440.

SECLOG command

The SECLOG command allows you to route security records to the Support Element (SE) and Hardware Management Console (HMC) logs. See "SECLOG" on page 457.

Changed Information

Information has been updated for the following commands:

System Operations

- | | |
|----------|--|
| ACF | The syntax diagram is modified to show unified check options for an automation control file. See "ACF" on page 15. |
| DISPGW | The DISPGW command dialog has been enhanced to show additional information about the remote systems such as focal points used, SMF id and so forth. See "DISPGW" on page 49. |
| DISPSTAT | The syntax has been modified for this command for subsystem definition and a default setting for the ALL2CONS parameter. Additional guidance for using wildcards in parameters is provided. See "DISPSTAT" on page 62. |
| INGFILT | The NETVASIS parameter is also added for entering commands in lower and mixed case. The SUBTYPE parameter has been updated to include wildcards. The DESCR, JOBNAME and RUNTOKEN parameters are added with wildcard support as filter criteria. See "INGFILT" on page 119. |
| INGLIST | The NETVASIS parameter is added for entering commands in |

lower and mixed case. The SUBTYPE parameter has been updated to include wildcards. The DESCR, JOBNAME and RUNTOKEN parameters are added with wildcard support as filter criteria. See "INGLIST" on page 144.

- INGHIST** The INGHIST command has been enhanced with the WIMAX parameter to allow the maximum number of work item records to be shown after work item expansion. See "INGHIST" on page 132.
- INGIMS** The INGIMS command is enhanced to show information about the dependent regions associated with the IMS™ control region and Time Controlled Options (TCO) details. The values TCO and DEP are added for the REQ parameter. The OUTDSN parameter is added. See "INGIMS" on page 135.
- INGGROUP** The INGGROUP command has been enhanced with the CHUNK parameter in the ACTION options to specify the number of server group members for recycling in parallel. See "INGGROUP" on page 125.
- INGMOVE** The VERIFY parameter is added for this command, to specify whether a confirmation is required for the requested action. See "INGMOVE" on page 159.
- INGREQ** The INGREQ command has been enhanced to include the JOB parameter to indicate whether the resource is a jobname rather than a system automation resource name. The NETVASIS parameter is added for entering commands in lower and mixed case. See "INGREQ" on page 197.
- INGSEND** The NETVASIS parameter is added for entering commands in lower and mixed case. See "INGSEND" on page 221.
- INGSET** The EXPIRED parameter has been added for this command. This parameter allows the cancellation of start/stop requests when they reach a certain time limit. See "INGSET" on page 229.
- INGTHRES** The INGTHRES command is enhanced to allow the deletion of thresholds from an automation script. The REQ parameter has been added to submit a deletion request. See "INGTHRES" on page 239.
- INGTWS** All references to INGOPC are standardized to INGTWS. The names are synonymous. See "INGTWS" on page 246.

PSM Commands - Special Requests

The previous chapter title now includes the subtitle "Special Requests" for all these requests that can be executed by the ProcOps Service Machine (PSM) Command Server. See Chapter 8, "PSM Commands - Special Requests," on page 503.

- RESYNC** An additional range of user exits is verified. The OUTMODE parameter is added. See "RESYNC" on page 263.
- SETSTATE** The EVT and the TRG parameters have been combined. See "SETSTATE" on page 267.

Processor Operations

- CBU** Restrictions. The SE Workplace Version number and its related IBM System name is updated. See "CBU" on page 410.

ICNTL	Requirements and processor type AAP. New value GRPCAP (Group Capacity) added for VAR parameter. See “ICNTL” on page 429.
ISQOVRD	A parameter for entering the ProcOps name of a zBX ensemble is added. See “ISQOVRD” on page 348.
ISQSTART	The ACFCLEAN parameters is added for calling the INGLEAN routine to a clean up of the in-storage data model on the ProcOps focal point NetView® domain. See “ISQSTART” on page 353.
ISQVARS	Parameters for addressing zEnsemble information are added. See “ISQVARS” on page 356.
ISQXCLS	Parameters for entering the ProcOps name of a zBX ensemble and target hardware are added. See “ISQXCLS” on page 370.
ISQXDST	Additional panels are available for displaying information about zBX and blade resources within ProcOps. See “ISQXDST” on page 376.
ISQXIII	Parameters for entering the ProcOps name of a zBX ensemble and target hardware are added. See “ISQXIII” on page 395.
ISQXLOC	A parameter for entering the ProcOps name of a zBX ensemble is added. See “ISQXLOC” on page 397.
ISQXMON	A parameter for entering the ProcOps name of a zBX ensemble to be monitored is added. See “ISQXMON” on page 399.
ISQXUNL	A parameter for entering the ProcOps name of a zBX ensemble is added. See “ISQXUNL” on page 405.
OOCOD	The SE Workplace Version number and its related IBM System name is updated. See “OOCOD” on page 438.
START	Defaults and restrictions. See “START” on page 458.
STOP	Restrictions. See “STOP” on page 459.
STP	The list of target hardware has been added to. See “STP” on page 460.
STPDATA	The list of target hardware has been added to. See “STPDATA” on page 462.

Deleted Information

The following information has been deleted:

SETSTATE

The SVP parameter has been retired. See “SETSTATE” on page 267.

You may notice changes in the style and structure of some content in this document—for example, headings that use uppercase for the first letter of initial words only, and procedures that have a different look and format. The changes are ongoing improvements to the consistency and retrievability of information in our documents.

This document contains terminology, maintenance, and editorial changes. Technical changes or additions to the text and illustrations are indicated by a vertical line to the left of the change.

Part 1. Introduction

Chapter 1. Introduction	3	Resource.	3
Overview of Commands	3	Specifying Resources		4
Understanding Terms	3	Format of Syntax Diagrams		5

This part gives an overview of System Automation for z/OS commands — how to enter them, their format, and the various types of commands.

Chapter 1. Introduction

Overview of Commands

Table 2 gives a brief overview of the System Automation for z/OS commands. This overview describes the various types of commands, their functions and where they can be entered. For detailed information about how to issue commands, see *IBM Tivoli System Automation for z/OS User's Guide*.

Table 2. Overview of Commands

Type of command	Function	Where entered
System operations commands	Control and maintain resources in the enterprise from a single point of control	NetView console, or NMC
I/O operations commands	Control input/output devices	TSO/ISPF, API, operator console
Processor operations commands	Common commands for automation	API, NetView console, or NMC Note: Precede with ISQCCMD command
	Control hardware processors	NetView console or NMC
	Ensemble commands for System z [®] zEnterprise BladeCenter [®] Extension (zBX) automation	API, NetView console Note: Precede with ISQECMD command

Understanding Terms

This section contains details of various terms that are used throughout this book.

Resource

In SA z/OS the term *resource* denotes any entity that can be automated. The automation manager administrates resources. A resource is identified by its name. The resource name must be unique within the automation manager's name space. The format of the resource name is *name/type[/system]*. The three components of the resource name can be the following:

Name	Specifies the name of the resource, for example the subsystem name for an application (APL) or the automation name for an application group (APG).
Type	Specifies the type of the resource. The type parameter is optional. It can have the following values: APL Indicates that the resource is a subsystem. APG Indicates that the resource is an application group. EVT Indicates that the resource is an event. MTR Indicates that the resource is a monitor. SVP Indicates that the resource is a service period (schedule). SYG Indicates the group of all resources of a system. SYG is created automatically. This is the application group that contains all resources of a particular system. SYS Indicates that the resource is a system.

Understanding Terms

System Specifies the system/image name where the resource is defined. The system parameter is not used for sysplex resources, for example, sysplex application groups, events or service periods.

Specifying Resources

There are various ways of specifying automation manager resources in System Automation for z/OS. The scope of the automation manager is a sysplex or SA z/OS subplex (that a group that shares the same XCF ID).

Using Components of Resource Names: Components are the parts that make up the name of a resource using automation manager notation.

Here are a few examples of how to specify resource names using components:

TSO	All resources that have the name TSO.
TSO/APG	All resources that have the name TSO, and the type APG.
TSO/APL	All resources that have the name TSO, of the type APL, on all systems in the sysplex.

Using Wildcards:

You can also use an asterisk (*) to substitute one or more components of a fully-qualified resource name. Components are optional and may be replaced by an asterisk (*). For example, a specification for TSO expands with TSO/*/*.

Here are a few examples of how to specify resources using wildcards:

*/APL/SYS1	All resources of type APL, on system SYS1.
TSO/*/SYS1	All resources that have the name TSO, of any type, on system SYS1.
/SYS/	All resources of type SYS, on any system in the sysplex.
*/**/*	All resources of any type on any system in the sysplex.

You can specify wildcards for a component of the fully-qualified resource name as a leading or trailing character. The following shows a few examples:

TSO*/APL/KEY*	All resources starting with TSO, of type APL, on the systems whose names start with KEY.
TSO/AP/*	All resources whose names end with TSO, of any type starting with AP, on any system in the sysplex.

You can use the percentage sign (%) as a *placeholder* for one character. This means that *any* character in that position of the resource name matches. The following shows a few examples:

%TSO*	All resources whose names contain TSO starting in character two.
TSO/S%S/*	All resources whose names start with TSO and where the first and last character of the type is S, on any system in the sysplex.

If the resource that you specified is not unique within the domain of the automation manager, a selection panel is displayed where you can select what you want to work with, as shown in Figure 1 on page 5.

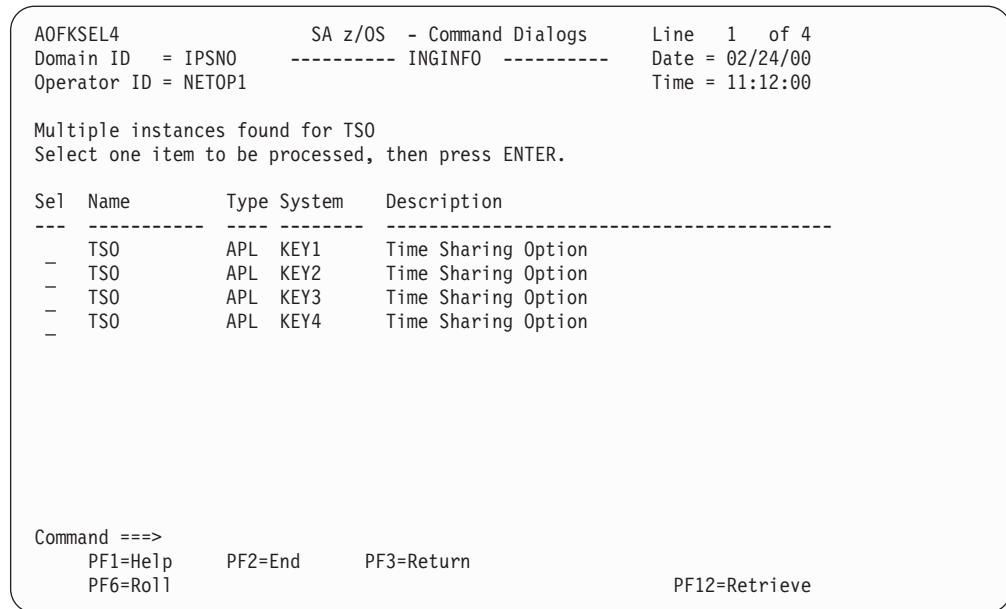
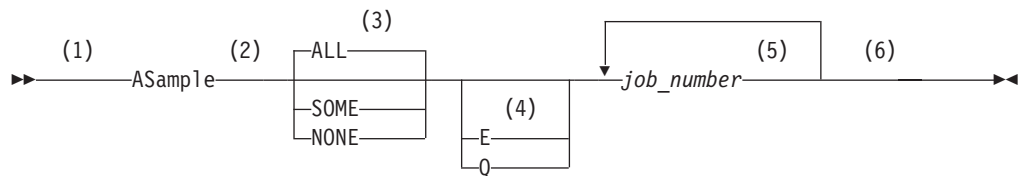


Figure 1. Resource Selection Panel

Format of Syntax Diagrams

The description of each command and routine includes the format of the command in a syntax diagram. The diagram shows the operands for the commands. Use blanks to separate the operands, unless otherwise stated or diagrammed.

To construct a command from the diagram, follow the diagram from left to right, choosing the path that suits your needs. Following is a sample syntax diagram that explains how to construct a command. This sample command is for illustration only.



Notes:

- 1 Start here. ►► indicates the start of the diagram.
- 2 You can type ASAMPLE or abbreviate it to AS. The uppercase characters are the abbreviation. Operands on the main line are required.
- 3 Choose one of the options. The default is always above the main line. In this case, ALL is the default. If the option includes punctuation marks, include them too: =(), .
- 4 Choose E, Q, or neither. Operands below the main line are optional.
- 5 Repeat *job_number* any number of times. Variables are shown in italics. Replace them with a real name or value. Note that if you specify more than one *job_number* you must put them in brackets.
- 6 End here. ►► indicates the end of the command.

Format of Syntax Diagrams

If a command continues to the next line, you see `→` and `▶`.
`|and|` indicates a fragment for a specific condition or option.

Examples:

```
====> asample none q DAF00821 DAF00832 ELD00824  
====> as some DLR01445
```

Part 2. SA z/OS System Operations Commands

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DISPSFLT	59	INGRPT	207
DISPSTAT	62	INGRUN	210
DISPSYS	66	INGSCHED	214
DISPTREE	68	INGSEND	221
DISPTRG	69	INGSESS	225
DRAINJES	71	INGSET	229
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INGAUTO	85	INGTOPO	243
INGCF	89	INGTRIG	244
INGCF DRAIN	96	INGTWS	246
INGCF ENABLE	100	INGVOTE	255
INGCF MAINT.	103	MONITOR	258
INGCF PATH	104	OPCAQRY	259
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This part describes SA z/OS system operations commands — their format, and specifics of how to use them.

See *IBM Tivoli System Automation for z/OS User's Guide* for general information about the SA z/OS commands.

Chapter 2. System Operations Commands

Using System Operations Commands

General Information

You can issue any system operations command by typing the command and its parameters on the command line of any NetView or system operations panel. You can also issue system operations commands by entering the command via NMC. In addition, System Automation for z/OS provides a menu of command dialogs that allows you to select a command dialog panel for a specific system operations command. For further information on how to issue system operations commands, see *IBM Tivoli System Automation for z/OS User's Guide*.

Overview of Commands that Operate Sysplexwide

The following system operations commands operate sysplexwide (which means that they also operate across an SA z/OS subplex):

```
| DISPEVT/DISPEVTS
| DISPMTR
| INGAMS
| INGCF/INGCFL
| INGCFG
| INGCICS
| INGEVENT
| INGHIST
| INGIMS
| INGINFO
| INGLIST
| INGMOVE
| INGTWS
| INGPLEX
| INGRELS
| INGREQ
| INGRUN
| INGSCHED
| INGSET
| INGSTR
| INGTRIG
| INGVOTE
```

You can issue sysplexwide commands from any system within the sysplex, regardless of where the resource resides.

If no target is specified, the command that was issued will find the affected resources in the sysplex.

Specifying the target system parameter is only required when routing the command from the focal-point system to a system in another sysplex or to a single remote system.

For further information about sysplexwide commands, see *IBM Tivoli System Automation for z/OS User's Guide*.

Additional Parameters for System Operations Commands

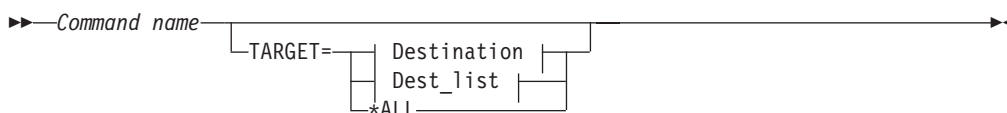
The following parameters are available for a number of system operations commands.

TARGET Parameter

Purpose: The TARGET parameter lets you specify the system where the command is to be processed. You can direct the command to:

- A particular system in the sysplex, or enterprise
- A subset of systems in the sysplex, or enterprise
- A sysplex
- All systems currently active in the local sysplex

Format:



Destination:



Dest_list:



Values:

system_name

Specifies the name of the z/OS system

domain_ID

Specifies the NetView domain identifier

sysplex_name

Specifies the name of the sysplex

***ALL** SA z/OS specifies that the command should be routed to all SA z/OS systems that are currently active in the local sysplex.

Note that not all of the commands that support the TARGET parameter also support the *ALL value. Refer to the syntax diagrams to find out whether *ALL is supported.

Processing: The search sequence to locate the target is as follows:

1. System name within the local sysplex
2. Domain ID within the local sysplex
3. Local sysplex name

If it is a human operator, the search continues in the following sequence:

- Domain ID within the enterprise

Additional Parameters for System Operations Commands

- System name within the enterprise
- Sysplex name within the enterprise

If no value is specified, and the command does not refer to a defined resource, it is processed on the local system.

Non-Sysplexwide Commands: If you do not specify the TARGET parameter, and the SA z/OS command refers to a defined resource, SA z/OS processing is as follows:

- If the resource is only defined on one active system, the command is routed to that system.
- When processing the command in line mode, SA z/OS checks whether the resource is defined on the local system. If it is, the command is processed locally. Otherwise, an error message is issued.
- If the resource is defined on more than one active system, and the command is not running on an autotask, SA z/OS displays a selection panel such as in Figure 2 where you can select the resource or resources that the command is to be routed to.

If you enter `dispacf mvsesa` a panel similar to Figure 2 is displayed.

```
AOFKSEL1          SA z/OS - Command Dialogs          Line 1 of 4
Domain ID = IPUFA  ----- DISPACF -----          Date = 06/27/00
Operator ID = NETOP1                               Time = 17:43:12

Multiple instances found for MVSESA in sysplex(es) AOCPLEX
Select one or more items to be processed, then press ENTER.

   Sel   System   Domain
   ---   -
   -     AOCA     IPUFA
   -     AOCP     IPUFB
   -     AOCC     IPUFC
   -     AOCD     IPUFD

Command ==>
PF1=Help   PF2=End   PF3=Return
PF6=Roll   PF12=Retrieve
```

Figure 2. Resource Selection Panel: Non-Sysplexwide

If the target is within the local sysplex, the communication method is via XCF facilities. Otherwise, the NetView RMTCMD command is used.

Sysplexwide Commands: Sysplexwide commands are processed locally.

If a target is specified and the resource is not defined on the specified system, SA z/OS issues an error message.

If you enter `ingvote stdt000*` a panel similar to Figure 3 on page 12 is displayed.

Additional Parameters for System Operations Commands

```
A0FKSEL4          SA z/OS - Command Dialogs          Line 1 of 32
Domain ID = IPUFA ----- INGVOTE -----          Date = 06/27/00
Operator ID = NETOP1                                   Time = 17:50:39

Multiple instances found for STDT000*
Select one item to be processed, then press ENTER.

Sel  Name           Type System      Description
-----
-   STDT000AN00    APL  AOCA        Parent for all STD* appl 05/16/00 06:25
-   STDT000AN00    APL  AOCC        Parent for all STD* appl 05/16/00 06:25
-   STDT000AN00    APL  AOCC        Parent for all STD* appl 05/16/00 06:25
-   STDT000AN00    APL  AOCC        Parent for all STD* appl 05/16/00 06:25
-   STDT000AN1A    APL  AOCA        Child of AN10 (child tree --- AN1B)
-   STDT000AN1A    APL  AOCC        Child of AN10 (child tree --- AN1B)
-   STDT000AN1A    APL  AOCC        Child of AN10 (child tree --- AN1B)
-   STDT000AN1A    APL  AOCC        Child of AN10 (child tree --- AN1B)
-   STDT000AN1B    APL  AOCA        Child of AN10 (child tree --- AN1B)
-   STDT000AN1B    APL  AOCC        Child of AN10 (child tree --- AN1B)
-   STDT000AN1B    APL  AOCC

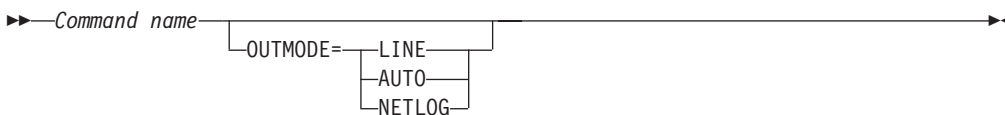
Command ==>
PF1=Help      PF2=End      PF3=Return
PF6=Roll      PF8=Forward  PF12=Retrieve
```

Figure 3. Resource Selection Panel 2: Sysplexwide

OUTMODE Parameter

Purpose: The OUTMODE parameter lets you specify the output mode of a command.

Format:



Values:

LINE

If you specify LINE, the output is displayed in line mode, independent of the task type. Further characteristics are:

- No color attributes are set for data that is shown in line mode.
- The sequence of the fields may be different in line mode than in fullscreen.
- Not all fields from the fullscreen display may be shown in line mode.
- Line mode output is shown in a multiline message.
- System operations commands can be issued within a NetView PIPE by using the OUTMODE=LINE parameter, unless noted otherwise in the command description.
- Line mode output is not processed by the NetView automation table and is not written to the netlog. To write output from a command such as DISPSTAT to the netlog, use a PIPE command, for example:
PIPE NETV DISPSTAT OUTMODE=LINE | LOGTO NETLOG
- Line mode output cannot be processed by a TRAP and WAIT.
- System operations commands that support the OUTMODE=LINE option can be used in user-written command lists. Note, however, that the format of the output may change in later releases.

Additional Parameters for System Operations Commands

- If you work with OUTMODE=LINE no prompt panel is displayed.

AUTO

Specifies that when the task that the command list runs on is unattended, the output of the command is written to the NetView log. Otherwise the output is written to the console.

NETLOG

Specifies that the output of the command is written to the NetView log.

Note: If no value is specified, the decision whether to display the command output with a fullscreen panel or in line mode is based on the NetView task type that the command is running on.

OUTDSN Parameter

Purpose: This parameter lets you specify the name of the data set that is to contain the output of the command.

Format:

►—Command name—┐OUTDSN=dsname┘◄

Values:

dsname

The data set name. You can specify a sequential data set or a member of a partitioned data set.

The record format can be either fixed-blocked or variable-blocked.

Restrictions: The data set must already exist.

The minimum record length is 80 bytes, except for the following:

Command	Minimum record length (bytes)
DISPSTAT, INGLIST, DISPGW, INGIMS	256
INGMSG, INGVOTE, DISPMTR, INGAMS, INGHIST	128

The OUTDSN parameter forces OUTMODE=LINE.

Note: If OUTDSN specifies a data set that is already allocated to NetView (for example DSILIST), the exclusive ENQ that is issued when OUTDSN is used will not be removed until NetView is stopped. Thus, it is recommended that you do not use pre-allocated data sets for OUTDSN.

Varying the Format of the Command Output

Most of the commands in fullscreen mode support the SORT and FIND subcommands.

Sorting a List

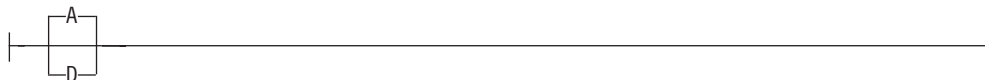
The SORT subcommand lets you change the order that data is displayed in.

The syntax of the SORT subcommand is as follows:

Additional Parameters for System Operations Commands



sort_order:



You can specify the following:

sort_order

The sort order. It can be:

- A** The list is displayed in ascending order. This is the default.
- D** The list is displayed in descending order.

coln The column to be sorted on. You can specify more than one column, separated by a comma or a blank.

For example, specifying SORT D,3 1 4 sorts the display in descending sequence and in the order column 3, 1, and 4.

For commands that support horizontal scrolling (for example, DISPSTAT or INGLIST), the column title (header) can be used instead of column number. The title can be abbreviated. First match is taken.

Searching for Strings

The FIND subcommand searches the display data for a specified string. It can be abbreviated to F. The RFIND (repeat find) command is used to find the next occurrence of the string in the display data. It can be abbreviated to RF.

The syntax of the FIND subcommand is as follows:



direction:



You can specify the following parameters with the FIND and RFIND commands:

search_string

The string that is to be searched for. The search starts at the first line shown in the display.

direction

The direction that is used for the search. It can be:

- N** Find the next occurrence (forward direction). This is the default.
- P** Find the previous occurrence (backward direction).

ACF

Purpose

The ACF command loads, displays, and modifies automation control file entries. You can use ACF to refresh data of a particular system if it does not affect automation manager configuration data.

For modification and display actions to work, the automation control file must be loaded into storage. Once loaded, the displays and modifications affect an in-storage version of the automation control file, allowing you to make *temporary* changes. To make permanent changes, change the automation policy using the customization dialogs, generate the automation control file member, then reload the new version using INGAMS. This ensures that the configuration matches the automation manager and the automation agents.

Recommendations

1. Use the INGAMS command rather than the ACF command to load or refresh an automation control file. This ensures that the configuration matches the automation manager and the automation agents.
2. Changes to automation policy that are made using the SA z/OS command dialogs or the ACF command are temporary. They modify the current in-storage version of the automation control file directly. They do not modify the automation control file that is stored on disk. To change an automation policy setting permanently, make sure you also change the automation policy (using the customization dialogs) that is stored on disk.
3. If the customization dialogs are used to rebuild the automation control file on disk, the changed data on disk will replace the data in storage at ACF REFRESH.
4. Use scope-checking to limit operator use of ACF to load and display operations.

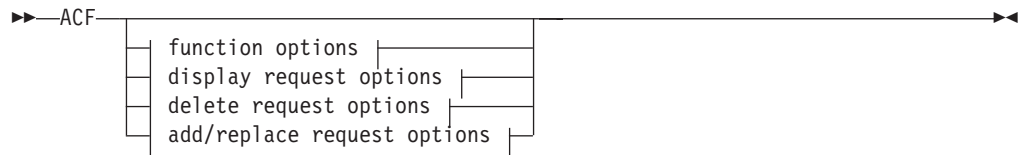
The following syntax diagrams show how to use the ACF command to perform the different functions ACF supports. Do not combine syntax from the separate diagrams in the same ACF call.

Note: The ACF command is freeform:

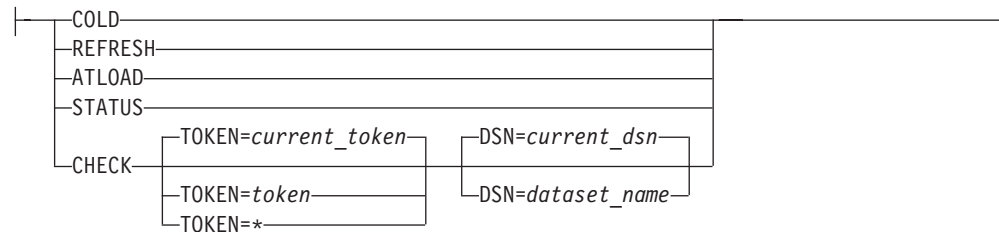
- Commas are optional
- More than one space can separate keywords
- Keywords can be specified in any sequence
- Any parameters specified must follow the keyword that they apply to

To replace or add information in the automation control file use the following syntax:

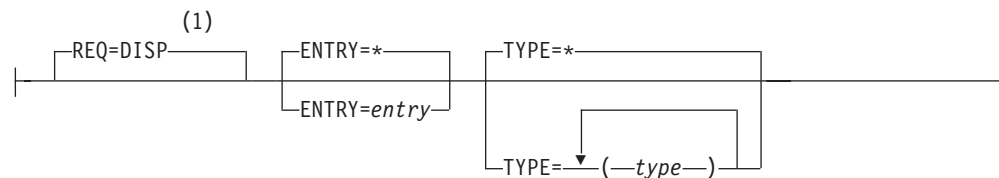
Syntax



function options:



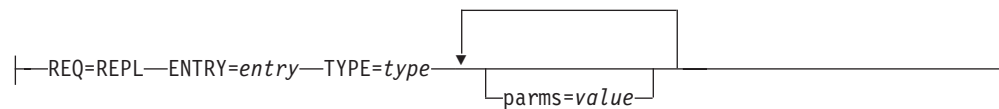
display options:



delete options:



add/replace options:



Notes:

- 1 The specification of either REQ=DISP or ENTRY=entry is required.

Parameters

COLD

Reloads the currently loaded automation control file data from disk. Automation is disabled while the automation control file load is performed. It deletes all global variables that were associated with the Entry/type pairs defined in the policy database. It also deletes all exceptional messages and disabled timers. Statistical data provided by the INGRPT command is also deleted.

Note: It is not recommended to use ACF COLD. Especially for cleanups, use the INGCLEAN command. For further details, refer to the INGCLEAN command reference in *IBM Tivoli System Automation for z/OS Programmer's Reference*.

REFRESH

Updates the currently loaded automation control file data. Automation is not disabled while the automation control file load is performed. Only data that has been changed will be loaded, everything else remains the same as before. This is the safe way to update the automation control file. Refresh will not load data of a subsystem that is currently in the process of being started or stopped by SA z/OS. SA z/OS will automatically retry the refresh five minutes later for the data that cannot currently be processed.

Note: ACF REFRESH will not delete global variables that were associated with Entry/Type pairs, that were deleted from the policy database before the last build was done, if those Entry/Types were not associated with a subsystem, a monitor resource, or an application group. However, if a keyword/value is removed from the Entry/Type, this is a change to the Entry/Type, and consequently an ACF REFRESH will rebuild the Entry/Type with the result that the deleted keyword/value pair is removed from the global variables. All deleted Entry/Types and their associated global variables will be reset during the next SA z/OS NetView restart or during ACF COLD processing or by using the INGCLEAN command. For further details, refer to the INGCLEAN command reference in *IBM Tivoli System Automation for z/OS Programmer's Reference*.

ATLOAD

Reloads the NetView automation tables that are specified in the System Info policy item and the message revision table, depending on the value of AOFSMARTMAT.

STATUS

Displays information about the automation control file that is currently in storage.

CHECK

Verifies the ACF for validity and tests the automation tables that are specified in the System Info policy and also the message revision table, depending on the value of AOFSMARTMAT.

TOKEN

The configuration token that the ACF should be validated against.

current_token

The token that is currently in use (displayed with ACF STATUS). This is the default.

token

The configuration token used as the reference.

* Specifying an asterisk (*) means that the token validation should be omitted.

DSN

The data set name that contains the ACF data.

current_dsn

The data set that is currently in use (displayed via ACF STATUS). This is the default.

dataset_name

The configuration data set name containing the ACF data.

REQ

The type of request for automation control file information the ACF command performs. This value can be one of the following:

- DISP** Displays information in the automation control file. This value is the default if this parameter is not coded.
- DEL** Deletes information in the automation control file. This value must be coded when using ACF to delete automation control file information.
- REPL** Replaces or adds information in the automation control file. This value must be coded when using ACF to replace automation control file information. REPL adds the entry specified on the ENTRY parameter if the entry does not already exist in the automation control file.

REQ=REPL will update data in place. That is, only data that is to be replaced needs to be specified in the command. All other existing data will be retained.

ENTRY The entry field of the automation control file. This value can be up to 32 characters long, without imbedded blanks, commas, or quotes.

If information in the automation control file is displayed (REQ=DISP), and no value is specified in the entry field, ENTRY=* is used.

TYPE The type field in the automation control file. The following values can be specified:

- * Specifying * returns all type fields that are associated with a given *entry*, for example, all SUBSYSTEM or NTFYOP entries. * is the default value when REQ=DISP (display). REQ=DISP supports the use of * as a wildcard character when specifying type names, with the following restrictions:
 - The wildcard character, *, must be the last character in the type name. If an asterisk appears in any other position in a type name then it will be treated as a literal. If an asterisk appears in any other position in a type name with an asterisk as the last character then no wildcard processing occurs and *both* asterisks are treated as literals.
 - If you update an entry, you must specify the ENTRY= operand without a wildcard.
 - If no matches are found, a final search is performed with a type name of DEFAULTS.

For other ACF request types (delete and replace), you must specify an actual type name.

type

The name of the type field. REQ=REPL requests allow you to enter only one type.

When ENTRY=SUBSYSTEM, *type* can be up to 11 bytes long. In all other cases, *type* can be up to 32 characters long, without imbedded blanks, commas, or quotes.

(type,type,...)

Multiple types may be specified for DISP and DEL requests. Type names should be enclosed in parentheses and separated by commas. For REQ=DISP, only the first type name found is displayed. For REQ=DEL requests, all the type names will be deleted.

parms=value

The data associated with the specified ENTRY and TYPE fields. This

field is valid only with the REQ=REPL option. Specify this field as the parameter value, an equal (=) sign, and the value, without any spaces in between; for example, AUTO=NO.

The value can be any character data. It can have imbedded quotes, commas, and blanks, provided that single quotes or parentheses frame the value.

SA z/OS defines several ENTRY, TYPE, and parms=value fields. A parms=value example is the JOB=jobname parameter in the SUBSYSTEM automation control file entry.

Note: REQ=REPL will update data in place. That is, only modified data is updated. All data will be retained.

Restrictions and Limitations

- If you use the COLD parameter, automation is disabled while the ACF LOAD is in progress. If you use the REFRESH parameter, automation continues.
- An automation control file cannot be loaded by an operator using the ACF command if the automation flag for major resource MVSESA is set to 'N'. If the automation flag for the MVSESA.RELOAD.CONFIRM minor resource is set to 'Y', the operator can reload the ACF.
- ACF must comply with the automation manager configuration, otherwise message AOF618I is issued.
- The ACF command should be used with care to change or delete automation policy settings. All changes are only temporary changes and may get lost during the next configuration refresh. The changes are definitely lost during an ACF COLD or after processing the INGCLEAN command.
- The number of entries in the automation control file is limited only by the amount of storage in the SA z/OS address space or region. If you have a very large configuration, you may have to increase the REGION size in the SA z/OS procedure.
- Not all data can be changed using ACF REQ=REPL, for example, service periods, events, triggers, and dependencies cannot be changed. ACF REQ=DEL and ACF REQ=REPL cannot be used to add or delete an application (subsystem), an application class, an application group or a monitor resource. It is NOT recommended to change data of existing applications, application groups and monitor resources via ACF REQ=REPL to avoid data mismatch between automation agent and automation manager. Use the customization dialogs to define these items and/or change those data.
- Changes to System Defaults and Application Defaults policy items are not propagated to the instances that have inherited this data.

Return Codes

- | | |
|------------|---|
| 0 | Function completed successfully. |
| 1 | Control file inactive. |
| 3 | ACF token mismatch. |
| 4 | Invalid parameters were used in the call. |
| 12 | No valid ACF member available. |
| 20 | ACF reload not allowed by automation flag settings. |
| 100 | Other error. |

Usage

- ACF performs two flag checks when the automation control file is reloaded. The checks are of the Automation flags for MVSESA.RELOAD.CONFIRM and MVSESA.RELOAD.ACTION. The action flag is checked only if the reload is to continue.

MVSESA.RELOAD.CONFIRM

This lets you:

- Turn the flag off and thus disable an automation control file reload by an operator.
- Tell SA z/OS to ask for confirmation by setting the AOFCONFIRM TGLOBAL to YES in a flag exit.
- Use a flag exit to perform additional checks and processing before deciding to either cancel or proceed with the reload.

If the flag is found to be off, the operator cannot reload the automation control file.

Note: You need to be aware of this if you turn the MVSESA automation flag off.

If the flag is on, the AOFCONFIRM task global is checked. If it is set to YES, SA z/OS will post a message requesting confirmation of the reload request. If AOFCONFIRM is null, SA z/OS will proceed with the reload.

MVSESA.RELOAD.ACTION

This provides an opportunity for you to do your own processing once SA z/OS is committed to reloading or restoring the automation control file. You can use a flag exit to call your own code. Your exit should return 0, indicating that the flag is turned on. If you return a nonzero return code, subsequent exits defined for the flag will not be invoked.

Note that there is no way of preventing the reload from an exit on this flag. See *IBM Tivoli System Automation for z/OS Defining Automation Policy* and *IBM Tivoli System Automation for z/OS Customizing and Programming* for further information.

- When you use ACF REQ=DISP to request a certain ENTRY value with one or more specific TYPE values, ACF searches for those types in the order specified in the command. When the first match is found, the information is returned to the requester as a multiline message. If there are no matches, it performs a final search with a *type* of DEFAULTS for that ENTRY value. If there is still no match, a message is returned to the requester. If the *type* DEFAULTS is found, that information is returned to the requester.
- If, when ACF is used to display an automation control file entry, a specific TYPE is found, it is treated as a complete entry. Only that specific entry is displayed.

Messages

The following lists the messages that are issued during the operation of ACF.

For the load function (COLD/REFRESH):

```
AOF042I MEMBER ACFZ999 NOT FOUND
AOF100I 16:05:09 : 'ACF REFRESH' COMMAND ISSUED
AOF618I NO VALID ACF FOUND FOR sysname - detail description
AOF782I AUTOMATION CONTROL FILE PROCESSING COMPLETED
```

For the status function (STATUS):

```

| AOF005I MEMBER ACFZ992 CURRENTLY BEING USED FOR THE CONTROL FILE
| AOF006I BUILT BY OPER1 ON 04/29/12 AT 11:43:03
| AOF006I REFRESHED BY OPER1 ON 04/30/12 AT 08:52:20
| AOF006I CONFIGURATION TOKEN = 2012049090119000C6F7A2084
| AOF006I CONFIGURATION DATASET = OPER1.USER.V34.ACF
| AOF002I END OF MULTI-LINE MESSAGE GROUP

```

For the delete and replace function (REQ=DEL/REPL):

```
AOF001I REQUEST REPL SUCCESSFUL FOR JES2-$HASP098
```

Note: In a display where the *type_name* is asterisk (*), multiple sets of AOF112I and AOF113I messages may be displayed. When the type is omitted or specified as asterisk (*), the DESIRED TYPE is not displayed in the AOF112I message.

For the display function (REQ=DISP):

```

| AOF041I UNABLE TO FIND entry type
|
| AOF111I AUTOMATION CONFIGURATION DISPLAY - ENTRY= entry_name
| AOF112I ACTIVE TYPE= act_type, DESIRED TYPE= desired_type ...
| AOF113I DATA IS data=value
| AOF002I END OF MULTILINE MESSAGE GROUP

```

For example, the following may occur:

```

AOF111I AUTOMATION CONFIGURATION DISPLAY - ENTRY= NTFYOP
AOF112I ACTIVE TYPE= NETOP1
AOF113I DATA IS OPER='OPER 1'
AOF113I DATA IS CLASS=(10,40)
AOF112I ACTIVE TYPE= NETOP2
AOF113I DATA IS CLASS=(10)
AOF002I END OF MULTILINE MESSAGE GROUP

```

Note: Use of the replace parameter (REPL) adds an entry if none exists, resulting in a successful message.

Generic error messages that can occur:

```

AOF013I SPECIFIED OPERAND operand INVALID FOR PARAMETER parameter.
AOF025I SYNTAX ERROR

```

Examples

The ACF command to display the Start automation flag for the CICST subsystem is:

```
ACF REQ=DISP,ENTRY=START,TYPE=CICST
```

The response is:

```

AOF111I AUTOMATION CONFIGURATION DISPLAY - ENTRY= START
AOF112I ACTIVE TYPE= CICST , DESIRED TYPE= CICST
AOF113I DATA IS AUTO=Y
AOF113I DATA IS NOAUTO=(TUESDAY,10:00,12:00)
AOF002I END OF MULTILINE MESSAGE GROUP

```

In this example, a Start automation flag exists for the CICST subsystem. The operator or automation procedure processes the command to display the entry, and the associated response is returned as a multiline message.

Use the following automation procedure to update ACF data for an entry. It allows you to modify the automation agent configuration data without affecting other automation agents or the automation manager.

ACF

```
/* ***** **
** Function: **
** - Read ACF Fragment **
** - Modify ACF entries **
** *****/
'PIPE (NAME ACFREPL)',
'QSAM (DSN) -dataset-', /* read ACF fragment */
'! NLOC 1.1 /*/', /* skip comments */
'! COLLECT', /* collect to multiline */
'! NETV ACF REQ=REPL', /* call ACF command */
'! CONS' /* issue msgs to console */
```

AOCHELP

Purpose

AOCHELP displays information about SA z/OS commands, and enables you to execute them.

Syntax

→ AOCHELP commandname →

Parameters

commandname

Specifies the SA z/OS system operations command that you require information about. The result is the same as if you had specified `help commandname`.

Restrictions and Limitations

- Some commands may not be executed from the AOCHELP command dialog. Attempts to execute these commands produce SA z/OS message AOF129I.
- Help is available only in fullscreen mode.
- The AOCHELP command can only be used when SA z/OS has initialized.

Usage

If you type `aoc help` by itself, you see a list of commands to choose from, as shown in Figure 4 on page 23. From this panel you can ask for help on a command by entering its item number.

Examples

To get help, specify the associated number of the command.

```

AOFPH000          SA z/OS - Command Dialogs          Line 1 of 62
Domain ID  = IPUFA  ----- AOCHHELP -----         Date = 09/01/12
Operator ID = NETOP1                               Time = 11:57:56

      1 AOCHHELP          Display help for SA z/OS commands
      2 AOCTRACE         Control the SA z/OS internal trace
      3 CROSS DOMAIN     Dealing with other domains
      4 DISPACF          Display control file information
      5 DISPAOPS         Display automated operator information
      6 DISPAPG          Display Automation group information
      7 DISPASF          Display status file information
      8 DISPAUTO         Display commands
      9 DISPERRS         Display error information
     10 DISPEVT          Display event information
     11 DISPEVTS         Display all events in a Sysplex
     12 DISPFLGS         Display automation flag information
     13 DISPGW           Display NNT gateway information
     14 DISPINFO         Display subsystem information

Enter n for help or nX to execute the command (if possible).

Command ==>
PF1=Help      PF2=End      PF3=Return      PF6=Ro11
              PF8=Forward  PF12=Retrieve
    
```

Figure 4. AOCHHELP Command Dialog Panel

To execute the command, specify the number associated with the command followed by an x, for example, 9x.

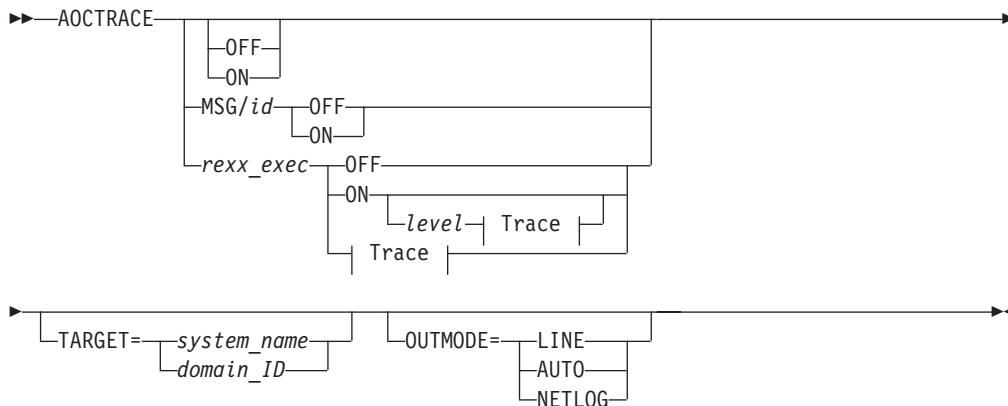
AOCTRACE

Purpose

The AOCTRACE command turns the SA z/OS system operations debugging feature on or off. AOCTRACE allows you to activate:

- Debugging globally
- Debugging for specific REXX script
- Debugging at a certain level of detail
- Tracing for a particular message
- REXX trace for a specific REXX script

Syntax



Trace:

```
|—trace _____|
      | routine_name |
```

Parameters**MSG/id**

The message that is being traced.

rexx_exec

The name of the REXX script that you want to debug.

ON Turns the debugging feature on.

If you *do not* specify a REXX script or message, AOCTRACE activates a global debugging flag. This causes each SA z/OS system operations REXX script that is invoked to write a record (AOF700I) to the netlog showing the parameters that it was invoked with.

If you *do* specify a REXX script or message, only that REXX script or message writes messages to the netlog. The netlog shows when and where the REXX script was called, and what parameters were given.

If you specify a REXX script or message but not a trace, an intermediate level of debugging is activated for the specified REXX script or message. This causes the REXX script to issue a number of messages describing its actions. Note, however, that not all REXX scripts support this facility.

OFF

Turns the debugging feature off.

If a REXX script is specified, this option deactivates both the intermediate and REXX tracing for the specified REXX script.

If a message is specified, this option deactivates message tracing for the specified message.

If a REXX script or message is not specified, this option disables the global trace.

trace

The type of REXX trace that you want for the specified REXX script. Valid values are:

- A** All
- R** Results
- I** Intermediates
- C** Commands
- E** Errors
- F** Failures
- L** Labels
- O** Off
- N** Normal

routine_name

The REXX script that is being traced.

level

Specifies the debug level that allows you to limit the amount of debug information that is written to the netlog. The meaning of the level depends on the particular REXX script.

NORM

This is the default. Control flow and important data area is written to the netlog.

MAX Extensive logging of control flow and data areas and structures.

/AM Indicates that data received from the automation manager is not traced.

/SLAVE

Indicates that data received from the command slave is not traced.

TARGET

For information on the TARGET parameter, see "TARGET Parameter" on page 10.

OUTMODE

For information on the OUTMODE parameter, see "OUTMODE Parameter" on page 12.

For further information about AOCTRACE command usage, see "Appendix C - Problem Determination" of *IBM Tivoli System Automation for z/OS User's Guide*.

Restrictions and Limitations

The trace operand can only be used on interpreted REXX scripts.

Using the trace on certain REXX scripts can cause execution problems, particularly with REXX scripts that trap messages.

The REXX trace setting of S (Scan) is not available.

Message tracing only works from the command line.

Note: The debugging facility is not active if REXX traces A, R, or I are used.

Examples

If you enter `aoctrace` on you see a message indicating that the debugging facility has been enabled. While the debugging facility is enabled, message AOF700I is written to the netlog for each procedure being processed.

If no parameter is specified Figure 5 on page 26 is displayed.

```

AOFKAANL                SA z/OS - Command Dialogs          Line 1    of 8
Domain ID = IPSFP      ----- AOCTRACE -----           Date = 08/16/08
Operator ID = NETOP1                                     Time = 17:41:18

Enter ADD in the Command line to create an entry
Cmd:  A Add      C Change    D Turn off Debug    R Reset    T Turn off Trace

Cmd CLIST      System  Dbg Level    T Subroutines/Messages being traced
-----
 *GLOBAL* KEY4      Y
 *MSG*  KEY4                IEF403
 *MSG*  KEY4                IEF404
- EVJEATDF KEY4      Y      R
- EVJESPRQ KEY4      Y
- EVJESPSC KEY4      Y
- EVJESRST KEY4      Y
- INGRMORD KEY4      Y
- INGRYST0 KEY4      Y      Y  AOF_SHOW_LIST_PANEL

Command ==>
PF1=Help      PF2=End      PF3=Return    PF6=Roll
PF9=Refresh   PF10=ALL_OFF PF12=Retrieve

```

Figure 5. AOCTRACE Main Command Dialog Panel

The panel shows all the REXX scripts (that is, clists) and messages that have debug mode or REXX tracing turned on.

The first entry is the ***GLOBAL*** entry. This entry is always shown. It shows whether the global debug option is on or off. You cannot modify the setting with a command code. To set the global debugging option specify **AOCTRACE ON** or **AOCTRACE OFF** on the command line.

MSG in the **CLIST** column indicates a message trace entry. The message ID is shown in the **Subroutines/Messages being traced** column. As with the Global entry (***GLOBAL***), message trace entries cannot be modified on this panel: you must use the **AOCTRACE MSG/id,ON|OFF** command entered at the command line to do so.

The following information is shown:

- The **CLIST** field shows the name of the REXX script.
- The **System** field shows the name of the system where debugging or tracing is active.
- The **Dbg** field indicates whether or not debug mode is on. Y indicates that debug mode is turned on.
- The **Level** field indicates the debug level.
- The **T (Trace)** field shows the Trace option specified for the REXX script.
- The **Subroutines/Messages being traced** field shows the list of subroutines that are being traced.

The **Cmd** field lets you specify the command codes shown on the panel. Type the appropriate letter next to the resource name and press Enter. The following command codes are available:

- A** Allows you to add debug or trace settings for another REXX script. The panel shown in Figure 6 on page 27 is displayed where you can specify the REXX script name and optionally overwrite the other settings.
- C** Allows you to modify the debug or trace settings of the selected REXX script.

The panel shown in Figure 6 is displayed showing the current settings. Here you can overwrite the appropriate values.

- D** Turns off the debug option for the selected REXX script.
- R** Turns off the debug and trace option for the selected REXX script.
- T** Turns off the trace option for the selected REXX script.

Use the PF9 key to refresh the data displayed.

Use the PF10 key to turn off the debug and trace option for ALL displayed REXX scripts.

The ADD command can also be entered at the command line to define the debug or trace settings for a REXX script.

Figure 6 is displayed when the command code A or C is specified on the panel in Figure 5 on page 26, or a REXX script name is specified as the only parameter of the AOCTRACE command. You can use this panel to enable and disable the automation debugging facility for a given REXX script.

```

AOFKAAND          SA z/OS - Command Dialogs
Domain ID = IPUN8  ----- AOCTRACE -----   Date = 08/16/08
Operator ID = NETOP1                               Time = 17:50:21

Specify or revise the following parameters:

Clist name          INGRVRP0
debug mode          ON          (ON or OFF)
debug detail level  _____ (NORM, MAX, /AM, /SLAVE)
REXX trace option   -          (A, R, I, C, E, F, L, O N)

Subroutines to be traced: (* for all)
_____  

_____  

_____  

- or -
Message id          _____

Command ==>
PF1=Help   PF2=End   PF3=Return   PF6=Ro11   PF12=Retrieve
    
```

Figure 6. AOCTRACE Command Dialog Panel for a Specific REXX Script

The following fields can be entered:

Clist name

Specify the name of the clist (that is, REXX script) When turned ON, the REXX script will write debug information to the NetView log. Note that if you have already specified a REXX script with the AOCTRACE command, or entered the command code C next to a REXX script on the main AOCTRACE panel, this field will contain that REXX script name and cannot be changed.

debug mode

Specify ON to turn on the REXX script's debug mode.

debug detail level

Specify the debug level for the REXX script. The meaning of the debug level varies from REXX script to REXX script. Standard values are:

AOCTRACE

NORM

This is the default. Control flow and important data area is written to the netlog.

MAX Extensive logging of control flow and data areas and structures.

/AM Indicates that data received from the automation manager is not traced.

/SLAVE

Indicates that data received from the command slave is not traced.

REXX trace option

Specify the trace setting for the REXX script. It can be one of the following:

A All
R Results
I Intermediates
C Commands
E Errors
F Failures
L Labels
O Off
N Normal
_ Default

For more information about trace settings, see TRACE in *z/OS TSO/E REXX Reference*.

Notes:

1. The REXX script debug setting need not be ON to use REXX script trace.
2. Specifying REXX trace option A, I, or R makes individual REXX script debugging ineffective.

Subroutines to be traced

Specify the list of subroutines to be traced. By default, only the REXX script main routine will be traced. You can specify more than one subroutine name separated by a blank character. Specify '*' to trace all subroutines.

Message id

Specify the message identifier to be traced.

ASF

Purpose

The ASF command is a file manager command that displays records from the automation status file. The automation status file records are maintained in a VSAM data set. ASF interfaces with the VSAM file to obtain control information that is vital to SA z/OS, such as:

- Automation status
- Time and date information for specific events within the lifecycle of an application
- Whether an error threshold has been exceeded
- Time and date information for error conditions

You can also use the ASF command to reset occurrences of threshold errors by updating records in the automation status file.

Syntax

To display single or multiple records use the following syntax:

```

▶▶—ASF—REQ=DISP—ID=resource—FROM=resource—TO=resource————▶▶

```

To reset occurrences of threshold errors use the following syntax:

```

▶▶—ASF—REQ=REPL—ID=resource—ERRORDT=' '—THRSHLD=' '————▶▶

```

Parameters

REQ

The type of request for automation status file information that the ASF command performs. This value may be:

DISP

Displays information in the automation status file. This value is the default if the REQ parameter is not coded.

REPL

Resets a record in the automation status file.

ID The resource ID that is the key to the automation status file record. This ID is the application name for application records. This value can be from 1 through 64 characters long.

FROM

The resource ID that is the starting key when displaying multiple automation status file records. This resource is the application name for application records. This value can be from 1 through 64 characters long.

TO The resource ID that is the ending key when displaying multiple automation status file records. If not specified, the value defaults to the FROM parameter value. This resource is the application name for application records. This value can be from 1 through 64 characters long.

If a resource ID is specified, the records that are to be displayed are resolved alphabetically.

ERRORDT

Specify ERRORDT=' ' THRSHLD=' ' with REQ=REPL to reset occurrences of threshold errors for a resource.

THRSHLD

Specify ERRORDT=' ' THRSHLD=' ' with REQ=REPL to reset occurrences of threshold errors for a resource.

Usage

To modify automation status file fields that are reserved for your data, use the ASFUSER command. See “ASFUSER” on page 30 for details.

Error conditions

To display status information about subsystem JES2, enter:

```
ASF REQ=DISP ID=JES2
```

To reset the occurrences of threshold errors for the application APPC, enter:

```
ASF ID=APPC REQ=REPL ERRORDT='' THRESHLD=''
```

ASFUSER

Purpose

The ASFUSER command is a file manager command that updates the 40 user fields in the automation status file. The ASFUSER command has different formats depending on whether it is used to:

- Display multiple records
- Display, delete, or replace (update) a single record

The ASFUSER command is pipeable.

Syntax

To display single or multiple records use the following syntax:

```
|
  >> ASFUSER — REQ=DISP — ID=resource — FROM=resource — TO=resource —
```

To delete a single record use the following syntax:

```
|
  >> ASFUSER — REQ=DEL — ID=resource —
```

To replace (update) a record use the following syntax:

```
|
  >> ASFUSER — REQ=REPL — ID=resource — USERn=data — (1)
```

Notes:

- 1 *n* can be a number from 1 through 40

Parameters

REQ

The type of request for automation status file record information the ASFUSER command performs. This value may be one of the following:

Value	Description
-------	-------------

DISP

Displays a record in the automation status file. This value is the default if the REQ parameter is not coded.

DEL

Deletes a record in the automation status file.

REPL

Replaces or adds a record in the automation status file.

If this parameter is specified, other parameters that describe the data to be displayed, deleted, or updated must be specified.

FROM

The resource ID that is the starting key when displaying multiple automation status file records. This value can be from 1 through 64 characters long.

TO The resource ID that is the ending key when displaying multiple records. If not specified, the value defaults to the same key as the FROM parameter. This value can be from 1 through 64 characters long.

ID The resource ID that is the key to the automation status file record. This ID is the application name for application records. This ID can be from 1 through 64 characters long.

USER1=*data*–USER40=*data*

These parameters specify data that is stored in each of the 40 fields in the automation status file that are reserved for your information. All these parameters are optional. The specified data can be 1 through 20 characters long. These parameters are only used with ASFUSER replace requests (REQ=REPL). The data must be enclosed in parenthesis or quotes if it contains blanks or a comma.

Restrictions and Limitations

None.

Usage

If your automation procedure performs a replace or update function, only those fields that need replacing must be specified. No change occurs to other automation status file fields.

Examples

Example 1

This example shows a command to create an automation status file record for a resource with a resource ID of DASD.

The ASFUSER command to create the record is:

```
ASFUSER REQ=REPL ID=DASD USER1=3390 USER2=SITE1
```

The response to the ASFUSER command is:

```
AOF001I REQUEST "REPLACE" WAS SUCCESSFUL FOR "DASD"
```

Example 2

This example shows a command to display an automation status file record for DASD.

ASFUSER

The ASFUSER command to display the record is:

```
ASFUSER ID=DASD
```

The response to the ASFUSER command is:

```
AOF150I STATISTICS DISPLAY REQUESTED FOR DASD THRU DASD
AOF151I ID=DASD , TYPE= N/A , STATUS= N/A
AOF152I LAST UPDATED BY OPERATOR OPER1
AOF158I USER1 = 3390
AOF158I USER2 = SITE1
AOF002I END OF MULTILINE MESSAGE GROUP
```

Example 3

This example shows a command to update the DASD automation status file record to add a new DASD device type.

The ASFUSER command to add a new field to the existing record is:

```
ASFUSER REQ=REPL,id=DASD,USER3=3990
```

The response to the ASFUSER command is:

```
AOF001I REQUEST "REPLACE" WAS SUCCESSFUL FOR "DASD"
```

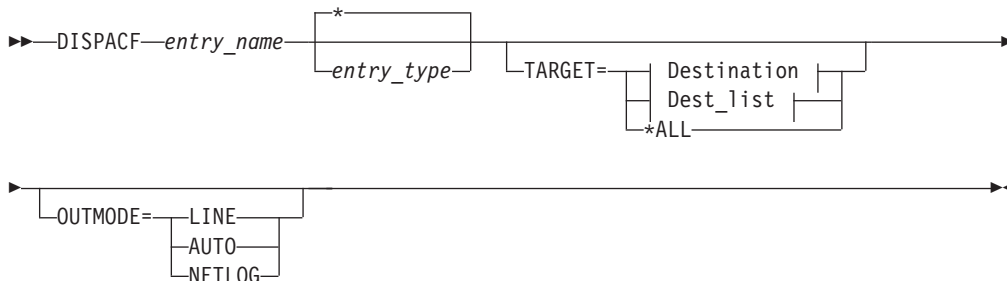
Note: Other values in record DASD remain as they were before the ASFUSER command was issued.

DISPACF

Purpose

The DISPACF command displays resource information and automation policy settings for a specific entry or entry-type pair in the automation control file.

Syntax



Destination:



Dest_list:**Parameters***entry_name*

Specifies the name of the entry in the automation control file.

If you specify *, all entry names are displayed.

entry_type

Specifies the type within the entry in the automation control file. If you specify a particular type-name, only that type-name (and its data fields) for the entry-name is displayed.

If you specify *, all of the type-names and their data fields for the entry-name are displayed. This is the default. Wildcard is supported.

TARGET

For information on the TARGET parameter, see “TARGET Parameter” on page 10.

OUTMODE

For information on the OUTMODE parameter, see “OUTMODE Parameter” on page 12.

Restrictions and Limitations

The DISPACF command can only be used when SA z/OS is initialized.

Examples

If you enter dispacf subsystem, you will see a fullscreen display similar to Figure 7 on page 34.

DISPACF

```
AOFK3D0X          SA z/OS - Command Response      Line 1    of 893
Domain ID  = IPSNO  ----- DISPACF -----      Date = 07/19/00
Operator ID = NETOP1                                     Time = 18:38:13

Command = ACF ENTRY=SUBSYSTEM,TYPE=*,REQ=DISP
SYSTEM = KEY3      AUTOMATION CONFIGURATION DISPLAY - ENTRY= SUBSYSTEM
-----
AUTOMATION CONFIGURATION DISPLAY - ENTRY= SUBSYSTEM
TYPE IS ALLOCAS
JOBTYPE      = MVS
RESTARTOPT   = ALWAYS
SHUTDLY     = 00:01:00
STRTDLY     = 00:02:00
TERMDLY     = 00:00:12
EXTSTART    = ALWAYS
EXTSTOP     = ALWAYS
JOB         = ALLOCAS
SCHEDSUB    = MSTR
SDESC      = 'MVS ADDRESS SPACE'
TYPE IS AMCP
IPLOPTIONS  = NOSTART
PARMS       = ',RUN=3'
PROCNAME    = AAAZTSEM
JOB         = AMCP
JOBTYPE     = TRANSIENT
OBJECTCLASS = JES2_TRANS
PARENT      = (JES2)
SDESC      = 'SIMULATED SUBSYSTEM'
TRANRERUN   = NO
TYPE IS ANTMMAIN
JOBTYPE     = MVS
RESTARTOPT  = ALWAYS
SHUTDLY    = 00:01:00
STRTDLY    = 00:02:00
TERMDLY    = 00:00:12
EXTSTART   = ALWAYS
EXTSTOP    = ALWAYS
JOB        = ANTMMAIN
SCHEDSUB   = MSTR

Command ==>
PF1=Help      PF2=End      PF3=Return      PF6=Ro11
               PF8=Forward  PF9=Refresh     PF12=Retrieve
```

Figure 7. Display of Automation Control File Settings for Subsystem (DISPACF SUBSYSTEM)

This command displays information for all types of the SUBSYSTEM entry, because you accepted the default TYPE=*.

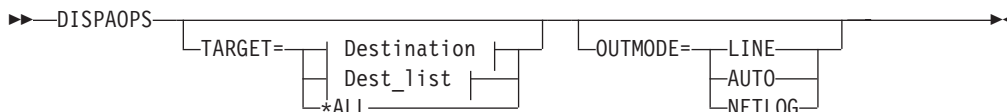
If you type dispacf subsystem jes2, you see only information about the JES2 type.

DISPAOPS

Purpose

The DISPAOPS command displays a list of automation operators that are currently active.

Syntax



Destination:**Dest_list:****Parameters****TARGET**

For information on the TARGET parameter, see “TARGET Parameter” on page 10.

OUTMODE

For information on the OUTMODE parameter, see “OUTMODE Parameter” on page 12.

Restrictions and Limitations

The DISPAOPS command can only be used when SA z/OS is initialized.

Examples

Type `dispaops` on any command line and press the Enter key. You will see a panel similar to Figure 8 on page 36.

DISPAOPS

```
A0FK2S0          SA z/OS - Command Dialogs          Line 1 of 20
Domain ID = IPUF9 ----- DISPAOPS -----          Date = 12/17/97
Operator ID = NETOP1                                   Time = 15:19:59
```

System	Automated Function	Primary	Status	Secondary	Status
AOC9	GATOPER	GATIPUF9	ACTIV		
AOC9	AOFWRK01	AUTWRK01	ACTIV		
AOC9	AOFWRK02	AUTWRK02	ACTIV		
AOC9	AOFWRK03	AUTWRK03	ACTIV		
AOC9	AOFWRK04	AUTWRK04	ACTIV		
AOC9	AOFWRK05	AUTWRK05	ACTIV		
AOC9	BASEOPER	AUTBASE	ACTIV		
AOC9	SHUTOPER	AUTSHUT	ACTIV		
AOC9	MONOPER	AUTMON	ACTIV		
AOC9	GSSOPER	AUTGSS	ACTIV		
AOC9	MVSCONS	AUTCON	ACTIV		
AOC9	MSGOPER	AUTMSG	ACTIV		
AOC9	NETOPER	AUTNET1	ACTIV	AUTNET2	ACTIV
AOC9	JESOPER	AUTJES	ACTIV		
AOC9	SYSOPER	AUTSYS	ACTIV		
AOC9	RECOOPER	AUTREC	ACTIV		
AOC9	LOGOPER	AUTLOG	ACTIV		
AOC9	PPIOPER	AOFARCAT	ACTIV		
AOC9	HBOPER	AUTHB	ACTIV		
AOC9	RPCOPER	AUTRPC	ACTIV		

```
Command ==>
PF1=Help      PF2=End          PF3=Return    PF6=Ro11
                PF9=Refresh        PF12=Retrieve
```

Figure 8. Automation Operators Panel

- The **System** field shows the name of the system where the automated function is defined
- The **Automated Function** field shows the name of the automated function that is used in SA z/OS automation procedures
- The **Primary** field shows the NetView automation operator ID assigned to this automated function
- The **Status** field shows the current status of the primary automation operator
- The **Secondary** field shows the Backup NetView automation operator ID assigned to this automated function
- The **Status** field shows the current status of the backup automation operator

The primary and backup NetView automation operator IDs are assigned to the automated function in the command dialogs.

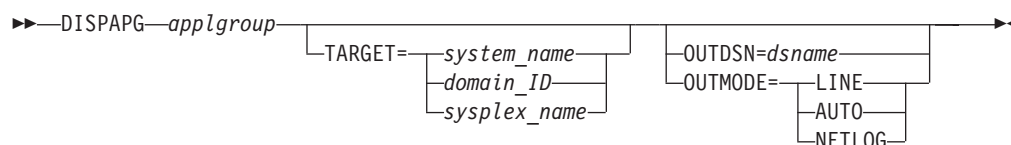
DISPAPG

Purpose

The DISPAPG command displays detailed information about a specified application group that is of interest from the automation agent's point of view, such as:

- Automation agent-related information
- Automation manager-related information
- The message history for captured messages that are associated with the group

Syntax



Parameters

applgroup

The name of the application group you want information about. If you do not specify a application group, a menu is displayed where you can specify the application group name.

TARGET

For information on the TARGET parameter, see “TARGET Parameter” on page 10.

OUTDSN

For information on the OUTDSN parameter, see “OUTDSN Parameter” on page 13.

OUTMODE

For information on the OUTMODE parameter, see “OUTMODE Parameter” on page 12.

Restrictions and Limitations

The DISPAPG command can only be used when SA z/OS is initialized.

Examples

If you enter dispapg followed by the name of an application group at a command line you will see a panel similar to Figure 9.

```

AOFKADAG                SA z/OS - Command Dialogs                Line 1 of 11
Domain ID = IPSFP        ----- DISPAPG -----                Date = 09/05/07
Operator ID = NETOP1     System = KEY1                          Time = 09:10:01

Resource ==> MOVSYSTEM/APG/KEY1                                format: name/type/system
Target   ==> _____ System name, domain ID or sysplex name

Resource      : MOVSYSTEM/APG/KEY1
Description   : System move pref 700/500/300 MOVSYS1/2/3

Inform list   : SDF NMC SMF

Nature        : MOVE
Passive       : NO
Move mode     : PARALLEL

Availability target : 1
Satisfactory target : 1

Command ==>
PF1=Help    PF2=End      PF3=Return    PF4=INGINFO    PF6=Roll
PF9=Refresh                                PF12=Retrieve
  
```

Figure 9. DISPAPG Panel

DISPAPG

You can use the **Resource** and **Target** fields to specify the name of a different application group or you can press PF9 to refresh the information about the current application group.

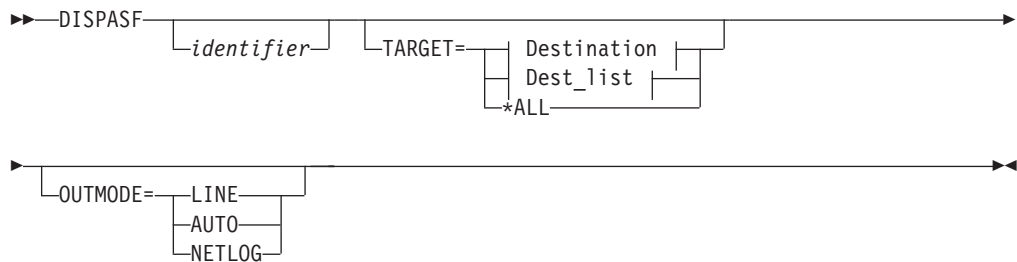
You can use the PF4 key to invoke the INGINFO command to get details about the application group from the automation manager's point of view.

DISPASF

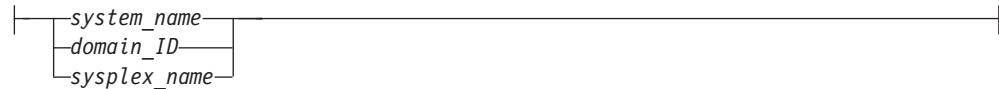
Purpose

DISPASF displays the information contained in the automation status file. This file holds information that is to be retained across SA z/OS automation agent sessions.

Syntax



Destination:



Dest_list:



Parameters

identifier

Specifies the name of an object in the status file. Such an object can be, for example, a subsystem. If you do not specify an identifier, a panel is displayed where you can specify an object.

TARGET

For information on the TARGET parameter, see "TARGET Parameter" on page 10.

OUTMODE

For information on the OUTMODE parameter, see "OUTMODE Parameter" on page 12.

Restrictions and Limitations

The DISPASF command can only be used when SA z/OS is initialized.

Examples

If you enter dispasf tso, you see a panel similar to Figure 10.

```

A0FK3D0X          SA z/OS - Command Response      Line 1   of 19
Domain ID  = IPUF9  ----- DISPASF -----      Date = 01/09/09
Operator ID = NETOP1                                     Time = 18:59:11

Command = ASF ID=TSO,REQ=DISP
SYSTEM = KEY1      STATISTICS DISPLAY REQUESTED FOR TSO THRU TSO
-----
STATISTICS DISPLAY REQUESTED FOR TSO THRU TSO
ID= TSOYYYY , TYPE= SUBSYSTEM , STATUS= UP
LAST UPDATED BY OPERATOR AUTWRK15
LAST STOP  EVENT: TS= 01/07/2009 18:01:32 , TYPE= NORM
LAST DOWN  EVENT: TS= 01/07/2009 18:01:36 , TYPE= NORM
LAST THRESHOLD EXCEEDED -
OPERATOR NOTIFIED: N
LAST STATUS CHANGE DATE= 01/09/2009 , TIME= 11:42:05 , OPID= AUTWRK15
  ERROR COUNT   DATE          TIME
           09   05/30/2008   06:48:00
           08   05/08/2008   17:35:00
           07   04/24/2008   06:14:00
           06   04/18/2008   07:16:00

Command ==>
PF1=Help      PF2=End      PF3=Return      PF6=Roll
               PF8=Forward  PF9=Refresh     PF12=Retrieve
  
```

Figure 10. Display of Automation Status File Information for TSO (DISPASF TSO)

DISPAUTO

Purpose

DISPAUTO provides a menu where you can initiate command dialogs that display information about your automation.

Syntax

```

▶▶—DISPAUTO—┬──────────────────────────────────────────────────────────────────────────────────┐
               │ Selection—Additional parameters—┘
  
```

Parameters

Selection

This is one of the commands that is listed for the DISPAUTO command.

Additional parameters

This indicates additional parameters that can be specified with the selected command.

Note: All keywords can be abbreviated to the minimum unique abbreviation. Additional parameters are passed 'as is' to the appropriate command routine.

Restrictions and Limitations

The DISPAUTO command can only be used when SA z/OS is initialized.

Examples

If you enter dispauto on an operator station task (OST) the panel in Figure 11 is displayed.

```

AOFKAADA          SA z/OS - Command Dialogs          Line 1 of 33
Domain ID = IPUFA ----- DISPAUTO -----          Date = 09/01/06
Operator ID = NETOP1                                     Time = 12:46:21

  1  FLAGS          Display current automation flag settings
  2  SCHEDULE       Display all scheduled NOAUTO periods
  3  NOTIFY         Display status of all notify operators
  4  THRESHOLDS    Display all current threshold settings
  5  ERRORS        Display all resources with errors
  6  STATUS        Display the current status of all subsystems
  7  REQUESTS      Display all requests
  8  SUBSYSTEMS    Display information about subsystem
  9  MESSAGES      Display current message assignments
 10  AUTOOPS       Display SA for z/OS controlled autotasks
 11  GATEWAYS      Display gateway status and statistics
 12  SYSTEM        Display system parameters and status
 13  CF            Display coupling facility statuses
 14  CDS           Display couple data set statuses
 15  TRIGGERS     Display list of defined triggers
 16  SERVICE       Display list of defined schedules

Command ==>
PF1=Help      PF2=End      PF3=Return      PF6=Ro11
               PF8=Forward  PF12=Retrieve

```

Figure 11. DISPAUTO Command Dialog Panel

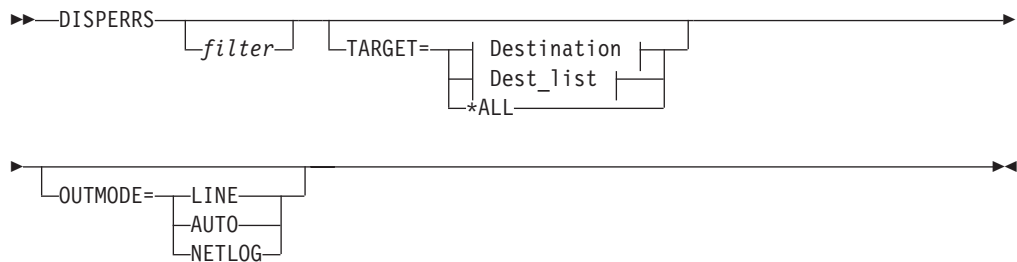
After the command selection number, you can specify appropriate parameters for the selected commands, for example, 10 TARGET=xxx, where xxx is the domain ID, or the system name of a system in the sysplex.

DISPERRS

Purpose

The DISPERRS command displays information about resources that errors have been recorded for in the status file.

Syntax



Destination:**Dest_list:****Parameters****filter**

This is the filter to be applied for the output. Only resource names that match the filter criteria are displayed.

The filter consists of one or more qualifiers separated by a period. A wildcard, *, is supported at the beginning or the end of each qualifier.

TARGET

For information on the TARGET parameter, see “TARGET Parameter” on page 10.

OUTMODE

For information on the OUTMODE parameter, see “OUTMODE Parameter” on page 12.

Restrictions and Limitations

The DISPERRS command can only be used when SA z/OS is initialized.

Examples

If you enter disperrs you see a panel similar to Figure 12 on page 42.

DISPERRS

```

AOFKAAD5          SA z/OS - Command Dialogs          Line 1 of 21
Domain ID = IPUFA ----- DISPERRS -----          Date = 09/16/08
Operator ID = NETOP1                                     Time = 15:08:12

System  Resource                                     Type      Thrs No Date      Time
-----
AOCA    AM                                           SUBSYSTEM  INFR  9 09/16/2008 09:11:34
                                                8 09/03/2008 07:55:34
                                                7 09/02/2008 09:18:48
                                                6 09/02/2008 09:14:29
                                                5 08/04/2008 13:10:55
                                                4 07/31/2008 12:47:00
                                                3 07/08/2008 14:24:00
                                                2 07/03/2008 08:49:00
                                                1 06/25/2008 12:45:00
AOCA    AM2                                           SUBSYSTEM  INFR  2 09/08/2008 09:38:14
                                                1 09/03/2008 07:55:32
AOCA    MQLOCAL                                       SUBSYSTEM  CRIT  2 06/19/2008 17:04:00
                                                1 06/19/2008 17:04:00
AOCA    AOFIPLDT                                       CONTROL    8 08/27/2008 19:32:00

Command ==>
PF1=Help      PF2=End      PF3=Return   PF6=Roll
PF8=Forward   PF9=Refresh  PF12=Retrieve
  
```

Figure 12. DISPERRS Command Dialog Panel

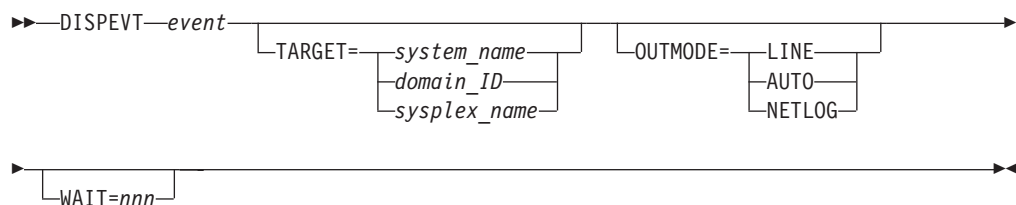
- The **System** field shows the name of the system where the resource is defined.
- The **Resource** field shows the name of the resource.
- The **Type** field shows the type of resource.
- The **Thrs** field shows the type of threshold, if any, that was exceeded when the last error was recorded. This is either CRIT (critical), FREQ (frequent), or INFR (infrequent).
- The **No** field shows the sequence number assigned to the error.
- The **Date** and **Time** fields show the date and time that the error occurred.

DISPEVT

Purpose

The DISPEVT command displays relationships between an event and the related resources. DISPEVT shows all the resources that use the event.

Syntax



Parameters

event
Specifies the name of the event.

TARGET

For information on the TARGET parameter, see "TARGET Parameter" on page 10

10. Note that if you specify a sysplex name as a target, this is translated to the next system that is available in the sysplex and the DISPEVT command is processed there.

OUTMODE

For information on the OUTMODE parameter, see “OUTMODE Parameter” on page 12.

WAIT

Specifies the number of seconds to wait before reporting that a timeout occurred if the automation manager does not provide the requested data. The maximum time interval is 999 seconds.

If omitted, the time interval is 30 seconds.

Restrictions and Limitations

The DISPEVT command can only be used when SA z/OS is initialized.

Usage

The DISPEVT command operates sysplexwide. For an overview see “Overview of Commands that Operate Sysplexwide” on page 9.

If you specify OUTMODE=LINE, specifying *event* becomes mandatory.

Examples

If you enter `dispevt b000s100`, Figure 13 is displayed.

```

AOFLE000          SA z/OS - Command Dialogs      Line 1   of 4
Domain ID   = IPUF9   ----- DISPEVT -----   Date = 11/26/99
Operator ID = NATOP1      Sysplex = KEY1PLEX      Time = 15:29:27

Event       ==> B000S100
Target      ==> KEY3      System name, domain id or sysplex name
Description . . : Start cond 1 Trigger6 batch job end
Unset condition. : UP

Resource    Type  System  Trigger  Status
-----
TRGG006AA10  APL  KEY1   TRIGGER6  SET
TRGG006AA10  APL  KEY2   TRIGGER6  UNSET
TRGG006AA10  APL  KEY3   TRIGGER6
TRGG006AA10  APL  KEY4   TRIGGER6  SET

Command ==>
PF1=Help    PF2=End      PF3=Return   PF6=Ro11
              PF9=Refresh  PF12=Retrieve
  
```

Figure 13. DISPEVT Command Dialog Panel

- The **Event** field shows the name of the event. You can overwrite the event to initiate a new display.
- The **Target** field shows the name of the system where the command is executed. You can overwrite the system name to initiate a new display.
- The **Description** field shows the description of the event.

DISPEVT

- The **Unset** condition field shows the status that an application must have to reset an event.
- The **Resource** field shows the name of the resource where the event is defined.
- The **Type** field shows the type of the resource.
- The **System** field shows the name of the system where the resource is defined.
- The **Trigger** field shows the trigger that the resource is linked to.
- The **Status** field shows the status of the event for that particular resource. It can contain the following values:

SET The event is set. It is shown in white.

UNSET The event is unset. It is shown in red.

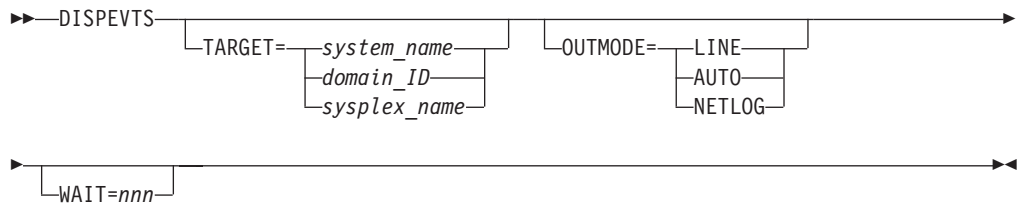
If the status of the event is neither SET nor UNSET, the event is in an unknown state. This is treated as UNSET.

DISPEVTS

Purpose

DISPEVTS displays all events defined in a sysplex. From the fullscreen panel you can set or reset an event or display the related resources of an event.

Syntax



Parameters

TARGET

For information on the TARGET parameter, see “TARGET Parameter” on page 10. Note that if you specify a sysplex name as a target, this is translated to the next system that is available in the sysplex and the DISPEVTS command is processed there.

OUTMODE

For information on the OUTMODE parameter, see “OUTMODE Parameter” on page 12.

WAIT

Specifies the number of seconds to wait before reporting that a timeout occurred if the automation manager does not provide the requested data. The maximum time interval is 999 seconds.

If omitted, the time interval is 30 seconds.

Restrictions and Limitations

The DISPEVTS command can only be used when SA z/OS is initialized.

Examples

If you enter `dispevts`, a panel that shows all events defined in the sysplex is displayed, as shown in Figure 14.

```

AOFLE100          SA z/OS - Command Dialogs      Line 1   of 38
Domain ID  = IPUF9  ----- DISPEVTS -----    Date = 11/26/99
Operator ID = NETOP1      System = AOC9          Time = 15:00:20

Cmd:  D show related resources      S set/reset event

Cmd Event   Unset  Description
-----
-  BATCHSTP NONE   Batch jobs B000P100,P200,P300
-  BATCHSTR NONE   Batch jobs B000S100,S200,S300
-  B000P100 DOWN  Stop cond 1 Trigger6 (batch job end)
-  B000P200 DOWN  = P1
-  B000P300 DOWN  Stop cond 2 Trigger6 (batch job 1 min)
-  B000S100 UP    Start cond 1 Trigger6 batch job end
-  B000S200 UP    = P1
-  B000S300 UP    Start cond 2 Trigger 6 batch end (1 min)
-  DRWEVT1  UP    unset UP
-  DRWEVT13 NONE  unset none
-  DRWEVT14 NONE  unset none
-  DRWEVT15 NONE  unset none

Command ==>
PF1=Help      PF2=End      PF3=Return   PF6=Ro11
               PF8=Forward  PF9=Refresh  PF12=Retrieve

```

Figure 14. DISPEVTS Command Dialog Panel

- The **Cmd** field lets you specify the command codes shown on the panel. Type the appropriate letter next to the resource name and press Enter. The following command codes are available:
 - D** Shows the related resources.
 - S** Sets or resets the event.
- The **Event** field shows the name of the event.
- The **Unset** field shows the status that an application must have to reset an event. The following values can occur:
 - START** Unsets the event when the resource is being started.
 - UP** Unsets the event when the resource becomes available.
 - DOWN** Unsets the event when the resource becomes unavailable.

If you do not specify anything the event will not be unset.

- The **Description** field shows the description of the event.

Type `S` next to an event and press Enter. The panel shown in Figure 15 on page 46 is displayed.

DISPEVTS

```

AOFLE110          SA z/OS - Command Dialogs
Domain ID = IPSNO  ----- INGEVENT -----   Date = 03/02/00
Operator ID = NETOP1      Sysplex = KEY1PLEX   Time = 12:35:26

Event . . . . . : EVTSTOP
Description . . . : Shutdown event
Unset condition . : DOWN

Specify/revise the following parameters and then press enter:

Function => _____ SET or UNSET
Resource => _____ Resource name

Target   => _____ System name, domain ID or sysplex name

Command ==>
F1=Help   F2=End   F3=Return           F6=Roll
F12=Retrieve
  
```

Figure 15. DISPEVTS Command Dialog Panel: Setting an Event

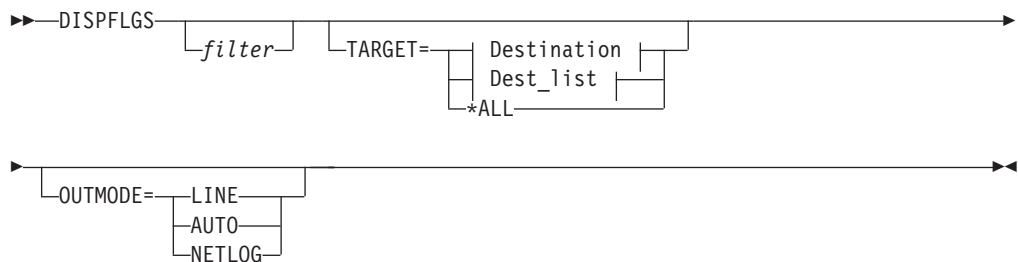
- The **Event** field shows the name of the event.
- The **Description** field shows the description of the event.
- The **Unset condition** field shows the status that an application must have to reset an event.
- The **Function** field shows the action to be performed. It can be overwritten.
- The **Resource** field shows the name of the application that is the only affected application when the command is executed. It can be overwritten.
- The **Target** field shows the name of the target system where the processing takes place. It can be overwritten. You only need to specify the name of the target system if you want to address a remote sysplex.

DISPFLGS

Purpose

The DISPFLGS command shows all resources that have explicit agent automation flags defined for them, what those flags are, and what the effective automation flags resulting from them are.

Syntax



Destination:**Dest_list:****Parameters****filter**

Is the filter to be applied for the output. Only resource names that match the filter criteria are displayed. Wildcard is supported. The filter consists of the major name and, optionally, of a minor name separated by a dot, for example, CICS*.TRANS* , or *.*CEMT. Specify * to view major resources. To view minor resources specify xyz.*.

TARGET

For information on the TARGET parameter, see “TARGET Parameter” on page 10.

OUTMODE

For information on the OUTMODE parameter, see “OUTMODE Parameter” on page 12.

Restrictions and Limitations

The DISPFLGS command can only be used when SA z/OS is initialized.

Usage

Subsystems that are not shown have no explicit automation flags set and have effective flags defined in the SUBSYSTEM entry.

Examples

If you enter dispflgs within SA z/OS you see a panel similar to Figure 16 on page 48.

```

AOFKAAU          SA z/OS - Command Dialogs          Line 1 of 17
Domain ID = IPSFM ----- DISPFLGS -----         Date = 07/28/06
Operator ID = NETOP1                                Time = 11:48:14

Cmd:  A Add flags    C Change flags    R Reset flags    S Scheduled Overrides
      Actual        Effective
Cmd  System  Resource          A I S R T RS  A I S R T RS
-----
-   KEY1    ASSISTD           Y - - - - -  Y Y Y Y Y Y
-   KEY1    DEFAULTS        - - - - -    Y Y Y Y Y Y
-   KEY1    MINORRES        - - - - E -   Y Y Y Y E Y
-   KEY1    AAA011I         - - - - E -   Y Y Y Y E Y
-   KEY1    MVSESA          Y - - Y - -   Y Y Y Y Y Y
-   KEY1    CDS             - - - Y - -   Y Y Y Y Y Y
-   KEY1    CF              - - - Y - -   Y Y Y Y Y Y
-   KEY1    ENQ             - - - N - -   Y Y Y N Y Y
-   KEY1    HUNGCMD         - - - N - -   Y Y Y N Y Y
-   KEY1    LONGENQ        - - - N - -   Y Y Y N Y Y
-   KEY1    SYSIEFSD       - - - N - -   Y Y Y N Y Y
-   KEY1    HEALTHCHK      - - - Y - -   Y Y Y Y Y Y

Command ==>
PF1=Help      PF2=End      PF3=Return   PF6=Ro11
PF8=Forward   PF9=Refresh  PF12=Retrieve
    
```

Figure 16. DISPFLGS Command Dialog Panel

The following command codes are available:

- A** Lets you define automation flags for a resource using the same flag settings as the selected resource. On the next panel displayed you can specify the resource name and optionally overtype the flag settings.
- C** Lets you modify the automation flags of the selected resource. The next panel shows the current flag settings. You can overtype the flag values.
- R** Resets the automation flags to the values specified in the automation control file (ACF).
- S** Shows the scheduled override settings of the automation flags for the selected resource.
- The **Resource** field shows the name of the resource. Names shown indented one character to the right represent minor resources, for example, MVSESA.DUMP as shown below. If the minor resources MVSESA.DUMP.ONE, MVSESA.DUMP.TWO, and MVSESA.DUMP.TWO.THREE existed, the Resource column would look like the example below:

```

MVSESA
  DUMP
    ONE
    TWO
    THREE
    
```

Major resources correspond to subsystems and minor resources correspond to specific situations or resources within a major resource. By default, automation flags for minor resources are derived from their major resources.

The entries are sorted alphabetically.

- The **Actual** flag settings are the flags that have been set for the resource.
- The **Effective** flag settings are the flags that are in effect for the resource.

The columns are headed with an abbreviation of the name of the automation flag.

The value of each flag is:

- There is no explicit setting.
- N** The flag is turned off.

- E A user exit is invoked whenever SA z/OS checks the flag.
- Y The flag is turned on.
- L The resulting commands or replies, or both, of an automated action are written to the netlog only but not issued when the event occurs.
- ? There is an error.

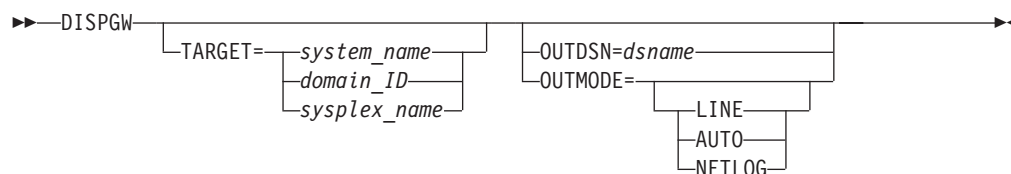
See *IBM Tivoli System Automation for z/OS Customizing and Programming* for further information on automation flags and minor resources.

DISPGW

Purpose

DISPGW displays gateway definitions, statuses, and connectivity information.

Syntax



Parameters

TARGET

For information on the TARGET parameter, see “TARGET Parameter” on page 10.

OUTMODE

For information on the OUTMODE parameter, see “OUTMODE Parameter” on page 12.

OUTDSN

For information on the OUTDSN parameter, see “OUTDSN Parameter” on page 13.

Restrictions and Limitations

The DISPGW command can only be used when SA z/OS is initialized.

Usage

There are related panels that display gateway information. Use PF11 and PF10 to scroll through them.

Examples

If you enter dispgw you see a panel similar to Figure 17 on page 50.

A0FK2GL		SA z/OS - Command Dialogs			Line 1 of 32	
Domain ID = IPUFA		----- DISPGW -----			Date = 12/20/10	
Operator ID = ALEXGRA		System = AOCA			Time = 14:17:17	
Focal Point = IPUFD						
Domain	SDF Root	Status	Comm	Release level	In/Outbound Status	
IPSFL	KEY6	ACTIVE	*IP *	SA z/OS 3.3	ACTIVE	ACTIVE
IPSFM		INACTIVE			INACTIVE	NOT STARTD
IPSFN		INACTIVE			INACTIVE	NOT STARTD
IPSF0	KEY3	INACTIVE		SA z/OS 3.3	INACTIVE	SESSFAL
IPSPF	KEY4	ACTIVE	*IP *	SA z/OS 3.4	ACTIVE	ACTIVE
IPSF7		INACTIVE			INACTIVE	NOT STARTD
IPUFB	AOCB	ACTIVE	*XCF*	SA z/OS 3.3	ACTIVE	ACTIVE
IPUFC	AOCC	ACTIVE	*XCF*	SA z/OS 3.2	ACTIVE	ACTIVE
IPUFD	AOCD	ACTIVE	*XCF*	SA z/OS 3.3	ACTIVE	ACTIVE
IPUFG		INACTIVE			INACTIVE	NOT STARTD
IPUFH	AOC2	ACTIVE	*IP *	SA z/OS 3.2	ACTIVE	ACTIVE
IPUFI		INACTIVE			INACTIVE	SESSFAL
IPUFJ		INACTIVE			INACTIVE	SESSFAL
IPUFK		INACTIVE			INACTIVE	NOT STARTD

Command ==>

PF1=Help PF2=End PF3=Return PF6=Ro11
PF8=ForwardPF9=Refresh PF11=Right PF12=Retrieve

Figure 17. DISPGW Command Dialog Panel 1

The amount of data depends on the screen size. Press PF10/11 to scroll horizontally.

- The **Domain** field shows the domain ID of the system that a gateway has been defined to, known as the *gateway domain*.
- The **SDF Root** field shows the system name of the gateway domain.
- The **Status** field shows the current status of the gateway.

The following are statuses that may occur for gateways:

ACTIVE The connection was established.

BAD DOMAIN

The specified domain is unknown. Message: DSI031I.

INACTIVE The connection cannot be established. One of the following messages was issued: DSI008I, DSI015A, DSI027I.

INV OPID The specified operator ID is invalid. Messages: DSI021A, DSI077A, DSI400A.

NOT STARTD

The domain has not been started by gateway initialization.

SESSFAL The attempt to start a session with the domain ended with a VTAM[®] request failure. See DSI046I in the netlog for details.

- The **Comm** field shows the communication method that is used for the outbound connection with the gateway domain:
 - *XCF* XCF is used as the transport mechanism. This is the case when the gateway domain resides in the same logical sysplex.
 - *IP *
 - *SNA*
 - *RPC*

Note: The RMTCMD method is derived from the RMTSYN entries found in CNMSTYLE. If you use RMTALIAS to describe more than one transport method, then you can influence which is selected as the RMTSYN entries are sorted in ascending order.

- The **Release level** field shows the SA z/OS release level of the gateway domain.

- The **In/Outbound Status** field shows the status of the inbound and outbound NetView sessions from this domain to the gateway domain. If this domain communicates with the gateway through another domain, the status is NO DIRECT.
- The **Last out/in** field shows the first 8 bytes of the last gateway request from the gateway domain to this domain, and the last gateway request from this domain to the gateway domain. It can be any of the following: CHECK, CONNECT, DISCONN, or FPRESET.
- The **System** field shows the name of the system.
- The **SMF ID** field shows the SMF ID assigned to the system.
- The **SA Plexname** field shows the SA z/OS SYSPLEX name. In most cases the name is identical to the physical SYSPLEX name
- The **XCF Group** field shows XCF group name the system belongs to.
- The **Net Id** field shows the Networking ID.
- The **SYSPLEX** field shows the physical sysplex name.
- The **PrimaryFP** field shows the name of the primary focal point defined for the domain.
- The **BackupFP** field shows the name of the backup focal point defined for the domain.
- The **Description** field shows a description of the gateway domain, obtained from the automation control file.

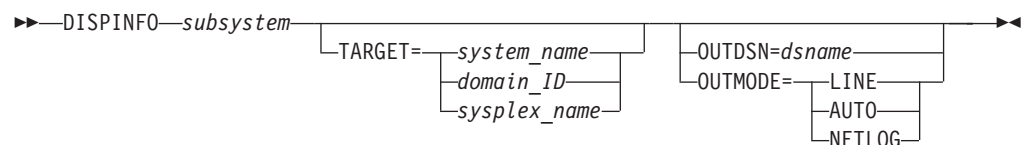
DISPINFO

Purpose

DISPINFO displays detailed information about a specified subsystem.

If the subsystem is a CICS® or IMS subsystem that is being controlled by CICS Automation or IMS Automation, a PF10 option is available to give access to CICS or IMS related information. This PF key is not available if the subsystem is down. See “Examples” on page 52 for more details.

Syntax



Parameters

subsystem

The name of the subsystem you want information about. If you do not specify a subsystem, a menu is displayed where you can specify the subsystem.

TARGET

For information on the TARGET parameter, see “TARGET Parameter” on page 10.

OUTDSN

For information on the OUTDSN parameter, see “OUTDSN Parameter” on page 13.

OUTMODE

For information on the OUTMODE parameter, see “OUTMODE Parameter” on page 12.

Restrictions and Limitations

The DISPINFO command can only be used when SA z/OS is initialized.

Examples

```

AOFKINFO          SA z/OS - Command Dialogs          Line 1    of 194
Domain ID   = IPUFA   ----- DISPINFO -----      Date = 09/01/06
Operator ID = NETOP1                                Time = 15:12:04

Subsystem ==> BZOENEW   System ==> SAT1   System name, domain ID
                                           or sysplex name
Subsystem   : BZOENEW   on System : SAT1

Description : Class for emulation appls

Inform list : SDF NMC SMF

Class chain : CLASS_EMUL   Class for emulation appls

Job Name    : BZOENEW
Procedure   : AAAZSSEM

Job Type    : MVS

Current status      : STOPPED

Last Monitored   : 14:50:58 on 09/01/06
Last Changed     : 09:46:38 on 09/01/06
Last Message

                AOF571I 09:46:38 : BZOENEW SUBSYSTEM STATUS FOR JOB BZOENE
                W IS STOPPED - SHUTDOWN OUTSIDE OF AUTOMATION  RESTARTOPT
                ^= ALWAYS

Monitor        : INGPJMON
Monitor Status : INACTIVE
Monitor Interval : None specified

Last start     : 09:45:52 on 09/01/06
Last termination : 09:46:38 on 09/01/06   Type : NORM

Command ==>
PF1=Help   PF2=End   PF3=Return   PF4=INGINFO           PF6=Roll
            PF8=Forward PF9=Refresh           PF12=Retrieve

```

Figure 18. DISPINFO Command Dialog Panel

For the subsystem and the system fields, you can override the values and refresh the display. You can also scroll forward and backward.

For further details about the fields on the panel, see the customization dialogs and *IBM Tivoli System Automation for z/OS Defining Automation Policy*.

When obtaining automation flag settings, no user exits are invoked.

To display the default settings use the subsystem name DEFAULTS or SUBSYSTEM.

PF4 lets you toggle to the automation manager command INGINFO.

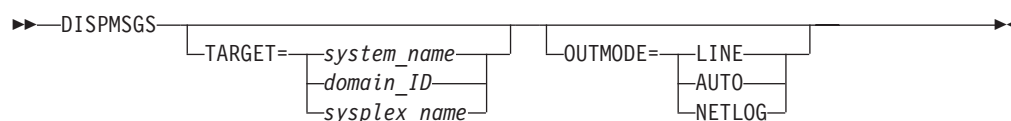
If PF10 is shown the DISPINFO command invokes the INGCICS or INGIMS commands. For more information see “INGCICS” on page 109 or “INGIMS” on page 135.

DISPMSGS

Purpose

The DISPMSGS command displays a list of automation operators that receive automated messages.

Syntax



Parameters

TARGET

For information on the TARGET parameter, see “TARGET Parameter” on page 10.

OUTMODE

For information on the OUTMODE parameter, see “OUTMODE Parameter” on page 12.

Restrictions and Limitations

The DISPMSGS command can only be used when SA z/OS is initialized.

Examples

Enter dispmsgs on a command line to display the Authorized Message Receivers panel, as shown in Figure 19 on page 54.

DISPMSG

```
A0FK2SM          SA z/OS - Command Dialogs          Line 1 of 17
Domain ID = IPSNO ----- DISPMSG ----- Date = 06/27/00
Operator ID = NETOP1          System = KEY3          Time = 15:05:53

Message   Primary Receivers          Secondary Receivers
-----
'*A0F01'  AUTWRK01 AUTGSS  AUTSYS
          AUTBASE
'*A0F02'  AUTWRK02 AUTGSS  AUTSYS
          AUTBASE
'*A0F03'  AUTWRK03 AUTGSS  AUTSYS
          AUTBASE
'*A0F04'  AUTWRK04 AUTGSS  AUTSYS
          AUTBASE
'*A0F05'  AUTWRK05 AUTGSS  AUTSYS
          AUTBASE
'AOF*'    AUTMSG  AUTSYS  AUTBASE
'IEA*'    AUTREC  AUTSYS  AUTBASE
'IEE600I  AUTSYS
'IEE889I  AUTSYS  AUTBASE
'IEE*'    AUTREC  AUTSYS  AUTBASE
'IOS*'    AUTREC  AUTSYS  AUTBASE
'*'       AUTLOG  AUTSYS  AUTBASE

Command ==>
PF1=Help    PF2=End    PF3=Return    PF6=Ro11
              PF9=Refresh    PF12=Retrieve
```

Figure 19. Authorized Message Receivers (DISPMSG) Panel

The information contained on the panel is:

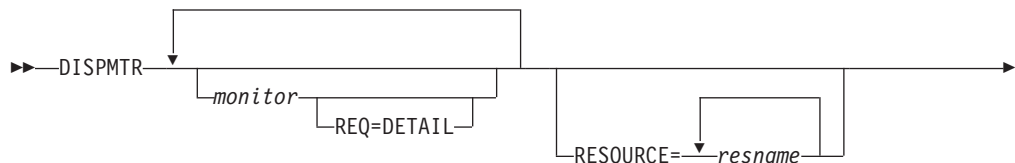
- The **Message** field shows the message or message prefix.
- The **Primary Receivers** field shows the automation operators, identified by their NetView IDs. The Primary Receivers column lists automation operators that can receive the messages listed beside their names. These messages go to the first automation operator listed in the Primary Receivers column that is active.
- The **Secondary Receivers** field shows the Alternate automation operators, identified by their NetView IDs. Secondary Receivers receive copies of the messages listed beside their names.

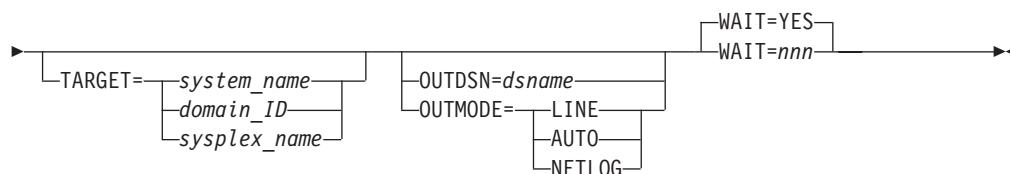
DISPMTR

Purpose

The DISPMTR command displays and allows you to manage monitors that you have defined using the customization dialogs for your system.

Syntax





Parameters

monitor

The name of the monitor resource. More than one name can be specified. Wildcard is supported, for example, SAP*.

resource

The resource name that the associated monitor, or monitors, should be displayed for. If more than one name is specified, they must be enclosed in parentheses. Wildcard is supported.

REQ=DETAIL

Displays detailed information for the specified monitor.

Note: Specification of the monitor name is only necessary when the OUTMODE parameter is specified.

TARGET

For information on the TARGET parameter, see “TARGET Parameter” on page 10.

OUTDSN

For information on the OUTDSN parameter, see “OUTDSN Parameter” on page 13.

OUTMODE

For information on the OUTMODE parameter, see “OUTMODE Parameter” on page 12.

WAIT

Specifies whether or not to wait until the request is complete. The default is YES.

nnn is the number of seconds to wait before giving up and reporting that a timeout has occurred. The maximum time interval is 999 seconds.

Restrictions and Limitations

The DISPMTR command can only be used when SA z/OS is initialized.

Examples

If you enter `dispmtr` a panel similar to that shown in Figure 20 on page 56 is displayed.

```

INGKYMN0          SA z/OS - Command Dialogs          Line 1 of 2
Domain ID = IPUN8 ----- DISPMTR -----          Date = 01/02/03
Operator ID = NETOP1          System = AOC8          Time = 13:15:00

Cmd:  A  Reset  B Start  C Stop  D Details  F INGINFO  I INGSCHED

CMD Monitor      System      Status      Health      Last monitored
-----
- JES2MON        AOCA        ACTIVE      UNKNOWN     2009-12-01 17:28:16
- PMTRA          AOCA        ACTIVE      NORMAL      2009-12-02 15:03:39
- PMTRB1         AOCA        ACTIVE      NORMAL      2009-12-02 15:03:40
- PMTRB2         AOCA        ACTIVE      NORMAL      2009-12-01 17:28:17
- PMTRB3         AOCA        ACTIVE      NORMAL      2009-12-01 17:28:16

Command ==>>
PF1=Help      PF2=End      PF3=Return   PF6=Ro11
PF8=Forward   PF9=Refresh   PF11=Next    PF12=Retrieve

```

Figure 20. DISPMTR Initial Command Dialog Panel

The amount of data depends on the screen size. Press PF10/11 to scroll horizontally.

- The **Cmd** field lets you specify command codes. To use one of the command codes shown, type the appropriate letter next to the resource name and press Enter. The following command codes are available:
 - A** If the resource is active, this lets you reset the health status of the resource being monitored to NORMAL.
If the resource is inactive, it sets the status of the monitor resource to SOFTDOWN.
 - B** Lets you start the monitor resource (that is, make it available).
 - C** Lets you stop the monitor (that is, make it unavailable).
 - D** Allows you to view definition details about the monitor and history data.
 - F** Invokes the INGINFO command to show details about the monitor.
 - I** Invokes the INGSCHED command to show details about the overrides that exist for the monitor.
- The **Monitor** column shows the name of the monitor.
- The **System** column shows the name of the system where the monitor runs.
- The **Status** column shows the status of the monitor. It can have one of the following values:
 - ACTIVE**
The monitor is running.
 - INACTIVE**
The monitor is not running.
 - FAILED**
The monitor has failed. Recovery may be in progress. No acceptable health status is provided.

BROKEN

Both the monitor and recovery failed. This is a permanent condition. The monitor will not be re-invoked.

- The **Last monitored** column shows when the resource was last monitored.
- The **Status message** column shows message that is associated with the status. If the message has been truncated it ends with `...`, use command code D to view full details about the message.
- The **Description** column shows descriptive information about the monitor resource.
- The **Monitored Object** column shows the name of the real object that is being monitored by this monitor.
- The **Jobname** column shows the name of the job this Monitor resource accepts events from.

The SORT, FIND, and RFIND subcommands are supported. See “Varying the Format of the Command Output” on page 13 for information.

If you enter command code D for a resource, a panel similar to Figure 21 is displayed.

```

INGKYM01          SA z/OS - Command Dialogs      Line 1    of 107
Domain ID   = IPSFP      ----- DISPMTR -----   Date = 11/23/09
Operator ID = NETOP1          System = AOC8          Time = 13:15:15

Monitor       : CICS1CON1/MTR/AOC8
Target        : AOC8
Description    : CICS Connection Monitor for CICS1TOR

Monitored Object : BICM.CICSA084.CONNECT.A083
Inform List     : SDF NMC SMF USR TTT EIF IOM

Commands...
  Activate      :
  Deactivate    :
  Monitoring    :

Interval       :

Last termination : 17:50:26 on 11/22/09
Last start       : 00:01:09 on 11/23/09

Command ==>
PF1=Help      PF2=End      PF3=Return      PF6=Roll
PF8=Forward   PF9=Refresh     PF12=Retrieve

```

Figure 21. DISPMTR Command Dialog Panel Showing Details for a Monitor

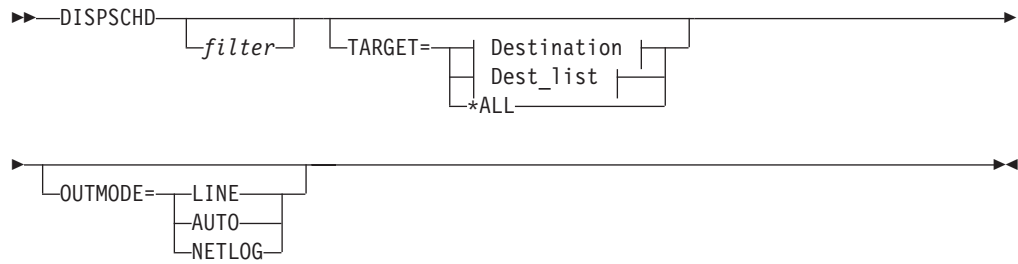
DISPSCHD

Purpose

DISPSCHD displays all resources that have scheduled override settings for the automation flags. Scheduled overrides are specified using the customization dialog. They are specific times when automation is turned off for a particular flag and resource.

Syntax

DISPSCHD



Destination:



Dest_list:



Parameters

filter

Is the filter to be applied for the output. Only resource names that match the filter criteria are displayed. Wildcard is supported. The filter consists of the major name and, optionally, of a minor name separated by a dot, for example, CICS*.TRANS* , or *.*CEMT. Specify * to view major resources. To view minor resources specify xyz.*.

TARGET

For information on the TARGET parameter, see "OUTMODE Parameter" on page 12.

OUTMODE

For information on the OUTMODE parameter, see "OUTMODE Parameter" on page 12.

Restrictions and Limitations

The DISPSCHD command can only be used when SA z/OS is initialized.

Examples

If you enter dispschd a panel similar to Figure 22 on page 59 is displayed.

System	Resource	Fl	Day	Start - End
AOC9	CICST	A	WEEKDAY	07:30 - 04:00
AOC9			THURSDAY	03:00 - 05:00
AOC9		I	*	12:00 - 13:00
AOC9		R	WEEKEND	18:00 - 19:00
AOC9		RS	*	12:00 - 13:00
AOC9	MVSDUMP	R	*	07:00 - 18:00

Command ==>
PF1=Help PF2=End PF3=Return PF6=Roll
PF9=Refresh PF12=Retrieve

Figure 22. DISPSCHD Command Dialog Panel

- The **System** column shows the name of the system where the resource is defined.
- The **Resource** column shows the name of resources that have NOAUTO specified in the automation control file. The resources are displayed in the order that they occur in the automation control file in.
- The **Fl (Flag)** column shows an abbreviation of the automation flag name.
- The **Day** column shows the day or days when automation is turned off. Valid values are:
 - Monday through Sunday
 - * (for every day)
 - Weekend
 - Weekday
- The **Start** column shows the start time (hh:mm) of the non-automation period.
- The **End** column shows the end time (hh:mm) that automation is disabled for.

Note: The display does not take into account any changes made with the INGAUTO command.

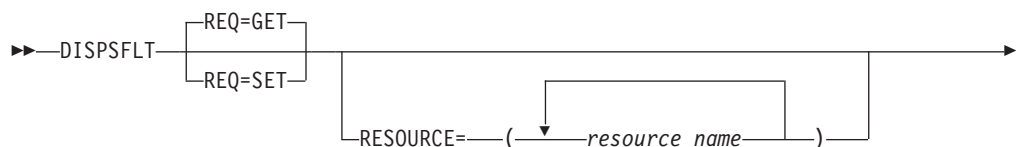
Entries for DEFAULTS or SUBSYSTEM will affect all subsystems that do not have their own automation flags coded.

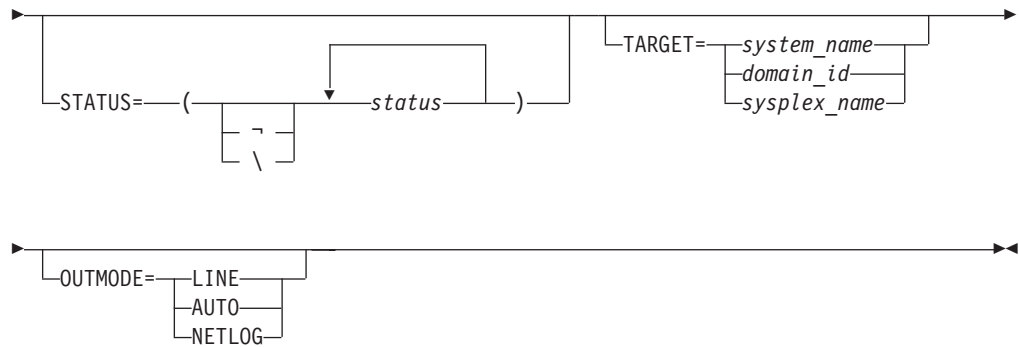
DISPSFLT

Purpose

The DISPSFLT command lets you set up view filters for DISPSTAT.

Syntax





Parameters

REQ

Specifies the type of the request. It can be one of the following:

SET Specifies setting new filter settings.

GET Specifies returning the current filter settings. This is the default.

RESOURCE

Specifies the name of the resource, or resources, to be displayed. The format is *resource name*. It can be a list of names. Wildcards are supported. If you specify only one resource you need not put it in parentheses.

STATUS

Specifies the resource statuses that you want to display. If you specify a list of statuses, separate them with a comma and enclose them in brackets (brackets are not needed for a single status). If '-' or '\' is used, all statuses except the ones that you specify are displayed.

The following are predefined lists:

STATUS=*

Lists all resource statuses.

STATUS=1

Lists all resources that are currently UP or ENDED.

STATUS=2

Lists all resources that are in a 'normal' status (DOWN, STARTED, UP, AUTOTERM, AUTODOWN, ACTIVE, ENDED, ENDING, RESTART, EXTSTART, RUNNING).

STATUS=3

Lists all resources that are in a 'down' status (DOWN, INACTIVE, RESTART, AUTODOWN, CTLDOWN, STOPPED, BROKEN, MOVED, FALLBACK).

STATUS=4

Lists all resources that are in a start transition status (RESTART, STARTED, STARTED2, ACTIVE, RUNNING, EXTSTART).

STATUS=5

Lists all resources that are in a stop transition status (AUTOTERM, ENDING, STOPPING, ABENDING, BREAKING).

TARGET

For information on the TARGET parameter, see “TARGET Parameter” on page 10.

OUTMODE

For information on the OUTMODE parameter, see “OUTMODE Parameter” on page 12.

If no parameters are specified, the filter settings are used.

If a subsystem name is specified, but no other parameters, for example, TARGET=, are specified, all subsystems of this name found on any system will be displayed.

Usage

The DISPSFLT command can also be used when SA z/OS is **not** initialized.

The DISPSFLT command lets you set filter options at operator logon from within the operator's initial REXX script.

Examples

If the operator is responsible for all resources starting with *xyz*, DISPSFLT will be called with the parameter RESOURCE=*xyz*. If you enter `dispsflt` a panel similar to Figure 23 is displayed.

```

A0FKSTA3          SA z/OS - Command Dialogs
Domain ID   = IPSNO   ----- DISPSFLT -----   Date = 06/27/00
Operator ID = NETOP1                               Time = 15:08:40

Resources      ( *, *esour*, resource or jobname )
*
-----

Statuses      ( *, status or choice, leading ~ or \ negates)
RESTART STARTED STARTED2 ACTIVE RUNNING EXTSTART
-----

Precoded:  1 All resources that are currently UP or ENDED
           2 All resources that are in a normal status
           3 All resources that are in a down status
           4 All resources that are in a start transition state
           5 All resources that are in a stop transition state

Targets      ( system name , domain ID , sysplex name or * )
KEY3
-----

Command ==>
PF1=Help   PF2=End   PF3=Return   PF4=Clear   PF5=Reset   PF6=Roll
           PF9=Save                PF12=Retrieve

```

Figure 23. DISPSFLT Command Dialog Panel

Filters are used to tailor the DISPSTAT display. To be displayed, a subsystem must pass all the filter criteria. If a filter is not explicitly set, it defaults to '*', which means that all subsystems pass it. Some filters allow you to specify a wildcard character, in the form of a trailing '*'.

- The **Resources** field contains the name of the resources or their jobs.
- The **Statuses** field shows the subsystem's current status. If '~', or '\ ' is specified, all statuses not specified are used.
- The **Targets** field shows the name of the target system.
- If you press PF4 the filter settings are cleared.

DISPSFLT

Subsystems are evaluated to see if they meet the current filter criteria when:

- DISPSTAT is invoked with filter parameters.
- The filters are changed through the DISPSTAT Filters panel.
- The Refresh key (PF9) is selected from the DISPSTAT panel.

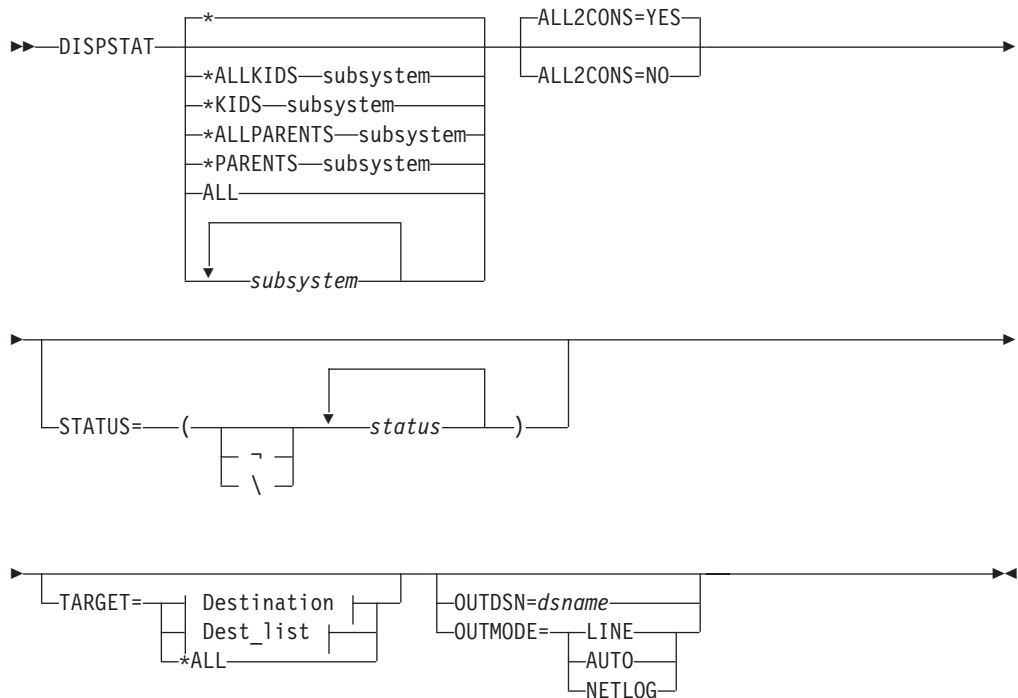
Note: If you make changes on this panel, and then decide that you do not want these changes to take effect, you can select the Reset key (PF5), which reinstates the field values that were present when you entered the panel. If you press PF9 the filter settings are saved until the session is terminated.

DISPSTAT

Purpose

DISPSTAT displays current information about one or more subsystems.

Syntax



Destination:



Dest_list:



Parameters

* A wildcard specification for all subsystems. This is the default.

subsystem

Specifies the particular subsystem whose status or automation flags you want to check. You can specify any automated subsystem. Wildcards are supported. An asterisk (*) matches a string of arbitrary length and a percentage (%) matches a single character.

***ALLKIDS**

Lists all children and children of children of the selected subsystem. Wildcards are not available for the subsystem here.

***KIDS**

Lists the direct children of the selected subsystem. Wildcards are not available for the subsystem here.

***ALLPARENTS**

Lists all parents and parents of parents of the subsystem. Wildcards are not available for the subsystem here.

***PARENTS**

Lists the direct parents of the selected subsystem. Wildcards are not available for the subsystem here.

ALL

Displays the current information for all automated subsystems.

STATUS

Specifies the resource statuses that you want to display. If you specify a list of statuses, separate them with a comma and enclose them in brackets (brackets are not needed for a single status). If '-', or '\' is used, all statuses except the ones that you specify are displayed.

The following are predefined lists:

STATUS=*

Lists all resource statuses.

STATUS=1

Lists all resources that are currently UP or ENDED.

STATUS=2

Lists all resources that are in a 'normal' status (DOWN, STARTED, UP, AUTOTERM, AUTODOWN, ACTIVE, ENDED, ENDING, RESTART, EXTSTART, RUNNING).

STATUS=3

Lists all resources that are in a 'down' status (DOWN, INACTIVE, RESTART, AUTODOWN, CTLDOWN, STOPPED, BROKEN, MOVED, FALLBACK).

STATUS=4

Lists all resources that are in a start transition status (RESTART, STARTED, STARTED2, ACTIVE, RUNNING, EXTSTART).

DISPSTAT

STATUS=5

Lists all resources that are in a stop transition status (AUTOTERM, ENDING, STOPPING, ABENDING, BREAKING)

ALL2CONS

Specifies whether or not a complete list of columns is displayed. The parameter only applies to line mode. The following are valid values:

YES Displays the complete list of columns. This is the default.

NO Displays only 60 characters of display data for each resource. This command is beneficial when DISPSTAT is entered on the system console.

For example, you can specify:

```
DISPSTAT cics* OUTMODE=LINE ALL2CONS=NO
```

TARGET

For information on the TARGET parameter, see "TARGET Parameter" on page 10.

OUTDSN

For information on the OUTDSN parameter, see "OUTDSN Parameter" on page 13. Note, however, that for the DISPSTAT command the minimum record length of the output data set is 256 bytes.

OUTMODE

For information on the OUTMODE parameter, see "OUTMODE Parameter" on page 12.

If no parameters are specified, the filter settings will be used, or, if not set, DISPSTAT will show all resources of the sysplex.

If a subsystem name is specified, but no other parameters, for example, TARGET=, are specified, all subsystems of this name found on any system will be displayed.

Restrictions and Limitations

The DISPSTAT command can only be used when SA z/OS is initialized.

Examples

If you enter dispstat, you see information about all automated resources, as shown in Figure 24 on page 65.

```

INGKYDS0          SA z/OS - Command Dialogs          Line 1    of 68
Domain ID = IPUFJ  ----- DISPSTAT -----         Date = 12/13/11
Operator ID = OPER1      System = AOC4                Time = 12:17:16
 A displflgs B setstate C ingreq-stop D thresholds E explain F info G tree
 H trigger    I service J all children K children L all parents M parents
CMD Resource   Status   System   Jobname  A I S R T RS Type   Activity
-----
  AM          UP      AOC4    AMA4    - - - - - MVS    --none--
  AM2         UP      AOC4    AMS4    - - - - - MVS    --none--
  APPC        UP      AOC4    APPC    - - - - - MVS    --none--
  ASCH        UP      AOC4    ASCH    - - - - - MVS    --none--
  BLSJPRMI    ENDED   AOC4    BLSJPRMI - - - - - TRANS  --none--
  DLF         UP      AOC4    DLF     - - - - - MVS    --none--
  FFST        UP      AOC4    FFST    - - - - - MVS    --none--
  IRRDPTAB    ENDED   AOC4    IRRDPTAB - - - - - TRANS  --none--
  JES2        UP      AOC4    JES2    - - - - - MVS    --none--
  LLA         UP      AOC4    LLA     - - - - - MVS    --none--
  PAPLMTRA    UP      AOC4    PAPLMTRA - - - - - MVS    --none--
  PAPLMTRB    UP      AOC4    PAPLMTRB - - - - - MVS    --none--
  PBSYSPL1    UP      AOC4    PBSYSPL1 - - - - - MVS    --none--

Command ==>
PF1=Help   PF2=End   PF3=Return  PF4=INGLIST  PF5=Filters  PF6=Roll
PF8=Forward PF9=Refresh PF10=Previous PF11=Next   PF12=Retrieve

```

Figure 24. Display of Status of All Automated Resources (DISPSTAT)

The amount of data displayed depends on the screen size used. Press PF10 and PF11 to scroll horizontally.

PF4 lets you toggle to the INGLIST command dialog showing the same resources from the automation manager view.

- The **CMD** field allows you to invoke other SA z/OS command dialogs, or control the amount of information displayed. To use one of the command dialogs, type the appropriate letter next to the resource name, and press Enter. When you return to this panel the data within the command scope is refreshed. The current filters are not reapplied until you select Refresh (PF9).

For example, to invoke the INGTHRES dialog in order to change thresholds for JES2, move the cursor in front of JES2 and type d.

You can specify X to exclude subsystems.

Note: The U command code is supported if the AOFEXC04 exit is installed.

- The **Resource** field shows the name of the resource in its corresponding status color, for example, green when the system is UP.
- The **Status** field shows the current status of the resource as supplied by the automation agent.
- The **System** is the name of the system that this instance of the resource is from.
- The **Jobname** is the job name of the resource.
- The automation flags are as follows:
 - A** If this flag is set to N (No), no automation is on, regardless of how the other flags are set. If this is set to Y (Yes), SA z/OS checks each of the other flags to see if they are set to Y or N.
 - I** If this is on, automation issues the correct MVS start command for each subsystem when SA z/OS is initialized and assures that subsystems are started in the order specified in the automation control file.
 - S** If this is on, automation manages and completes the startup process of subsystems.

DISPSTAT

- R** If this is on, automation takes the specified action for any MVS message that is not associated with the initialization, startup, shutdown, or restart of a subsystem. For example, if this flag is on, automation takes actions to restart the subsystem in case of an abend.
- T** If this is on, automation manages the shutdown process for subsystems by issuing shutdown commands and responding to prompts for additional information.
- RS** If this is on, automation monitors subsystems to ensure that they are running and, if one fails, attempts to restart it according to the policy in the automation control file.

Each flag has a value of:

- N** Off
- E** User exit
- Y** On
- L** Log
- ?** Error

Note: DISPSTAT shows settings that have been set by the INGAUTO command. It does *not* show the effective setting for the specific flag. Use the DISPFLGS command to view the effective settings for the flags.

- The **Type** field shows the type of job, either MVS, NONMVS, TRANS(ient), or ONESHOT.
- The **Activity** field shows whether the resource is in a starting or stopping process.
- The **Last Changed** field shows the date and time that the status of the subsystem last changed.
- The **Last Monitored** field shows the time that the system was last monitored. If monitoring has been disabled this field is set to dashes.
- The **Description** field shows a description of the subsystem, from the automation control file.

Press PF5 to display the DISPSFLT panel. For a description of the DISPSFLT command see "DISPSFLT" on page 59.

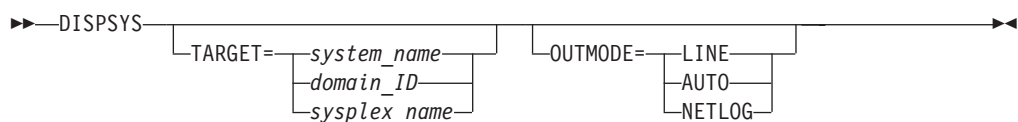
DISPSYS

Purpose

The DISPSYS command displays information about the NetView automation agent setup and the environment that it runs on.

Note that if no data is defined or it is not relevant (for example, the sysplex group name for a system that is not in a sysplex) the word 'none' is displayed in the appropriate field.

Syntax



Parameters

TARGET

For information on the TARGET parameter, see “TARGET Parameter” on page 10.

OUTMODE

For information on the OUTMODE parameter, see “OUTMODE Parameter” on page 12.

Restrictions and Limitations

The DISPSYS command can only be used when SA z/OS is initialized.

Usage

DISPSYS is used when you want to see the system parameters and SA z/OS status information for the Sysplex Timer®.

Examples

If you enter dispsys, you will see a panel similar to Figure 25.

```

AOFKADAE                SA z/OS - Command Dialogs          Line 1 of 98
Domain ID = IPSF0      ----- DISPSYS -----           Date = 11/28/11
Operator ID = NETOP1   System = SYS3                      Time = 12:17:12

System      : KEYC                in Sysplex : KEYAPLEX
Domain     : IPXFI
Sysplex Group : KEY1PLEX
XCF Group name : INGXSUGG

Software
Operating System : z/OS 01.11.00
NetView         : Tivoli NetView for z/OS V5R3
Tower(s)       : SA
System Automation : V3R4M0
Tower(s)       : SYSOPS PROCOPS

Configuration
Data set      : KEYAPLEX.V34.SOCNTL(ACFZ992)
Built by     : NETOP1 11/24/11 13:24:42
Activated    : 11/24/11 13:25:24
CFG Token    : 20111124132434000C6F7A2084

Runmode(s)
Current : *ALL
Defined
WEEKEND      : WK1 WK2 WK3
DISASTER_RECOVERY : RD1 RD2

Command ==>
PF1=Help    PF2=End      PF3=Return    PF6=Roll
PF8=Forward PF9=Refresh    PF12=Retrieve

```

Figure 25. DISPSYS Command Dialog Panel

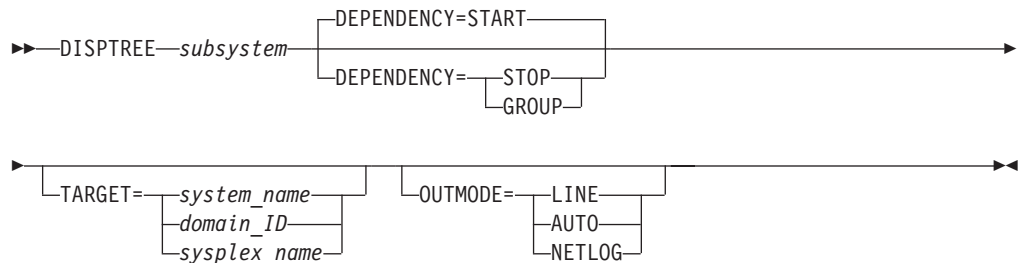
For further details about the fields on the panel, see the online help, the customization dialog and *IBM Tivoli System Automation for z/OS Defining Automation Policy*.

DISPTREE

Purpose

The DISPTREE command displays the dependency graph for a particular resource.

Syntax



Parameters

subsystem

The name of the subsystem the display is to be focused upon.

DEPENDENCY

Specifies the type of dependency that should be used to draw the dependency graph. The following options are available:

START

The start relationship that is defined for the named subsystem will be used to draw the graph.

STOP

The stop relationship that is defined for the named subsystem will be used to draw the graph.

GROUP

The group relationship that is defined for the named subsystem will be used to draw the graph.

TARGET

For information on the TARGET parameter, see "TARGET Parameter" on page 10.

OUTMODE

For information on the OUTMODE parameter, see "OUTMODE Parameter" on page 12.

Restrictions and Limitations

The DISPTREE command can only be used when SA z/OS is initialized.

Examples

If you enter `disptree jes2`, a panel similar to Figure 26 on page 69 is displayed.

```

AOFKTREE          SA z/OS - Command Dialogs          Line 1 of 78
Domain ID = IPSNO ----- DISPTREE -----          Date = 07/19/00
Operator ID = NETOP1                                Time = 18:39:18

Subsystem ==> JES2      Target ==> KEY3      Dependency ==> START

PCAUTH  --+
AOCSSI  --+
AOCAPPL --+
JES2
+-- AMCP
+-- ASTEX
+-- DBUSS
+-- IRRDPTAB
+-- MIM
|   +-- TMS
|       +-- SLS
|           +-- HSM
+-- OMIIHIST
|   +-- OMIIHDI
|       +-- OMIIETE
|           +-- OMIICOL
|               +-- OMIICCOL
|                   +-- OMIICCUA
+-- PIRLM
|   +-- PIMS
|       +-- OMIIPIMS
|           +-- PIMSDBRC
|               +-- PIMSDLI
+-- PMO
+-- QFETCHA
+-- QFETCHB
+-- QFETCHC
+-- QFETCHD
+-- RMF
|   +-- RMFGAT
+-- RODM
|   +-- GMFHS
|       +-- NETGMFLS

Command ==>
PF1=Help   PF2=End   PF3=Return   PF4=Focus   PF5=Info   PF6=Roll
PF8=Forward PF9=Refresh

```

Figure 26. DISPTREE Command Dialog Panel

- The **Subsystem** field shows the name of the subsystem
- The **Target** field shows the name of the system where the subsystem resides
- The **Dependency** field shows the dependency type (START, STOP, or GROUP)

If you position the cursor next to a resource and press PF4 the tree structure of the resource is shown.

PF5 lets you toggle to the DISPINFO command dialog.

DISPTRG

Purpose

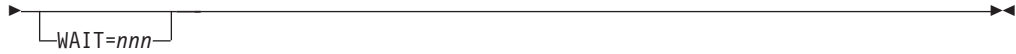
The DISPTRG command displays the trigger conditions of a subsystem.

Syntax

```

▶▶ DISPTRG resource [TARGET= system_name | domain_ID | sysplex_name] [OUTMODE= LINE | AUTO | NETLOG]

```



Parameters

resource

The name of the resource that the trigger condition is displayed for. The format is name/type[/system]. Wildcard is supported.

TARGET

For information on the TARGET parameter, see “TARGET Parameter” on page 10.

OUTMODE

For information on the OUTMODE parameter, see “OUTMODE Parameter” on page 12.

WAIT

Specifies the number of seconds to wait before reporting that a timeout has occurred if the automation manager does not provide the requested data. The maximum time interval is 999 seconds.

If omitted, the time interval is 30 seconds.

Restrictions and Limitations

The DISPTRG command can only be used when SA z/OS is initialized.

Examples

If you type the name of a resource that a trigger has been defined for, a panel similar to Figure 27 is displayed.

```

AOFLT000          SA z/OS - Command Dialogs          Line 1 of 4
Domain ID = IPSFO  ----- DISPTRG -----         Date = 12/12/11
Operator ID = NETOP1      Target = KEY3             Time = 13:26:58

Resource => TRGG006AA10/APL/KEY3
Target   => KEY3           System name, domain id or sysplex name
Trigger. . . : TRIGGER6

Cmd: S show details
Cmd Type  Events
-----
STARTUP   B000S100 B000S200
STARTUP   B000S300
SHUTDOWN  B000P100 B000P200
SHUTDOWN  B000P300

Command ==>
PF1=Help   PF2=End       PF3=Return    PF6=Ro11
PF9=Refresh PF12=Retrieve

```

Figure 27. DISPTRG Command Dialog Panel

- The **Resource** field shows the name of the resource that uses the trigger.
- The **Target** field shows the name of the system where the subsystem is defined.
- The **Trigger** field shows the trigger that is defined for the subsystem.

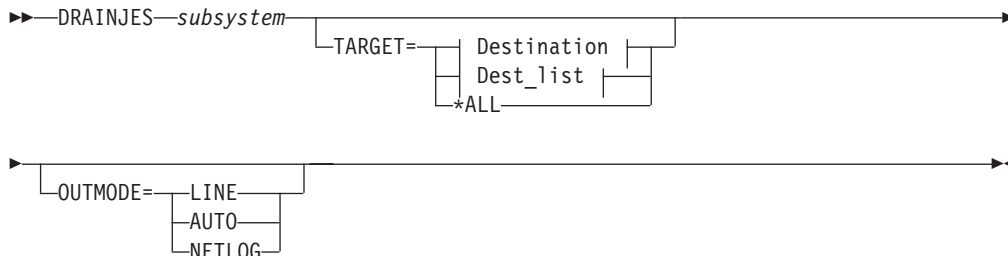
- The **Cmd** field allows you to specify command codes. The following command code is available:
 - S** Shows details of the system defined.
- The **Type** field shows the type of the specified condition.
- The **Events** field shows the names of the specified events. Event that are satisfied are shown in white. Unset events are shown in red.

DRAINJES

Purpose

DRAINJES drains (that is, halts) JES2 resources prior to JES2 shutdown. Specifically, DRAINJES issues commands to drain the initiators, syslog, offloader tasks, lines, printers, punches, and readers (depending on which resources are listed in the automation control file).

Syntax



Destination:



Dest_list:



Parameters

subsystem

Specifies the name of the JES2 subsystem whose resources you want to drain. If you are in fullscreen mode and you do not specify a subsystem, a panel is displayed where you can specify the subsystem. If you are in line mode an error message is displayed.

TARGET

For information on the TARGET parameter, see “TARGET Parameter” on page 10.

DRAINJES

OUTMODE

For information on the OUTMODE parameter, see “OUTMODE Parameter” on page 12.

Restrictions and Limitations

The DRAINJES command can only be used when SA z/OS is initialized.

Usage

Normally, you do not need to issue this command because it is performed automatically as part of the SHUTDOWN processing. However, if SA z/OS is unable to shut down a particular JES2 subsystem, you can use DRAINJES.

Examples

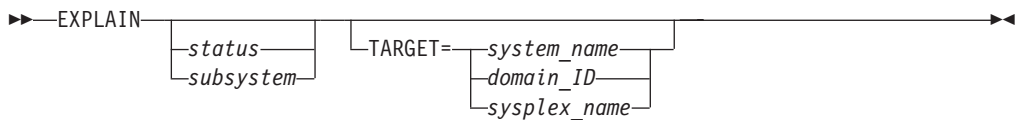
Assuming the JES2 subsystem name is JES2, type `drainjes jes2` to drain the JES2 resources.

EXPLAIN

Purpose

The EXPLAIN facility gives you a description of the automation statuses that can occur for SA z/OS subsystems. It explains what the status means, why the subsystem may have got into the status, and how another status can be achieved.

Syntax



Parameters

If you do not specify any parameters, a menu panel is displayed where you can specify either an automation manager status, automation agent status, or the name of a subsystem.

status

The status you want to see an explanation of.

subsystem

The name of the subsystem you are investigating. Its status is queried and an explanation of the automation agent status is displayed.

TARGET

For information on the TARGET parameter, see “TARGET Parameter” on page 10.

Restrictions and Limitations

The EXPLAIN command can only be used when SA z/OS is initialized.

Usage

Use EXPLAIN when you want information about an automation status.

Examples

If you enter EXPLAIN, a panel similar to Figure 28 is displayed.

```

AOFKEXPL          SA z/OS - Command Dialogs
Domain ID  = IPSFO  ----- EXPLAIN -----   Date = 06/27/02
Operator ID = NETOP1                               Time = 17:28:26

Specify one of the following for a description of the corresponding status:

1. Agent status          _____  (? for list)
2. Automation manager status _____  (? for list)
3. Subsystem name       _____

Command ==>
PF1=Help    PF2=End    PF3=Return

PF6=Ro11
PF12=Retrieve

```

Figure 28. EXPLAIN Command Dialog Panel

INGAMS

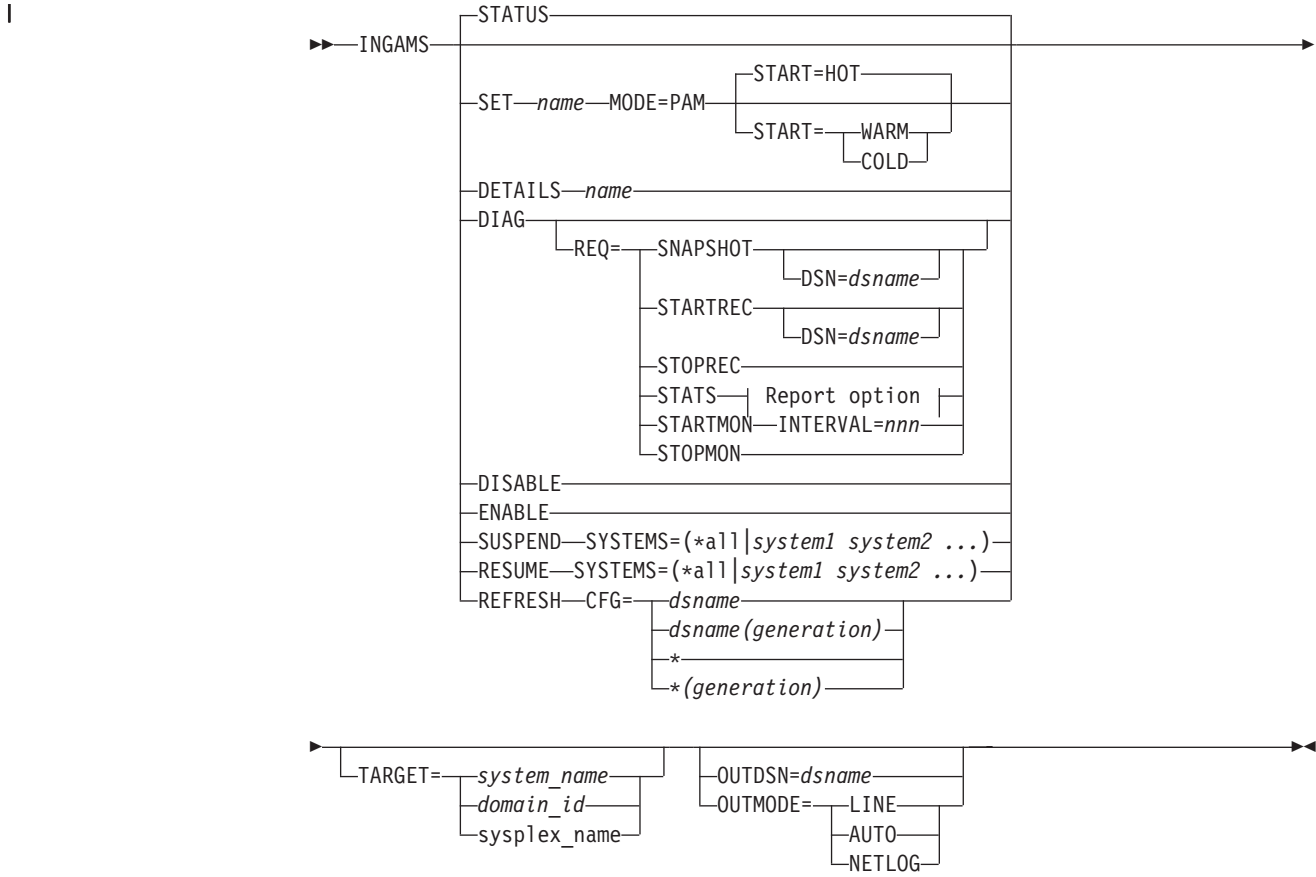
Purpose

The INGAMS command displays details about currently registered automation managers and automation agents, and lets you change the operation mode (PAM or SAM) of the automation managers. Note that it is only possible to make a secondary automation manager a primary one, not vice versa.

INGAMS lets you dynamically refresh the definition data for an automation manager and the corresponding ACFs with the contents of a specified configuration data set. The consistency of the configuration data as used by the automation agent and the associated ACFs is maintained. Data that would cause resources to contain conflicting definitions is rejected during configuration refresh with an appropriate message.

You can also use the INGAMS command to initiate and view diagnostic information for the primary automation manager.

Syntax



Report option:



Parameters

STATUS

Displays a list of all automation manager and automation agents in the sysplex that are registered to the same XCF group.

SET

Changes the operation mode of the specified automation manager.

name

The name of the automation manager.

MODE

Specifies the mode of operation, this can be:

PAM Primary automation manager

START

Specifies how an automation manager switch should be carried out. Valid values are HOT, WARM, or COLD.

DETAILS

Displays detailed information about the specified automation manager.

DIAG

Displays the diagnostic panel where you can either request that a snapshot of the current state image queue be taken or that recording of the inbound work items be started or stopped. The output file must be a sequential data set.

REQ

Is the function to be performed. It can be one of the following:

SNAPSHOT	Write a snapshot of automation manager data.
STARTREC	Start recording.
STOPREC	Stop recording.
STATS	Display work item statistics.
STARTMON	Activate work item queue monitoring.
STOPMON	Stop work item queue monitoring.

INTERVAL

The time period in seconds between two monitoring cycles. The value can be in the range of 10–999.

STATS

Specify the type of work item statistics report to generate: A SUMMARY (the default) or a DETAIL report, which shows details about all tasks.

DISABLE

Causes the automation manager to stop writing to the takeover file. It also deallocates the takeover file from the automation manager. This is only necessary when performing repair operations on the takeover file.

ENABLE

Causes the automation manager to start updating the takeover file for each work item processed.

SUSPEND

Tells the automation manager to suspend sending orders to start or stop resources that are hosted by the systems that are specified with the SYSTEMS parameter.

RESUME

Tells the automation manager to resume sending orders to start or stop resources that are hosted by the suspended systems that are specified with the SYSTEMS parameter.

SYSTEMS

The parameter to define the systems that the sending of orders is suspended or resumed for. If you specify multiple systems, they must be enclosed in parentheses.

Alternatively, you can use *all to specify all the systems that are controlled by the automation manager.

REFRESH

Updates an automation manager with the definition data that is stored in the specified configuration file. This also reloads the appropriate ACFs on the active automation agents.

Notes:

1. INGAMS REFRESH does not delete global variables that are associated with ENTRY TYPES that were deleted from the policy database before the last build if those ENTRY TYPES are not associated with a subsystem. However, if a keyword/value is removed from the ENTRY TYPE, this is a

change to the E-T. Therefore, INGAMS REFRESH rebuilds the E-T and the deleted keyword/value pair is removed from the global variables.

All deleted entry types and their associated global variables are reset during the next SA z/OS COLD start or during ACF COLD processing.

2. The configuration refresh on the automation agent runs parallel to other activities. Thus any start/stop orders may be processed before the new data is loaded.

CFG

This is the name of a partitioned data set that holds the configuration file member and the ACF fragments. The name can be a fully qualified data set name or generation data group (GDG) name. You can use an asterisk (*) to indicate a reload of the configuration file that was previously used or a different generation of the GDG that was previously used.

dsname Specifies a data set name. If you specify a GDG base data set name, the latest generation (0) is used.

dsname (generation) Specifies the name of a generation data group (GDG) and the generation number (zero or a negative signed integer) of a generation data set within the GDG, for example, *(-2).

DSN

Lets you specify the name of the data set that contains the snapshot or work item recording data. You can only use a sequential file.

The output data set must be pre-allocated with a RECFM FB and LREC 80. It must be allocated as a single volume data set, without candidate volumes for further expansion.

TARGET

For information on the TARGET parameter, see "TARGET Parameter" on page 10.

OUTDSN

For information on the OUTDSN parameter, see "OUTDSN Parameter" on page 13.

OUTMODE

For information on the OUTMODE parameter, see "OUTMODE Parameter" on page 12.

Restrictions and Limitations

None.

Usage

The INGAMS command operates sysplexwide. For an overview see "Overview of Commands that Operate Sysplexwide" on page 9.

When using the DIAG parameter make sure that the data set for writing a snapshot or starting recording is online and free before issuing a command. The data set must be used exclusively by the automation manager (DISP=OLD) for making snapshots or recording.

Examples

If you enter `ingams` a panel similar to Figure 29 on page 77 is displayed.

```

INGKYAM0          SA z/OS - Command Dialogs          Line 1 of 4
Domain ID = IPUFJ ----- INGAMS -----          Date = 08/03/11
Operator ID = NETOP1          Sysplex = AOC4PLEX          Time = 16:33:35

Cmd:  A Manage      B Show Details  C Refresh Configuration  D Diagnostic

CMD System  Member  Role  Status  Sysplex  XCF-Group  Release  Comm  PA
-----
AOC4      AOC4$$$$1  PAM  READY  AOC4PLEX  INGXSGA4  V3R4M0  XCF
AOC4      AOC4      AGENT  READY  AOC4PLEX  INGXSGA4  V3R4M0  XCF
AOC5      AOC5$$$$1  SAM  READY  AOC4PLEX  INGXSGA4  V3R3M0  XCF
AOC5      AOC5      AGENT  READY  AOC4PLEX  INGXSGA4  V3R3M0  XCF

Command ==>
PF1=Help  PF2=End  PF3=Return  PF6=Roll
PF9=Refresh  PF10=Previous  PF11=Next  PF12=Retrieve

```

Figure 29. INGAMS Command Dialog Panel

- The **Cmd** field allows you to specify command codes to initiate various activities related to automation managers. To use one of the command codes shown, type the appropriate letter next to the resource name, and press Enter. The amount of data displayed depends on the screen size. Press PF10/PF11 for horizontal scrolling. The following command codes are available:

- A** Displays the automation manager menu panel allowing you to:
- Modify the automation manager's operation mode. You can only change a secondary automation manager to a primary one.
 - Enable and disable takeover file processing
 - Suspend or resume the sending of orders from the automation manager to the automation agent on the system specified. This is useful if, for example, you have erroneously issued a command to shut down a system or sysplex. In such a situation, you now have the chance to rectify the error.

You should also note that while the automation manager is suspended for a particular system, it continues to respond to queries (such as INGLIST or INGVOTE) and any automation action for other systems within its scope.

See “Controlling the Secondary Automation Manager's Functions” on page 79.

- B** Displays additional information about the automation manager or automation agent. For an automation agent, the DISPSYS command is issued to show details about the agent and the environment the agent runs on. See “Showing Details about the Automation Manager” on page 80.
- C** Displays the refresh configuration data panel where you enter the name of the data set that contains the automation manager configuration members. This is then used to update the definition data for the automation manager in real time and to reload the corresponding automation configuration files for the active automation agents. This command thus maintains the consistency of the configuration data that is used by the automation agent and its automation configuration files. See “Refreshing the Configuration Data Sysplexwide” on page 82.

- D Displays the utility panel where you can perform the following diagnostic functions:
 - Write snapshot.
 - Start or stop recording.
 - Display work item statistics
 - Start or stop monitoring of the work item queue.

For further information, see “Diagnostic Functions” on page 83 and “How to Use the Diagnostic Option of INGAMS” in *IBM Tivoli System Automation for z/OS User’s Guide*.

- The **System** field shows the name of the system where an instance of the automation manager or automation agent runs.
- The **Member** field shows the name of the agent or manager. The name must be unique within the XCF group. The member name for an automation manager is automatically generated and consists of the z/OS system name plus a 1-character suffix running from 1 to 9. The z/OS system name is padded with '\$' to create an 8-character system name before appending the suffix.

Note: The member name of an automation agent is equal to the z/OS system name.

- The **Role** field shows the type of the system. It can be one of the following:

AGENT	An automation agent.
PAM	The primary automation manager.
SAM	The secondary automation manager. There can be more than one.
- The **Status** field shows the status of the member. It can be one of the following:

COMM	Is the type of communication being used between the automation manager and the automation agent.
NOT READY	The automation agent or manager is initializing.
PENDING	The automation manager is in the process of initializing as a primary automation manager (PAM).
READY	The member is completely initialized.
REFRESH	The automation manager is performing a configuration refresh.
SELECTED	The automation manager is selected to become the next primary automation manager (PAM).
STOPPING	The automation manager is terminating.
SUSPENDED	The automation agent has been placed in suspended mode.
- The **Sysplex** field shows the name of the sysplex.
- The **XCF-Group** field shows the name of the associated XCF-Group.
- The **Release** field shows the SA z/OS Version and Release of the automation manager or automation agent.
- The **Comm** field shows the type of communication in use between the automation manager and the automation agent.
- The **PA** field shows if this is a primary agent (PA) communicating with a higher level automation manager.
- The **Runmode** field shows the Runmode assigned to this system (agents only).
- The **Pref** field shows the preference value assigned to various automation instances.

The FIND/RFIND/SORT commands are supported. See “Varying the Format of the Command Output” on page 13 for information.

Controlling the Secondary Automation Manager's Functions

If you enter command code *A* for a *secondary* automation manager, a panel is displayed where you can specify the new mode of operation, as shown in Figure 30. Switching into primary mode is considered a directed takeover.

```

INGKYAM1                SA z/OS - Command Dialogs
Domain ID = IPSFO      ----- INGAMS -----      Date = 16/12/11
Operator ID = NETOP1   Sysplex = KEY1PLEX          Time = 13:41:27

Specify or revise the following data:

  Action => ___      1. Make primary Automation manager - Start => ___
                   2. Enable Takeover File
                   3. Disable Takeover File
                   4. Suspend System _____
                   5. Resume System _____

Automation manager => KEY3$$$$2
Target             => _____ System name, domain id or sysplex name

Command ==>>>
PF1=Help    PF2=End    PF3=Return

PF6=Ro11
PF12=Retrieve

```

Figure 30. INGAMS Command Dialog Panel to Control Secondary Automation Manager Functions

Use this panel to initiate the following functions:

Make primary Automation manager

This allows you to change the operation mode of a secondary automation manager to become primary (PAM). This is considered a directed takeover. Optionally, you can specify the start mode for the new PAM. Valid start modes are HOT, WARM or COLD. The default is HOT.

Note: A primary automation manager cannot be changed to a SAM.

Enable Takeover file

This causes the automation manager to start updating the Takeover file for each work item that is processed. This is necessary after the Takeover file has been enlarged or another error condition resolved.

Disable Takeover file

This causes the automation manager to stop writing to the Takeover file. The Takeover file is freed from the automation manager.

Suspend System

This causes the automation manager to stop sending orders to the agent running on the system specified left of the action. You can specify more than one system name separated by a blank character. Specify **all* to suspend all systems that are controlled by the automation manager.

Resume System

This causes the automation manager to resume sending orders to the agent running on the system specified left of the action. You can specify more

than one system name separated by a blank character. Specify *all to resume all systems that are controlled by the automation manager.

Fill in the following fields:

Automation manager

Specify the name of the automation manager.

Target The name of the system where the automation manager resides. This is only necessary when the automation manager is not within the local sysplex. You can specify either the system name, the domain ID or the sysplex name.

Showing Details about the Automation Manager

If you enter command code B for an automation manager, a panel similar to Figure 31 on page 81 is displayed.

```

INGKYAM3          SA z/OS - Command Dialogs          Line 1   of 47
Domain ID = IPUFJ  ----- INGAMS -----          Date = 08/03/11
Operator ID = NETOP1      Sysplex = AOC4PLEX          Time = 16:56:47

Automation Manager : AOC4$$$1      running on system : AOC4
Operation mode    : PAM              Job name          : YAMBUMU
Status           : READY             Start type         : HOT
XCF-Groupname    : INGXSGA4
Start time       : 02 AUG 2011 08:46:51
PAM selected time : 02 AUG 2011 09:39:45

Takeover file    : AOC.AM.A4.HSATKOV
Status           : ENABLED
IO Interval (secs) : 05

Service level ... HSACMAIN          Framework
Compile date     : 25 JUL 2011 12:54 18 APR 2011 14:03
Size             : 00B41A60          00050F50
Signature        : SA34DR09          SA34DR0134

PARMLIB settings
BLOCKOMVS       : YES
PREF            : 10

Workitem Statistics
External        : 207
Internal        : 407

CPU time (secs) : 20.486

Logic Deck ...
Release         : V3R4M0
Date built      : 13 Jul 2011
Time built      : 06:00:21
Last APAR      : NONE

Diagnostic Info
Snapshot size   : 2712008
Number of resources : 329
Number of requests : 49
Number group requests : 48
History records : 102943
Max History records : 262144

Config dataset name : BUMU.INGRCLUP.V340.ACF
Config member       : HSAZ99P
                   Z99PCRES STRUCTURE 20110801150652
                   Z999CLGC STRUCTURE 20110801150652
                   Z99PCSCH SCHEDULE 20110801150652

Config token       : 20110801150652FF066AAD2094
Config version     : 01

Command ==>
PF1=Help   PF2=End   PF3=Return   PF6=Ro11
PF7=Back   PF9=Refresh PF12=Retrieve

```

Figure 31. INGAMS Command Dialog Panel to Show Details

The **Takeover file** section shows the data set name of the takeover file, its status, (either enabled or disabled, where disabled means that no I/O is done to the takeover file) and the I/O interval time. SA z/OS delays I/O to the takeover file for the specified number of seconds and the in-storage pages are only marked to be written. This reduces the amount of I/O to the takeover file significantly, giving an update work item the same performance characteristics as a query work item.

The **Service level** section shows the current APAR level including the compilation date of the HSACMAIN module and the automation manager framework. This is used primarily for debugging purposes.

The **PARMLIB settings** section shows the BLOCKOMVS and Preference Settings.

The **Workitem Statistics** section shows the number of work items received from the various automation agents (that is, external work items) and the internally generated work items.

The **CPU Time** shows the processor time (in seconds) used by the automation manager.

The **Suspended Systems** section shows those systems that the sending of orders by the automation manager has been suspended for.

The **Logic Deck** section shows the date and time when the logic deck was built and the last APAR number of the logic deck.

The **Diagnostic Info** section shows details about the size of the state image and other useful information. This can be used when allocating the data set that will hold the snapshot data.

The **Configuration** section displays the data set name that the configuration is loaded from, the main configuration member name, and the include members with their timestamps.

Note that the last two sections (Configuration, and Diagnostic Info) are only present for the primary automation manager.

Refreshing the Configuration Data Sysplexwide

If you enter command code C for an automation manager, a panel similar to Figure 32 is displayed.

```

INGKYAM2                SA z/OS - Command Dialogs
Domain ID = IPSFO      ----- INGAMS -----   Date = 09/18/03
Operator ID = NETOP1   Sysplex = KEY1PLEX       Time = 17:48:42

Specify or revise the following data:

Configuration data set name (* for current data set)
                        *(-1)
Target                 => _____ System name, domain id or sysplex name

Command ==>
PF1=Help   PF2=End   PF3=Return
PF6=Ro11
PF12=Retrieve
    
```

Figure 32. INGAMS Command Dialog Panel to Refresh the Configuration

- In the **Configuration data set name** field specify the name of the data set containing the automation manager configuration members. The name can be a fully qualified data set name or a generation data group name. You can use * to indicate a reload of the configuration from the data set that was used previously, or a different generation of the previously used GDG.
- In the **Target** field specify the name of the system where the automation manager resides. Specifying this is only necessary if the automation manager is not within the local sysplex. You can specify either the system name, the domain, or the sysplex name.

Diagnostic Functions

If you enter command code D for a primary automation manager, a panel similar to Figure 33 is displayed.

```

INGKYAM4                SA z/OS - Command Dialogs
Domain ID = IPSFO      ----- INGAMS -----      Date = 11/23/09
Operator ID = NETOP1   Sysplex = KEY1PLEX          Time = 17:30:10

Specify or revise the following data:

Action =>  ___  1. Write Snapshot
                2. Start recording
                3. Stop recording
                4. Work item Statistics
                5. Start queue monitoring - Interval =>  ___
                6. Stop queue monitoring

Data set name => _____

Target          => _____ System name, domain id or sysplex name

Command ==>
PF1=Help      PF2=End      PF3=Return
PF6=Roll      PF12=Retrieve

```

Figure 33. INGAMS Command Dialog Panel to Manage Diagnostic Functions

Initiating Diagnostic Functions: For options 1–3, fill in the following fields:

Data set name

Specify the name of the data set that will hold the snapshot data. The data set can be a sequential file or a member of a partitioned data set. However the recording data set can only be a sequential file.

Notes:

1. A data set name is required when writing a snapshot or when starting recording.
2. Make sure that the automation manager has the appropriate authority to write to the data set.

Target Specify the name of the system where the automation manager resides. It is only required when the automation manager is not in the local sysplex. You can specify either the system name, the domain ID or the sysplex name.

Use options 5 and 6 to start and stop work item queue monitoring. The monitor examines the work item input queue for expired work items and issues message INGX1011I when more work items arrive than can be processed by the automation manager within the monitoring interval.

When you start monitoring, fill in the following field:

Interval

Specify monitoring interval in seconds. The valid range is 10–999.

Work item Statistics: To display work item statistics, you enter 4 in the **Action** field without specifying a data set name or system. This displays a panel similar to Figure 34.

```

INGKYAM5          SA z/OS - Command Dialogs          Line 1    of 11
Domain ID   = IPUFJ   ----- INGAMS -----          Date = 12/16/11
Operator ID = NETOP1   Sysplex = AOC4PLEX           Time = 17:02:39

Snapshot: 2011-12-16 17:02:37   Queue: 0           CPU time: 11.617

Cmd: S Details

```

Cmd Task	Status	Since (secs)	17:02	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10
ADMIN	IDLE												
QUERY1	IDLE				4	1		1					
QUERY2	IDLE												
QUERY3	UNKNOWN												
SCHED	IDLE			1					1				1
UPDATER1	IDLE			2					2				2
UPDATER2	IDLE												
UPDATER3	IDLE												
UPDATER4	IDLE												
Totals				3	4	1		1	3				3

```

-----
Command ==>
PF1=Help      PF2=End      PF3=Return   PF6=Ro11
PF7=Back      PF9=Refresh  PF12=Retrieve

```

Figure 34. INGAMS Work Item Statistics Display

This panel shows history information about the work items processed by the automation manager. The automation manager keeps track of the last 500 work items processed by each of the tasks that build the automation manager kernel.

The following data is shown:

Snapshot

The snapshot timestamp shows the time of the query.

Task The name of the task.

Queue

The number of elements in the workitem input queue.

CPU Time

The processor time (in seconds) used by the automation manager.

Status The status of the task. It is one of the following:

BUSY The task is processing a work item.

IDLE The task is waiting for work.

NOTIDLE

The task has completed work but is not waiting for work.

UNKNOWN

History records have not yet been defined for this task.

Since This is the number of seconds that the task has been processing the work

item (elapsed time). If this number is unexpectedly high, it is an indication that something is wrong. The following coloring is used depending on how long the work item has been active for:

Color	Active longer than
Red	60 seconds
Yellow	30 seconds
Blue	15 seconds

The columns to the right of the **Since** column show the number of work items that have been processed in one minute, starting from the time the statistics query was made or refreshed (with INGAMS DIAG REQ=STATS).

You can use the S command code to display details of the work item history for the selected task, such as the starting time and total processing time of the work item, as shown in Figure 35.

```

INGKYAM6          SA z/OS - Command Dialogs          Line 1  of 300
Domain ID  = IPZFA  ----- INGAMS -----          Date = 09/28/07
Operator ID = NETOP1      Sysplex = SATPLEX          Time = 13:51:52

                                          Snapshot: 2007-09-15 13:29:55

Task          Starting Elapsed
              Day   Time   in secs Busy Work item
-----
QUERY1       11:53:36  0.043  GET_RESOURCE_DATA
QUERY1       11:54:11  0.096  GET_RAW_RESOURCE_DATA
QUERY1       11:54:11  0.067  GET_RAW_RESOURCE_DATA
QUERY1       11:54:11  0.069  GET_RAW_RESOURCE_DATA
QUERY1       11:54:12  0.067  GET_RAW_RESOURCE_DATA
QUERY1       11:54:12  0.067  GET_RAW_RESOURCE_DATA
QUERY1       11:54:13  0.067  GET_RESOURCE_DATA
QUERY1       11:54:14  0.066  GET_RESOURCE_DATA
QUERY1       11:54:15  0.067  GET_RESOURCE_DATA
QUERY1       11:54:16  0.066  GET_RESOURCE_DATA
QUERY1       11:54:17  0.067  GET_RESOURCE_DATA
QUERY1       11:59:11  0.091  GET_RAW_RESOURCE_DATA

Command ==>
PF1=Help      PF2=End      PF3=Return   PF6=Ro11
               PF8=Forward  PF9=Refresh  PF12=Retrieve
  
```

Figure 35. INGAMS Work Item History Display

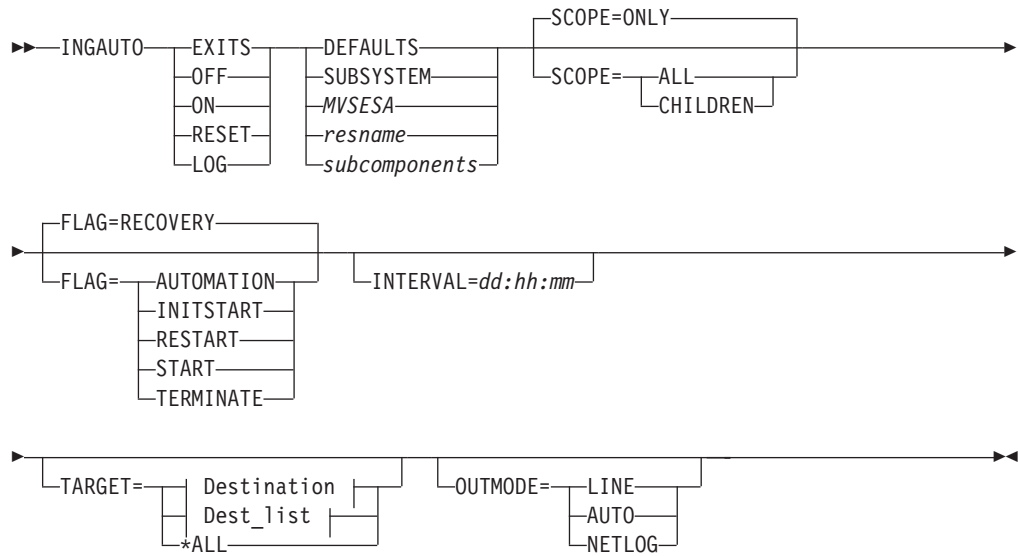
INGAUTO

Purpose

The INGAUTO command lets you turn the automation flags on or off for either a specific resource, or for a specified time period after which they will automatically be turned on again for DEFAULTS, MVSESA or SUBSYSTEM. INGAUTO enables you to change a resource's assist mode settings.

Syntax

INGAUTO



Destination:



Dest_list:



Parameters

If you do not specify a subsystem, a menu is displayed where you can specify it.

EXITS

Enables user exits for the flag that you specify.

OFF

Sets the automation flag that you specify to off.

ON

Sets the automation flag that you specify to on.

RESET

Resets the automation flag to the values that you specified in your policy database.

LOG

Writes the commands and replies to the netlog if an event occurs that triggers the automated action.

DEFAULTS

Specifies the value **DEFAULTS**. This sets automation flags for all resources that do not have their own flags defined.

SUBSYSTEM

Sets defaults for all subsystems.

MVSESA

Sets defaults for all MVS subcomponents.

resname

Specifies the name of a particular resource, for example, WTOBUF. You can specify any automated resource.

Wildcards are supported, for example, IMS* or *PRD.

subcomponents

Specifies the subcomponents of the resource. Enter a period (.) between each subcomponent name.

SCOPE

Specifies whether to change automation for this resource and its dependent resources, dependent resources only, or this resource alone. Valid options are the following:

ONLY

Specifies this resource alone. This is the default.

ALL

Specifies this resource and its dependent resources.

CHILDREN

Specifies dependent resources only.

FLAG

Specifies the automation flags to set on, off, reset, or enable a user exit for, (depending on whether you specified INGAUTO ON, OFF, RESET or EXITS). See *IBM Tivoli System Automation for z/OS Customizing and Programming* for further information on automation flags. Valid options are the following:

AUTOMATION

This sets the Automation flag, which is the controlling flag. If you set the Automation flag to OFF, SA z/OS turns all automation off. If the Automation flag is ON, SA z/OS checks the other flags.

INITSTART

Sets the Initstart flag. This is checked after SA z/OS initialization for the first start of an application. If this flag is on, SA z/OS will start the resource, provided its goal is to be available and all other conditions for its startup have been met.

RECOVERY

Sets the Recovery flag. If this is set to on, SA z/OS will perform recovery actions other than restarting a resource.

RESTART

Sets the Restart flag. If this is set to on, SA z/OS will restart the resource if possible.

START Sets the Start flag. If this is set to on, SA z/OS will manage and complete the startup of the resource.

TERMINATE

Sets the Terminate flag. If this is set to on, SA z/OS will process automated shutdown requests for the resource.

INTERVAL=dd:hh:mm

Specifies the period of time the flag will be changed for.

At the end of the interval, the flag is reset to the state defined in the automation control file.

INGAUTO

If no interval is specified, the flag is changed indefinitely.

TARGET

For information on the TARGET parameter, see "TARGET Parameter" on page 10.

OUTMODE

For information on the OUTMODE parameter, see "OUTMODE Parameter" on page 12.

Restrictions and Limitations

The INGAUTO command can only be used when SA z/OS is initialized.

A flag cannot be reset for an interval.

Usage

If the Automation flag is currently set to off, and you have changed one of the other flags, your change will not be effective until the Automation flag is set to on. Occurrences will be detailed in the netlog.

If you have selected EXITS for an automation flag, and none have been specified in your automation control file, automation will be set to on. Occurrences will be detailed in the netlog.

SCOPE=ONLY is the only valid scope for DEFAULTS, a resource type, and subcomponents. ALL and CHILDREN are not valid.

Make sure you specify the correct subcomponent name. Even if you specify a subcomponent that does not exist, the message FUNCTION SUCCESSFULLY COMPLETED will appear.

Examples

To turn all automation on in SA z/OS for TSO and for 2 hours only, enter the following:

```
ingauto on,tso,flag=automation,interval=00:02:00
```

To turn all automation on for the WTOR buffer shortage recovery, enter the following:

```
ingauto on,mvsesa.wto
```

```

AOFKAASF          SA z/OS - Command Dialogs
Domain ID = IPUN8  ----- INGAUTO -----   Date = 09/02/03
Operator ID = NETOP1                               Time = 17:23:40

Resource name => MVSESA          Specific or group resource or DEFAULTS
Sub-components => WTO              Resource sub-components
Target        => AOC8            Note : Be sure to specify the correct sub-component name
Scope        => ONLY            System name, domain ID, sysplex name, *ALL
Change automation for:
ONLY        - only this resource
CHILDREN   - dependants
ALL        - resource and dependants

Automation    =>                Specify new settings for automation flags
Initstart    => -                Y - flag is always on
Start        => -                N - flag is always off
Recovery     => Y                E - exits called if specified
Terminate    => -                L - resulting commands are logged only
Restart      => -                R - return to automation control file
settings

Interval     =>                Specify duration of change (dd:hh:mm)
or leave blank for an indefinite change

Command ==>>
PF1=Help    PF2=End    PF3=Return    PF6=Ro11    PF12=Retrieve

```

Figure 36. INGAUTO Command Dialog Panel

INGCF

Purpose

The INGCF command supports all the functions of SA z/OS that deal with coupling facilities. It supports full mode and line mode; for full line mode capability, see "INGCFL" on page 107. If you issue INGCF in line mode, only the display function is available.

The INGCF command supports the following parameters:

- DRAIN
Removes all allocated structures from the coupling facility, to disconnect the coupling facility from the systems of the sysplex, and to inactivate the coupling facility.
- ENABLE
Activates a coupling facility, to connect it with the systems of a sysplex and to populate it with structures.
- MAINT
Puts the coupling facility into or takes it out of maintenance mode.
- PATH
Displays and controls the sender paths of the target coupling facility. It sets the sender paths ONLINE and OFFLINE physically and logically.
- STRUCTURE
Displays detail information and rebuilds or deletes a selected structure on the target coupling facility. It also lets you start and stop duplexing.

INGCF associates a status with every coupling facility, and a condition with every structure (instance) that is allocated on the target coupling facility. The structure condition is influenced by the release level of the system that allocated the structure. The INGCF functions use the coupling facility state and the structure conditions to determine which action can be performed in any given situation.

Therefore, the DRAIN and ENABLE functions can enforce a correct sequence of actions for complex tasks such as draining or restoring a coupling facility.

If the selected action impacts the sysplex configuration it must be confirmed before execution.

Authorizations

The actions that you can initiate with INGCf depend on your authorizations. The panels show your authorization type. Note that the authorization types apply to the current function, and that your authorization type may vary for different functions.

The following authorization types exist:

DISPLAY

You cannot initiate any action that affects the sysplex configuration.

ALL BUT (ACTIVATE | SHUTDOWN)

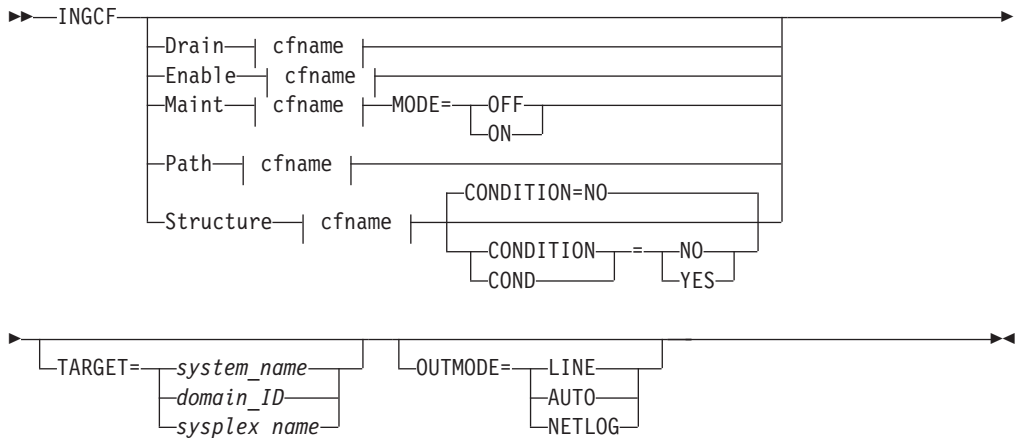
This type only occurs in the DRAIN and ENABLE command dialogs. You can rebuild structures, force the deletion of structures and set the sender paths offline and online, but you cannot inactivate or activate the coupling facility.

ALL You can initiate all actions from the corresponding panel.

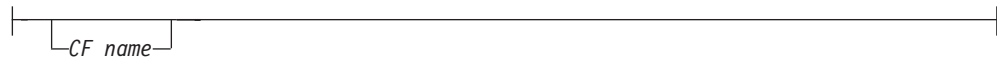
Depending on your authorizations, it is possible that you have, for example, authorization type ALL for the STRUCTURE function, and authorization type DISPLAY for the DRAIN function.

Note: The actions that modify the sysplex configuration are marked by an asterisk (*) in the following descriptions.

Syntax



cfname:



Parameters

Drain

Prepares a coupling facility for removal from the sysplex.

Enable

Integrates or reintegrates a coupling facility into a sysplex.

Maint

Controls the maintenance mode of a coupling facility.

Path

Controls the sender paths of a coupling facility.

Structure

Offers manipulation of individual structures (detail information, rebuild, deletion).

CF_name

The name of the target coupling facility for the specified function. The default is a selection panel that shows all available coupling facilities of the sysplex.

CONDITION

Specify YES if you want to get the current condition for each structure.

Selecting this option increases the response time required to build the display.

The default is NO.

MODE

Specify ON if you want to put the coupling facility into maintenance mode, or OFF to take it out of maintenance mode.

TARGET

For information on the TARGET parameter, refer to "TARGET Parameter" on page 10.

OUTMODE

For information on the OUTMODE parameter, refer to "OUTMODE Parameter" on page 12.

Restrictions and Limitations

The ENABLE and the PATH functions require that the active IODF is catalogued. Otherwise, sender path information cannot be retrieved in certain situations.

INGCF ENABLE assumes that the receiver paths from the coupling facility to the systems of the sysplex have been defined and activated. This requires a POR of the CPC that the coupling facility resides on.

Coupling Facility States

The status of a coupling facility can be as follows:

ACTIVATING

The coupling facility is being activated and will then become DRAINED.

DEACTIVATING

The coupling facility is being deactivated and will then become INACTIVE.

DRAINING

The coupling facility is being disconnected from the connected systems.

DRAINED

The coupling facility does not have a connection to any system and can be removed from the sysplex.

DRAINED NOHWACC

The coupling facility does not have a connection to any system, but cannot be removed from the sysplex because the BCP (Basic Control Program) internal interface is not available.

Note: This status is also displayed when the coupling facility has been deactivated from the HMC (Hardware Management Console) but the XCF display commands still return the name of the coupling facility.

ENABLING

The coupling facility is being connected to the systems of the sysplex that use it.

FORCING

Allocated structures are being deleted from the coupling facility. This only happens with structures that have no active connectors, and with these only when they cannot be rebuilt by system-managed rebuild.

INACTIVE

The coupling facility is not active.

INACTIVE NOHWACC

The coupling facility is not active and cannot be activated because the BCP Internal Interface does not have access to the appropriate Support Element.

MAINTMODE

The coupling facility is in maintenance mode and has not allocated any structures. It can now be removed from the configuration or deactivated without touching the sender paths. If you want to move structures back to the coupling facility you need to take it out of maintenance mode before populating it.

MAINTMODE OFFLINE

The coupling facility is in maintenance mode and may have allocated structures. At least one system has set all its sender paths to the coupling facility to OFFLINE. XCF will reject any rebuild command to the coupling facility.

MAINTMODE NOHWACC

The coupling facility is in maintenance mode and has not allocated any structures. It can now be removed from the configuration without touching the sender paths. However, this must be done manually because automation does not have access to the appropriate Support Element. If you want to move structures back to the coupling facility you need to take it out of maintenance mode before populating it.

NORMAL

The coupling facility may have allocated structures and is connected to all systems.

NORMAL MAINTMODE

The coupling facility is in maintenance mode but has allocated one or more structures. The coupling facility is no longer eligible for structure allocations.

NORMAL OFFLINE

The coupling facility may have allocated structures. At least one system has set all its sender paths to this coupling facility to OFFLINE. XES will reject any rebuild request for this coupling facility.

NOTINPOLICY

The coupling facility is active but not defined in the active CFRM policy.

POPULATING

The coupling facility is being populated with all those structures that have it on the first place in their preference list.

REBUILDING

Either all allocated structures that can be rebuilt are being removed from the coupling facility by the XES rebuild process (initiated by DRAIN), or one particular such structure is being removed (initiated by the STRUCTURE).

Structure Conditions

The condition of an allocated structure can be:

Rebuild is not supported.

The structure can neither be rebuilt, nor can its deletion be forced.

The structure has at least one active connector that does not support user-managed rebuild, and at least one active connector that does not support system-managed rebuild.

System-managed processes not supported.

The structure cannot be rebuilt, nor can its deletion be forced.

System-managed rebuild, which is a system-managed process, is not possible for one of the following reasons:

- The structure was allocated from a system with OS/390 V2.7 or earlier.
- The CFRM couple data sets have not been formatted to support system-managed processes (ITEM NAME(SMREBLD) NUMBER(1) was not specified).

Note: In certain rare cases system-managed processes are not supported although the condition that is displayed on the DRAIN panel seems to indicate the contrary. Then, the rebuild will be initiated, but will fail with message IXC367I indicating that system-managed processes are not supported for the structure.

No alternate coupling facility defined or available.

The structure can neither be rebuilt, nor can its deletion be forced.

The structure has an active connector and supports rebuild but does not have an alternate coupling facility defined in its preference list, or the alternate coupling facilities that are defined in the preference list are currently unavailable.

Insufficient space detected for rebuild.

The structure cannot or could not be rebuilt. Its deletion cannot be forced.

No alternate coupling facility has enough space to rebuild the structure.

Preference list is empty.

The structure cannot be rebuilt because its preference list is currently empty. A possible reason for this is a pending policy change, see "P column" on page 107.

Structure is pending deallocation.

XES accepted a forced deletion of the structure but does the real deallocation later.

Note: This status can only occur when MVS APAR OW39404 has not been installed.

Structure is being rebuilt.

The structure is being rebuilt to another coupling facility.

Duplex rebuild is being stopped.

Two instances of the structure were maintained on different coupling facilities. The application is being disconnected from that instance that is allocated on the target coupling facility. After disconnecting, the instance is deleted.

No connection exists.

The structure cannot be rebuilt, but you can force its deletion.

The structure does not have any connections and cannot be rebuilt with system-managed rebuild.

No alternate coupling facility for structure with no connections.

The structure cannot be rebuilt, but you can force its deletion.

The structure does not have any connections. It could be rebuilt with system-managed rebuild, but no alternate coupling facility is defined in its preference list or available.

No alternate coupling facility for structure with no active connections.

The structure cannot be rebuilt, but you can force its deletion.

The structure has only DISCONNECTING, FAILED, or FAILED-PERSISTENT connections. It could be rebuilt with system-managed rebuild, but no alternate coupling facility is defined in its preference list or available.

The structure's initial size is less than its actual size.

The structure can be rebuilt, but this can lead to loss of data.

An initial size is specified for the structure in the active CFRM policy. This initial size was used for the allocation of the structure. Afterwards, the size of the structure was increased either by the application itself or an operator command. However, the structure will only be rebuilt with its initial size. Subsequently, INGCf will expand the structure to its actual size again, but this will happen *after* the data have been transferred. To avoid a potential loss of data, the application has to change the initial size to the actual size.

No active connection exists.

The structure cannot be rebuilt, but you can force its deletion.

The structure has only DISCONNECTING, FAILED, or FAILED-PERSISTENT connections and cannot be rebuilt with system-managed rebuild.

Note: INGCf DRAIN deallocates structures with this condition as part of the REBUILD action (see "REBUILD (F10)" on page 97). INGCf STRUCTURE accepts a rebuild request for structures with this condition, but deallocates them (see "Rebuild (R)" on page 105).

No connections. System-managed rebuild supported.

The structure can be rebuilt.

The structure does not have any connections, but can be rebuilt with system-managed rebuild.

No active connections. System-managed rebuild supported.

The structure can be rebuilt with system-managed rebuild.

User-managed rebuild is not possible for the structure because it has only DISCONNECTING, FAILED, or FAILED-PERSISTENT connections.

System-managed rebuild is supported

The structure can be rebuilt.

The structure has active connectors. At least one active connector does not support user-managed rebuild, but all active connectors support system-managed rebuild.

Duplex rebuild is active.

The application is connected to two instances of the same structure on different coupling facilities.

[No condition]

When no condition is displayed, the structure can be rebuilt.

The structure has at least one active connection, and all its active connectors support user-managed rebuild.

Structure is awaiting rebuild.

The structure has been selected for rebuild but has not been processed yet.

Structure is currently allocated on *cf_name*.

The structure can be rebuilt on the target coupling facility with the POPULATE action of the ENABLE function. It is currently allocated on the *cf_name* coupling facility, but the target coupling facility precedes *cf_name* in the structure's preference list. This condition is displayed only in the ENABLE command dialog.

Structure allocated in *cf_name* cannot be rebuilt to this CF.

The structure can probably not be rebuilt on the target coupling facility with the POPULATE action of the ENABLE function. It is currently allocated in the *cf_name* coupling facility, but the target coupling facility precedes *cf_name* in the structure's preference list. And, the actual size of the structure is greater than the free space of the target coupling facility. This condition is displayed only in the ENABLE command dialog.

Example

If you issue INGCF without any parameters, a panel with all coupling facilities of the sysplex is displayed, as shown in Figure 37 on page 96.

INGCF DRAIN

```
INGLX900          SA z/OS - Command Dialogs          Line 1 of 2
Domain Id = IPSFO ----- INGCF -----          Date = 02/23/03
Operator Id = NETOP1                               Time = 13:42:35

Sysplex . . . . . : KEY1PLEX          SM process level . . : 12
-----
Cmds: D drain CF / E enable CF / M start or stop maintenance mode
      P display sender paths / S display structures

      CF Name  Total Space Free Space Free% V Lvl LP Node Descriptor
-----
_ CF01          507392 K   446976 K 88.09 Y 11  D 009672.RX6.IBM.51.000000064516
_ CF02          245248 K   210944 K 86.01 Y 11  E 009672.RX6.IBM.51.000000064516

Command ==>
F1=Help      F2=End          F3=Return      F6=Ro11
              F9=Refresh          F12=Retrieve
```

Figure 37. INGCF Selection Panel

Specify a function for a selected coupling facility and press Enter.

INGCF DRAIN

Purpose

The DRAIN function of INGCF facilitates the removal of a coupling facility from the sysplex, for example, for maintenance purposes. With this option, you can perform the following sequence of tasks:

1. Display information for all allocated structures of the coupling facility.
2. Put the coupling facility into maintenance mode if the MAINT function is available.
3. Rebuild all rebuildable structures on *another* coupling facility, and delete instances of structures on the target coupling facility that are being duplexed on another coupling facility.

Notes:

- a. The scope of the structures that can be rebuilt depends on the release level of the sysplex members.
 - b. INGCF DRAIN rebuilds structures one at a time (SETXCF START,REBUILD,STRNAME=), not globally (SETXCF START,REBUILD,CFNAME=), and always on a coupling facility that is different from the target coupling facility (LOCATION=OTHER).
 - c. Generally, you should be aware that it is XES that performs the actual rebuild. Not all of the factors that XES takes into account when allocating a structure are accessible to SA z/OS. Therefore, a rebuild request for a structure that should be rebuildable according to its condition can fail in certain rare cases.
4. Force the deletion of structures that have no active connectors and cannot be rebuilt.

Note that there are structures that you can neither rebuild nor delete with the force action. These include the structures that have at least one active connector

and do not support rebuild. To remove such structures first disconnect all active connectors, and then delete the structure manually if it is persistent or has persistent connections.

5. When the coupling facility is not in maintenance mode, disconnect the coupling facility from the systems that it is connected to.
6. Inactivate the target coupling facility.

INGCF DRAIN ensures that these actions are performed in the correct order, as specified above.

Actions

The following F-keys are supported:

*REBUILD (F10)

Starts the rebuild of structures that can be rebuilt on *another* coupling facility. Thus, a rebuild is only initiated for structures whose preference list contains more than one coupling facility.

There are two methods for rebuild, user-managed and system-managed rebuild. User-managed rebuild is supported for all release levels. System-managed rebuild is only available with systems that have been enabled by formatting the CFRM couple data sets with the specification:

```
ITEM NAME(SMREBLD) NUMBER(1)
```

System-managed rebuild is only performed when the requirements for user-managed rebuild are not met. This applies, for example, to structures without active connectors.

The REBUILD action also deletes all structure instances on the target coupling facility that are being duplexed on another coupling facility.

Note: The REBUILD action *deallocates* structures with the condition No active connection exists.. See “No active connection exists” on page 94.

*FORCE (F5)

Forces the deallocation of structures with one of the following conditions:

- No connection exists.
- No alternate coupling facility for structure with no active connections.
- No alternate coupling facility for structure with no connections.

This action is only made available after all structures that can be rebuilt have been rebuilt.

*MAINTON (F5)

Puts the coupling facility into maintenance mode.

Note that this function is only available before you start the rebuild process. Once you have started the rebuild process and you want to put the coupling facility into maintenance mode you need to issue the command `INGCF MAINT cf_name MODE=ON`.

*DRAIN (F4)

Disconnects the coupling facility from its connected systems by setting the sender paths OFFLINE.

This action is only enabled after all structures of the target coupling facility have been removed to another coupling facility or deallocated. Note that

INGCF DRAIN

structures that have active connectors but do not support rebuild cannot be removed with F10 or F5. They must be deallocated manually before executing this step is enabled.

*SHUTDOWN (F11)

This action inactivates the coupling facility. It is only made available when all connections between the coupling facility and the systems of the sysplex have been disconnected.

Note: This function key is unavailable when running on a z/OS image that runs under z/VM.

Note that these actions can only be performed if INGC F DRAIN is issued in full mode. In line mode, only the display function is available.

To avoid performance degradation due to multiple rebuild processes, or unpredictable results due to multiple executions of an action, all actions are locked. Therefore, an action is rejected if any lock exists even if the action does not affect the action currently being performed. Because the action can take a long time it is also executed asynchronously on a dedicated autotask, preventing the operator from being blocked. To check progress, use the refresh function (F9).

Example

Example not Using MAINTMODE: In the following example, a coupling facility is drained:

1. All of its structures that can be rebuilt are rebuilt on another coupling facility, and duplexing is stopped.
2. For all structures that have no active connector and cannot be rebuilt deletion is forced.
3. All systems that are connected with the coupling facility are disconnected.
4. The coupling facility is inactivated.

When you issue INGC F with the DRAIN option, you can specify the coupling facility to be drained, for example by entering INGC F DRAIN CF01. If you do not specify a coupling facility name, INGC F displays a selection panel with all coupling facilities that are defined in the sysplex.

The status of the coupling facility (NORMAL) and the authorization type of the operator (ALL) are displayed on the right side of the panel header. The main part of the panel consists of a list containing the structures allocated in CF01 and their conditions. The conditions are classified by color and an asterisk. The asterisk signifies that a structure cannot be rebuilt.

Depending on the availability of the MAINT function, either the two actions, MAINTON with F5 and REBUILD with F10, are enabled, or only REBUILD with F10, is enabled. Pressing F10 calls the confirmation panel of the rebuild process.

After F10 has been pressed on the confirmation panel and the rebuild is complete the command dialog can be refreshed with F9.

One structure could not be rebuilt because no alternate coupling facility is specified in its preference list. The REBUILD action is no longer available. Instead, the FORCE action (F5) is available because the structure that could not be rebuilt has a condition that allows forcing the deallocation of the structure. Pressing F5

calls a confirmation panel similar to that for REBUILD. Pressing F10 on the confirmation panel and refreshing the command dialog after the action has been completed results in an empty panel.

No more structures are allocated in the coupling facility and the coupling facility is not in maintenance mode, so that the coupling facility can be released from the connections with the systems of the sysplex. Consequently, INGCDF DRAIN enables the DRAIN action (F4). After completion of that action, the status of the coupling facility changes to DRAINED.

Because the coupling facility is no longer connected to any system, it can be inactivated. After pressing F11 and confirming the action the status of the coupling facility changes to INACTIVE.

Example Using MAINTMODE: In the following example, a coupling facility is drained:

1. The coupling facility is put into maintenance mode.
2. All of its structures that can be rebuilt are rebuilt on another coupling facility, and duplexing is stopped.
3. Deletion is forced for all structures that have no active connector and cannot be rebuilt.
4. The coupling facility is made inactivate.

Note: It is no longer necessary to turn the sender paths offline when the coupling facility is in maintenance mode, regardless of whether or not all systems in the sysplex run z/OS 1.9 or later.

When you issue INGCDF with the DRAIN option, you can specify the coupling facility to be drained, for example, by entering INGCDF DRAIN CF02. If you do not specify a coupling facility name, INGCDF displays a selection panel with all coupling facilities that are defined in the sysplex.

The status of the coupling facility (NORMAL) and the authorization type of the operator (ALL) are displayed on the right side of the panel header. The main part of the panel consists of a list containing the structures allocated in CF02 and their conditions. The conditions are classified by color and an asterisk. The asterisk signifies that a structure cannot be rebuilt.

Two actions are enabled, MAINTON with F5 and REBUILD with F10. Pressing F5 calls the confirmation panel for starting the maintenance mode.

After pressing F10 on the confirmation panel, the main panel shows the new status (NORMAL MAINTMODE) and leaves only F10 for the rebuild process. Pressing F10 calls the confirmation panel for the rebuild process.

After pressing F10 on the confirmation panel and the rebuild is complete, you can refresh the command dialog with F9.

One structure could not be rebuilt because no alternate coupling facility is specified in its preference list. The REBUILD action is no longer available. Instead, the FORCE action (F5) is available because the structure that could not be rebuilt has a condition that allows forcing the deallocation of the structure.

INGCF DRAIN

Pressing F5 calls a confirmation panel similar to that for REBUILD. Pressing F10 on the confirmation panel and refreshing the command dialog after the action has been completed results in an empty panel and the status of the coupling facility has changed to MAINTMODE.

Because no more structures are allocated in the coupling facility, it can be inactivated. After pressing F11 the status of the coupling facility changes to INACTIVE.

INGCF ENABLE

Purpose

The ENABLE function of the INGCF command is intended to support the integration AND re-integration of a coupling facility into a sysplex. With this option, you can:

1. Activate the target coupling facility.
2. Connect the systems of the sysplex with the coupling facility.
3. Take the coupling facility out of maintenance mode when it is in this mode and the MAINT function is supported.
4. Switch to another CFRM policy if the target coupling facility is not defined in the active policy and a suitable policy is available.

A suitable CFRM policy must contain:

- A definition of the target coupling facility
 - Appropriate definitions for every active coupling facility and every allocated structure
5. Rebuild all structures on the target coupling facility whose preference list starts with this coupling facility, unless this is excluded by other requirements.

INGCF ENABLE ensures that these actions are performed in the correct order, as specified above.

Actions

The possible actions and the associated F-keys are:

*ACTIVATE (F11)

This action activates the CFCC (Coupling Facility Control Code) through the BCP Internal Interface by an ACTIVATE command.

Note: This function key is unavailable when running on a z/OS image that runs under z/VM.

*ENABLE (F4)

Sets the sender paths of all systems of the sysplex to ONLINE. This action is enabled when the coupling facility is active.

*MAINTOFF (F5)

Takes the coupling facility out of maintenance mode.

*SWITCH (F5)

Switches to another CFRM policy when the target coupling facility is not defined in the active CFRM policy and a suitable policy is available. When there is more than one suitable policy you can choose one of these from a selection panel.

A CFRM policy is suitable when it contains:

- A definition of the target coupling facility

- Definitions for every active coupling facility and every allocated structure

This action is only made available when the target coupling facility is active, but not defined in the current CFRM policy.

*POPULATE (F10)

Starts a rebuild process by which all structures that have the target coupling facility at the beginning of their preference list but are currently allocated on another coupling facility are allocated on the target coupling facility.

This action requires that the coupling facility be enabled, connected to all members of the sysplex, and defined in the current CFRM policy. The action is offered whenever INGCN ENABLE detects that a structure is not allocated on the target coupling facility although it is the preferred coupling facility of that structure.

Note: When you have drained a coupling facility with INGCN DRAIN and then reintegrate it with INGCN ENABLE, be aware that the set of structures that are allocated on the target coupling facility after population can be different from the original set before the draining. Typically, this happens when the original set does not contain exactly those structures that have the target coupling facility at the first position in their preference list.

Note that these actions can only be performed when INGCN ENABLE is called in full mode. In line mode, only the display function is available.

Example

Example with CF not in MAINTMODE: In the following example, a coupling facility that has already been activated is reintegrated into the sysplex in two steps:

1. The coupling facility is connected to all systems of the sysplex.
2. All structures that have the target coupling facility as the first coupling facility in their preference list are allocated on the target coupling facility.

If you issue INGCN with the ENABLE option, you can specify the coupling facility to be reintegrated, for example by entering INGCN ENABLE CF02. If you do not specify a coupling facility name, INGCN shows a selection panel with all coupling facilities that are defined in the sysplex.

The selected coupling facility has already been activated manually, therefore its status, as shown on the right of the panel header, is DRAINED. The authorization type of the operator (ALL) is also displayed on the right side of the panel header. The main part of the panel is empty because no structures are allocated in CF02. The only action that is activated is ENABLE with F4. If you press F4 a confirmation panel is displayed.

After pressing F10 on the confirmation panel, the command dialog shows that structures are currently allocated in CF01.

The status has changed to NORMAL, and F10 is enabled for populating the coupling facility. This implies that the target coupling facility is defined in the active CFRM policy.

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The structure list contains 10 entries with the condition Structure is currently allocated in CF01.. These are the structures that are currently allocated in CF01, but have CF02 in the first position in their preference list.

Pressing F10 and confirming the action populates the coupling facility.

```
INGLX901          SA z/OS - Command Dialogs          Line 1 of 10
Domain Id = IPSFP ----- INGCF ENABLE -----      Date = 09/29/08
Operator Id = USER1                                Time = 13:52:50

Coupling Facility ==> CF02          Status . . . . . : NORMAL
Sysplex . . . . . ==> KEY1PLEX      Permission . . . . . : ALL
-----
Structure          Condition
-----
DBNA_GBP2          No active connection. System-managed rebuild supported.
DBNA_LOCK1         No active connection. System-managed rebuild supported.
HSA_LOG            System-managed rebuild is supported.
IXCPLEX_PATH3
IXCPLEX_PATH4
JES2CKPT1         System-managed rebuild is supported.
LOGGER_STR2       The structure's initial size < its actual size.
SYSZWLM_9F092064 System-managed rebuild is supported.
S941EMHQ          No connections. System-managed rebuild supported.
S941MSGQ          No connections. System-managed rebuild supported.

Command ==>
F1=Help          F2=End          F3=Return          F6=R011
                  F9=Refresh         F12=Retrieve
```

Figure 38. ENABLE Command Dialog Panel: After Populating

Example with CF in MAINTMODE: In the following example, a coupling facility that has already been activated is reintegrated into the sysplex in two steps:

1. The coupling facility is taken out of maintenance mode.

Note: It is no longer necessary to turn the sender paths offline when the coupling facility is in maintenance mode, regardless of whether or not all systems in the sysplex run z/OS 1.9 or later.

2. All structures that have the target coupling facility as the first coupling facility in their preference list are allocated on the target coupling facility.

If you issue INGCF with the ENABLE option, you can specify the coupling facility to be reintegrated, for example, by entering INGCF ENABLE CF02. If you do not specify a coupling facility name, INGCF shows a selection panel with all coupling facilities that are defined in the sysplex.

The selected coupling facility has already been activated manually, therefore its status, as shown on the right of the panel header in Figure 39 on page 103, is MAINTMODE. The authorization type of the operator (ALL) is also displayed on the right of the panel header. The structure list contains 10 entries with the condition Structure is currently allocated in CF01. These are the structures that are currently allocated in CF01, but have CF02 in the first position in their preference list. The only action that is activated is MAINTOFF with F5.

```

INGLX901          SA z/OS - Command Dialogs      Line 1 of 10
Domain Id = IPSFP ----- INGCF ENABLE -----      Date = 09/29/08
Operator Id = USER1                                Time = 13:55:52

Coupling Facility ==> CF02          Status . . . . . : MAINTMODE
Sysplex . . . . . ==> KEY1PLEX      Permission . . . . . : ALL
-----
Structure          Condition
-----
DBNA_GBP2          Structure is currently allocated in CF01.
DBNA_LOCK1         Structure is currently allocated in CF01.
HSA_LOG            Structure is currently allocated in CF01.
IXCplex_PATH3     Structure is currently allocated in CF01.
IXCplex_PATH4     Structure is currently allocated in CF01.
JES2CKPT1         Structure is currently allocated in CF01.
LOGGER_STR2       Structure is currently allocated in CF01.
SYSZWLm_9F092064 Structure is currently allocated in CF01.
S941EMHQ          Structure is currently allocated in CF01.
S941MSGQ          Structure is currently allocated in CF01.

Command ==>
F1=Help          F2=End          F3=Return          F5=MaintOFF      F6=Roll
                  F9=Refresh          F12=Retrieve

```

Figure 39. ENABLE Command Dialog Panel: After Issuing Command "INGCF E cf_name"

If you press F5 a confirmation panel is displayed.

After pressing F10 on the confirmation panel, the command dialog shows the new status and a new function key.

The status has changed to NORMAL, and F10 is enabled for populating the coupling facility. This implies that the target coupling facility is defined in the active CFRM policy.

Pressing F10 and confirming the action populates the coupling facility.

INGCF MAINT

Purpose

The MAINT function of the INGCF command is intended to put a coupling facility into or take it out of maintenance mode.

After the corresponding XCF command has been processed the command issues the INGCF command without any positional parameters.

Restrictions

The function requires:

- At least one system in the SA z/OS sysplex must run z/OS 1.9, or later.
- The MAINT function must be supported by all SA z/OS applications that are involved in command processing.

Example

In the following example, a coupling facility is put into maintenance mode using the command INGCF M *cf_name* MODE=ON OUTMODE=LINE:

INGCF PATH

```
Sysplex . . . . . : KEY1PLEX
SM process level . : 16
MAINTMODE supported : Y

CF Name  M Total KB  Free KB Free% V Lvl LP Node Descriptor
-----
CF01     N  457472  165376 36.15 Y 13  1 002064.116.IBM.02.000000099F09
CF02     Y  457472  456960 99.89 Y 13  F 002064.116.IBM.02.000000099F09
*** End of Display ***
```

Figure 40. MAINT Command Output

INGCF PATH

Purpose

The INGC F PATH function displays the sender paths, that is, the paths from the connected systems to the specified coupling facility.

Restrictions

The last sender path of each system can only be set to OFFLINE when no more structures are allocated.

Example

```
INGLX903          SA z/OS - Command Dialogs          Line 1    of 14
Domain Id  = IPSFN      ----- INGC F PATH -----          Date = 06/20/01
Operator Id = USER1                                         Time = 10:28:49

Coupling Facility ==> CF01          Allocated Structures: 37
Sysplex . . . . . ==> KEY1PLEX          Permission . . . . . : ALL
-----

Cmds: F set OFFLINE / N set ONLINE

  System  CHPID  Physical          Logical  Type
  -----
- KEY1    A5    ONLINE          ONLINE  CFS
-         A9    ONLINE          ONLINE  CFS
- KEY2    A5    ONLINE          ONLINE  CFS
-         A9    ONLINE          ONLINE  CFS
- KEY3    A5    ONLINE          ONLINE  CFS
-         A9    ONLINE          ONLINE  CFS
- KEY4    05    ONLINE          ONLINE  CFS
- KEY6    A5    ONLINE          ONLINE  CFS
-         A9    ONLINE          ONLINE  CFS
-

Command ==>
F1=Help      F2=End      F3=Return      F6=Roll
              F8=Forward  F9=Refresh     F12=Retrieve
```

Figure 41. PATH Command Dialog Panel

The following command codes are available:

F Sets the sender path OFFLINE.

N Sets the sender path ONLINE.

The fields on the command dialog panel display the following information:

- If you have issued INGC F with the PATH parameter, the **Coupling Facility** field is an input field. To display the path list of another coupling facility specify the name of the coupling facility in this field and press Enter.
- The **Allocated Structures** field shows the number of allocated structures.
- The **Permission** field shows your authorization level.

- The **System** field contains the names of the systems that are connected to the target coupling facility.
- The **CHPID** field shows the IDs of the sender channel paths.
- The **Physical** field shows the status of the sender channel paths.
- The **Logical** field shows the logical status of the paths to that coupling facility.
- The **Type** field shows the type of the sender channel paths.

INGCF STRUCTURE

Purpose

The STRUCTURE function of the INGCF displays the allocated structures of a coupling facility. You can initiate a rebuild or deallocation of a selected structure if the conditions for these actions are satisfied.

Example

```

INGLX904          SA z/OS - Command Dialogs      Line 1   of 15
Domain ID   = IPSFM      ----- INGCF STRUCTURE -----      Date = 02/22/02
Operator ID = NETOP1                                Time = 16:09:04

Coupling Facility ==> CF01
Sysplex . . . . . ==> KEYIPLEX          Permission . . . . : ALL
Include condition ==> YES (Yes/No - Condition retrieval takes longer)
-----
Cmds: D display details / F force / P stop duplex / R rebuild / S start duplex

  Structure      P D Condition
-----
- DSNB_GBP0      U Duplex rebuild is active.
- DSNB_GBP32K    P U
- DSNB_LOCK1     S Duplex rebuild is active.
- DSNB_SCA       S System-managed rebuild is supported.
- ISGLOCK
- ISTGENERIC     System-managed rebuild is supported.
- IXCGRS
- IXCVLF
Command ==>
F1=Help      F2=End      F3=Return      F6=Ro11
              F9=Refresh      F12=Retrieve

```

Figure 42. STRUCTURE Command Dialog Panel

The following command codes are available:

- D** Displays detail information about the structure.
- *F** Forces the deallocation of the structure if it has one of the following conditions:
 - No connection exists.
 - No alternate CF for structure with no active connections.
 - No alternate CF for structure with no connections.

When you try to force the deallocation of a structure that can be rebuilt, an error message is issued.
- *P** Stops duplexing of the selected structure.
- *R** Starts the rebuild of the selected structure. Depending on the PENDING status, the automation starts the rebuild with a different LOCATION parameter (PENDING uses the parameter LOCATION=NORMAL, otherwise LOCATION=OTHER). A rebuild with the parameter LOCATION=OTHER is only initiated for structures whose preference list contains more than one coupling facility.

INGCF STRUCTURE

There are two methods for rebuild, user-managed and system-managed rebuild. User-managed rebuild is supported for all release levels. System-managed rebuild is only available with systems that have been enabled by formatting the CFRM couple data sets with the specification:

```
ITEM NAME(SMREBLD) NUMBER(1)
```

System-managed rebuild is only performed when the requirements for user-managed rebuild are not met. This applies, for example, to structures without active connectors.

INGCF STRUCTURE accepts a rebuild request for structures with the condition 'No active connection exists.,' but *deallocates* them. See "No active connection exists" on page 94.

*S Starts duplexing of the selected structure.

There are two methods for duplexing, user-managed and system-managed duplexing. User-managed duplexing is supported for all release levels. System-managed duplexing is only available when it has been enabled by formatting the CFRM couple data sets with the specification

```
ITEM NAME(SMDUPLEX) NUMBER(1)
```

System-managed duplexing is only performed when the requirements for user-managed duplexing are not met. This applies, for example, to structures without active connectors.

Starting the duplex rebuild of a structure requires at least the policy entry allowing the duplex rebuild of the structure. If there is no entry the duplex rebuild is disabled. The other requirements depend on the type of the duplex rebuild. When all connectors to a structure allow user-managed duplex rebuild, this type takes precedence over system-managed duplex rebuild. However, user-managed rebuild also requires at least one active connector. Thus, when the operator starts the duplex rebuild for a structure allowing user-managed duplex rebuild as well as system-managed rebuild but without having active connectors, XCF tries to initiate a system-managed duplex rebuild. System-managed duplex rebuild has the following requirements:

- System-managed rebuild must be supported by all connectors.
- The structure must be allocated in a coupling facility supporting system-managed duplexing and another coupling facility supporting system-managed duplexing must be defined in its preference list.
- The CFRM couple data set must support system-managed duplex rebuild and the structure must not have a policy change pending.
- The structure must be defined in the active CFRM policy when any connection state is not active.

The fields on the command dialog panel display the following information:

- The **Coupling Facility** field is an input field, if you have specified INGCFF with the STR parameter. To display the structure list of another coupling facility, specify the name of the coupling facility in this field and press Enter.
- The **Include Condition** field is an input field. By specifying Yes or No in this field you determine whether or not the conditions of the structures are displayed in the Structure column.
- The **Permission** field shows your authorization level. There are two possible values, ALL and DISPLAY. DISPLAY signifies that you can only use the display functions. ALL signifies that you can also rebuild and delete structures.

- You can specify an action code before every structure entry. The codes you can enter depend on your authorization level.
- The **Structure** column shows the names of the structures.
- If the **P** column contains the letter P, this indicates that policy changes are pending for the structure.

A structure has policy changes pending if it was allocated at the time of a CFRM policy switch, but XES could not bring the switch into effect for that structure. One reason for a pending policy change is that the old and the new policy define the structure differently, for example, with different preference lists.

- The **D** column indicates the type of duplexing that is possible. The following values are possible:
 - U** User-managed duplexing
 - S** System-managed duplexing
 - B** User-managed and system-managed duplexing
- The **Condition** column shows the status of the structures. You can switch the display of the conditions on and off with the **Include Condition** field.

INGCFG

Purpose

The INGCFG command may be used with the CLEAR_HISTORY parameter to clear the workitem history for the given resource(s).

Syntax

```

  >> INGCFG CLEAR_HISTORY resource >>>
  
```

Parameters

resource

Specifies the name of the resources to have workitems cleared. The format is *name[/type[/system]]*. It can be a list of names. The resource names must be separated by a blank. Asterisks (*) and a percentage sign (%) can be used as wildcard characters.

INGCFL

Purpose

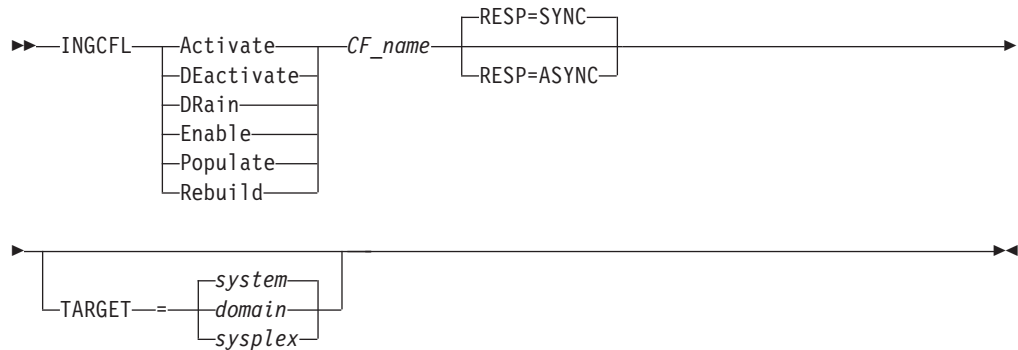
The INGCFL routine supports line mode for INGCF other than display capability. For further information see “INGCF” on page 89.

Support of the maintenance mode of a coupling facility depends on the function that is specified:

- ACTIVATE, ENABLE, and POPULATE automatically handle the maintenance mode of the coupling facility. However, each command will fail when the coupling facility is in maintenance mode but the mode is not supported by SA z/OS (see “Restrictions and Limitations” on page 109).

- DEACTIVATE and DRAIN put the coupling facility into maintenance mode when possible. Otherwise, both functions proceed with setting the sender paths offline after the rebuild has been performed.
- REBUILD does not make use of the maintenance mode capability.

Syntax



Parameters

Activate

Activates the coupling facility.

DEactivate

Deactivates the coupling facility after performing DRAIN.

DRain

Performs REBUILD, then puts the coupling facility into maintenance mode if possible. Otherwise, it sets the sender paths to OFFLINE.

Enable

Performs ACTIVATE, then takes the coupling facility out of maintenance mode if it is in this mode. Finally, it sets the sender paths to ONLINE.

Populate

Starts the populate process of the coupling facility after performing ENABLE.

Rebuild

Starts the rebuild process of the coupling facility.

CF_name

The name of the target coupling facility for the specified function.

RESP

Specifies whether the final result is returned synchronously as a return code or asynchronously as a message (default: synchronous response).

TARGET

Specifies the system where the command is executed (default: local system).

Note: The real activation and deactivation of a coupling facility are unavailable when running on a z/OS image that runs under z/VM.

Return Codes

- 0 The command completed normally.

- 1 An initialization error occurred. Check the netlog for explanatory messages.
- 3 The slave routine failed. Check the netlog for explanatory messages. If you are still unable to detect the reason for failure, attempt a rerun after turning on debugging for the INGRVX92 slave routine.
- 4 The lock is unavailable to update the coupling facilities.
- 5 The authorization check failed for function. Check the netlog for explanatory messages.
- 6 The status of the coupling facility is not as expected for the current request. Running with GDPS debugging should provide a listing of status changes that have taken place. This return code does not necessarily indicate that the request failed.
- 7 The permission check has failed for the POPULATE request.

Restrictions and Limitations

The real activation and deactivation of a coupling facility are unavailable when running on a z/OS image that runs under z/VM.

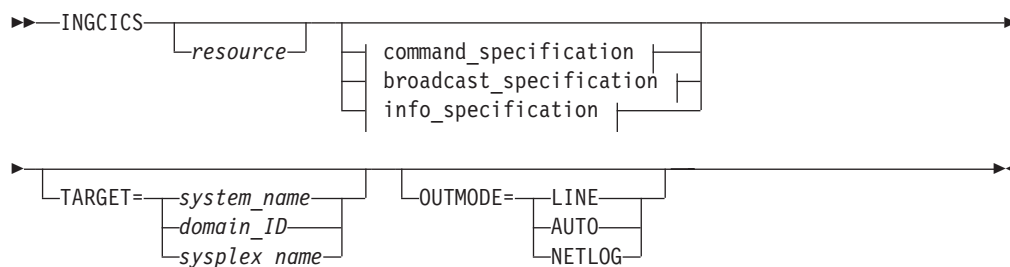
INGCICS

Purpose

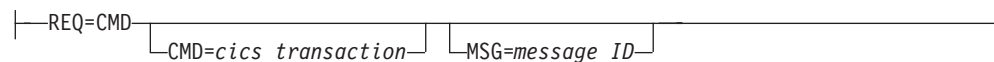
The INGCICS command lets you:

- Issue any console-enabled CICS transaction.
- Broadcast messages to all or selected CICS users.
- Issue a list of defined transactions and view the output.
- Display the output of CICS transactions in fullscreen or pipeable line mode.

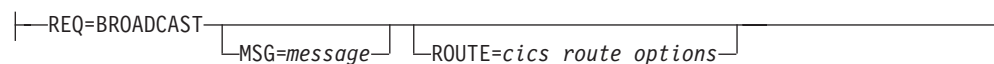
Syntax



command_specification:



broadcast_specification:



info_specification:

|—REQ=INFO—|

Parameters*resource*

The resource specifies the name of the CICS subsystem that the command will be issued to. The format is subsystem[/APL[/system]], where the subsystem is the specific name of the desired CICS subsystem and system is the name of the system that the CICS is running on.

Note: You need not specify the fully qualified name of the resource. However, the command requires enough information to execute the request against a unique CICS subsystem. The command does not support issuing requests to multiple CICS subsystems at the same time.

REQ

Specifies the request to be issued to the CICS subsystem. It can be one of the following:

CMD Issues a CICS transaction and displays the results.

BROADCAST

Issues a CICS broadcast to all or selected users.

INFO Issues a set of predefined commands and displays the results. The list of commands is obtained from the CICSINFO user message policy of the subsystem specified by the resource name.

CMD

Specifies the CICS transaction and its parameters to be executed for a REQ=CMD type request. If the command and parameters contain spaces, enclose the command in quotation marks (single or double). For CEMT transactions INGCICS waits up to twice the period that is defined by the system wait time parameter for a result.

MSG

Specifies the message to be sent to all or selected CICS terminals or users for the REQ=BROADCAST request.

For REQ=CMD the MSG command can be used to contain a list of words that will be used to end processing if they are received anywhere in the output results. The words will normally be a required message ID and when entered INGCICS waits up to the period that is defined by the system wait time parameter for a result. If no words are entered, CMD is processed until any result is received.

ROUTE

Specifies the CICS routing information that is used to select the CICS terminals or users are to receive the message for a REQ=BROADCAST request. The contents of the ROUTE= parameter are the parameters to be supplied to the CMSG transaction to route messages to CICS terminals or users. See the CMSG transaction for the details of the parameters for that transaction.

TARGET

For information on the TARGET parameter, see "TARGET Parameter" on page 10.

OUTMODE

For information on the OUTMODE parameter, see “OUTMODE Parameter” on page 12.

Restrictions and Limitations

To use the INGCICS command system operations must be initialized. CICS subsystems must be enabled for system console commands using the MVS MODIFY command.

Usage

The INGCICS command operates sysplexwide. For an overview see “Overview of Commands that Operate Sysplexwide” on page 9.

Examples

If you enter INGCICS REQ=CMD a panel similar to Figure 43 is displayed.

```

EVEKYCMD          SA z/OS - Command Dialogs          Line 1    of 28
Domain ID   = IPSFM   ----- INGCICS -----      Date = 03/05/02
Operator ID = SAUSER                                Time = 08:23:31

Resource      => EYUMAS1A/APL/KEY1                    Format: name/type/system
Target        => _____                          System name, domain ID or sysplex name
Request       => CMD                                  CMD, BROADCAST or INFO
CICS Transaction => CEMT I TA
CICS Route    => _____
CICS Message  => _____
              => _____

Tas(0000024) Tra(CONL)          Sus Tas Pri( 255 )
Sta(U ) Use(STCUSER ) Uow(B747C4105BD4E305)
Tas(0000026) Tra(COI0)          Sus Tas Pri( 255 )
Sta(U ) Use(STCUSER ) Uow(B747C413B3F7A908)
Tas(0000027) Tra(CONM)          Sus Tas Pri( 240 )
Sta(U ) Use(STCUSER ) Uow(B747C41430B48804)
Tas(0000028) Tra(CONM)          Sus Tas Pri( 240 )
Sta(U ) Use(STCUSER ) Uow(B747C41430C33084)
Tas(0000029) Tra(CONM)          Sus Tas Pri( 240 )
Sta(U ) Use(STCUSER ) Uow(B747C41430CFD804)
Tas(0000030) Tra(CONM)          Sus Tas Pri( 240 )
Sta(U ) Use(STCUSER ) Uow(B747C41430DB0684)
Tas(0000031) Tra(CONM)          Sus Tas Pri( 240 )
Sta(U ) Use(STCUSER ) Uow(B747C41430E8D844)
Tas(0000032) Tra(CONM)          Sus Tas Pri( 240 )
Sta(U ) Use(STCUSER ) Uow(B747C41430F56504)

Command ==>>
PF1=Help      PF2=End      PF3=Return   PF4=DISPINFO   PF6=Ro11
PF8=Forward   PF9=Refresh                                PF12=Retrieve

```

Figure 43. INGCICS REQ=CMD Command Dialog Panel

- The **Resource** field shows the name of the CICS subsystem to be used for issuing the requests. The format is name/type[/system]. Wildcards are supported.
- The **Target** field shows the name of the system (system name, domain ID, or sysplex name) that the command should be routed to. Specifying this is only necessary if the resources are not part of the local sysplex.
- The **Request** field shows the request to be carried out. It can be CMD, BROADCAST or INFO.
- The **CICS Transaction** field shows the CICS transaction to be executed on the CICS subsystem specified by the resource field.

INGCICS

- The **CICS Route** field shows the routing parameters for the CMSG transaction when the request is BROADCAST.
- The **CICS Message** field shows the message to be sent to users or terminals for the BROADCAST request.
- The output from the CICS transaction appears in the blank area after the **CICS Message** field.

If you specify INGCICS REQ=BROADCAST a panel similar to Figure 44 is displayed.

```
EVEKYCMD          SA z/OS - Command Dialogs      Line 1    of 28
Domain ID   = IPSFM   ----- INGCICS -----      Date = 03/05/02
Operator ID = SAUSER                                     Time = 08:36:12

Resource      => EYUMAS1A/APL/KEY1                Format: name/type/system
Target        =>                                     System name, domain ID or sysplex name
Request       => BROADCAST                          CMD, BROADCAST or INFO
CICS Transaction => CMSG R=&ROUTE,'&MESSAGE',S
CICS Route    => ALL
CICS Message  => test1
              =>

Command ==>
PF1=Help      PF2=End      PF3=Return    PF4=DISPINFO    PF6=Ro11
              PF9=Refresh   PF12=Retrieve
```

Figure 44. INGCICS REQ=BROADCAST Command Dialog Panel

The CICS command that is issued is displayed in the **CICS Transaction** field. The &ROUTE and &MESSAGE parameters are resolved to the corresponding panel fields. Do not overwrite the command that is displayed because changes are not honored.

If you specify INGCICS REQ=INFO a panel similar to Figure 45 on page 113 is displayed.

```

EVEKYCMD          SA z/OS - Command Dialogs          Line 1    of 67
Domain ID = IPSFM  ----- INGCICS -----          Date = 03/05/02
Operator ID = SAUSER                               Time = 08:40:30

Resource          => EYUMAS1A/APL/KEY1              Format: name/type/system
System            =>                               System name, domain ID or sysplex name
Request          => INFO                            CMD, BROADCAST or INFO
CICS Transaction => _____
CICS Route       => _____
CICS Message     => _____
                 => _____

SYSTEM INFORMATION

Aging( 00500 )
Akp( 04000 )
Cdsasize(00786432)
Cicstslevel(010200)
Cmdprotect(Cmdprot)
Db2conn(SG12)
Dfltuser(STCUSER)
Dsalimit( 05242880 )
Dtrprogram( DFHDYP )
Dumping( Nosysdump )
Ecdsasize(0006291456)
Edsalimit( 0041943040 )
Erdsasize(0013631488)
Esdsasize(0000000000)

Command ==>>
PF1=Help      PF2=End      PF3=Return  PF4=DISPINFO      PF6=Ro11
PF8=Forward   PF9=Refresh  PF12=Retrieve
    
```

Figure 45. INGCICS REQ=INFO Command Dialog Panel

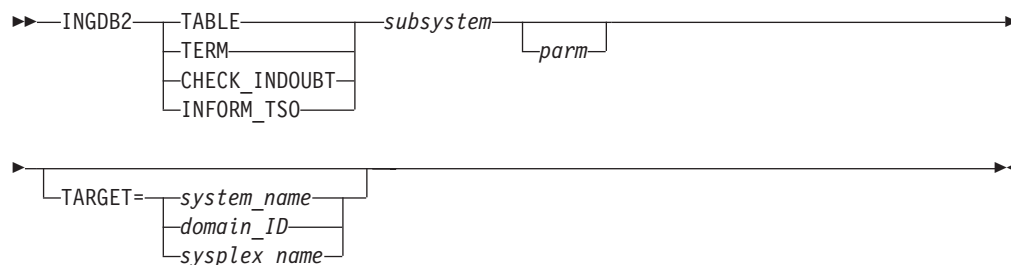
INGDB2

Purpose

The INGDB2 utility lets you:

- Start or stop a table space
- Terminate active threads
- Inform TSO users that their thread is about to be terminated
- Check for indoubt threads

Syntax



Parameters

TABLE

The TABLE parameter requests to start or stop a table space.

For DB2[®] table space stop, certain active threads that use the specified table space are terminated. These include REMOVE, DB2CALL, BATCH and TSO. TSO users are issued with a message informing them that their thread is about to be terminated before actual thread termination.

TERM

The TERM parameter requests the termination of all active threads for a DB2 subsystem. These include REMOTE, DB2CALL, BATCH, TSO and all remaining threads.

All threads are discovered using the DIS THD() command and canceled by token using CAN THD(tokenid). UTILITY threads are treated differently: after having been discovered using DIS UTIL() and checked not to be COPY, REORG, REPAIR or LOAD, they are terminated using the TERM UTIL() command. UTILITY threads are ignored during the cancel-threads-by-token process.

TSO users that are using threads that cannot be stopped are canceled.

CHECK_INDOUBT

This parameter requests a check for indoubt threads.

INFORM_TSO

With this parameter, TSO users with an active stoppable thread are informed that their thread is about to be terminated.

subsystem

Specifies the subsystem name of the DB2 subsystem.

parm

Specifies a positional parameter string.

When INGDB2 is called with TABLE as the first parameter, one or three values are expected at this position in the parameter sequence, as follows:

parm1 START or STOP to start or stop a table space.

parm2 A database name. This is not required if *parm1* is START.

parm3 A table space name. This is not required if *parm1* is START.

When all three parameters are passed to INGDB2, the START or STOP request applies to the specified table space.

If only START is passed to INGDB2, a start command is issued for all table spaces that are currently in the status LPL or GRECP. Table spaces of database DSNDB01 are started before those of database DSNDB06. After this, the table spaces of all other databases are started.

When requesting a STOP for a specified tablespace, the following processing cycles are done:

1. The command ST0 DB(*dbname*) SPACENAM(*tsname*) is issued.
If the specified table space is then still used by any DDF threads or BATCH jobs, these processes are canceled.
TSO users of threads still using the table space are notified that the table space is to be stopped and they are requested to stop using it.
2. If the table space is still used by TSO users, these users are canceled. After one minute, a message is sent to the cancelled users to inform them at logon, that they were canceled due to the stop of a tablespace.
3. If the table space is still used by any processes, a message is issued listing the name and type of all these processes.

The delay time between the processing cycles is determined by the STOP Tablespace Delay option in the DB2 CONTROL policy item of the DB2 master. The default value is 2 minutes.

TARGET

For information on the target parameter, see “The TARGET Parameter” in *IBM Tivoli System Automation for z/OS Operator’s Commands*.

Version

When you specify `INGDB2 TABLE,&SUBSAPPL,START [dbname tsname]` as a command in the automation policy that is to be issued in response to a received message, code definitions for message ID DATABASE are used to decide whether any databases or table spaces are excluded from recovery.

To exclude databases or table spaces from recovery, specify a code definition as follows with IGNORE or EXCLUDE as the Value Returned.

Code1	Code2	Code3	Value Returned
<i>database</i>	<i>tablespace</i>		IGNORE EXCLUDE

Restrictions and Limitations

The INGDB2 utility can only be used when:

- SA z/OS is initialized
- The DB2 subsystem is defined to SA z/OS as application of type DB2 and subtype MSTR
- The status of the DB2 subsystem is UP, but for TERM and INFORM_TSO the status can be AUTOTERM to allow for SHUTNORM passes.

For non-utility threads, only those with a non-zero token can be canceled with `INGDB2 TERM`.

Return Codes

- 0 Function completed successfully
- 1 Indoubt threads were found when being called with the CHECK_INDOUBT parameter
- 4 Incorrect parameters were used in the call
- 6 SA z/OS initialization incomplete, unable to process command request

Examples

To terminate threads for a DB2 subsystem called DB2P, enter the following command:

```
INGDB2 TERM DB2P
```

To start a table space where the DB2 subsystem is DB2P, the database name is DB2PDBN and the table space name is DB2PTSN, enter the following command:

```
INGDB2 TABLE DB2P START DB2PDBN DB2PTSN
```

INGDLA

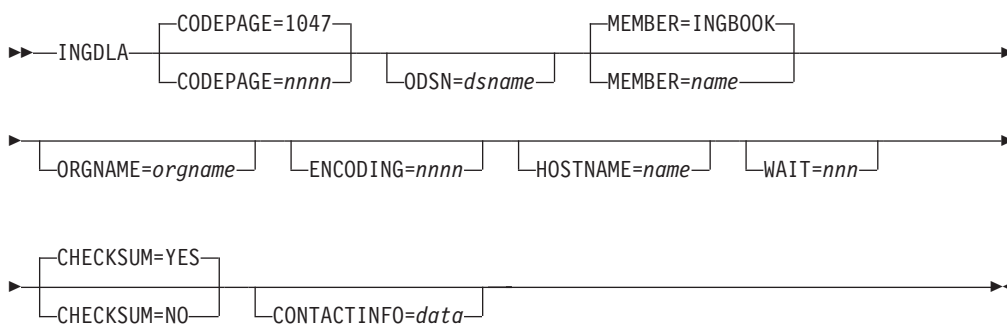
Purpose

The INGDLA command invokes the SA z/OS Discovery Library Adapter to discover SA z/OS configuration data, which is primarily the SA z/OS resources and their relationships. It then saves the data in an Identity Markup Language (IdML) book, which can be forwarded to a system that is hosting a Tivoli Application Discovery Dependency Manager (TADDM).

The discovery scope of the INGDLA command is the entire sysplex, that is, all the systems that the SA z/OS automation manager controls.

You can use the INGDLA command, for example, after a major configuration change, or periodically driven by a NetView timer.

Syntax



Parameters

CODEPAGE

Specifies the encoding codepage — this is the one that NetView uses. The default is 1047, unless it is overwritten by the installation defaults (using the INGCNTL command, see *IBM Tivoli System Automation for z/OS Programmer's Reference*).

You must specify this parameter if you are running with a different codepage. Failure to do so will result in the generation and downloading of a corrupt Identity Markup Language (IdML) book that Tivoli Application Discovery Dependency Manager (TADDM) cannot load.

ODSN

Specifies the name of the output data set. The data set must be a pre-allocated (catalogued) PDS with attribute VB=3000. The name must be fully qualified, with or without surrounding quotes. The user ID that NetView is running under must have UPDATE access to it.

MEMBER

Specifies the name of the member that will contain the IdML data. The default is INGBOOK unless it is overwritten with installation defaults (see INGCNTL in *IBM Tivoli System Automation for z/OS Programmer's Reference*).

Reserved member name is @CHCKSUM.

ORGNAME

Specifies the name of the organization. The default is to take the default

name from the IBM Tivoli Change and Configuration Management Database (CCMDB) unless it is overwritten by the installation defaults (see INGCNTL in *IBM Tivoli System Automation for z/OS Programmer's Reference*).

Place quotes around the organization name in order to maintain mixed case names.

ENCODING

Specifies the encoding option. Valid values are EBCDIC, ASCII and UTF-8. The default is UTF-8 unless overwritten by the installation defaults (see INGCNTL in *IBM Tivoli System Automation for z/OS Programmer's Reference*).

HOSTNAME

Specifies the name of the host of the management software system (that is, SA z/OS). It is used to address SA z/OS. If specified, it takes precedence over a discovered host name.

WAIT Specifies the maximum number of seconds to wait for the automation manager query to respond. The maximum time interval is 999 seconds. The default is 30 seconds.

CHECKSUM

Specifies whether to skip generating the SA z/OS DLA book if the checksum matches:

YES

Skip generation if the checksum matches. This is the default.

NO Ignore checksum results.

CONTACTINFO

Provides details of ports and security keys that are needed to establish a session with NetView over TCP/IP when used in conjunction with the host name.

Return Codes

- 0** Successful completion.
- 8** Error occurred, such as a bad return code received from the automation manager.
- 12** Bad input parameters or allocation failed.
- 16** Fatal error.

Usage

The INGDLA command can be invoked from the NetView command line on any system in the sysplex.

The INGDLA command operates sysplexwide. For an overview see “Overview of Commands that Operate Sysplexwide” on page 9.

Examples

If you enter `ingdla` at the command line, SA z/OS displays a report that informs you of the progress of the DLA.

INGEVENT

```
ING502I SA z/OS Discovery Library Adapter started 14:18:05 29 NOV 2007
ING501I DRIVING SA Z/OS DISCOVERY
ING501I .QUERYING RESOURCES
ING501I .QUERYING RELATIONSHIP DATA
ING501I ..FOR RESOURCES */APL/SAT1
ING501I ..FOR RESOURCES */APL/SAT2
ING501I ..FOR RESOURCES */APL/SAT3
ING501I ..FOR RESOURCES */APL/SAT4
ING501I ..FOR RESOURCES */APG/SAT1
ING501I ..FOR RESOURCES */APG/SAT2
ING501I ..FOR RESOURCES */APG/SAT3
ING501I ..FOR RESOURCES */APG/SAT4
ING501I ..FOR RESOURCES */APG
ING501I ..FOR RESOURCES */MTR/*
ING501I .OBTAINING AGENT INFORMATION FOR SAT1
ING501I PROCESSING CHECKSUMS
ING501I COMPOSING SA Z/OS DISCOVERY BOOK
ING501I .WRITING BOOK: INGBOOK
ING501I ..COMPOSING RESOURCE DEFINITIONS
ING501I ..COMPOSING RESOURCE RELATIONSHIPS
ING501I ..COMPOSING DELAYED RELATIONSHIPS
ING501I .FINISHED WRITING BOOK: INGBOOK
ING501I UPDATING CHECKSUM DATA
ING504I Checksum data updated
ING503I SA z/OS Discovery Library Adapter completed 14:18:17 29 NOV 2007, RC=0
```

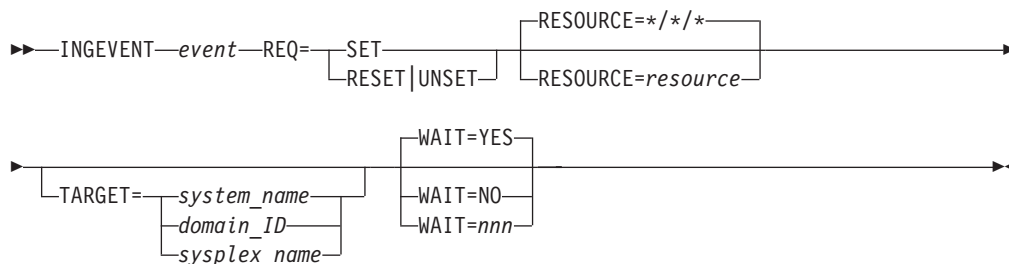
Figure 46. SA z/OS Discovery Library Adapter Report

INGEVENT

Purpose

The INGEVENT command sets or resets a particular event for all affected resources in a sysplex, or for specific resources.

Syntax



Parameters

event

Specifies the name of the event.

REQ

Specifies the request to be performed. It can have the following values:

SET Sets the event for all resources having the event defined.

RESET | UNSET

Resets or unsets the event for all resources having the event defined.

Note that RESET and UNSET are synonyms.

RESOURCE

Specifies the name of the resource where INGEVENT should be effective. It can be abbreviated to RES. The format is *name/type[/system]*

TARGET

For information on the TARGET parameter, see “TARGET Parameter” on page 10.

WAIT

Specifies whether or not to wait until the request is complete. The default is YES.

mmn is the number of seconds to wait before giving up and reporting that a timeout has occurred. The maximum time interval is 999 seconds.

Restrictions and Limitations

Wildcards are not supported.

Usage

The INGEVENT command operates sysplexwide. For an overview see “Overview of Commands that Operate Sysplexwide” on page 9.

Examples

To set an event for all resources that are linked to that event, type the following:

```
INGEVENT B000P100 REQ=SET
```

The command response is as follows:

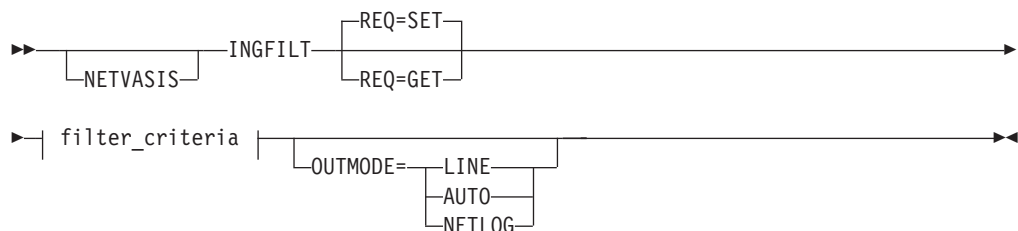
```
IPUFA    AOF442I SET EVENT B000P100 DONE FOR RESOURCE */*/* ON AOCPLX. -
          FROM=AOCA
IPUFA    AOF099I FUNCTION COMPLETED
```

INGFILT

Purpose

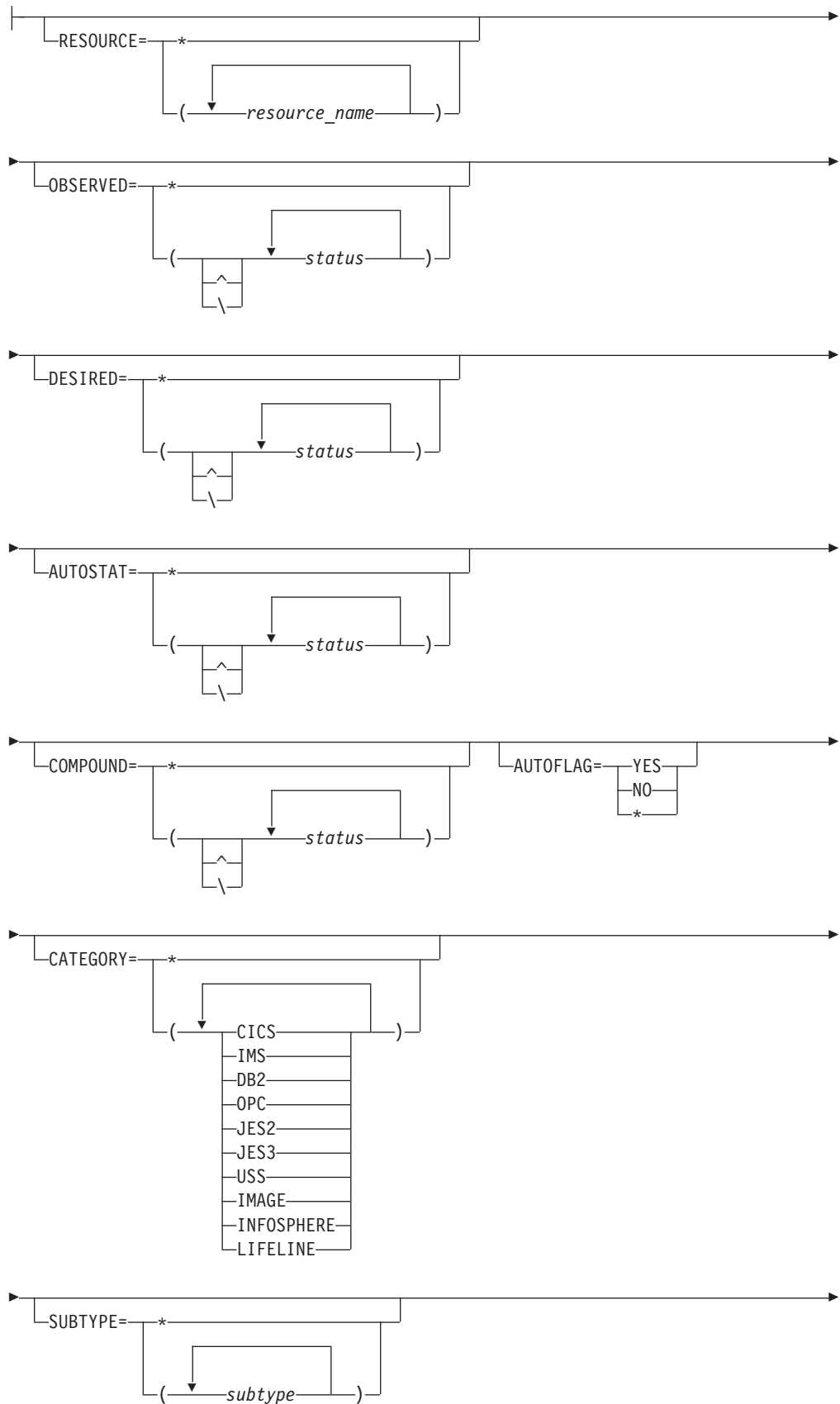
The INGFLT command restricts the amount of information shown in the display. Use INGFLT to set a default filter for the operator's logon. If an asterisk (*) is specified, the filter is reset.

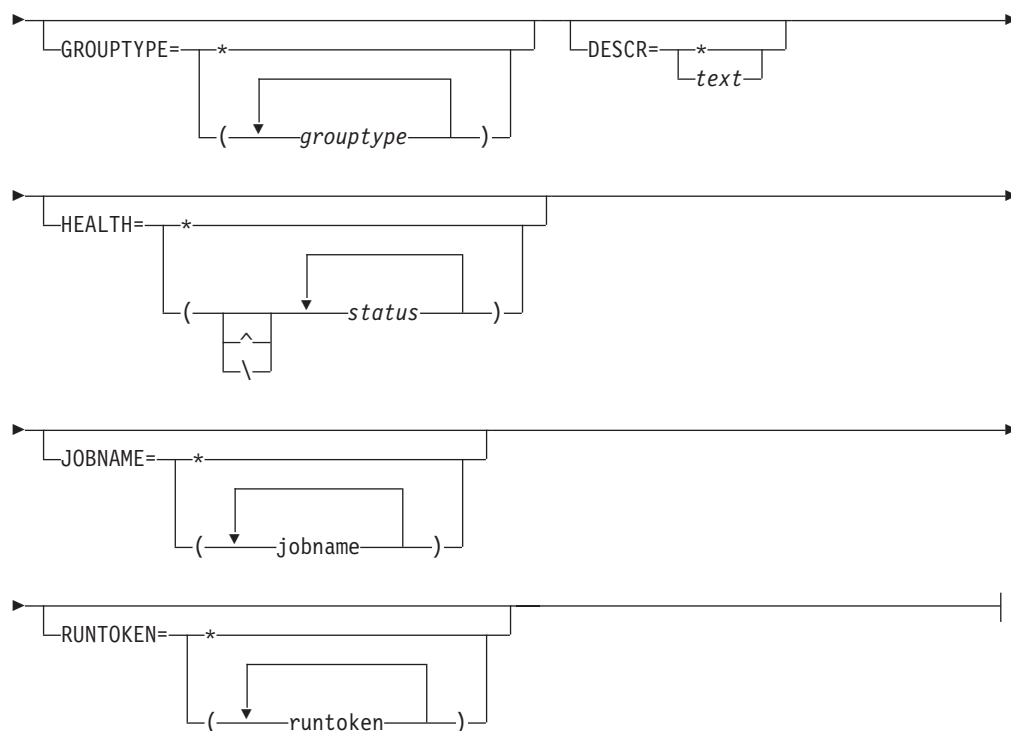
Syntax



filter_criteria:

INGFILT





Parameters

NETVASIS

Prefix the INGFLT command with NETVASIS if you want to pass the description text in lower or mixed case.

REQ

Specifies the type of the request. The type can be:

- SET** Sets new filter settings. This is the default. If no filter parameter is specified when the command is invoked, the appropriate value of the current filter settings is taken.
- GET** Returns the current filter settings. Any filter parameter that is specified when the command is invoked will be added to the current filter settings.

filter_criteria

The filter criteria to be applied prior to displaying the data.

RESOURCE

Specifies the names of the resources to be displayed. The format is *name/type/system*. The resource names must be separated by a blank. Asterisks (*) can be used as wildcard characters.

OBSERVED

Specifies the observed statuses to be displayed. The statuses must be separated by a blank. It can be abbreviated, for example, to AV for available. You can also specify an asterisk (*) to reset the current filter setting, for example, INGFLT OBSERVED=*.

If '^' or '\' is used, all statuses except the ones you specify are displayed.

DESIRED

Specifies the desired statuses to be displayed. The statuses must be

separated by a blank. It can be abbreviated, for example, to AV for available. You can also specify an asterisk (*) to reset the current filter setting, for example, INGFILT DESIRED=*.

If '^' or '\' is used, all statuses except the ones you specify are displayed.

AUTOSTAT

Specifies the automation status to be displayed. The statuses must be separated by a blank. It can be abbreviated, for example, to ID for idle. You can also specify an asterisk (*) to reset the current filter setting, for example, INGFILT AUTOSTAT=*.

If '^' or '\' is used, all statuses except the ones you specify are displayed.

COMPOUND

Specifies the compound status. The statuses must be separated by a blank. It can be abbreviated, for example, to SA for satisfactory. You can also specify an asterisk (*) to reset the current filter setting, for example, INGFILT COMPOUND=*.

If '^' or '\' is used, all statuses except the ones you specify are displayed.

AUTOFLAG

Specifies the automation flag to be displayed. It can be either YES or NO, and can be abbreviated. You can also specify an asterisk (*) to reset the current filter setting, for example, INGFILT AUTOFLAG=*.

CATEGORY

Specifies the category that the resource belongs to. More than one value can be specified.

SUBTYPE

| Specifies the subtype of the resource. More than one value can be specified.
| The subtype can contain wildcard characters. An asterisk (*) matches a
| string of arbitrary length and a percentage sign (%) matches a single
| character.

GROUPTYPE

| Specifies the type (nature) of the resource group. More than one value can
| be specified. You can also specify an asterisk (*) to reset the current filter
| setting, for example, INGFILT GROUPTYPE=*.

DESCR

| Specifies the text string as a filter. The text can contain wildcards. An
| asterisk (*) matches a string of arbitrary length and a percentage sign (%)
| matches a single character. You can also specify an asterisk (*) to reset the
| current filter setting. The DESCR parameter is case-sensitive. The text
| string must be enclosed in single or double quotation marks or
| parentheses() to maintain the case-sensitivity of the entry.

HEALTH

| Specifies the desired health statuses to be displayed. The statuses must be
| separated by a blank. It can be abbreviated, for example, to NO for normal.
| You can also specify an asterisk (*) to reset the current filter setting, for
| example, INGFILT HEALTH=*.

| If '^' or '\' is used, all statuses except the ones you specify are displayed.

JOBNAME

| The jobname assigned to the resource. More than one jobname can be
| specified. Wildcards are supported. You can also specify an asterisk (*) to
| reset the current filter setting.

RUNTOKEN

The runtoken assigned to the resource. More than one runtoken can be specified. Wildcards are supported. You can also specify an asterisk (*) to reset the current filter setting.

OUTMODE

For information on the OUTMODE parameter, see “OUTMODE Parameter” on page 12.

Restrictions and Limitations

None.

Usage

The INGFLT command can also be used when SA z/OS is *not* initialized.

The INGFLT command lets you set filter options at operator logon from within the operator's initial REXX script.

Examples

If you enter `ingfilt` a panel similar to Figure 47 is displayed.

```

INGKYFLT                SA z/OS - Command Dialogs
Domain ID = IPUFA      ----- INGFLT -----      Date = 12/13/11
Operator ID = NETOP1                               Time = 16:35:20

Resources...          format: name/type/system or *am*/**/
*
-----
Observed status ==> *
Desired status  ==> *
Automation status ==> *
Compound status ==> *
Health status   ==> *
Automation flag ==> _____ Yes or No
Resource category ==> *
Resource subtype ==> *
Group type      ==> *
Job name(s)     ==> *
Description     ==> *
RunToken(s)    ==> *

Command ==>
PF1=Help  PF2=End  PF3=Return  PF4=Clear  PF5=Reset  PF6=Roll
          PF9=Save                PF12=Retrieve

```

Figure 47. INGFLT Command Dialog Panel

This panel shows the current INGLIST filters. The filter settings are kept in task globals, so when you next run INGLIST they will be used again. Press PF9 to save the currently displayed filters into these globals.

You can specify one or more of the following filters:

Resources

This is the list of resources in name/type/system format. You can also specify a wildcard.

Observed status

This is the list of observed statuses. You can abbreviate the status, for example, "av for Available. Any resources whose observed status is in the list is eligible for the display.

Desired status

This is the list of desired statuses. You can abbreviate the status. Any resources whose desired status is in the list is eligible for the display.

Automation status

This is the list of automation statuses. You can abbreviate the status. Any resource whose automation status is in the list is eligible for the display.

Compound status

This is the list of compound statuses. You can abbreviate the status. Any resources whose compound status is in the list is eligible for the display.

Health status

This is the list of health statuses. You can abbreviate the status. Any resource whose health status is in the list is eligible for the display.

Automation flag

This is the automation flag for the resource. Specify either YES or NO.

Resource category

This is the list of categories that the resource belongs to. It is one of CICS, IMS, DB2, OPC, USS, IMAGE, JES2, JES3, INFOSPHERE or LIFELINE.

Resource subtype

This is the subtype that is defined for the resource. You can specify more than one subtype.

Group type

This is the type (nature) of the resource group. You can specify more than one group type.

Job Name

The job name assigned to the resource. You can specify more than one job name. Wildcards are supported.

Description

The description of the resource. Wildcards are supported.

Runtoken(s)

The runtoken assigned to the resource. You can specify more than one runtoken. Wildcards are supported.

In order to be eligible for the display, a resource must match all filter criteria. An asterisk indicates that the filter has not been set.

Use the PF4 key to clear the currently established filter settings. The filter will contain an asterisk, meaning that the filter not set, or a blank.

Use the PF5 key to go back to the currently established filter settings.

Note: If INGFILT was called from INGLIST, the filters that are displayed take effect when you press Enter. If you press PF9 first, the filters will be saved.

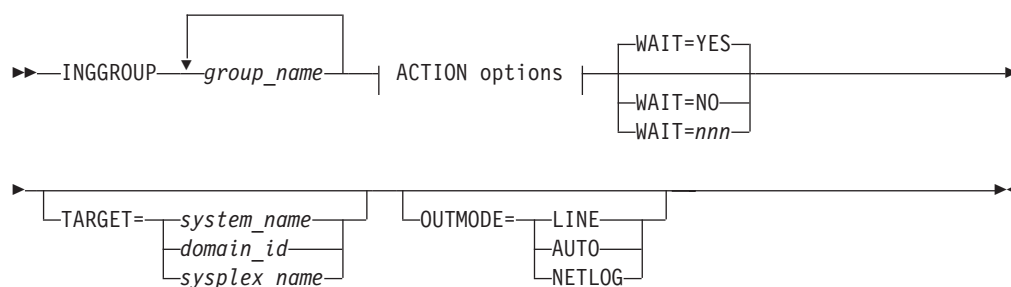
INGGROUP

Purpose

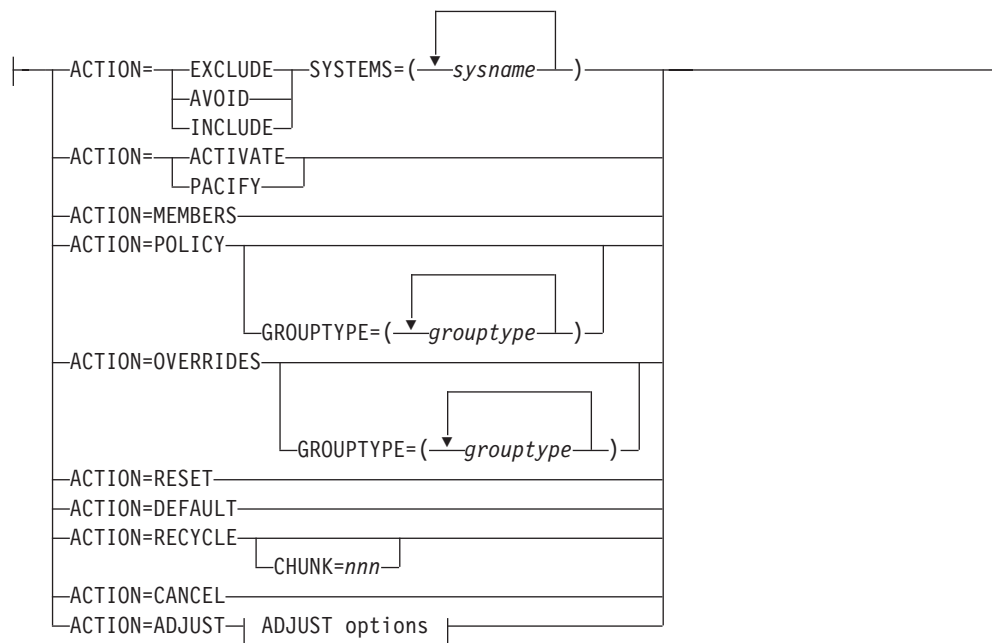
The INGGROUP command displays the members of a group and their settings. INGGROUP can also be used to:

- Move an application from one system to another by terminating the application and starting it on a system of your choice.
- Activate or deactivate a group.
- Adjust the availability or satisfactory target (server group only).
- Initiate[®] or cancel the rolling recycle of a group.

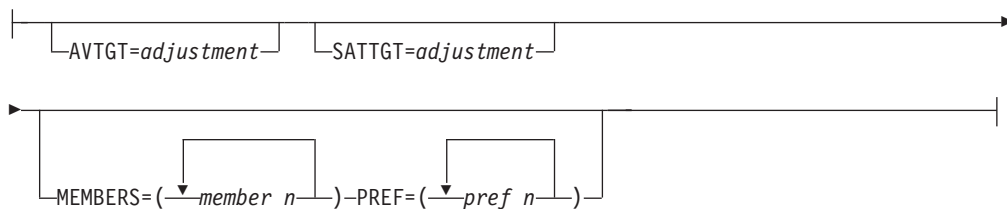
Syntax



ACTION options:



ADJUST options:



Parameters

group_name

This is a list of application groups, possibly including wildcards, that are to be the target of the command.

- For an ADJUST action specify only a single application group.
- For an AVOID/INCLUDE/EXCLUDE action, you may specify several application groups.
- For an ACTIVATE/PACIFY action, you may specify several application groups.
- For a MEMBERS action, you may specify only a single application group.
- For the RECYCLE/CANCEL action, you may specify several application groups.

ACTION

Indicates that you want to remove movable members from a system (EXCLUDE), prohibit the manager from activating movable members on a system (AVOID) or that you want to undo either of the other two actions (INCLUDE).

EXCLUDE

Removes resources immediately from the excluded systems. This acts to disruptively force resources from a system.

AVOID

No new resources will be moved to the system and those that are there will be removed as scheduled service outages permit. This would be used to gradually (and non-disruptively) remove resources from a system in preparation for an Exclude at a later point in time (mainly to reduce the disruption caused by the Exclude). Note, however, that if there is no other way to maintain or restore application availability, groups will choose to ignore avoidance policies.

INCLUDE

The movement of resources to the system depends on the relative preferences of the resources on that system and on other systems. It is possible that the resources will not be moved to that system until the next scheduled service outage.

ACTIVATE

Changes the behavior of a group to active. If used on group that is already active there is no effect. When a group becomes active it will distribute votes to all of its non-passive members reflecting its nature and goals. Making a group active may cause some of its members to be stopped or started.

PACIFY

Changes the behavior of a group to passive. If used on group that is already passive there is no effect. When a group becomes passive, it

withdraws all votes that it has propagated to its members. Making a group passive may cause some of its members to either start or stop, depending upon the votes that it had propagated.

MEMBERS

Displays the group members and their settings.

POLICY

Displays the policies for the specified resource groups.

OVERRIDES

Displays the overrides for the specified resource groups that have been made with the INGGROUP command.

RESET

Sets the preference assigned to the members of the application group to its initial value. Applies only to MOVE and SERVER groups.

DEFAULT

Sets the following group policies to the values that are defined in the policy database:

- Availability and satisfactory target
- Preference value of group members
- Group passive attribute

RECYCLE

Causes a rolling recycle to be initiated for each selected server or move group.

Note: If you specify more than one group and any of them have common members, only one of the groups can be involved in a complete rolling recycle. The other groups are flagged as being involved in a partial recycle, that is, some of their members (possibly all of them) are being or have been recycled.

Specify CHUNK to indicate the number of server group members to recycle in parallel. Refer to 128 for further details.

If the systems in a Server group all have the same preference value, the system that is active after a rolling recycle has completed may not be the same one as before the rolling recycle. Thus, triggering a rolling recycle always results in a move occurring. If you set the preference of the original system more than 250 points higher than that of any other system, the rolling recycle is followed by a second move to return the application to that system. This leads to an increase in the application down time.

Note: Preference values do not influence the order in which resources are recycled. The resources of the group are recycled from last to first as they are displayed in the list of group members.

CANCEL

Causes any rolling recycles amongst the selected groups to be canceled.

ADJUST

Indicates that you want to temporarily adjust a group's policy.

SYSTEMS

Is the list of systems to be excluded or included. If no groups are specified, all application groups with resources in these systems are affected.

This parameter must be specified for INCLUDE, AVOID and EXCLUDE actions.

GROUPTYPE

Specifies the type (nature) of the resource group. More than one value can be specified.

CHUNK

Indicates the number of server group members to recycle in parallel.

Note: SA z/OS adjusts the chunk size to ensure that at least one group member is active at any time to avoid an application outage. This is the case when the chunk size is greater or equal to the number of active group members.

AVTGT

Specifies the availability target that is to be set for the group. The value, *n*, is a positive number. It specifies the number of group members that should be made available when the group has to be available.

You can also specify *, which resets the AVTGT parameter to the value that is specified in the policy database.

This parameter may only be specified for an ADJUST action.

SATTGT

Specifies the number of members in the group that must be active before the automation manager treats the group as being in a satisfactory state. The value must be a positive, decimal number. The parameter will be ignored for groups other than server groups.

You can also specify *, which resets the SATTGT parameter to the value specified in the policy database.

This parameter may only be specified for the ADJUST action.

MEMBERS

Specifies a list of group members that the preference value should be set for. Wildcards may not be used.

This parameter may only be specified on an ADJUST action.

PREF

Specifies a preference value that is to be used for each specified member. The number of values specified should be the same as the number of members specified. Each preference is an integer value that replaces the member's current preference value. You can also specify *, which resets the PREF parameter to the value that is specified in the policy database.

Preference values are used to determine which members in the group are selected to make the group active.

This parameter may only be specified on an ADJUST action when a list of members has been specified.

Changes to preference values, as set by the PREF parameter, apply in the following manner:

- The preference value in the automation policy is not affected.
- An adjustment value is calculated that, when applied to the preference value in the automation policy, produces the "result" value.
- The "result" preference value is then used by the automation when a preference value is required.

- The adjustment value, rather than the "result" value, is preserved when performing an automation manager HOT restart or an INGAMS REFRESH, but is lost during WARM and COLD restarts.

If an adjustment was made via the INGGROUP or INGMOVE command and to the base preference via the customization dialogs, the current effective preference and the new base preference will be taken to calculate a new adjusted preference. As a result, the old effective preference will be preserved.

WAIT

Specifies whether or not to wait until the request is complete. The default is YES.

nnn is the number of seconds to wait before giving up and reporting that a timeout has occurred. The maximum time interval is 999 seconds.

TARGET

For information on the TARGET parameter, see "TARGET Parameter" on page 10.

OUTMODE

For information on the OUTMODE parameter, see "OUTMODE Parameter" on page 12.

Restrictions and Limitations

None.

Usage

The INGGROUP command operates sysplexwide. For an overview see "Overview of Commands that Operate Sysplexwide" on page 9.

Automation policy overrides that have been entered using the INGGROUP command are preserved when performing an automation manager HOT restart and an INGAMS REFRESH, but are lost during WARM and COLD restarts.

Examples

If you enter `inggroup` a panel similar to Figure 48 on page 130 is displayed.

```

INGKYGRA          SA z/OS - Command Dialogs
Domain ID = IPUFA  ----- INGGROUP -----   Date = 09/17/08
Operator ID = NETOP1      Sysplex = AOCAPLEX      Time = 14:52:51

Specify or revise the following data:

Target => _____ System name, domain id or sysplex name

Action => _____ EXCLUDE-AVOID-INCLUDE or ACTIVATE-PACIFY or
                ADJUST or RESET DEFAULT or OVERRIDES, POLICY or
                RECYCLE-CANCEL

Group(s) => _____
                _____
                _____

System(s)=> _____
                _____

Command ==>
PF1=Help   PF2=End   PF3=Return  PF4=Members   PF6=Roll
                PF10=GO                PF12=Retrieve
    
```

Figure 48. INGGROUP Command Dialog Panel

This panel allows you to change the policy of application groups. You may specify:

- The target sysplex for the command with the **Target** field. If omitted, this defaults to the local system or sysplex. Specify the system name only when viewing or changing the policy of an application group that is not part of the local sysplex.
- The policy change that you want to make with the **Action** field. The policy options are explained below.
- Next you must specify in the **Group(s)** field either the name of the target group or a set of templates that will match one or more groups. All policy items work with a list of group name templates, and apply to all Move and Server groups that match those names. Although applying a policy to a basic group is not an error, it will not achieve anything either.

Note: A group name of *xxxx* will be automatically expanded into *xxxx/APG/**, except for ADJUST and MEMBERS actions.

- For the Exclude, Avoid, and Include policy items, you can specify a list names of systems that the policy is to be set for. Specify a question mark (?) to see the list of systems within the sysplex.

See the online help for details about the policy items that you can change.

After entering the appropriate information in the fields for the policy item that you want to change, press PF10 or Enter to make your changes active and proceed with the action.

You can press PF4 to display the members detail panel (Figure 50 on page 131), where you can fine tune the group by changing the preferences of its individual members. If you do not specify a group on the main INGGROUP panel, a selection panel (Figure 49 on page 131) displays all the groups that are currently available, with the message Multiple instances found for */APG. Select one application group and press Enter.


```

A0FKSEL4          SA z/OS - Command Dialogs      Line 1 of 160
Domain ID = IPUFA ----- INGGROUP -----      Date = 10/27/09
Operator ID = NETOP1                                Time = 15:54:24

Multiple instances found for */APG
Select one item to be processed, then press ENTER.

Sel  Name          Type System      Description
-----
-    AMAPG          APG              APG for Automation Managers
-    BASE_APPL      APG AOCA         Base z/OS Applications
-    BASE_APPL      APG AOCB         Base z/OS Applications
-    BASE_APPL      APG AOCC         Base z/OS Applications
-    BASE_APPL      APG AOCD         Base z/OS Applications
-    BASE_SUPP      APG AOCA         Base z/OS Support Functions
-    BASE_SUPP      APG AOCB         Base z/OS Support Functions
-    BASE_SUPP      APG AOCC         Base z/OS Support Functions
-    BASE_SUPP      APG AOCD         Base z/OS Support Functions
-    BASE_SYS       APG AOCA         Base z/OS Components
-    BASE_SYS       APG AOCB         Base z/OS Components

Command ==>
PF1=Help      PF2=End      PF3=Return   PF8=Forward
PF6=Ro11                                PF12=Retrieve
    
```

Figure 49. INGGROUP Command Dialog Selection Panel

The members detail panel, as shown in Figure 50, allows you to change the preference policy values for the members of Move and Server groups.

```

INGKYGRB          SA z/OS - Command Dialogs      Line 1 of 3
Domain ID = IPUFA ----- INGGROUP -----      Date = 09/17/08
Operator ID = NETOP1                                Time = 16:06:05

Group: MOVPLEX1/APG          Nature: Move          Passive: NO
Description: Sysplex move group KEY1/SAT1/TSA1 pref.
Excluded :
Avoided :
Mode : Normal      Availability Target: 1      Adjust: 0      Result=> 1
Move Mode: Parallel Satisfactory Target=> 1 Adjust: 0
Rolling Recycle: COMPLETE

Name          Type System      Pref  Adj  Result  Avl  Eff  Stat  Act
-----
MOVPLEX1      APL SAT1          700   0    700    Yes  950  Sel   --
MOVPLEX1      APL SAT2          700   0    700    No   700  Uns   --
MOVPLEX1      APL SAT3          700   0    700    No   700  Uns   --

Command ==>
PF1=Help      PF2=End      PF3=Return   PF6=Ro11
PF9=Refresh   PF10=G0     PF11=Reset   PF12=Retrieve
    
```

Figure 50. INGGROUP Command Dialog Panel Showing Members' Detail

On this panel you can change the values in the **Result** field to change the availability target for that server group. Also, in the **Result** column you can change the preference value for that member. The effective preference value is shown in the **Eff** column. (Preference value changes are also possible for Server groups).

Changes to preference values for members, as set with the **Result** field are implemented in the following manner:

1. The preference value in the automation policy is not affected.
2. An adjustment value is calculated, which produces the Result value, when it was applied to the preference value in the automation policy.

INGGROUP

3. The Result preference value is used by the automation when a preference value is required.
4. The adjustment value, not the Result, is preserved across automation manager HOT restart and across INGAMS REFRESH, but is lost during WARM and COLD restarts.

To make your changes active, press PF10. To reset the initial settings, press PF11.

The action taken after PF10 is pressed may differ from the assumed or proposed action displayed in the action column of panel INGKYGRB. This is because the assumed or proposed action is calculated by processing the group's resources in alphanumeric sequence, while the actual action performed is calculated by the automation manager that processes the group's resources in a random sequence.

For further details about this panel and how to use it, and sample preference scenarios, see the online help.

Note: The avoid, exclude, and include parameters are only applied to the members of the group. They are not propagated further when the member is also a group.

To remove subsystems from the list of members that can be used, enter the following:

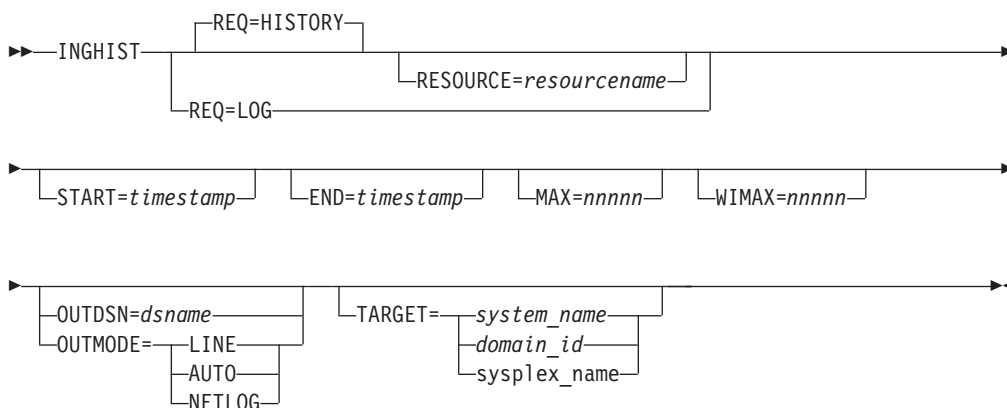
```
INGGROUP group1 TSO/APG ACTION=EXCLUDE
```

INGHIST

Purpose

The INGHIST command shows history information about the work item processed by the automation manager. It also lets you display messages that the manager issues to the system logger.

Syntax



Parameters

REQ

Specifies the request to be performed. It can have the following keywords:

HISTORY

Displays the work item history. This is the default.

LOG Retrieves the messages written to the system logger by the automation manager.

RESOURCE

Specifies the name of the resource to be displayed. The format is *name/type[/system]*. The RESOURCE parameter can only be specified if REQ=HISTORY.

START

Is the start date and, optionally, time for the display of the history data. The format is yyyy-mm-dd [hh:mm:ss]. If omitted, the history data from the last hour will be displayed, unless another limiting parameter (resource name) is specified. If you specify more than one value, they must be enclosed with parentheses, or separated by a period (.), for example:

```
inghist resource=stdt000an1x start=(2000-03-10 08:00:00)
```

or

```
inghist resource=stdt000an1x start=2000-03-10.08:00:00
```

END

Is the end date and, optionally, time for the display of the history data. The format is yyyy-mm-dd [hh:mm:ss]. If you specify more than one value, they must be enclosed with parentheses, or separated by a period (.).

MAX

Specifies the maximum number of work items to be shown. Use this parameter to limit the output if many work items exist within the specified time period.

WIMAX

Specifies the maximum number of work item records to be shown after work item expansion. The value can be * to indicate unlimited or a value to limit expansion. The default is 10000. If the report becomes truncated then the message "***OUTPUT TRUNCATED***" will appear.

OUTDSN

For information on the OUTDSN parameter, see "OUTDSN Parameter" on page 13.

TARGET

For information on the TARGET parameter, see "TARGET Parameter" on page 10.

OUTMODE

For information on the OUTMODE parameter, see "OUTMODE Parameter" on page 12.

Restrictions and Limitations

To use INGHIST system operations does not have to be initialized.

Usage

The INGHIST command operates sysplexwide. For an overview see "Overview of Commands that Operate Sysplexwide" on page 9.

Time-interval search criteria are entered in local time. However, because the history data is stored using GMT time stamps, it is necessary for INGHIST to convert the local-time search criteria to GMT before retrieving the data. This may make it

necessary for the operator to make a manual adjustment to the time-interval search criteria after a daylight-saving-time change has been set. The local-time-to-GMT conversion calculation will be one hour different after a daylight-saving-time change. Data written after a daylight-saving-time change will be retrieved as expected but data written before will be offset by one hour.

Examples

If you enter `inghist resource=stdt000an1x/apl/aoc7` a panel similar to Figure 51 is displayed.

```

INGKYHI0          SA z/OS - Command Dialogs          Line 1    of 15
Domain ID   = IPUFM   ----- INGHIST -----         Date = 07/24/00
Operator ID = AFRANCK       Sysplex = AOC7PLEX         Time = 14:20:46

Start time ==> _____ format: yyyy-mm-dd hh:mm:ss
End time   ==> _____ Resource ==> STDT000AN1X/APL/AOC7

Cmd: + Expand workitem (e) - Collapse workitem (c)
Cmd Date   Time   Footprint
-----
- 2000-07-24 14:18:32 Termination processing for STDT000AN1X/APL/AOC7
                        completed
- 2000-07-24 14:18:30 Agent status for STDT000AN1X/APL/AOC7 = RESTART
- 2000-07-24 14:18:29 No PRESTART commands to issue
- 2000-07-24 14:18:29 Agent status for STDT000AN1X/APL/AOC7 = AUTODOWN
- 2000-07-24 14:18:27 Shutdown in progress
- 2000-07-24 14:18:25 Startup for STDT000AN1X/APL/AOC7 in progress
- 2000-07-24 14:18:24 Agent status for STDT000AN1X/APL/AOC7 = AUTOTERM
- 2000-07-24 14:18:23 Agent status for STDT000AN1X/APL/AOC7 = STARTED
- 2000-07-24 14:18:20 No SHUTINIT commands to issue

Command ==>
PF1=Help    PF2=End      PF3=Return   PF6=Ro11
PF9=Refresh PF12=Retrieve

```

Figure 51. INGHIST Command Dialog Panel

The FIND/RFIND subcommands are supported. See “Varying the Format of the Command Output” on page 13 for information.

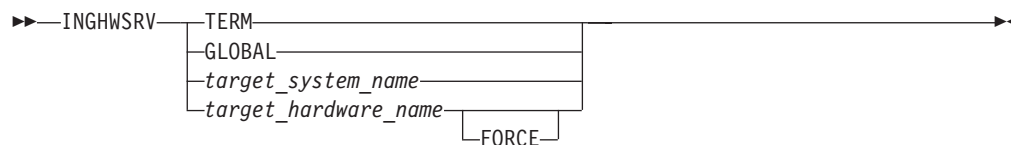
INGHWSRV

Purpose

The INGHWSRV command lets you:

- Terminate all BCP internal interface connections and disable the BCP internal interface
- Display Processor Operations and BCP internal interface NetView common global variables (CGLOBALS)
- Display specific target hardware or system NetView common global variables (CGLOBALs)
- Free control blocks that are associated with abended hardware system connection

Syntax



Parameters

TERM

Terminate all BCP internal interface connections and disable the BCP internal interface.

GLOBAL

Display Processor Operations and BCP internal interface common global variables.

target_system_name

Display NetView common global variables (CGLOBALs) for the specified target system name.

target_hardware_name

Display NetView common global variables (CGLOBALs) for the specified target hardware name.

FORCE

Clear the control blocks for the specified target hardware name.

Restrictions and Limitations

None.

Usage

You should use the FORCE option only after a connection failure to free control blocks that are associated with the target hardware name.

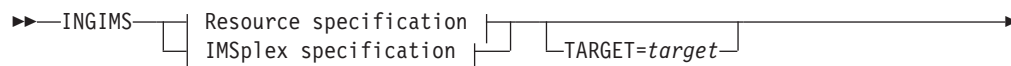
INGIMS

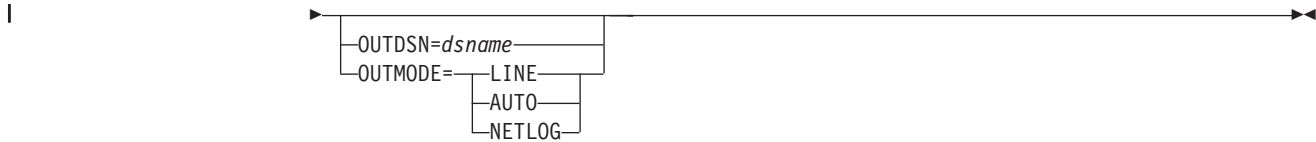
Purpose

The INGIMS command lets you:

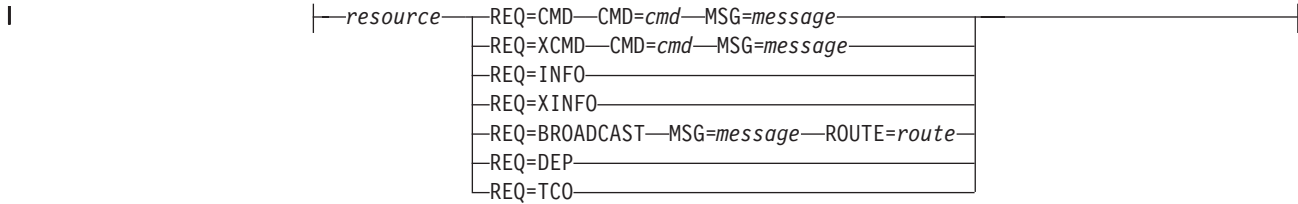
- Issue both type-1 and type-2 IMS commands, and to issue those commands against an IMSplex and its members.
- Broadcast messages to all or selected IMS users.
- Issue a list of defined transactions or commands and view the output.
- Display the output of IMS transactions in fullscreen or pipeable line mode.

Syntax

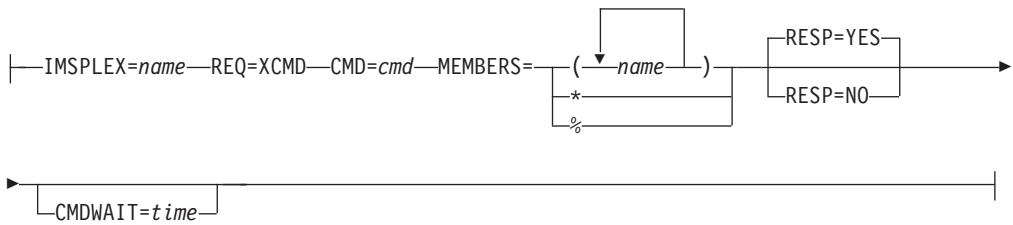




Resource specification:



IMSpIex specification:



Parameters

resource

The resource specifies the name of the IMS subsystem that the command is issued to. The format is subsystem[/APL[/system]], where the subsystem is the specific name of the desired IMS subsystem and system is the name of the system that the IMS is running on.

Note: If you specify REQ=XCMD or REQ=XINFO, SA z/OS determines the IMSplex name that the IMS subsystem belongs to and routes the command to that IMS.

REQ

Specifies the request to be issued to the IMS subsystem. It can be one of the following:

CMD Issues the specified IMS command or transaction and displays the results. The command is forwarded to IMS using its console interface.

Enclose the command in single or double quotation marks if the command and parameters contain spaces.

REQ=CMD is the default.

Note: Do not specify the prefix character, forward slash (/), for IMS commands.

XCMD

This is the same as CMD but the command is forwarded to IMS via

the IMS Operations Manager if either the IMSPLEX parameter is specified or an IMSplex name for the given resource is available in the policy. IMS type 2 commands are also supported in that case. Otherwise the console interface is used that supports only type-1 commands. However, the output is formatted in the same way in either case.

Note: Do not specify the prefix character, forward slash (/), for IMS commands.

INFO Issues a set of predefined commands and displays the results. The list of commands is obtained from the user-defined keyword-data pairs for the IMSINFO message ID in the policy of the subsystem that is specified by the resource name. The individual commands are executed as with CMD.

XINFO

This is the same as INFO but the individual commands are executed as with XCMD.

BROADCAST

Issues an IMS broadcast to all or selected users.

DEP Displays the dependent region associated with the control region.

TCO Displays the details about the IMS Timed Control Operations function.

IMSPLEX

Specifies the IMSplex name.

MEMBERS

Identifies a list of members where the command should be executed. It can be:

- Asterisk (*), which causes the command to be forwarded to all registered command processing clients in the IMSplex.
- Percent sign (%), which causes the command to be forwarded to one registered command processing client with MASTER capability.
- A list of member names or type identifiers, or both. The type identifiers are subtypes of the type IMS (that is, DBCTL, DCCTL, DBDC, or FDBR) and must be preceded by an asterisk, for example, *DCCTL or *FDBR. *CTL can be used as shorthand for "*DBCTL *DCCTL *DBDC".

MEMBERS is optional. If omitted the command is forwarded to all registered command processing clients.

RESP

Specifies whether output should be returned to the caller or not. RESP is optional and the default is YES

CMDWAIT

Specifies the maximum wait time for a command to complete. CMDWAIT is optional and the default is the value of CGLOBAL WAITTIME.

MSG

Specifies the message to be sent to all or selected IMS terminals or users for the REQ=BROADCAST request. Enclose the message in single or double quotation marks.

For REQ=CMD the MSG parameter can be used to contain a list of words that will be used to end processing if they are received anywhere in the output results. The words will normally be a required message ID. If no words are entered the CMD will be processed until any result is received.

ROUTE

Specifies the IMS routing information used to select the IMS terminals or users are to receive the message for a REQ=BROADCAST request. The contents of the ROUTE parameter are the parameters to be supplied to the /BRO transaction to route messages to IMS terminals or users. See the /BRO transaction for the details of the parameters for that transaction.

TARGET

For information on the TARGET parameter, see "TARGET Parameter" on page 10.

OUTDSN

For information on the OUTDSN parameter, see "OUTDSN Parameter" on page 13.

OUTMODE

For information on the OUTMODE parameter, see "OUTMODE Parameter" on page 12.

Restrictions and Limitations

To use the INGIMS command, system operations must be initialized. IMS subsystems must be enabled for system console commands using the MCS/E-MCS Console.

You can only issue XCMD or XINFO requests against subsystems that are running SA z/OS 3.3 or higher.

Usage

The INGIMS command operates sysplexwide. For an overview see "Overview of Commands that Operate Sysplexwide" on page 9.

Examples

If you enter ingims a panel similar to Figure 52 is displayed.

```

EVIKYCMD          SA z/OS - Command Dialogs          Line
Domain ID = IPSFM  ----- INGIMS -----           Date = 06/08/09
Operator ID = NETOP1                                     Time = 15:08:38

Resource    => SREL1          -or- IMSplex name => _____
IMS Members => _____
Target      => _____           System name, domain ID or sysplex name
Request     => XCMD           CMD or XCMD, INFO or XINFO, BROADCAST, DEP, TCO
IMS Command => _____
Response   => YES           Yes/No           Command wait time => 60 (seconds)
IMS Route   => _____
IMS Message => _____
             => _____

Command ==>>>
PF1=Help      PF2=End      PF3=Return    PF6=Ro11
               PF9=Refresh  PF12=Retrieve
    
```

Figure 52. INGIMS Command Dialog Panel

- The **Resource** field shows the name of the IMS subsystem to be used for issuing the requests. The format is name/type[/system]. Wildcards are supported.
- The **IMSPlex name** field shows the name of the IMSplex.
- The **IMS Members** field identifies the members where the commands should be processed. The IMS is either named by its subsystem ID or its type identifier. Type identifiers are DB, DC, FDBR, CQS, and so on. You must prefix the type identifier with an asterisk (*), for example, *DBDC. You can use *CTL as shorthand for *DB *DC *DBDC.
- The **Target** field shows the name of the system (system name, domain ID, or sysplex name) that the command should be routed to. Specifying this is only necessary if the resources do not reside in the local sysplex.
- The **Request** field shows the request to be carried out. It can be CMD, BROADCAST, INFO, XCMD, or XINFO.

Note: If you specify XCMD or XINFO, you must use either the **IMSPlex name** or **IMS Members** field, or both, to specify the destination of the request.

- The **IMS Command** field shows the IMS transaction to be executed on the IMS subsystem specified by the resource field.
- The **Response** field indicates whether the output should be returned to the caller.
- The **Command wait time** field specifies the maximum wait time for a command to complete. The default is the value of WAITTIME common global variable.
- The **IMS Route** field shows the routing parameters for the /BRO command when the request is BROADCAST.
- The **IMS Message** field shows the message to be sent to users/terminals for the BROADCAST request.

The output from the IMS transaction appears in the blank area below the **IMS Message** field.

If you specify, for example, INGIMS EIMSDBRC REQ=BROADCAST a panel similar to Figure 53 on page 140 is displayed.

```

EVIKYCMD          SA z/OS - Command Dialogs          Line
Domain ID = IPSFM ----- INGIMS -----          Date = 06/08/09
Operator ID = NETOP1                                Time = 15:11:23

Resource => EIMSDBRC/APL/AOC8          -or- IMSplex name => _____
IMS Members => _____
Target => _____ System name, domain ID or sysplex name
Request => BROADCAST          CMD or XCMD, INFO or XINFO, BROADCAST, DEP, TCO
IMS Command => BROADCAST
Response => _____ Yes/No          Command wait time => _____ (seconds)
IMS Route => ACTIVE
IMS Message => _____
=> _____

Command ==>
PF1=Help          PF2=End          PF3=Return          PF6=Roll
                  PF9=Refresh          PF12=Retrieve
    
```

Figure 53. INGIMS REQ=BROADCAST Command Dialog Panel

If you specify, for example, INGIMS REQ=XCMD CMD='DIS ACT' output similar to the following is displayed in a NetView window (which allows you to scroll through the output):

```

OM=IMSAA10M Rc=00000000 Rsn=00000000
Master=MAC1 User=STCUSER Cmd=DIS ACT

MbrName  MsgData
MAA1     REGID JOBNAME  TYPE  TRAN/STEP PROGRAM  STATUS          CLASS
MAA1         4 IMSAA1M1 TP      NONE          WAITING         1
MAA1         JMPRGN   JMP    NONE
MAA1         JBPRGN   JBP    NONE
MAA1         BATCHREG BMP    NONE
MAA1         1 IMSAA1F1 FPM    NO MSG.  DFSIVP4
MAA1         3 IMSAA1F3 FPM    NO MSG.  DBFSAMP3
MAA1         DBTRGN   DBT    NONE
MAA1         IMSAA1RC DBRC
MAA1         IMSAA1DL DLS
MAA1     VTAM ACB OPEN          -LOGONS ENABLED
MAA1     IMSLU=N/A.N/A          APPC STATUS=DISABLED TIMEOUT= 0
MAA1     OTMA GROUP=N/A          STATUS=NOTACTIVE
MAA1     APPC/OTMA SHARED QUEUE STATUS - LOCAL=INACTIVE  GLOBAL=INACTIVE
MAA1     APPC/OTMA RRS MAX TCBS - 40 ATTACHED TCBS - 1 QUEUED RRSWKS-
MAA1     APPLID=IPXAGIA1 GRSNAME=          STATUS=DISABLED
MAA1     LINE ACTIVE-IN - 1 ACTIV-OUT - 0
MAA1     NODE ACTIVE-IN - 0 ACTIV-OUT - 0
MAA1     *09139/155812*
    
```

If you specify, for example, INGIMS REQ=XINFO output similar to the following is displayed:

```

QUERY CQS DATA-----
OM=IMSAA10M Rc=00000000 Rsn=00000000
Master=MAC1 User=STCUSER Cmd=DIS CQS

MbrName  MsgData
MAA1     DFS4444I DISPLAY FROM ID=MAA1
MAA1         JOBNAME  VERS#  STATUS
MAA1         IMSAA1SQ  1.5  CONNECTED
MAA1         *09148/174750*
    
```

```

DISPLAY COORDINATOR CONTROLLERS-----
OM=IMSAA10M Rc=00000000 Rsn=00000000
Master=MAC1 User=STCUSER Cmd=DIS CCTL

MbrName  MsgData
MAA1     DFS4444I DISPLAY FROM ID=MAA1
MAA1           CCTL             STATUS
MAA1           IMSAA1SQ   1.5  CONNECTED
MAA1           *09148/174715*
    
```

Note that a separator line is inserted between the individual command outputs.

You can issue a command against members of an IMSplex with the IMSPLEX parameter, for example:

```
INGIMS IMSPLEX=IMXPLEX_1 MEMBERS=*CTL REQ=XCMD CMD='QUERY AREA' OUTMODE=LINE
```

If you wish to view IMS dependent regions, use the INGIMS command dialog with REQ=DEP and the following screen is displayed:

```

EVIKYDP0 SA z/OS - Command Dialogs Line 1 of 5
Domain ID = IPSFP ---- Dependent Regions ----- Date = 08/03/07
Operator ID = OPER Time = 12:44:37
Control Reg.= IMSCTL/APL/KEY4
CMD: A Update B Start C Stop D INGRELS E INGVOTE F INGINFO
      H DISPTRG I INGSCHED N /ASSIGN P /PSTOP / scroll
CMD Name Type System Reg.Id Type Trans/Step Program IMS Status
-----
- IMSDBRC APL KEY4 DBRC
- IMSDLS APL KEY4 DLS
- IMSFP1 APL KEY4 1 FPME NO MSG. DFSIVP4
- IMSMP1 APL KEY4 2 TP WAITING
- IMSPPI APL KEY4 3 BMP IMS941PP EVIRYPPI

Command ==>
PF1=Help PF2=End PF3=Return PF6=Ro11
PF9=Refresh PF10=Previous PF11=Next PF12=Retrieve
    
```

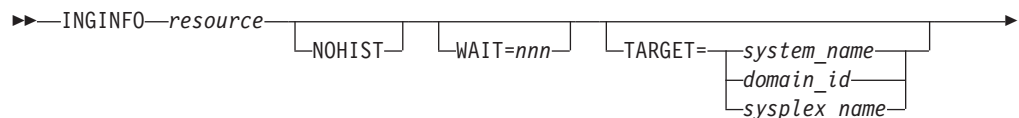
Figure 54. IMS Dependent Regions Panel

INGINFO

Purpose

INGINFO displays details about a particular group or resource from the automation manager point of view.

Syntax





Parameters

resource

Specifies the name of the resource to be displayed. The format is *name/type[system]*.

NOHIST

Specifies that no history information should be included in the display.

WAIT

Specifies the number of seconds to wait before reporting that a timeout occurred if the automation manager does not provide the requested data. The maximum time interval is 999 seconds.

If omitted, the time interval is 30 seconds.

TARGET

For information on the TARGET parameter, see “TARGET Parameter” on page 10.

OUTDSN

For information on the OUTDSN parameter, see “OUTDSN Parameter” on page 13.

OUTMODE

For information on the OUTMODE parameter, see “OUTMODE Parameter” on page 12.

Restrictions and Limitations

None.

Usage

The INGINFO command operates sysplexwide. For an overview see “Overview of Commands that Operate Sysplexwide” on page 9.

Examples

If you enter, for example, `inginfo TPXA/APL/KEY3` a panel similar to Figure 55 on page 143 is displayed.

```

INGKYIN0          SA z/OS - Command Dialogs          Line 1 of 901
Domain ID = IPSNO  ----- INGINFO -----          Date = 05/25/06
Operator ID = NETOP1      Sysplex = KEY1PLEX          Time = 11:06:35

Resource ==> TPXA/APL/KEY3          format: name/type/system
Target ==> _____ System name, domain ID or sysplex name

Resource      : TPXA/APL/KEY3
Description   : Simulated subsystem

Status...
Observed Status : AVAILABLE
Desired Status  : AVAILABLE
Automation Status : IDLE
Startable Status : YES
Compound Status : SATISFACTORY      Last changed : 2006-05-24 06:19:24
Health Status  : N/A

Dependencies...
PreStart       : Satisfied
Start          : Satisfied

Command ==>>>
PF1=Help      PF2=End      PF3=Return    PF4=DISPINFO      PF6=Roll
              PF8=Forward  PF9=Refresh   PF12=Retrieve

```

Figure 55. INGINFO Command Dialog Panel

This panel shows detailed information about the specified resource that includes:

- Resource statuses and dependencies
- Resource settings
- Relationships that have been defined for the resource
- Requests that have been issued against resource
- Votes that are pending for the resource
- History data that has been collected for the resource

There are two input fields, **Resource** and **Target**, where you can specify the name of the resource and the system that is to be queried. You can specify a wildcard for the resource name. Specify the system name only when obtaining details about a resource that is not part of the local sysplex.

If the specified resource name is not unique a selection panel will be displayed where you can select the resource concerned. You can either enter a resource name to get details about the resource, or press the PF9 key to refresh the information about the current resource.

If the resource is of type APL (that is, application), you can use the PF4 key to invoke the DISPINFO command to obtain details about the resource from the automation agent's point of view. PF4 invokes DISPMTR when the resource is a monitor resource.

You can use the FIND(F) and RFIND(RF) subcommands to search the displayed data for a specific string. The line containing the string is then displayed as top line of the display. For example, to locate the line containing "abc" enter FIND abc. Optionally you may add the direction parameter, which is either P (previous) or N (next). The default is next. When you want to locate the next or previous occurrence of the string, enter RFIND or RF optionally followed by the direction.

Note: The history data is stored using GMT time stamps so it is necessary for INGINFO to convert these time stamps to local-time before displaying the data. The GMT-to-local-time conversion calculation will be one hour

INGINFO

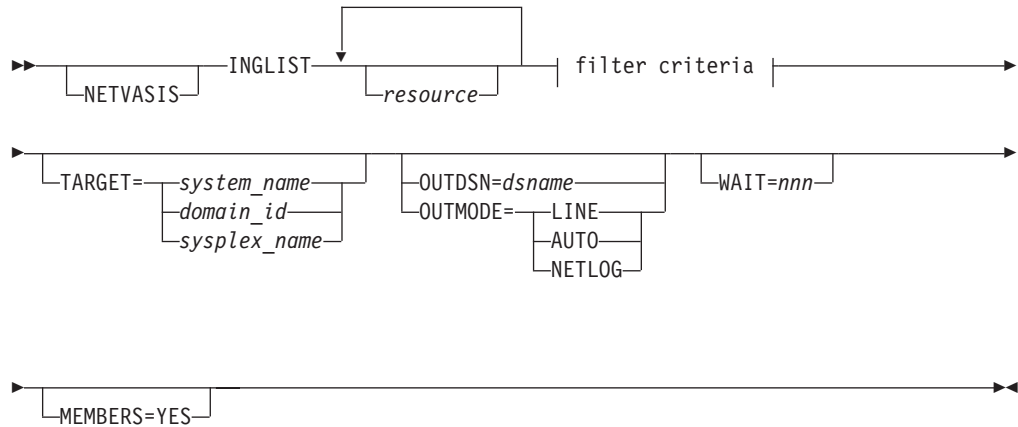
different after a daylight-saving-time change. Data written after a daylight-saving-time change will be retrieved as expected but data written before will be offset by one hour.

INGLIST

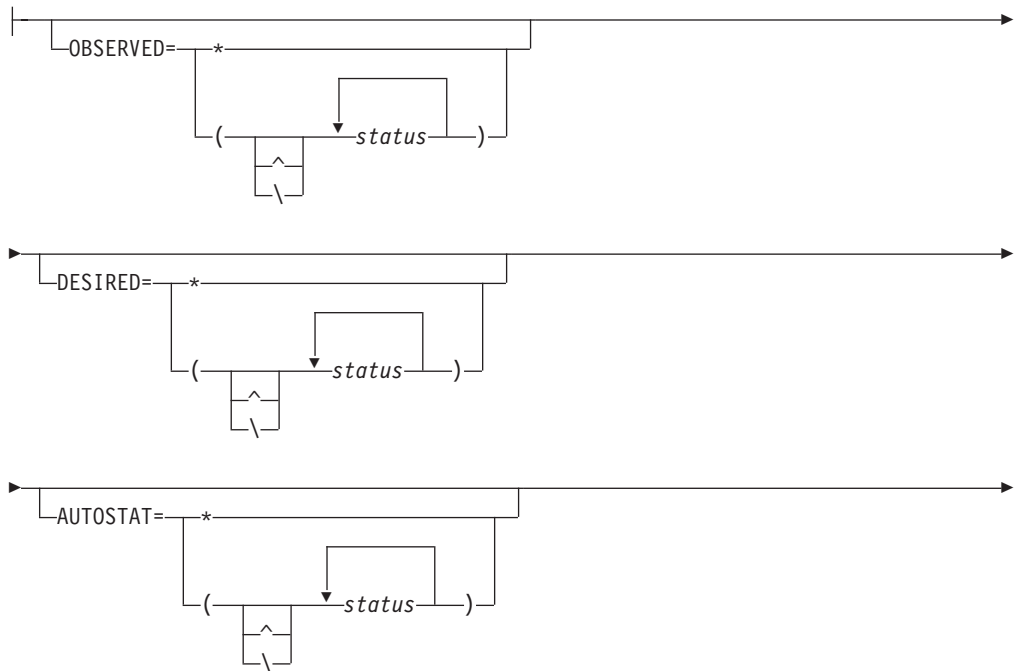
Purpose

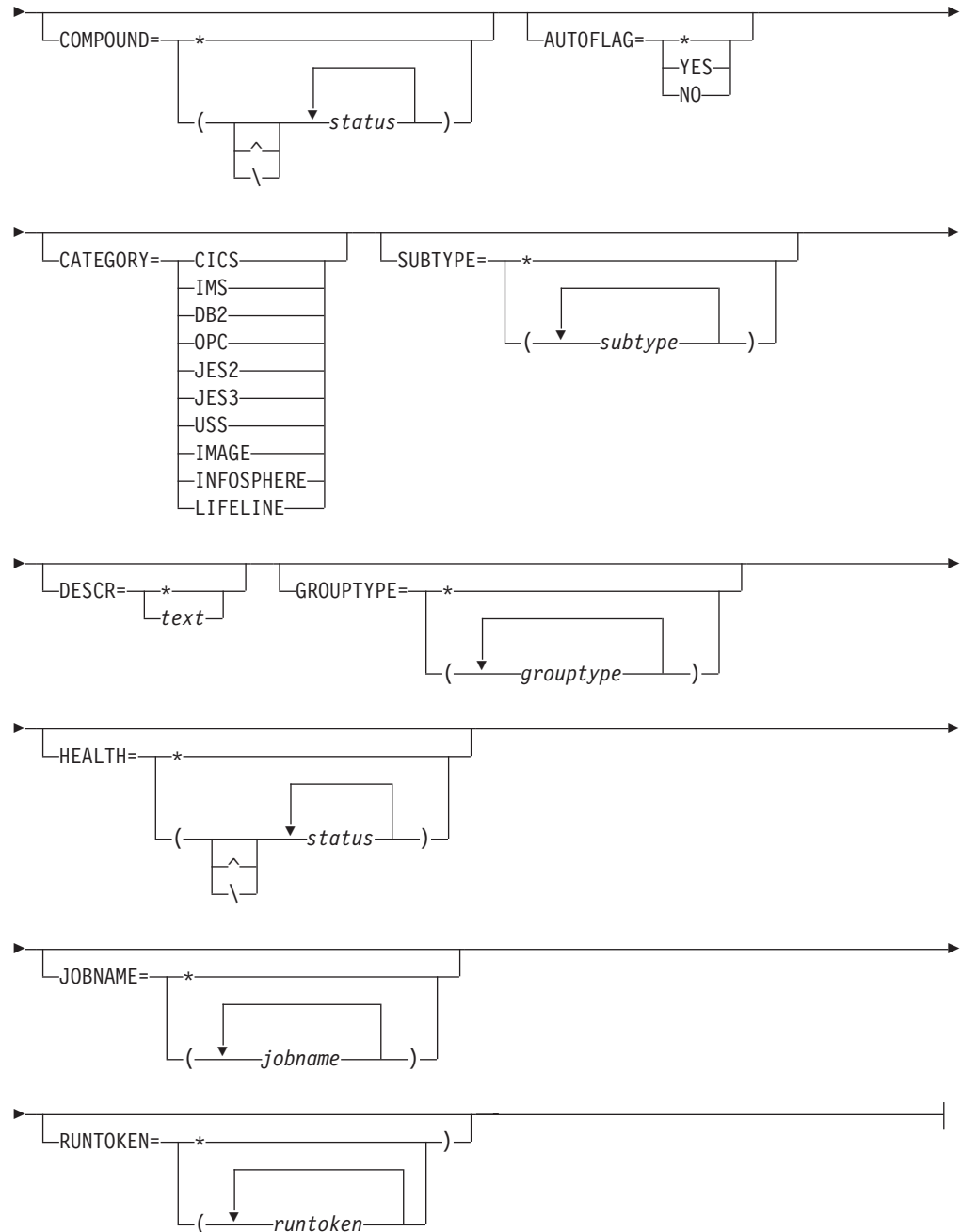
The INGLIST command displays details about one or more resources.

Syntax



filter criteria:





Parameters

NETVASIS

Prefix the INGLIST command with NETVASIS if you want to pass the description text in lower or mixed case.

resource

Specifies the name of the resources to be displayed. The format is *name/type[system]*. It can be a list of names. The resource names must be separated by a blank. Asterisks (*) and a percentage sign (%) can be used as wildcard characters.

filter criteria

The filter criteria to be applied prior to displaying the data. See also "INGFILT" on page 119 for further information. The following values can occur:

OBSERVED

Specifies the observed statuses to be displayed. The statuses must be separated by a blank. It can be abbreviated, for example, to AV for available. If '^' or '\' is used, all statuses except the ones you specify are displayed. If an asterisk (*) is specified, the filter is reset (the filter previously set by the INGFILT command).

DESIRED

Specifies the desired statuses to be displayed. The statuses must be separated by a blank. It can be abbreviated, for example, to AV for available. If '^' or '\' is used, all statuses except the ones you specify are displayed. If an asterisk (*) is specified, the filter is reset (the filter previously set by the INGFILT command).

AUTOSTAT

Specifies the automation status to be displayed. The statuses must be separated by a blank. It can be abbreviated, for example, to ID for idle. If '^' or '\' is used, all statuses except the ones you specify are displayed. If an asterisk (*) is specified, the filter is reset (the filter previously set by the INGFILT command).

COMPOUND

Specifies the compound status. The statuses must be separated by a blank. It can be abbreviated, for example, to SA for satisfactory. If '^' or '\' is used, all statuses except the ones you specify are displayed. If an asterisk (*) is specified, the filter is reset (the filter previously set by the INGFILT command).

AUTOFLAG

Specifies the automation flag to be displayed. It can be either YES or NO and can be abbreviated. If an asterisk (*) is specified, the filter is reset (the filter previously set by the INGFILT command).

CATEGORY

Specifies the category that the resource belongs to. More than one value can be specified. If an asterisk (*) is specified, the filter is reset (the filter previously set by the INGFILT command).

SUBTYPE

Specifies the subtype of the resource. More than one value can be specified. The subtype can contain wildcard characters. An asterisk (*) matches a string of arbitrary length and a percentage sign (%) matches a single character. If an asterisk (*) is specified, the filter is reset (the filter previously set by the INGFILT command).

DESCR

Specifies the text string used as a filter. The text can contain wildcards. An asterisk (*) matches a string of arbitrary length and a percentage sign (%) matches a single character. The DESCR parameter is case-sensitive. The text string must be enclosed in single or double quotation marks or parentheses() to maintain the case-sensitivity of the entry. If an asterisk (*) is specified, the filter is reset (the filter previously set by the INGFILT command).

GROUPTYPE

Specifies the type (nature) of the resource group. More than one value can be specified. If an asterisk (*) is specified, the filter is reset (the filter previously set by the INGFLT command).

HEALTH

Specifies the desired health statuses to be displayed. The statuses must be separated by a blank. It can be abbreviated, for example, to NO for normal. You can also specify an asterisk (*) to reset the current filter setting, for example, INGFLT HEALTH=*. If '^' or '\' is used, all statuses except the ones you specify are displayed.

JOBNAME

The jobname assigned to the resource. More than one jobname can be specified. Wildcards are supported. If an asterisk (*) is specified, the filter is reset (the filter previously set by the INGFLT command).

RUNTOKEN

The runtoken assigned to the resource. More than one runtoken can be specified. Wildcards are supported. If an asterisk (*) is specified, the filter is reset (the filter previously set by the INGFLT command).

For further information about statuses, see *IBM Tivoli System Automation for z/OS User's Guide*.

TARGET

For information on the TARGET parameter, see "TARGET Parameter" on page 10.

OUTDSN

For information on the OUTDSN parameter, see "OUTDSN Parameter" on page 13. Note, however, that for the INGLIST command the minimum record length of the output data set is 256 bytes.

OUTMODE

For information on the OUTMODE parameter, see "OUTMODE Parameter" on page 12.

WAIT

Specifies the number of seconds to wait before reporting that a timeout occurred if the automation manager does not provide the requested data. The maximum time interval is 999 seconds.

If omitted, the time interval is 30 seconds.

MEMBERS

Displays the members of resource groups that match the filter criteria. The only valid specification is YES. MEMBERS=NO is accepted but does not have any meaning.

Note: When specifying MEMBERS=YES only one resource name can be specified and it must be fully specified.

Restrictions and Limitations

None.

Usage

The INGLIST command operates sysplexwide. For an overview see “Overview of Commands that Operate Sysplexwide” on page 9.

Examples

If you enter `inglist`, you will see information about all automated resources, as shown in Figure 56.

```

INGKYST0          SA z/OS - Command Dialogs          Line 1 of 383
Domain ID = IPSNO ----- INGLIST -----          Date = 11/23/09
Operator ID = NETOP1          Sysplex = KEY1PLEX          Time = 17:27:19
A Update B Start C Stop D INGRELS E INGVOTE F INGINFO G Members
H DISPTRG I INGSCHED J INGGROUP K INGCICS L INGIMS M DISPTR T INGTWS
U User X INGLKUP / scroll

CMD Name          Type System          Compound          Desired          Observed          Nature
-----
- ALLOCAS          APL KEY1          INHIBITED          AVAILABLE          UNKNOWN
- ALLOCAS          APL KEY2          INHIBITED          AVAILABLE          UNKNOWN
- ALLOCAS          APL KEY3          SATISFACTORY          AVAILABLE          AVAILABLE
- ALLOCAS          APL KEY4          INHIBITED          AVAILABLE          UNKNOWN
- AMCP             APL KEY1          INHIBITED          AVAILABLE          UNKNOWN
- AMCP             APL KEY2          INHIBITED          AVAILABLE          UNKNOWN
- AMCP             APL KEY3          PROBLEM             AVAILABLE          HARDDOWN
- AMCP             APL KEY4          INHIBITED          AVAILABLE          UNKNOWN
- ANTMAIN          APL KEY1          INHIBITED          AVAILABLE          UNKNOWN
- ANTMAIN          APL KEY2          INHIBITED          AVAILABLE          UNKNOWN
- ANTMAIN          APL KEY3          SATISFACTORY          AVAILABLE          AVAILABLE
- ANTMAIN          APL KEY4          INHIBITED          AVAILABLE          UNKNOWN
- AOCAPPL          APL KEY1          INHIBITED          AVAILABLE          UNKNOWN

Command ==>
PF1=Help  PF2=End    PF3=Return  PF4=DISPSTAT  PF5=Filters  PF6=Roll
          PF8=Forward  PF9=Refresh PF10=Previous PF11=Next    PF12=Retrieve

```

Figure 56. INGLIST Command Dialog Panel

The amount of data depends on the screen size. Press PF10/11 to scroll horizontally.

Use the PF5 key to restrict the list of resources to be displayed. This causes the INGfilt panel to be displayed, where you specify the filter criteria to be used for the display.

You can use the PF4 key to toggle to the DISPSTAT panel to view the same resources, but now from the automation agent viewpoint. To return to the INGLIST panel press the PF3 key on the DISPSTAT panel. Note that pressing PF4 on the DISPSTAT panel displays the INGLIST panel for all resources shown in the DISPSTAT panel. However, this might not be the same as the original INGLIST display because the DISPSTAT display might be modified due to filtering or suppressing of resources that the automation agent does not handle, such as application groups.

This panel displays the following information:

- The **CMD** field lets you specify command codes. To use one of the command codes shown, type the appropriate letter next to the resource name and press Enter. The following command codes are available:
 - A** Resets the status of the resource or application group (observed status, automation status). Sets or resets attributes that are assigned to the resource.

The automation agent status can also be updated if you enter this command code. See “Setting the Status or Attribute of a Resource or Application Group” on page 151.

- B** Start. Calls the INGREQ command dialog to make the resource available. See “INGREQ” on page 197 for further information.
- C** Stop. Calls the INGREQ command dialog to make the resource unavailable. See “INGREQ” on page 197 for further information.
- D** Displays dependency information and its evaluation for the resource.
- E** Invokes the INGVOTE command, showing all requests currently present for the resource. Allows the operator to cancel a request.
- F** Shows details about the resource by invoking the INGINFO command.
- G** Shows all members for the selected application group or processor in a new window.
- H** Invokes the DISPTRG command to show the trigger definitions for the selected resource.
- I** Invokes the INGSCHED command to show the resource overrides for the selected resource.
- J** Invokes the INGGROUP ACTION=MEMBERS command to show member details.
- K** Invokes the INGCICS command using the selected resource.
- L** Invokes the INGIMS command using selected resource.
- M** Invokes the DISPMTR command to show the monitors that have been defined for the selected resource.
- T** Invokes the INGTWS command using selected resource.
- U** Invokes the AOFEXC04 user exit if it has been installed.
- X** Invokes the INGKLUP REQ=ANALYSE command. The X character examines the automation manager and automation agent for the selected resource to provide information about why the resource could not be brought into the desired state. The display lists all of the potential problems that might stop that action from succeeding. The display simply shows the resources concerned and a note of the potential problems that have been detected with them.

- The **Name** field shows the name of the resource.
- The **Type** field shows the type of the resource.
- The **System** field shows where the resource is defined.
- The **Compound** field shows the compound status of the resource. This is a summary of all statuses of the resource and provides a single value to check the status of a resource.
- The **Desired** field shows the status that the automation manager is trying to move the resource to. It can either be available or unavailable.
- The **Nature** field applies to group resources only and defines the type of the group. It can have the following values:

BASIC

Indicates that the group contains a number of different resources, all of which perform different roles to constitute a complete application.

MOVE

Indicates that the group contains alternate instances of the same resource.

SERVER

Indicates that the group contains a number of readily interchangeable resources. The group has a target that tells the automation manager how many of them should be made available for the group to be available.

- The **Automation** field shows the status representing the automation agents' automation for the resource.
- The **Startable** field indicates whether or not it is possible to start the resource if the automation manager is asked to do so at this point in time.
- The **Health** field shows the health status of the resource.
- The **Auto** field shows the automation flag that is maintained by the automation manager. No automation is performed for the resource by the automation manager if the flag is off.
- The **Hold** field shows the hold flag that is maintained by the automation manager.
- The **Description** field shows descriptive information about the resource.
- The **Starttype** field shows the preset start type to be used the next time the resource is made available (started). This value is set by INGSET and will override any TYPE value specified (or defaulted) on the next INGREQ start request.
- The **Stoptype** field shows the preset stop type to be used the next time the resource is made unavailable (shutdown). This value is set by INGSET and will override any TYPE value specified (or defaulted) on the next INGREQ stop request. However, a stop type of FORCE, wherever specified, will always be honored.
- The **Trigger** field shows the trigger that is associated with the resource.
- The **Schedule** field shows the schedule (service period) that the resource is linked to.
- The **Category** field shows the category of the resource, such as CICS, DB2, or IMS.
- The **Subtype** field shows the subtype of the resource. This applies to resources of category CICS, DB2, IMS, INFOSHERE, LIFELINE and OPC.
- The **Jobname** field shows the job name assigned to the resource.
- The **Qual** field indicates how a resource qualifies for the current runmode. There are three indicators:
 - G** Resource qualifies because it is in one or more groups that qualify.
 - R** Resource qualifies because it was explicitly added via the INGRUN command.
 - T** Resource qualifies because of its runtokens

Different colors are used to indicate when a particular status is regarded as abnormal:

- A desired status of UNAVAILABLE is shown in blue.
- A compound status of PROBLEM is shown in red, DENIED and INHIBITED are shown in pink, while a compound status of DEGRADED is shown in yellow.
- An observed status of HARDDOWN or PROBLEM is shown in red, while an observed status that is not in line with the desired status is shown in yellow.

Additionally you can use the following command codes:

- The slash character (/) to make the selected line the first line of the display.

The SORT, FIND, and RFIND subcommands are supported. See “Varying the Format of the Command Output” on page 13 for information.

Setting the Status or Attribute of a Resource or Application Group

If you enter command code A for a resource, a panel similar to Figure 57 is displayed.

```

INGKYST1          SA z/OS - Command Dialogs
Domain ID = IPUFP  ----- INGLIST -----   Date = 04/08/05
Operator ID = NETOP1      Sysplex = KEY1PLEX   Time = 17:25:08

Resource . . . : AM/APL/KEY4
Description. . . : Primary Automation Manager

Action to be performed ==>  ___                current setting
1. Set START Type  _____
   Parm            _____
2. Set STOP Type   _____
   Parm            _____
3. Set Automation Flag NO                YES
4. Set Hold Flag  YES                    NO
5. Set Group failed flag  ___ (Yes or No)
6. Set Observed Status  _____          AVAILABLE
7. Set Automation Status _____          IDLE
8. Set Agent Status    _____          UP

Command ==>
PF1=Help    PF2=End    PF3=Return                PF6=Ro11
                                           PF12=Retrieve

```

Figure 57. INGLIST Command Dialog Panel To Update Status

Use this panel to update the observed or automation status of the selected resource, or to modify other resource settings. In detail, you can:

- Set the start or stop type to be used the next time
- Turn on or off the automation flag
- Turn on or off the hold flag
- Turn on or off the group failed flag
- Update the observed status
- Update the automation status
- Update the agent status

Fill in the following fields:

Action

This identifies what to update. This is a one-digit numeric character ranging from 1 to 8. Depending on the specified action, fill out the appropriate field.

START type

Specify the new start type if action 1 is entered. Specify a question mark (?) to see a list of defined startup types. To reset the start type to its default, specify NORM.

INGLIST

STOP type

Specify the new stop type if action 2 is entered. Valid shutdown types are NORM, IMMED and FORCE. To reset the stop type to its default, specify NORM.

Group failed flag

Specify YES or NO if action 5 is entered.

Observed Status

Specify the new observed status if action 6 is entered. You can abbreviate the observed status, for example, you can enter AV for available. Valid observed statuses are: SYSGONE, SOFTDOWN, HARDDOWN, STARTING, AVAILABLE, DEGRADED, PROBLEM, STOPPING, WASAVAILable and UNKNOWN.

Automation Status

Specify the new automation status if action 7 is entered. You can abbreviate the automation status. Valid automation statuses are: IDLE, INTERNAL, BUSY, DENIED, PROBLEM and UNKNOWN.

Agent status

Specify the automation agent status if action 8 is entered. The agent status can be one of the following: CTLDOWN, RESTART, UP, MOVED, AUTODOWN or ENDED.

Setting the Hold flag to YES will only be granted if:

- The resource is down, that is, its observed status is either HardDown, SoftDown, SysGone or Unknown.
- The automation manager is not in the process of starting the resource.

INGLKUP

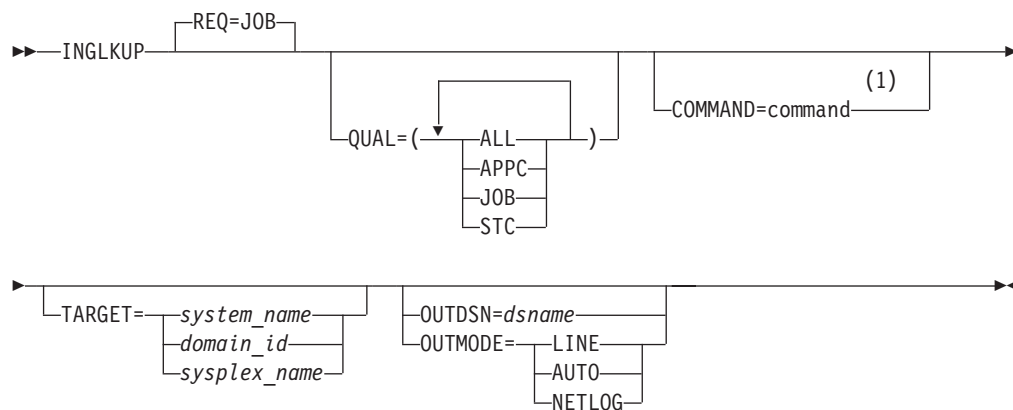
Purpose

INGLKUP has three purposes:

1. The INGLKUP command lets you display all jobs that are not controlled by SA z/OS. You can either stop, cancel or force those jobs with the corresponding MVS command.
You can list all active jobs, started tasks (STCs), and APPC/MVS transaction programs. You can define an exclude list to tailor the list that is displayed.
2. The INGLKUP command can also be used to obtain diagnostic information about a particular resource if you want to perform debugging.
3. The INGLKUP command queries the automation manager and the various agents for the reasons why the resource concerned could not be brought into the desired status.

Syntax

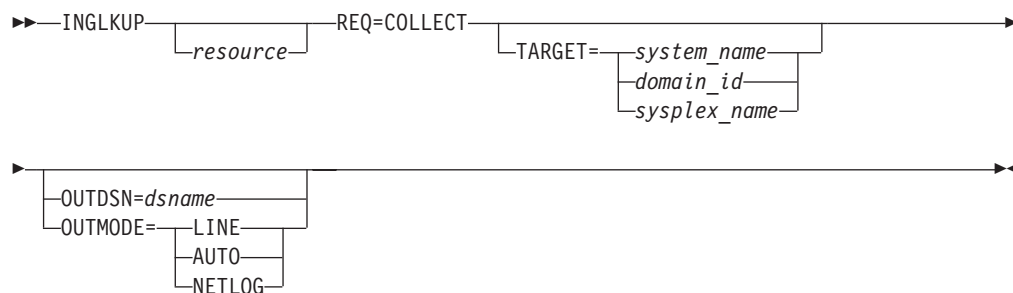
1. Syntax for JOB display



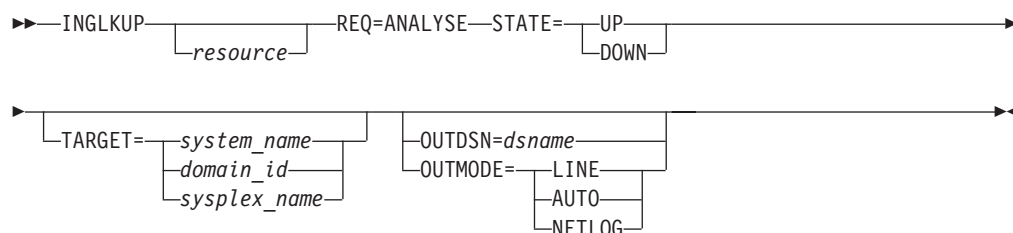
Notes:

1 Line Mode only

2. Syntax for diagnostic display



3. Syntax for analyse function



Parameters

REQ

Specifies the type of request to be performed.

JOB Displays all jobs, started tasks, and APPC/MVS transaction programs that are not controlled by SA z/OS. Note that the term JOB includes batch jobs, started tasks, and APPC/MVS programs.

COLLECT

Causes diagnostic information to be displayed in the netlog if OUTDSN is not specified.

INGLKUP

ANALYSE

Reports possible reasons why the resource concerned could not be brought into the desired state.

resource

Specifies the name of the resource to be processed. The format is name{/type{/system}}. Wildcard is supported. If more than one resource matches the wildcard specification, a selection panel is displayed.

A resource specification is only valid when REQ=COLLECT.

QUAL

Specifies the type of "job" to be displayed. QUAL can be ALL, JOB, STC, or APPC. The default is ALL. You can specify more than one qualifier by enclosing the qualifiers in parentheses.

COMMAND

Specifies the command to be issued in order to terminate the jobs/started tasks (STC). Valid entries are STOP, CANCEL or FORCE. These commands may be abbreviated. This parameter is used with Line Mode only.

STATE

Specifies the state the resource should be in:

UP Resource is available.

DOWN

Resource is in a "DOWN" state.

TARGET

For information on the TARGET parameter, see "TARGET Parameter" on page 10.

OUTDSN

For information on the OUTDSN parameter, see "OUTDSN Parameter" on page 13. The record length must be at least 80 bytes if a resource is specified or 256 bytes if no resource is specified.

OUTMODE

For information on the OUTMODE parameter, see "OUTMODE Parameter" on page 12.

Restrictions and Limitations

INGLKUP may display subsystem address spaces if the subsystems are NON-MVS subsystems but are represented by an MVS address space. This occurs, for example, in the case of the IMS PPI dependent region.

Usage

1. Exclude List for REQ=JOB: An exclude list may be built using User Entry Type (UET) pairs. The exclude list allows the Automation Administrator to reduce the list of active jobs that are shown when REQ=JOB.

The UET data is specified in the policy database as follows:

Entry INGLKUP

Type EXCLUDE

Keyword/Data

JOB

Data Is JOB=*jobname* (where *jobname* specifies the JOB or STC to be

excluded from the display). Wildcard is supported in *jobname*. For more information, refer to *IBM Tivoli System Automation for z/OS Defining Automation Policy*.

2. Output for REQ=COLLECT: If you specify a resource name with REQ=COLLECT, the output from the following commands is collected:

- INGINFO
- INGRELS
- INGSCHED
- DISPAPG (for APG resources only)
- DISPINFO
- DISPMTR (for MTR resources only)
- DISPTRG

If you do not specify a resource name with REQ=COLLECT, the output from the following commands is collected:

- INGLIST
- INGSESS
- DISPMTR
- DISPSTAT

Whether you specify a resource name or not, output from the following commands is always displayed with REQ=COLLECT:

- INGAMS
- INGHIST
- INGVOTE

Examples

If you specify `inglkup` and cancel a job with command code C, a panel similar to Figure 58 is displayed.

```

INGKYL00                SA z/OS - Command Dialogs          Line 1   of 24
Domain ID   = IPSFP    ----- INGLKUP -----          Date = 04/12/12
Operator ID = NETOP1   System = KEY4                    Time = 14:36:17

Cmd:  C cancel job      F force job      P stop job

Cmd Job      Step      Procedure Type ASID  System
-----
-  AMST      AMST      AMPROC   SO      KEY4
-  AMST2     AMST2     AMPROC   SO      KEY4
-  APPC      APPC      APPC     S       KEY4
-  ASCH      ASCH      ASCH     S       KEY4
-  BTS0      BTS0      AAAZSSEM S       KEY4      ** CANCELLED **
-  CU12      STEP1     CU12     AO      0049  KEY4
-  CU12      STEP1     CU12     AO      005A  KEY4
-  CU129     STEP1     CU12     AO      KEY4
-  FTPD1     STEP1     FTPOE    AO      KEY4
-  FTPOE1    STEP1     FTPOE    AO      KEY4

Command ==>
PF1=Help      PF2=End      PF3=Return   PF6=Ro11
                PF8=Forward  PF9=Refresh  PF12=Retrieve

```

Figure 58. INGLKUP Command Dialog Panel

INGLKUP

This panel displays all active jobs, started tasks (STC) and APPC/MVS transaction programs that are not controlled by SA z/OS. You can either stop or cancel or even force the job (or jobs).

For each job the following information is shown:

- The **Cmd** field lets you specify the command codes shown on the panel. Type the appropriate letter next to the job name and press Enter. The following command codes are available:
 - C** Cancel the job.
 - F** Force the job.
 - P** Stop the job.
- The **Job** field shows the job name.
- The **Step** field the step name.
- The **Procedure** field shows the procedure step name.
- The **Type** field shows the job type.
- The **ASID** field shows the address space ID (this is only present if the job name is not unique).
- The **System** field shows the name of the system that the job is running on.

The SORT, FIND, and RFIND subcommands are supported. See “Varying the Format of the Command Output” on page 13 for information.

If you specify REQ=ANALYSE for the INGLKUP command, the following panel is displayed:

Figure 59. INGLKUP Command Dialog Panel for the ANALYSE Option

```
INGKYL2                SA z/OS - Command Dialogs                Line
Domain ID = IPUNA      ----- INGLKUP -----                Date = 12/14/11
Operator ID = OPER1    Sysplex = AOCAPLEX                    Time = 14:13:25

Resource => PMTRB3/MTR/AOC5                Examined State ==> UP
Target   =>                               System name, domain ID or sysplex name

Name      Type System   Cat  Problem
-----
PMTRB3    MTR  AOC5    Pot  AM Observed status is UNKNOWN
PMTRB3    MTR  AOC5    Pot  AM Automation status is UNKNOWN
PAPLMTRA  APL  AOC5    Pot  AM Observed status is UNKNOWN
PAPLMTRA  APL  AOC5    Pot  AM Automation status is UNKNOWN
PAPLMTRB  APL  AOC5    Pot  AM Observed status is UNKNOWN
PAPLMTRB  APL  AOC5    Pot  AM Automation status is UNKNOWN

Command ==>
PF1=Help   PF2=End       PF3=Return   PF6=Ro11
           PF9=Refresh                PF12=Retrieve
```

INGMDFY

Purpose

The INGMDFY command displays the defined actions for the startup or shutdown of a subsystem that are currently loaded and allows you to modify them for the next startup or shutdown.

INGMDFY also allows you to define additional actions or to delete defined actions for the startup or shutdown of a subsystem.

Syntax

```

  >>—INGMDFY—subsystem—phase—>>
           |
           |—jobname—|
  
```

Parameters

subsystem

The name of the subsystem that the defined actions are to be displayed for.

jobname

The job name of the subsystem that the defined actions are to be displayed for.

phase

This parameter is used to specify whether startup or shutdown actions are to be displayed.

START

Startup actions are to be displayed.

STOP

Shutdown actions are to be displayed.

Restrictions and Limitations

- The INGMDFY command can only be used when SA z/OS is initialized.
- The INGMDFY command is provided for fullscreen mode.
- To ensure consistency during the startup or shutdown process of an application, the save and reset functions are not applicable during startup or shutdown processing of the related application.
- Persistence of modifications:
 - NetView Recycle

Both the modified start/stop definitions in storage and the previously loaded ACF data in the KEEP are lost. At restart, SA z/OS initializes with the automation policy data from disk.
 - ACF COLD

Both the modified start/stop definitions in storage and the previously loaded ACF data in the KEEP are lost. The ACF data is reloaded from disk.
 - ACF SAVE

Saves the currently loaded, modified ACF data using the NetView SAVE facility. When restoring the saved data via ACF WARM, an existing KEEP is deleted.
 - Configuration Refresh

If the configuration data for a subsystem has been changed in the automation policy, both the modified start/stop definitions in storage and the previously loaded ACF data in the KEEP are lost during the configuration refresh. The new ACF data is loaded from disk.
 - Temporarily Changing ACF Data with ACF REQ=REPL

When using ACF REQ=REPL, only the currently loaded ACF data is modified. An existing KEEP remains untouched so that previously loaded ACF data is restored after the next start/stop or after INGMDFY expires.

Usage

INGMDFY also displays default startup commands if no startup commands are defined for applications with a job type other than NONMVS and they can be modified.

Examples

If you enter INGMDFY followed by a subsystem name and START or STOP, a panel similar to Figure 60 is displayed.

```

AOFKEDSS          SA z/OS - Command Dialogs          Line 1 of 15
Domain ID = IPSNO ----- INGMDFY ----- Date = 02/13/07
Operator ID = NETOP1          Sysplex = KEY1PLEX          Time = 20:55:00

Subsystem = VTAM          Category =          Extstop = NEVER          Modified = No
                          Subtype =          Jobtype = MVS
Cmd: S Select C Define Command R Define Reply
Cmd Phase/Pass AF/Retry Command Text/Reply Text
-----
  SHUTINIT
-  _____ NETOPER MVS D NET,BFRUSE
-----
  SHUTNORM
  PASS1          _____ MVS Z NET,QUICK
  PASS2          _____ MVS Z NET,CANCEL
-----
  SHUTIMMED
  PASS1          _____ MVS Z NET,CANCEL
-----

Command ==>
PF1=Help PF2=End PF3=Return PF4=Reset PF5=Save Changes PF6=Ro11
PF8=Forward PF12=Retrieve

```

Figure 60. INGMDFY Command Dialog Panel

Use the command code S or C to overwrite the command definition of a selected row in another panel or to define a new command for an empty row.

Use the command code S or R to overwrite the reply definition of a selected row in another panel or to define a new reply in an empty row.

Only one command code can be issued at a time.

Additionally you can use the slash character (/) to make the selected line the first line of the display.

When overwriting the displayed data, the changes are at first accumulated in storage, until PF5 is used to save the changes. Thereafter the previously loaded configuration definitions are saved and the changed definitions are loaded into storage. The changed definitions are used for the next startup or shutdown of the application.

After the changed definitions have been used to start up or shut down an application, the changes are discarded and the saved configuration data is restored into storage to be used for further startups or shutdowns of the application.

The Modified flag indicates that changed startup or shutdown definitions have been loaded into storage.

PF7/PF8 lets you scroll forward and backward if more than one screen is needed to display the data.

PF10/PF11 lets you shift right and left if the defined action is longer than the screen width.

For further details about the fields on the panel, see the online help and *IBM Tivoli System Automation for z/OS Defining Automation Policy*.

INGMOVE

Purpose

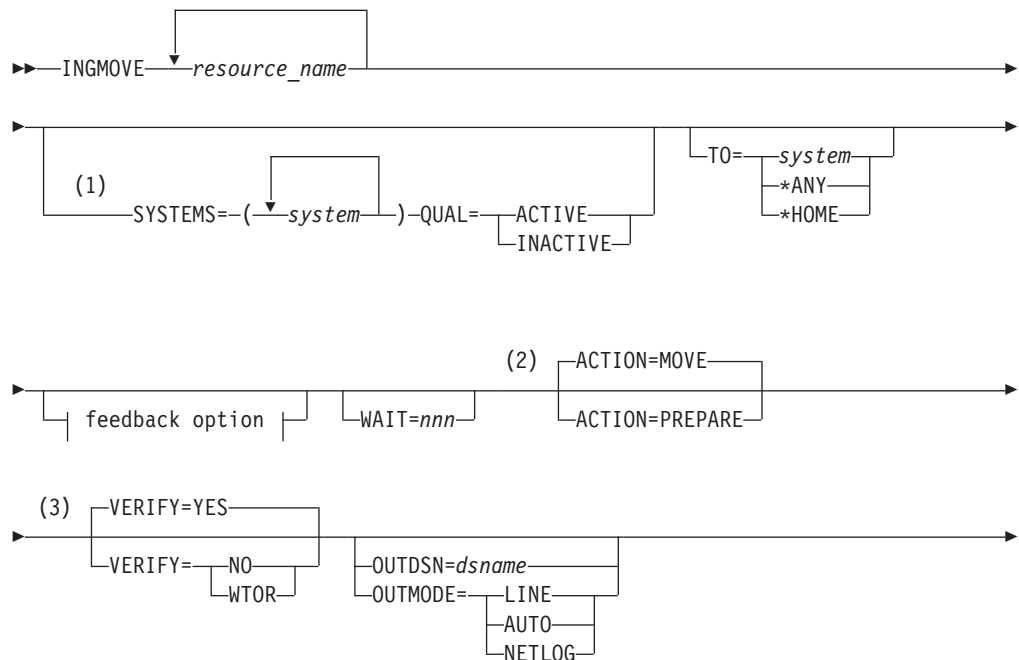
INGMOVE makes moving sysplex application groups easier. Rather than manipulating the preference value of each member in the sysplex application group, you simply specify where the group should be moved to.

In a sysplex application group of type MOVE only one member is active at a time. By specifying the new location of the move group, the active member is terminated and the member associated with the new location is activated.

INGMOVE supports the moving of a sysplex application group to another system.

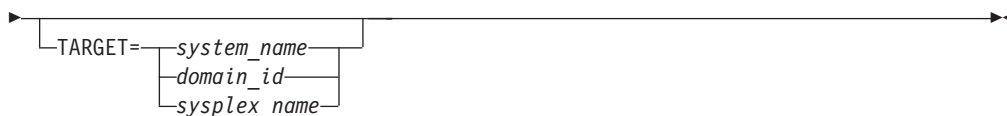
Syntax

To move sysplex application groups

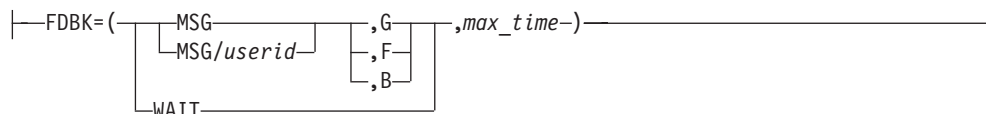


I

INGMOVE



Feedback option:



Notes:

- 1 Cannot be used in line mode.
- 2 Can only be used in line mode.
- 3 The default depends on the type of task that the INGMOVE command runs on. If the task that the command runs on, is an autotask associated with a *ANY* console, the default is WTOR. The default for an unattended task is NO.

Parameters

resource_name

Specifies the name of the sysplex application group. More than one name can be specified, separated by a blank or a comma. Each name can contain a wildcard.

If no group name is specified, all sysplex application groups of type MOVE are displayed.

WAIT

Specifies the number of seconds to wait before reporting that a timeout occurred if the automation manager does not provide the requested data. The maximum time interval is 999 seconds.

If omitted, the time interval is 30 seconds.

TO Specifies the system that the application group should be moved to.

Alternatively, *ANY can be specified. This causes the application to be moved to any other viable system in the sysplex. In the background, an INGGROUP ACTION=EXCLUDE is done. The advantage of this, however, is that the INGMOVE command checks for the successful completion of the move operation within the allowed time interval.

FDBK

Specifies the feedback parameter that causes the final result of the command to be reported back to the designated instance.

MSG Causes message signaling of the successful or unsuccessful completion of the command to be performed.

The message is sent back to the originator of the command. The originator is determined by the NetView OPID(S) function unless the

user ID is specified. Depending on the status, either message ING300I or ING301I is issued. The message text contains the command that was processed successfully or failed.

userid

Identifies the NetView user ID of the person to be notified if different to the originating user.

Use the following values to specify when to issue the message:

- G** Issue the message only when the resource has reached its expected status.
- F** Issue the message only if the resource did not reach its expected state in the specified time interval.
- B** Issue the message in all cases.

WAIT To wait for the completion of the command (denoted by the *max_time* parameter). Note that the WAIT option is rejected when the INGMOVE command executes on a work operator.

max_time

The time interval in NetView format (mm:ss, :ss, mm or hh:mm:ss) that SA z/OS will wait. If the specified resource has not reached the expected state, the command is considered to have failed and the operation is posted in error.

SYSTEMS

Specifies a list of systems to be used as a filter. Only groups that can run on one of the specified systems are displayed. If more than one system is specified, they must be separated by a blank character and enclosed in parentheses. The SYSTEMS parameter cannot be used in line mode.

QUAL

Specifies a qualifier for the SYSTEMS filter. It can be one of the following:

ACTIVE

Shows only those groups that are running on one of the systems specified with the SYSTEMS parameter.

INACTIVE

Shows only those groups that are not running on one of the systems specified with the SYSTEMS parameter.

The QUAL parameter cannot be used in line mode.

ACTION

Specifies when the action is to be done. Valid values are:

MOVE

Perform the move immediately. This is the default.

PREPARE

Perform the move at the next recycle.

VERIFY

Specifies whether the operator is prompted for confirmation prior to carrying out the requested action. The default depends on the type of task that the INGMOVE command runs on. It is NO for Unattended tasks, otherwise YES.

YES Asks the operator for confirmation.

NO No verification is performed. This setting is always for Unattended tasks.

INGMOVE

WTOR

The list of affected resources is displayed before the requested action is carried out. The operator is prompted to verify the list via WTOR.

The default depends on the type of task that the INGMOVE command runs on. If the task the command runs on is an autotask associated with a *ANY* console, the default is WTOR. The default for an unattended task is NO.

TARGET

For information on the TARGET parameter, see "TARGET Parameter" on page 10.

OUTDSN

For information on the OUTDSN parameter, see "OUTDSN Parameter" on page 13.

OUTMODE

For information on the OUTMODE parameter, see "OUTMODE Parameter" on page 12.

Restrictions and Limitations

The FDBK parameter will only monitor resources within the local sysplex.

Examples

If you enter ingmove a panel similar to Figure 61 is displayed.

INGKYMV0		SA z/OS - Command Dialogs				Group 1 of 7	
Domain ID = IPSNO		----- INGMOVE -----				Date = 11/23/09	
Operator ID = NETOP1		Sysplex = KEY1PLEX				Time = 13:08:38	
B Start	C Stop	D INGRELS	E INGVOTE	F INGINFO	G Members	I INGSCHED	
J INGGROUP	M Move	P Prepare	R Reset	X Box Group		/ scroll	
Cmd Group name	Obs Status	---- Systems ----					Move to
- ARMGROUP	SOFTDOWN	KEY1	KEY2	KEY3	KEY4		
		KEY5	KEY6	KEY7			
- MOVDISRN	AVAILABLE	KEY2	KEY4				*
- MOVDISRY	AVAILABLE	KEY2	KEY4				KEY2
- MOVPLEXA	AVAILABLE	KEY1	KEY2	KEY3	KEY4		KEY2
		KEY5	KEY6				
- MOVPLEXB	SOFTDOWN	KEY1	KEY2	KEY3	KEY4		
- MOVPLEXC	SOFTDOWN	KEY1	KEY2	KEY3	KEY4		
- MOVPLEXD	AVAILABLE	KEY1	KEY2	KEY3			=

Command ==>
 PF1=Help PF2=End PF3=Return PF6=Roll
 PF9=Refresh PF12=Retrieve

Figure 61. INGMOVE Command Dialog Panel

This panel shows all sysplex application groups of type MOVE (referred to as *move groups*) that match the specified filter criteria. The following information is shown:

- The **Group name** column shows the name of the move group. Because the move groups are unique within a sysplex, only the first part of the resource group name is shown.
- The **Obs Status** column shows the observed status of the move group as seen by the automation manager.
- The **Systems** columns show a list of the systems where a member of the MOVE group exists and could run. Different colors are used to indicate the state of the system or the member of the group that is running on that system, as follows:
 - Red if the system is down

- Yellow if the member of the group that is running on that system is not startable
- Green if a member of the group is currently active on that system
- Pink if the system is excluded
- White if the system is avoided
- Turquoise in all other cases

The *home* system, or systems, which are those that have the highest preference value, are underlined.

The system that has the highest actual preference is shown in reverse video, unless it is a home system. Note that this can be more than one system.

- The **Move to** column is an input field where you can specify the system that the group should be moved to. Moving a sysplex application move group means terminating the member that is currently active and starting the member on the designated system.

Initially, SA z/OS shows the best system to be used for a move operation in this field, based on the state of the group members and their preference points. The proposed system is shown in blue.

You can designate the system by specifying in the **Move to** field:

- The name of the system.
- An asterisk (*). This means that the group is moved back to its home system, which is the one with the highest base preference value. If more than one home system exists, it is moved to the first one in the list.
- An equals sign (=). This is a shorthand form that means to take the value from the nearest field above with a value specified in it.

You can enter the following action codes in the **Cmd** field to launch other commands:

- B** Start. Calls the INGREQ command dialog to make the resource available. See "INGREQ" on page 197 for further information.
- C** Stop. Calls the INGREQ command dialog to make the resource unavailable. See "INGREQ" on page 197 for further information.
- D** Invokes the INGRELS command to display dependency information and its evaluation for the resource.
- E** Invokes the INGVOTE command, showing all requests currently present for the resource. Allows the operator to cancel a request.
- F** Shows details about the resource by invoking the INGINFO command.
- G** Invokes the INGLIST MEMBERS=YES command to show all members for the selected application group in a new window.
- I** Invokes the INGSCHED command to show the resource overrides for the selected resource.
- J** Invokes the INGGROUP ACTION=MEMBERS command to show member details.
- M** Moves the group to the designated system.
- P** Moves the group to the designated system when the group is next recycled.
- R** Resets the preference values of the group members to the values that are defined in the policy database.

INGMOVE

- X *Boxes* the group. The member that is currently active acquires a preference of 2800 so that if the system is terminated the group will *not* move to another system.

You can use the / character to place the selected line as the first line of the display.

Note: This panel does not support the FIND and SORT subcommands.

If you specify one or more systems Figure 62 is displayed to ask you for confirmation.

```
INGKYMV1          SA z/OS - Command Dialogs      Line 1    of 3
Domain ID  = IPSNO  ----- INGMOVE -----      Date = 09/10/04
Operator ID = NETOP1                                Time = 12:23:25

Verify the Move Group activities

Group name  Runs on  Move to  Action
-----
MOVDISRN   AOCB    AOCB    now
MOVPLEXA   AOCA    AOCB    now
MOVPLEXB   AOCB    AOCB    at recycle
```

Figure 62. INGMOVE Confirmation Panel

For each group that is to be moved the panel shows:

- The name of the group
- The name of the system where the group is currently active
- The name of the system that the group should be moved to
- Descriptive information about the action

Specifying GO at the command line or pressing the PF10 key carries out the move operation. Specifying CANCEL at the command line or pressing the PF11 key returns you to the previous panel.

Note: Pressing PF2 or PF3 has the same behavior as PF11.

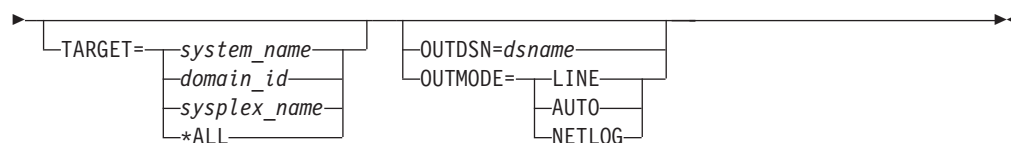
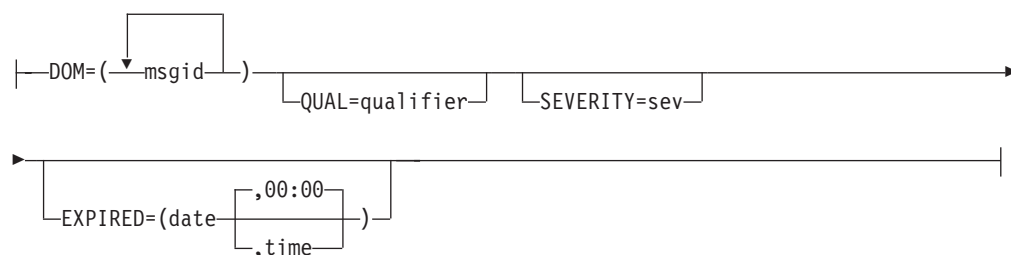
INGMSGSGS

Purpose

The INGMSGSGS command displays all important (that is, exceptional) messages that currently exist for a given system. The command is also used to delete exceptional messages.

Syntax



**delete options:****Parameters***resource_name*

An optional parameter used as a filter. Only exceptional messages that are associated with the specified resource are shown. The resource name can contain a wildcard. More than 1 resource name can be specified. If no resource name is specified, only messages that are not associated with a resource automated by SA z/OS are taken into account (MVSESA).

REQ

Specifies the type of request to be performed:

DISPLAY

Displays all exceptional messages for the resource. This is the default setting.

DELETE

Deletes the message(s) based on the delete settings:

DOM

Specifies one or more IDs of messages to be deleted. The message IDs must be separated by a blank character and enclosed in parenthesis or quotes if more than one message ID is specified. The message ID can contain wildcards.

QUAL

Specifies a qualifier that is used to identify the message in addition to its message ID.

SEVERITY

Specifies the severity of the message used as Filter Criteria. Valid entries are UNUSUAL, IMPORTANT and CRITICAL.

EXPIRED

Specifies the expiry date and time of the message. Any message that was issued prior to the specified timestamp will be deleted when also the other specified filter criteria match. The date format is yyyy-mm-dd and the time format is hh:mm. The time specification is optional.

TARGET

For information on the TARGET parameter, see "TARGET Parameter" on page 10.

OUTDSN

For information on the OUTDSN parameter, see "OUTDSN Parameter" on page 13.

OUTMODE

For information on the OUTMODE parameter, see "OUTMODE Parameter" on page 12.

Restrictions and Limitations

The INGMSGSGS command can only be used when SA z/OS has initialized.

A qualifier is not displayed when invoking INGMSGSGS in line mode.

Examples

If you enter ingmsgsgs a panel similar to Figure 63 is displayed.

```

INGKYMSG          SA z/OS - Command Dialogs          Line 1    of 26
Domain ID   = IPUFA          ----- INGMSGSGS -----   Date = 11/23/09
Operator ID = NETOP1        System = AOCA              Time = 17:16:48

CMD:  D Delete    F INGINFO/DISPSYS

CMD Timestamp      S Message
-----
- 2009-11-23 09:08:05 C SYSTEM=AOCA RESOURCE=HGSIPLALWY/APL/AOCA
                        AOF571I 09:08:05 : HGSIPLALWY SUBSYSTEM STATUS FOR JO
                        B HGSIPLA IS STOPPED - AT SYS-OPS RELOAD
- 2009-11-23 09:08:05 C SYSTEM=AOCA RESOURCE=APLC/APL/AOCA
                        AOF571I 09:08:05 : APLC SUBSYSTEM STATUS FOR JOB APLC
                        IS BROKEN - AT SYS-OPS RELOAD
- 2009-11-23 09:08:06 C SYSTEM=AOCA RESOURCE=HGSTRTIPL/APL/AOCA
                        AOF571I 09:08:06 : HGSTRTIPL SUBSYSTEM STATUS FOR JOB
                        HSTRTIPL IS STOPPED - AT SYS-OPS RELOAD
- 2009-11-23 09:08:06 U SYSTEM=AOCA RESOURCE=HGDDSEXC/APL/AOCA
                        AOF571I 09:08:06 : HGDDSEXC SUBSYSTEM STATUS FOR JOB
                        HGDDSEXC IS CTLDOWN - AT SYS-OPS RELOAD

Command ==>>
PF1=Help      PF2=End      PF3=Return          PF6=Ro11
               PF8=Forward  PF9=Refresh        PF12=Retrieve
    
```

Figure 63. INGMSGSGS Command Dialog Panel

This panel displays exceptional messages that have been captured by SA z/OS. An exceptional message is a message whose severity is either Unusual, Important or Critical. By default the messages are displayed in chronological order (the oldest message is shown at the top of the panel) but can be rearranged in any other order, for example, by severity with the SORT subcommand. The individual messages are colored depending on their severity. The color attribute is defined via SDF status definitions.

For each message the following information is shown:

- The **T**imestamp column shows the date and time when the message was captured.
- The **S** column shows the severity assigned to the message. It can be:
 - U** Unusual
 - I** Important

C Critical

- The **Message** column shows the message text, the system where the message was captured, the qualifier if present that is associated with the message and the name of the resource associated with the message. If no resource name is shown, the message is associated with the system.

You can enter the following action codes in the **Cmd** field to launch other commands:

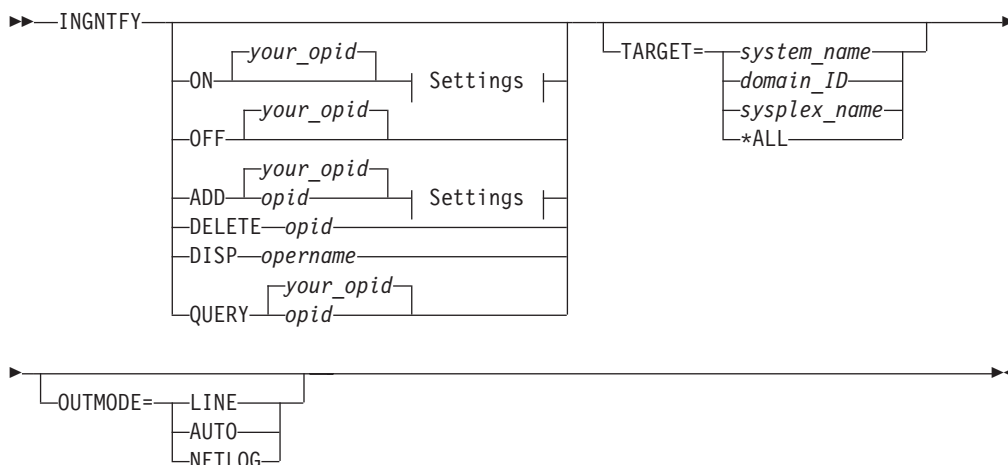
- D** Delete (DOM) the message. This also removes the message from any target it has been forwarded to (SDF, NMC, TEP).
- F** Shows details about the resource that is associated with the message by invoking the INGINFO or DISPSYS command.

INGNTFY

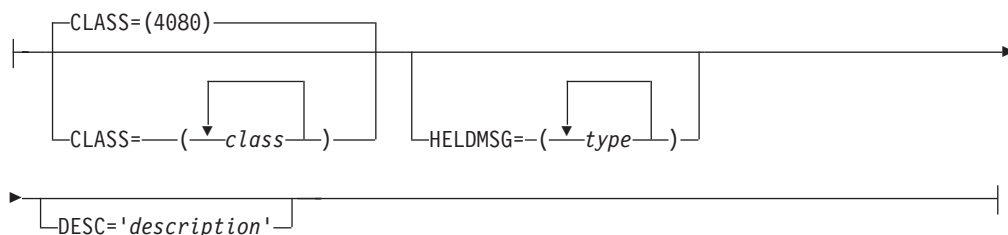
Purpose

INGNTFY allows you to add, change, delete, and display notification operator settings.

Syntax



Settings:



Parameters

- ON** Allows the operator who issues the command to receive notifications.

OFF

Turns off notifications for the operator who issues the command.

ADD

Adds the operator specified in *opid* to the list of notification operators, or changes the definition of the existing operator specified in *opid*.

Note: Use of the ADD function to change the definition of an existing operator completely deletes the old definition. It is necessary to re-specify all message classes and held message types that you want this operator to retain. This allows you to remove unwanted message classes and held message types from an existing operator.

DELETE

Removes the operator specified in *opid* from the list of notification operators.

DISP

Displays information about the operator that is specified in *opername*, which can also contain a wildcard, such as **abc*, *abc**, or **abc**.

QUERY

Displays information about the operator that is specified in *opid*.

opid

The ID of the operator to add, change, delete, or query.

your_opid

The ID of the operator issuing the command.

CLASS

The classes of messages the operator is to receive. See *IBM Tivoli System Automation for z/OS Messages and Codes* for information about which classes are valid. Up to ten comma-delimited classes, enclosed in parentheses, can be defined for an operator. The default classes are 40 and 80, unless defined otherwise in the automation control file.

DESC

An optional description of the operator. If the description contains blanks, commas, or other punctuation characters it must be enclosed in single quotation marks.

HELDMSG

The type or types of messages to hold on the operator's screen. If more than one type is specified, the types should be separated by commas and enclosed in parentheses. The types are:

Type Meaning

A	Immediate Action
D	Immediate Decision
E	Eventual Action
I	Information
W	System Wait

TARGET

For information on the TARGET parameter, see "TARGET Parameter" on page 10.

OUTMODE

For information on the OUTMODE parameter, see “OUTMODE Parameter” on page 12.

For further details of message types and message notifications, see *IBM Tivoli System Automation for z/OS Messages and Codes*.

Restrictions and Limitations

Any changes you make using the INGNTFY command are in effect only until the automation control file is reloaded.

The INGNTFY command can only be used when SA z/OS is initialized.

Examples

To turn your messages off, enter `ingntfy off`

To add notification operator Jim, assign him all messages in class 43, and hold Immediate Action type messages on his screen, enter:

```
ingntfy add jim class=43 heldmsg=a
```

If no parameter is specified in the INGNTFY command, a panel similar to Figure 64 is displayed.

AOFKAANT		SA z/OS - Command Dialogs		Line 1 of 6			
Domain ID = IPUN8		----- INGNTFY -----		Date = 06/19/09			
Operator ID = NETOP1				Time = 20:12:52			
Cmd: A Add C Show/Change settings D Delete O Turn OFF msg receiving							
Cmd	Operator	System	Log	Rcv	Description	Classes	
---	-----	---	---	---	-----	-----	
-	AUTNOTI1	AOC8	Y	N	MSG AOP	40 80	
-	DON	AOC8	Y	N	DON JONES	40	
-	GIS	AOC8	Y	Y	GISELA STUART	80	
-	MIK	AOC8	Y	Y	MIK SMITH	60	
-	NOTI1	AOC8	N	Y		40 41 42 43 44	
-	NOTI2	AOC8	N	Y		80 81 82	
Command ==>							
PF1=Help		PF2=End		PF3=Return		PF6=Roll	
				PF9=Refresh		PF12=Retrieve	

Figure 64. INGNTFY Command Dialog Panel

- The **Cmd** field lets you specify the command codes shown on the panel. Type the appropriate letter next to the resource name and press Enter. The following command codes are available:

- A** Add a notification operator using the settings of the selected operator.
- C** Show or change the settings for the selected operator.
- D** Delete the notification operator.
- O** Turn off message receiving for the selected notification operator.

INGNTFY

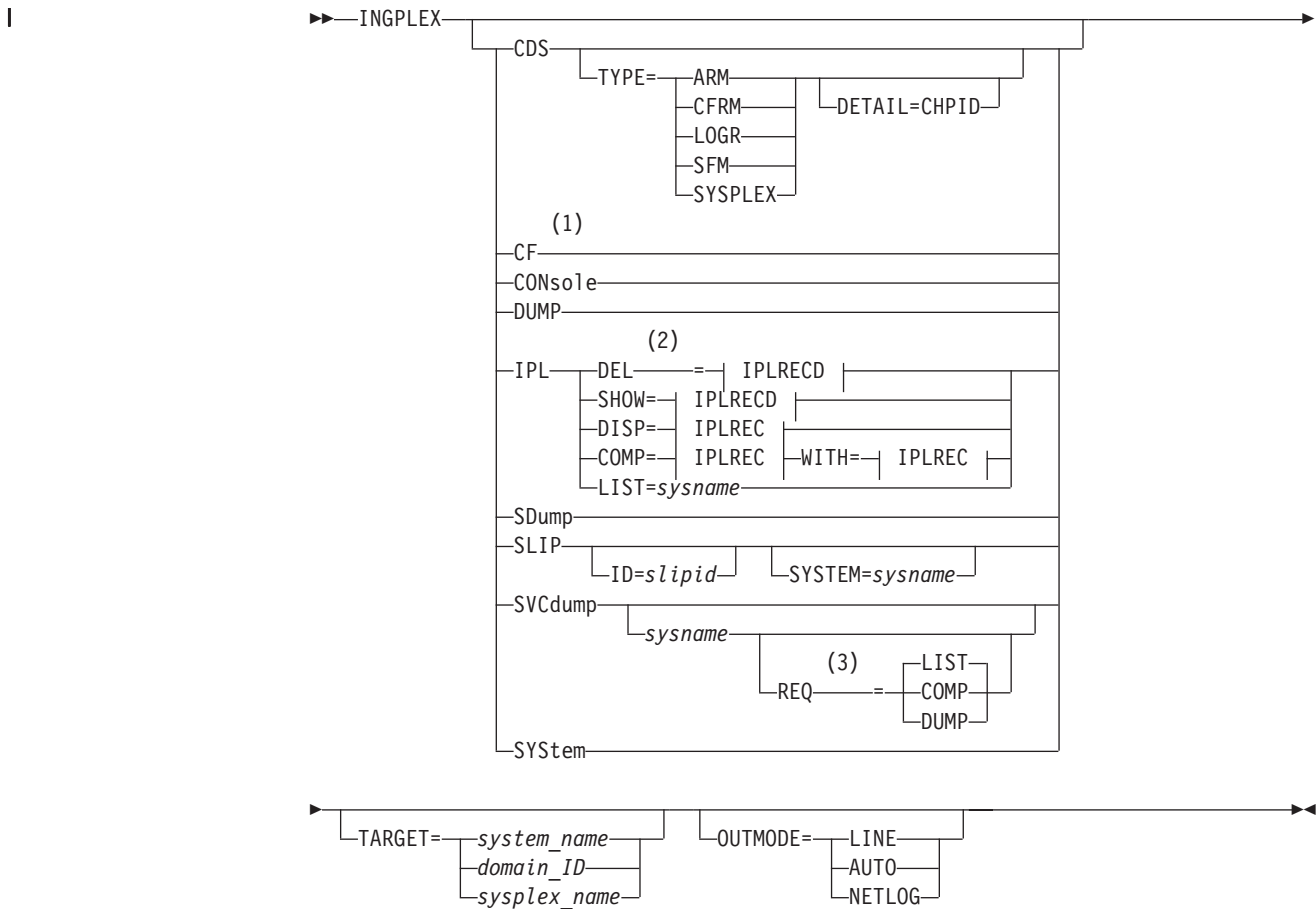
- The **Operator** field shows the operator ID. It is not necessarily defined to NetView.
- The **System** field shows the name of the system where the operator is defined.
- The **Log** field shows a Y if the operator was logged on when the command dialog was started, or an N if the operator was not logged on.
- The **Rcv (Receive)** field shows a Y if the operator was receiving messages when the command dialog was started, or an N if the operator was not receiving messages.
- The **Description** field shows a description of the operator from either the automation control file or the INGNTFY command dialog.
- The **Classes** field shows the classes that are assigned to the notify operators.

INGPLEX

Purpose

The INGPLEX command comprises all the sysplex-related functions of SA z/OS. It can be called in full mode and in line mode.

Syntax



IPLRECD:

```
|—sysname/timestamp—|
```

IPLREC:

```
|—sysname/timestamp[/member[/suffix]]—|
```

Notes:

- 1 For details see “INGCF” on page 89.
- 2 Line mode only
- 3 Line mode only

Parameters**CDS**

Displays information about CDSs and supports replacement of the current alternate CDS by a new one as well as making the alternate CDS the new primary. For further information about INGPLEX CDS refer to “INGPLEX CDS” on page 175.

TYPE

The type of CDS that the CDS function is issued for. Possible values are ARM, CFRM, LOGR, SFM, and SYSPLEX.

DETAIL

If you specify this parameter with the CDS function, the channel paths for the respective CDS type are displayed.

CF This is the equivalent of the INGCF command.

CONSOLE

Displays information about consoles.

DUMP

Shows the DUMP submenu.

IPL

Shows and compares IPL information. It can be issued with the following options:

DEL

Deletes a single IPL record and all its related information. Note that the DEL parameter is supported in line mode only.

SHOW

Shows the details panel of the specified IPL record.

DISP

Shows all, one, or particular PARMLIB members used by the IPL of the specified system and at the specified date and time.

COMP

Compares all, one, or particular PARMLIB members used by the IPL of the specified system and at the specified date and time with those specified in the WITH parameter.

LIST

Shows the IPL summary records of the specified system.

WITH

The COMP parameter compares all, one, or particular PARMLIB members used by the IPL of the specified system, at the specified date and time with those specified in parameter WITH.

sysname

Is the name of the system in the sysplex.

timestamp

Is the IPL date and time. The format is YYYYMMDDhhmm.

member

Is the name of the PARMLIB member without the suffix.

suffix

Is the suffix of the PARMLIB member.

For further information about INGPLEX IPL refer to "INGPLEX IPL" on page 186.

SDUMP

Displays and controls the SDUMP options being set on all systems in the sysplex. For further information about INGPLEX SDUMP refer to "INGPLEX SDUMP" on page 187.

SLIP

Displays and controls all SLIP traps of all systems in the sysplex. Controlling is limited to DISABLE, ENABLE, or REMOVE a SLIP trap. The following parameters are supported:

ID Limits the line mode output and the initial full screen display to the particular SLIP trap ID.

slipid

Is the ID of a SLIP trap. It can consist of one to four characters. Wildcards are not supported.

SYSTEM

Limits the line mode output and the initial full screen display to the particular system.

For further information about INGPLEX SLIP refer to "INGPLEX SLIP" on page 193.

SVCdump

Allows you to issue a multisystem dump of up to 15 address spaces including data spaces owned by the address spaces, structures used by the address spaces, and XCF group members on the same or on other systems in the sysplex of those groups the address spaces have joined. The following parameters are supported:

sysname

Is the name of the system that has joined the XCF group of the NetView that the operator is logged on to.

REQ

Specifies the type of the line-mode request.

LIST Requests the list of all active address spaces. This is the default when the parameter is omitted.

COMP

Requests the list of all components of the address spaces that are passed to the command.

DUMP

Requests a dump of the address spaces and their components that are passed to the command.

For further information about INGPLEX SVCDUMP refer to “INGPLEX SVCdump” on page 189.

SYStem

Displays information about a member system of the sysplex.

TARGET

For information on the TARGET parameter, refer to “TARGET Parameter” on page 10.

OUTMODE

For information on the OUTMODE parameter, refer to “OUTMODE Parameter” on page 12.

Example

If you specify INGPLEX without parameters, the selection panel shown in Figure 65 is displayed.

```

INGLX000          SA z/OS - Command Dialogs
Domain Id  = IPSFM  ----- INGPLEX -----          Date = 04/07/05
Operator Id = NETOP1                                Time = 18:50:47

Sysplex . . . . . : SYS1PLEX

Select the desired command:                          INGPLEX ...

  1 Display systems (including ETR & signalling paths)  SYStem
  2 Display consoles                                   CONsole
  3 Control coupling facilities                         CF
  4 Control couple data sets                           CDS

  6 Display IPL information                             IPL
  7 Control dumps                                       DUMP

10 Control all structures (allocated and unallocated)

Command ==>
F1=Help      F2=End      F3=Return
                                           F6=Ro11
                                           F12=Retrieve

```

Figure 65. INGPLEX Selection Panel

Use this panel to launch other command dialogs showing sysplex-related information.

Use one of the following command codes to invoke another command dialog:

1 INGPLEX SYStem

Displays the target sysplex name, its GRS mode and its systems. For each system the following details are shown:

- System name
- Status

- SSUM action
- SSUM interval time
- SSUM weight
- SFM failure detection interval
- WLM query timestamp
- Total free SUs
- SUs used
- SU-consuming resources
- Free SUs

See “INGPLEX SYStem” on page 181.

2 INGPlex CONsole

Displays the following details for the target sysplex:

- Master console name
- WTO & WTOR buffer utilization
- Number of queued messages of various types
- Awaiting mounts and operator requests
- List of consoles with more details, such as:
 - Name
 - Status
 - Authority
 - Number of WTOR buffers, etc.

See “INGPLEX CONsole” on page 183.

3 INGPlex CF

Displays the coupling facilities in the sysplex, their spaces, and CF levels. Each coupling facility can be drained and enabled. The structures of each coupling facility can be displayed, rebuilt, and forced. Duplexing can be started and stopped, when supported. The paths of the coupling facility can be displayed and set online or offline.

See “INGCF” on page 89.

4 INGPlex CDS

Displays the couple data sets in the sysplex. For each couple data set, paths and more detailed information can be displayed. The couple data sets can be switched and new alternate data sets can be allocated.

See “INGPLEX CDS” on page 175.

6 INGPlex IPL

Displays and compares IPL information being used during the IPL of an operating system. The information shown or compared can be varied from all available information to the content of a particular PARMLIB member.

See “INGPLEX IPL” on page 186.

7 INGPlex DUMP

Displays the default dump options as well as the setting of the slip traps for all systems in the sysplex. It also allows you to change the settings either locally, sysplexwide, or for some systems in the sysplex. In addition, the function allows to take multisystem SVC dumps.

See “INGPLEX SDUMP” on page 187, “INGPLEX SVCdump” on page 189, and “INGPLEX SLIP” on page 193.

10 INGSTR

Displays all allocated and unallocated structures, independent of the coupling facility. The structures can be displayed, rebuilt, forced, and duplexing can be started and stopped, when supported. You can also reallocate all structures from their current location to their preferred location if all systems in the sysplex support the XCF REALLOCATE command.

See “INGSTR” on page 233.

INGPLEX CDS**Purpose**

The CDS function displays information about all the couple data sets in the system, including details of the corresponding policies. For every CDS type that is required by the implementation INGPLEX CDS allows the operator to:

- Switch from the primary to the alternate CDS
- Define a new alternate CDS
- Change the active policy (if applicable)

Actions are started by specifying an action code for a selected CDS type on the panel.

Actions

The possible action codes are:

***A: Allocate alternate CDS**

Replaces the current alternate CDS for a selected CDS type with a new one. There are two options how to do this:

- The alternate CDS is allocated automatically by SA z/OS.
This automatic allocation requires that spare volumes have been defined, and that one of these spare volumes is available.
- Specify the data set that is to be used as the new alternate CDS.

If you specify your own data set, observe the following:

- The data set must exist
- It must have been formatted with the XCF formatting tool
- It must be at least as large as the current primary CDS, which means that every value you have passed to the XCF formatting tool (for example, in the case of a sysplex CDS, the maximum number of systems supported) must be equal to or greater than the corresponding value of the primary CDS.

C: Display CHPIDs

Displays information about the channel paths for the selected CDS type.

D: Display CDS information

Displays detail information about the selected CDS type. This comprises the formatting parameters and the policies that are contained in the CDS, if applicable. When the CDSs of the selected type contain policies, the detail information panel provides further actions:

D: Display policy

Displays details about the selected policy.

S: Start policy

Makes the selected policy the active policy.

The policy switch must be confirmed before it is executed.

***P: Switch alternate CDS to primary CDS**

Makes the alternate CDS the primary one. Because an alternate CDS is no longer available after the switch, SA z/OS shows a confirmation panel before the action is performed. On the panel, you can specify a new alternate CDS. When CDS recovery is switched on and you do not supply your own alternate CDS, SA z/OS tries to allocate a new alternate CDS automatically. The special requirements for manual and automatic creation of the new alternate CDS are the same as those for the replacement of the alternate CDS (action code A).

Examples

The following example illustrates the switch from the primary to the alternate CDS.

The following examples start with issuing INGPLEX CDS and pressing F8 on the CDS command dialog to scroll down the CDS list. The panel shown in Figure 66 is displayed.

```

INGKX300                SA z/OS - Command Dialogs          Line 7   of 18
Domain ID   = IPSFO      ----- INGPLEX CDS -----      Date = 03/01/01
Operator ID = NETOP1     Sysplex = KEY1PLEX              Time = 10:08:10

System...: KEY3          Interval...: 86400          OPNotify: 86400
Maxmsg...: 999999       Cleanup....: 60             Retry...: 255
Classlen: 956           Max CFlevel: 9             COUPLExx: COUPLER1
SMREBLD.: 1             Max SMlevel: 9

Cmds: A allocate alternate CDS / C display CHPIDs
      D display CDS information / P switch alternate CDS to primary CDS

  Type      MS   Volume  Dev   Couple Dataset Name
  -----
-  CFRM
   PRIMARY...: 16  KEY1SP  260B  SYS1.KEY1.PXESCDS
   ALTERNATE: 16  KEYUSR  261C  SYS1.KEY1.AXESCDS
-  LOGR
   PRIMARY...: 8   KEY1SP  260B  SYS1.KEY1.PLOGCDS
   ALTERNATE: 8   KEYUSR  261C  SYS1.KEY1.ALOGCDS

Command ==>
F1=Help      F2=End      F3=Return   F6=Ro11
PF7=Back     PF8=Forward  F9=Refresh  F12=Retrieve
    
```

Figure 66. INGPLEX CDS Command Dialog Panel

The panel header contains sysplex-related information about the system that the INGPLEX command was executed on. The details are as follows:

- The **System** field shows the name of the system.
- The **Interval** field shows the system failure detection interval in seconds. This interval is the amount of time XCF lets elapse without a status update before assuming that the system failed.
- The **OPNotify** field shows the number of seconds that XCF waits before notifying the operator of a potential system problem.
- The **Maxmsg** field shows the default value for the maximum amount of kilobytes of message buffer space. This default value is used when MAXMSG is not specified on SETXCF START commands.
- The **Cleanup** field shows the number of seconds that XCF waits for cleanup of members.

- The **Retry** field shows the default value for the retry limit. This value is used when the REPLY keyword is not specified on SETXCF START commands.
- The **Classlen** field shows the default length (in bytes) of messages allowed for a transport class. This value is used when CLASSLEN is not specified on the SETXCF START CLASSDEF command.
- The **Max CFlevel** field shows the maximum CFLEVEL supported by this system. This system can connect to a coupling facility with a higher CFLEVEL than the value of **Max CFlevel** but would not be enabled to use any functions supported by the higher level coupling facility.
- The **COUPLExx** field shows the COUPLExx Parmlib member used for system IPL.
- The **SMRBLD** field shows whether (value 1) or not (value 0) system-managed rebuild has been activated in the CFRM couple data set.
- The **Max SMlevel** field shows the maximum system-managed process level supported by this system.

The main part of the screen shows information about the primary and alternate CDSs for every CDS type. Press F8 to scroll and display further entries. The **MS** field shows the maximum number of systems that are supported by the CDS.

Making an Alternate CDS the Primary CDS: In this example, the alternate LOGR couple data set is made the new primary CDS. A new alternate CDS is automatically generated.

To switch the LOGR couple data set, enter P before LOGR on the panel displayed in Figure 66 on page 176, and press Enter. INGPLEX CDS displays the confirmation panel shown in Figure 67.

```

INGKX30A                SA z/OS - Command Dialogs
Domain ID = IPSFO      ----- INGPLEX CDS -----      Date = 03/01/01
Operator Id = NETOP1   Sysplex = KEY1PLEX                Time = 10:08:13

                          SETXCF PSWITCH Confirmation

You are going to remove the LOGR   primary couple data set.
The alternate couple data set  SYS1.KEY1.ALOGCDS
becomes the primary as soon as you proceed with the GO function key.
Immediately after the switch, automation will try to allocate a new alternate
couple data set on one of the spare volumes defined during the customization.
If you want the automation to allocate your own alternate couple data set
complete the necessary information below.

Your alternate couple dataset...

Name ==> _____

Volume ==> _____

Command ==>
          F2=End      F3=Return      F6=Roll
          F10=Go     F11=Cancel   F12=Retrieve

```

Figure 67. Confirmation Panel for Switching from the Current Primary CDS to the Alternate CDS

Use this panel to determine how a new alternate CDS is to be created after the switch. You can either specify your own new alternate CDS or let SA z/OS create it for you. When you specify the new alternate CDS yourself, the data set must exist and must have been formatted with the XCF formatting tool. Automatic creation requires that spare volumes have been defined for LOGR couple data sets.

Pressing F10 causes SA z/OS to generate the new alternate CDS. After returning to the CDS command dialog, refreshing the panel, and scrolling down with F8, the panel looks as shown in Figure 68.

```

INGKX300          SA z/OS - Command Dialogs      Line 7   of 18
Domain ID   = IPSFO  ----- INGPLEX CDS -----   Date = 03/01/01
Operator ID = NETOP1          Sysplex = KEY1PLEX      Time = 10:08:25

System...: KEY3          Interval...: 86400          OPNotify: 86400
Maxmsg...: 999999       Cleanup....: 60          Retry...: 255
Classlen: 956          Max CFlevel: 9          COUPLExx: COUPLER1
SMREBLD.: 1           Max SMlevel: 9

Cmds: A allocate alternate CDS / C display CHPIDs
      D display CDS information / P switch alternate CDS to primary CDS

Type      MS   Volume  Dev   Couple Dataset Name
-----
-  CFRM
  PRIMARY...: 16  KEY1SP  260B  SYS1.KEY1.PXESDCS
  ALTERNATE: 16  KEYUSR  261C  SYS1.KEY1.AXESDCS
-  LOGR
  PRIMARY...: 8   KEYUSR  261C  SYS1.KEY1.ALOGCDS
  ALTERNATE: 8   AOCUSR  262B  AOC.CDS.TEST.LOGR.CDS02

Command ==>
F1=Help      F2=End          F3=Return      F6=Ro11
PF7=Back     PF8=Forward     F9=Refresh     F12=Retrieve
  
```

Figure 68. INGPLEX CDS Command Dialog Panel after the Switch

The previous alternate LOGR CDS has become the primary, and there is a new alternate, which was created by SA z/OS.

Switching the CFRM Policy: In this example, the active CFRM policy is switched.

Enter D before CFRM on the panel displayed in Figure 66 on page 176, and press Enter. The panel shown in Figure 69 is displayed.

```

INGKX311          SA z/OS - Command Dialogs      Line 1   of 5
Domain ID   = IPSFO  ----- INGPLEX CDS -----   Date = 03/01/01
Operator ID = NETOP1          Sysplex = KEY1PLEX      Time = 10:13:13
                                CFRM Couple Data Set Information

Data Set Information
Volume Device FORMAT TOD          Data Set Name
-----
KEY1SP 260B 08/29/2000 08:51:30 SYS1.KEY1.PXESDCS
KEYUSR 261C 08/29/2000 08:47:42 SYS1.KEY1.AXESDCS
Control Card Information
MS POLICY CF STR CONNECT SMREBLD SMDUPLEX
--
16      8  4  64          16      1      0
Policy Information
Cmds: D display policy / S start policy
Name      CF Str Date      Time      Userid
-----
- BZ0EPOL ACTIVE 2 19 02/10/2001 10:05:47 BZ0E
- HIRPOL   2 19 02/19/2001 19:45:57 HIR
- HIRPOL1  1 8 08/25/2000 09:20:04 HIR

Command ==>
F1=Help      F2=End          F3=Return      F6=Ro11
PF8=Forward  F9=Refresh     F12=Retrieve
  
```

Figure 69. CFRM Couple Data Set Information Panel before Policy Switch

The panel shows information about the names and locations of the CDSs. The panel also shows the parameters that were used by the formatting tool of XCF for the allocation of the CDS. The **POLICY** column, for example, displays the maximum number of policies the CDS can contain. Furthermore, the panel shows information about the policies in the CDS, for example, how many coupling facilities and structures are defined in every policy, and which policy is currently active.

To switch to the HIRPOL policy, enter S before this policy and press Enter. INGPLEX CDS displays the confirmation panel shown in Figure 70.

```

INGKX30C          SA z/OS - Command Dialogs
Domain ID  = IPSFO  ----- INGPLEX CDS -----      Date = 03/01/01
Operator Id = NETOP1      Sysplex = KEY1PLEX          Time = 10:13:17

                          SETXCF START  Confirmation

You are going to start a new CFRM   CDS policy named  HIRPOL   .

The current policy

      BZOEPOL

will be stopped as soon as you proceed with the GO function key,

Command ==>>>
                F2=End      F3=Return      F10=Go      F11=Cancel  F6=Ro11
                                                F12=Retrieve
  
```

Figure 70. Confirmation Panel for Policy Switch

Displaying the Channel Paths for a CDS Type: In this example, the channel paths for the CFRM couple data sets are displayed.

Enter C before CFRM on the panel displayed in Figure 66 on page 176, and press Enter. The panel shown in Figure 71 on page 180 is displayed.

```

INGKX318                SA z/OS - Command Dialogs                Line 1 of 4
Domain ID = IPSFO      ----- INGPLEX CDS -----                Date = 03/02/01
Operator ID = NETOP1   Sysplex = KEY1PLEX                      Time = 08:05:46
                        CFRM Channel Path Information
System  T  DEVN  CHPIDs                                           SSID
-----  -  ----  -----
KEY1    P  260A  E4=+ E5=+ E2=+ E3=+                                           2600
        A  2610  E4=+ E5=+ E2=+ E3=+                                           2600
KEY2    P  260A  E4=+ E5=+ E2=+ E3=+                                           2600
        A  2610  E4=+ E5=+ E2=+ E3=+                                           2600
KEY3    P  260A  E4=+ E5=+ E2=+ E3=+                                           2600
        A  2610  E4=+ E5=+ E2=+ E3=+                                           2600
KEY4    P  260A  13=+ 22=+ 30=+ 94=+                                           2600
        A  2610  13=+ 22=+ 30=+ 94=+                                           2600

Command ==>
F1=Help      F2=End          F3=Return      F6=Roll
              F9=Refresh      F12=Retrieve

```

Figure 71. Channel Path Information for CFRM Couple Data Sets

- The **System** field shows the name of the sysplex members.
- The **T** field (for 'type') indicates whether the CDS is the primary (value 'P') or alternate (value 'A').
- The **DEVN** field displays the number of the device that the CDS resides on.
- The **CHPIDs** field shows the status of the paths to the devices in the format *chpid=status_code*. The codes are those of the operating system. They have the following meaning:
 - + The path is logically and physically available and I/O on the path was successful.
 - * The path is physically, but not logically available. The subchannel's logical path indicator is off but I/O to the path is successful. You can use the command `VARY PATH (ddd,nn),ONLINE` to make channel path *nn* logically available to device *ddd*.
 - The path is neither logically nor physically available. The subchannel's logical and physical indicators are both off for this channel path. You can use the command `CONFIG CHP(nn),ONLINE` to make the channel path logically available to all devices connected to the channel.
 - & The device is reserved to another path. This indicator applies to devices with the dynamic pathing selection feature.
 - < The path is installed but not physically available. The start subchannel request received a condition code of 3.
 - > The device microcode has detected an error and will not allow I/O to complete on the path.
 - B** The path is unable to communicate. The device indicates that a busy or reserve condition exists on the path.
 - C** A controller error occurred while accessing the device.
 - D** A device error occurred while accessing the device.
 - I** Intervention is required; the device is not ready.

- R** The path is available and the device is reserved to this path/group. This only applies to devices with the dynamic pathing feature.
 - T** A time out has occurred; there is no response from the device. The cause of the time out is undetermined and this condition is transient.
 - U** A storage control unit or storage director error occurred while accessing the device.
 - X** Unable to determine the failing unit.
- The **SSID** field displays the storage subsystem that the device belongs to.

INGPLEX SYSTEM

Purpose

The SYSTEM function displays the target sysplex name, its GRS mode and its member systems.

Example

Figure 72 shows an example of the INGPLEX SYSTEM command dialog panel.

```

AOFKX100          SA z/OS - Command Dialogs          Line 1   of 4
Domain ID = IPSFP  ----- INGPLEX SYSTEM -----   Date = 27/01/06
Operator ID = NETOP1                               Time = 16:29:12

Sysplex . . . . . : KEY1PLEX
GRS Mode . . . . . : STAR

Display more info: C CPU E ETR I IPL O IOS S STOR/ESTOR
Signalling Path : D device T structure

          Monitor
Cmd  System  Status  Timestamp  INTERVAL  Action  TIME  WEIGHT
---  -
-    KEY1    ACTIVE  16:28:34  86400     ISOLATE  50    50
-    KEY2    ACTIVE  16:28:35  86400     ISOLATE  50    15
-    KEY3    ACTIVE  16:28:34  86400     ISOLATE  50    15
-    KEY4    ACTIVE  16:28:36  86400     ISOLATE  50    15

Command ==>
F1=Help      F2=End      F3=Return   F6=Roll
F9=Refresh   F10=Previous F11=Next    F12=Retrieve

```

Figure 72. INGPLEX SYSTEM Command Dialog Panel 1

The following command codes are available:

- C** Displays the online or offline status of one or more processors and any vector facilities, or ICRFs attached to those processors.
- E** Displays the timer synchronization mode and ETR ports.
- I** Displays IPL information.
- O** Displays IOS-related configuration information.
- S** Displays the number of megabytes of central and expanded storage assigned and available to the system.
- D** Displays the device number of one or more inbound or outbound signalling paths that XCF can use and information about inbound or outbound XCF signalling paths to this system.

INGPLEX SYSTEM

- T Displays detailed signalling path information for all coupling facility structures.

The following information is displayed:

- The **Sysplex** field shows the name of the sysplex.
- The **GRS Mode** field shows the GRS mode of the target system. The mode can be either STAR or RING.
- The **Cmd** field allows you to specify command codes. To use one of the command codes shown, type the appropriate letter next to the resource name, and press Enter.
- The **System** column shows the name of the system.
- The **Status** column shows the status of the system.
- The **Monitor Timestamp** column shows the last time stamp recorded for status monitoring on this system.
- The **INTERVAL** column shows the system failure detection interval in seconds. This interval is the time XCF allows to elapse without a status update before assuming that the system failed.

The last three columns contain configuration data of the SFM policy (if applicable).

- The **SSUM Action** field shows the SSUM action. It can be one of the following:
 - ISOLATE
 - DEACTIVATE
 - RESET
 - PROMPT
 - N/A
- The **SSUM TIME** field shows the SSUM interval as specified in the current SFM policy.
- The **SSUM WEIGHT** field shows the SSUM weight specified in the current SFM policy. This value is used in sysplex reconfigurations after a signalling connectivity failure.

Use the PF11 key to view WLM-related information to the right, as shown in Figure 73 on page 183.

```

AOFKX100          SA z/OS - Command Dialogs          Line 1   of 4
Domain ID   = IPSFP      ----- INGPLEX SYSTEM -----   Date = 27/01/06
Operator ID = NETOP1                                Time = 16:29:16

Sysplex . . . . . : KEY1PLEX
GRS Mode . . . . . : STAR

Display more info: C CPU E ETR I IPL O IOS S STOR/ESTOR
Signalling Path : D device T structure

----- WLM Data -----
Cmd  System      Timestamp          SUs Total    SUs Used     Resources    SUs Exp.
-----
-    KEY1        2006-01-27 16:28  32343721    594686       675          31749046
-    KEY2        2006-01-27 16:28  32411392    617101        1           31794291
-    KEY3        2006-01-27 16:28  32603037    541798        1           32061239
-    KEY4        2006-01-27 16:28  32967516    83846         3           32883672

Command ==>
F1=Help      F2=End          F3=Return      F6=Roll
F9=Refresh   F10=Previous    F11=Next       F12=Retrieve

```

Figure 73. INGPLEX SYSTEM Command Dialog Panel 2

- The **Timestamp** field shows the last time stamp when capacity data was queried from WLM.
- The **SUs Total** field shows the number of available SUs.
- The **SUs Used** field shows the number of used SUs in the last 10 minutes.
- The **Resource** field shows the number of SU-consuming resources with a desired state of AVAILABLE.
- The **SUs Exp.** field shows the number of free SUs, taking into account the resources that SA z/OS is about to start or stop.

INGPLEX CONSOLE

Purpose

The CONSOLE function displays the following information for the target sysplex:

- The name of the master console
- WTO & WTOR buffer utilization
- Number of queued messages (replies) of various types
- Awaiting mounts
- Operator requests and list of consoles (name, status, authority, number of WTOR buffers, UD, device, system, ALTGRP, MSCOPE)

Example

```

INGLX400                SA z/OS - Command Dialogs                Line 1 of 6
Domain Id = IPSFP      ----- INGPLEX CONSOLE -----          Date = 04/12/01
Operator Id = NETOP1                                         Time = 10:36:26

Sysplex . . . . . : KEY1PLEX                Master Console . . . : --none--
Message Buffer Usage : 14 / 9999              Reply Buffer Usage . . : 14 / 99
Awaiting Replies . . : 14                    Eventual Action . . . : 0
Immediate Action . . : 0                     Awaiting Mounts . . . : 0
Critical Action . . . : 0                     Operator Requests . . : 0
-----

Cmds: D Details / R Requests

  Console  Status  AUTH  NBUF  UD  Device  System  ALTGRP  MSCOPE
  -----  -----  -----  -----  --  -----  -----  -----  -----
- MASTER   INACTIVE MASTER n/a  Y  -none- --none-- --none-- *ALL
- MASTER1  INACTIVE ALL   n/a  N  -none- --none-- --none-- *ALL
- 03       INACTIVE MASTER n/a  N  -none- --none-- --none-- *ALL
- 04       INACTIVE MASTER n/a  N  -none- --none-- --none-- *ALL
- 05       INACTIVE MASTER n/a  N  -none- --none-- --none-- *ALL
- 06       INACTIVE MASTER n/a  N  -none- --none-- --none-- *ALL

Command ==>
F1=Help      F2=End          F3=Return      F6=Ro11
              F9=Refresh      F12=Retrieve

```

Figure 74. INGPLEX CONS Command Dialog Panel

Use one of the following command codes to get more information for the selected console or consoles:

- D** Displays details for the console
- R** Displays current requests for the console

The fields on the command dialog panel display the following information:

- The **Sysplex** field shows the name of the sysplex.
- The **Message Buffer Usage** field shows the limit of the number of WTO message buffers allowed outstanding.
- The **Awaiting Replies** field shows a decimal number representing the number of messages awaiting replies.
- The **Immediate Action** field shows a decimal number representing the number of outstanding immediate action messages (with descriptor codes 1 or 2). If the number is greater than 99999, asterisks appear in this field.
- The **Critical Action** field shows a decimal number representing the number of outstanding critical eventual action messages (with descriptor code 11). If the number is greater than 99999, asterisks appear in this field.
- The **Master Console** field shows the name of the master console.
- The **Reply Buffer Usage** field shows the limit of the number of WTOR message buffers allowed outstanding. The maximum value of yyyy is specified by the RMAX parameter in the CONSOLxx parmlib member.
- The **Eventual Action** field shows a decimal number representing the number of outstanding eventual action messages (with descriptor code 3). If the number is greater than 99999, asterisks appear in this field.
- The **Awaiting Mounts** field shows a decimal number representing the number of outstanding mount requests.
- The **Operator Requests** field shows a decimal number representing the number of outstanding requests for operator intervention.

The following details are shown for each MCS console that has been defined.

If the MSCOPE information does not fit on the primary screen, the PF10 function key is available for you to toggle between the primary panel and the panel showing only MSCOPE information.

- The **Console** field shows the name of the console as specified in the CONSOLxx parmlib member.
- The **Status** field shows the status of the console. The following values can occur:

HARDCOPY Hardcopy log. This condition is only indicated if the console is active on the system where the command processes.

ACTIVE Active console

ACTIVE-P In the process of becoming an active console. This condition is only indicated if the console is active on the system where the command is processing.

MASTER Master console

INACTIVE Inactive console

INACT-P In the process of becoming a non-active console. This condition is only indicated if the console is active on the system where the command is processing.

PROB-DET The active system console is in the problem determination mode. PD is indicated only for the system console.

SUBSYS Subsystem-allocatable console

- The **AUTH** field shows which commands may be entered from this console. The following values can occur:

ALL Any INFO, SYS, IO, or CONS command may be entered from this console.

CONS INFO commands and any commands from the console command group may be entered from this console.

INFO Any command from the informational command group may be entered from this console.

IO INFO commands and any commands from the I/O Control command group may be entered from this console.

MASTER The specified console is authorized to enter any operator command.

NONE This console does not have command authority.

SYS INFO commands and any commands from the system control command group may be entered from this console.

- The **NBUF** field shows the number of WTO message buffers currently queued to this console. If nnnn is greater than 9999, asterisks (****) appear in this field.
- The **UD** field shows whether this console is receiving messages with the UD attribute.
- The **Device** field shows the device number of the console as specified in the CONSOLxx parmlib member.
- The **System** field shows the system name of the active console.
- The **ALTGRP** field shows the alternate group defined for this console.

- The **MSCOPE** field lists the name of the system or systems that this console is receiving unsolicited messages from. Note that these systems might be different from the system where this console is physically attached.

INGPLEX IPL

Purpose

With the INGPLEX IPL command you can view and compare the IPL information of the operating system. If a system does not behave after IPL as expected, the IPL recording function enables you to identify parameters that were changed, for example, since the last IPL. The recording function enables you to compare different IPL scenarios. INGPLEX IPL is a tool that helps to identify and resolve the cause of startup problems. The following information can be displayed:

- The selected system (or blank)
- The name of the sysplex
- The maximum number of IPLs that are stored for each system
- An indicator showing whether comments in PARMLIB members are ignored when collecting information

Example

```

INGLX200          SA z/OS - Command Dialogs          Line 1 of 6
Domain ID = IPSFM  ----- INGPLEX IPL -----      Date = 02/22/02
Operator ID = NETOP1                               Time = 17:59:27

System . . . . . ==>                               Max. number of IPL records/system : 10
Sysplex . . . . . ==> KEY1PLEX                   Suppression of PARMLIB comments . : N
-----
Cmnds: C compare record / D display details / E erase record

  System  IPL Timestamp      Dev  Volume  OpSys  Release  FMID
  -----
-  KEYA   2002-02-22 13:52   770E 120204  z/OS   SP7.0.2  HBB7705
-  KEYA   2002-02-09 09:28   770E 120204  z/OS   SP7.0.2  HBB7705
-  KEYA   2002-02-08 15:28   770E 120204  z/OS   SP7.0.2  HBB7705
-  KEYA   2001-12-10 14:31   0707 120147  z/OS   SP7.0.2  HBB7705
-  KEYB   2002-02-22 13:59   770E 120204  z/OS   SP7.0.2  HBB7705
-  KEYB   2002-02-14 16:24   770E 120204  z/OS   SP7.0.2  HBB7705
-  KEYB   2002-02-11 18:46   770E 120204  z/OS   SP7.0.2  HBB7705
-  KEYB   2002-02-11 15:36   770E 120204  z/OS   SP7.0.2  HBB7705
-  KEYB   2002-02-11 14:22   770E 120204  z/OS   SP7.0.2  HBB7705
-

Command ==>
F1=Help      F2=End      F3=Return      F6=Roll
              F8=Forward  F9=Refresh    F10=Previous  F11=Next      F12=Retrieve
  
```

Figure 75. INGPLEX IPL Main Panel

Use F10 and F11 to scroll through all available columns. SORT by column numbers is supported as well as the FIND and RFind command to locate information on the panel. You can also limit the display to a particular system by specifying the system name in the appropriate entry field.

The following command codes are available:

- C** Compares the complete IPL information with another IPL record. A second panel will be displayed where you can select the second record.
- D** Displays detailed information about this IPL record.
- E** Erases the IPL information records. This action must be confirmed.
- The **Sysplex** field shows the name of the sysplex.

- The **System** field shows the name of the system in the sysplex.
- The **IPL Timestamp** field shows the date and time of the IPL. The format is YYYY-MM-DD HH:MM converted to local timezone.
- The **Dev** field shows the IPL device number.
- The **Volume** field shows the volume serial of the IPL device.
- The **OpSys** field shows the name of the operating system, for example, z/OS or OS/390®.
- The **Release** field shows the release level of the operating system.
- The **FMID** field shows the FMID of the operating system.

For further information about the panel fields refer to the online help.

INGPLEX SDUMP

Purpose

The INGPLEX SDUMP command lets you control the default dump options sysplexwide.

Example

The dump functions can be invoked directly by specifying the commands, or from the dump panel of the INGPLEX command selecting the appropriate command. In addition, you can invoke the dump submenu from the main panel of the INGPLEX command selecting command 7. The panel shown in Figure 76 is displayed.

```

INGLX250                SA z/OS - Command Dialogs                Line 1 of 12
Domain Id = IPSFP      ----- INGPLEX -----                Date = 02/26/02
Operator Id = NETOP1                                       Time = 16:30:36

Sysplex . . . . . : KEY1PLEX

Select the desired command:                                INGPLEX ...

  1 Control default SDUMP options                          SDUMP
  2 Issue SVC dumps                                       SVCDUMP
  3 Control SLIP trap settings                             SLIP

Command ==>
F1=Help      F2=End      F3=Return                                F6=Roll
                                                    F12=Retrieve

```

Figure 76. INGPLEX Dump Options Panel

If you select option 1, the panel shown in Figure 77 on page 188 is displayed.

```

INGLX251          SA z/OS - Command Dialogs          Line 1 of 12
Domain Id = IPSFP ----- INGPLEX SDUMP -----      Date = 02/26/02
Operator Id = NETOP1                                   Time = 15:44:58

Sysplex . . . . => KEY1PLEX          Permission . . . . : ALL
-----
Cmds: C change

  System      Dump options
-----
_ KEY1      Q=      Type=      Buffers= 0K MaxSpace= 500M MsgTime=99999
              LSQA
              TRT
_ KEY2      Q=      Type=      Buffers= 0K MaxSpace= 500M MsgTime=99999
              LSQA
              TRT
_ KEY3      Q=      Type=      Buffers= 0K MaxSpace= 500M MsgTime=99999
              LSQA
              TRT
_ KEY4      Q=      Type=      Buffers= 0K MaxSpace= 500M MsgTime=99999

Command ==>
F1=Help      F2=End      F3=Return      F6=Roll
              F8=Forward  F9=Refresh      F12=Retrieve
    
```

Figure 77. INGPLEX SDUMP Panel

The following command code is available:

C change

Invokes the modification panel by providing the options of the selected system as input:

- The **Sysplex** field shows the name of the sysplex.
- The **System** field shows the name of the system in the sysplex.
- The **Permission** field shows your authorization level.
- The **Dump options** field shows the default SDUMP options of all systems in the sysplex. For each system the following details are displayed:

Q= Shows whether or not SDUMP quiesces the system while dumping the contents of the SQA or CSA.

TYPE=
Causes SVC dump to dump the cross memory address spaces that the caller has when SVC dump gets control (XMEM) or when the error causing the dump occurs (XMEME).

BUFFERS=
Shows the reserved storage exclusively used by SVC dump. This storage can be used while capturing the contents of the common area storage.

MaxSpace
Shows the maximum amount of virtual storage that SVC dump can use to capture volatile virtual storage data, summary dump data, and component-specific data before writing the dump to DASD.

MsgTime
Shows how long (mm) the message IEA793A is shown at the console. When the system deletes the message, it also deletes the captured dump.

The FIND and RFIND commands are supported. If you specify command code C, the panel shown in Figure 78 on page 189 is displayed.

```

INGLX252                SA z/OS - Command Dialogs                Line 1 of 12
Domain Id = IPSFP      ----- INGPLEX SDUMP -----                Date = 02/26/02
Operator Id = NETOP1                                         Time = 16:18:08

System . . . . . : KEY1
Sysplex . . . . . : KEY1PLEX                Recommended options are underlined.

NODUMP ... ==> N      (all other options below are ignored)

ALLNUC ... ==> -      ALLPSA(*) ==> -      COUPLE ... ==> -      CSA ..... ==> -
GRSQ ..... ==> -      LPA ..... ==> -      LSQA ..... ==> Y      NUC ..... ==> -
PSA ..... ==> -      RGN ..... ==> -      SERVERS .. ==> -      SQA(*) ... ==> -
SUMSUMP(*) ==> -      SWA ..... ==> -      TRT ..... ==> Y      WLM ..... ==> -
XESDATA .. ==> -      (*) = The NOxxx option is generated when not selected.

Q(uiesce) ==> -      (YES / NO)
Type ..... ==> -      (XMEM / XMEME)
Buffers .. ==> 0K      (nnnnK / nnnM)
MaxSpace . ==> 500      (MB)
MsgTime .. ==> 99999      (minutes)

Command ==>
F1=Help      F2=End      F3=Return      F4=Set SYS      F5=Undo all      F6=Roll
F10=Set SYSS F11=Set SYSP F12=Retrieve

```

Figure 78. INGPLEX SDUMP Modification Panel

The modification panel allows you to modify all SDUMP options. Furthermore, you can delete SDUMP options. After entering your changes you can set the new options for:

- The selected system
- All systems in the sysplex
- Selected systems in the sysplex

To set the options press the appropriate F-key. If you want to modify selected systems in the sysplex, you are prompted for the systems that the SDUMP options are being changed for. To reset the options to the state when the modification panel was invoked press F5 Undo all.

Note: The user must be authorized to change any SDUMP option. The authorization can be any of those that are used for controlling coupling facilities and couple data sets.

For further information about the panel fields refer to the online help.

INGPLEX SVCdump

Purpose

The INGPLEX SVC DUMP function allows you to issue a multisystem dump of up to 15 address spaces of a single system including their data spaces and structures.

Example

```

INGLX26S          SA z/OS - Command Dialogs          Line 1 of 6
Domain Id = IPSFP  ----- INGPLEX SVCDUMP -----   Date = 02/06/02
Operator Id = NETOP1                                Time = 17:05:17

The following systems of sysplex KEY1PLEX are registered to the automation.
Use any non-blank character to select one system and then press ENTER.

Sel  System
---  -----
-    KEY2
-    KEY3
-    KEY4

Command ==>
F1=Help      F2=End      F3=Return      F6=Roll
              F12=Retrieve
    
```

Figure 79. INGPLEX SVCDUMP Target System Selection Panel

- The **Sel** field lets you select a system that a multisystem dump is issued from.
- The **System** field shows the name of the system having joined the same XCF group the operator is logged on to.

For further information about the panel fields refer to the online help. After selecting a system and pressing Enter, the panel shown in Figure 80 is displayed.

```

INGLX260          SA z/OS - Command Dialogs          Line 38 of 63
Domain Id = IPXFG  ----- INGPLEX SVCDUMP -----   Date = 03/11/02
Operator Id = NETOP1                                Time = 12:26:26

System . . . . . ==> KEYA
Sysplex . . . . . ==> KEYAPLEX
-----
Cmds: D/S de-/select job names for the SVC dump (up to 15 can be specified)

Jobname  ASID  WorkUnitID  Userid
-----  -
- TNF      0024
- TRACE   0004
- TSO      003B  STC05983   STCUSER
- VLF      0019
- VMCF     0025
- VTAM     001E  STC05982   STCUSER      selected
- WATS     0217  TSU06587   -             selected
- WLM      000B
- XCFAS    0006

Command ==>
F1=Help      F2=End      F3=Return      F5=NextPnl    F6=Roll
              F8=Forward   F9=Refresh
    
```

Figure 80. INGPLEX SVCDUMP Address Space Selection Panel

If, for example, you select the VTAM address space and the WATS address space (which is a user), press Enter and then press F5, the panel shown in Figure 81 is displayed.

```

INGLX261          SA z/OS - Command Dialogs          Line 1 of 9
Domain Id = IPXFG  ----- INGPLEX SVCDUMP -----   Date = 03/11/02
Operator Id = NETOP1                                     Time = 12:34:04

System . . . . . : KEYA
Sysplex . . . . . : KEYAPLEX
-----
Cmds: D/S de-/select the areas to be dumped (max. 113 structures)
      A selection of the job name includes all related areas.

  Jobname  ASID  T Data Space/XCF Group Member/Structure
  -----  -
  VTAM     001E
  -
  -        D IST90C95
  -        D 00012IXL
  -        D 00013IXL
  -        L ISTGENERIC
  -        M ISTCFS01.KEYB.VTAM.IPXVH__DEIBMIPS          selected
  -        M ISTXCF.KEYB.VTAM.IPXVH__DEIBMIPS          selected
  -        M IXCLO008.KEYB.VTAM.M28                    selected
  WATS     0217
  Command ==>
  F1=Help   F2=End     F3=Return  F4=PrevPnl F5=NextPnl  F6=Roll
            F8=Forward F9=Refresh
            F12=Retrieve

```

Figure 81. INGPLEX SVCDUMP Address Space Detail Panel

Address space VTAM has some data spaces (D), one list structure (L) and some XCF group members (M). TSO user WATS has nothing.

The following command codes are supported:

- D** Deselects the previous selection.
- S** Selects a local address space, data space, structure, or XCF group member address space for the SVC dump.

If you press F5, the dump option selection panel is displayed, as shown in Figure 82 on page 192.

```

INGLX262                SA z/OS - Command Dialogs
Domain Id = IPSFP      ----- INGPLEX SVC -----           Date = 02/26/02
Operator Id = NETOP1                                     Time = 18:02:56

System . . . . . : KEY3
Sysplex . . . . . : KEY1PLEX

Title .... ==> _____
                    ==> _____

SDATA Dump Options (recommended options are underlined)
ALLNUC ... ==> ALLPSA(*) ==> Y   COUPLE ... ==> -   CSA ..... ==> Y
GRSQ ..... ==> LPA ..... ==> -   LSQA ..... ==> -   NUC ..... ==> Y
PSA ..... ==> RGN ..... ==> Y   SERVERS .. ==> -   SQA(*) ... ==> Y
SUMSUMP(*) ==> SWA ..... ==> -   TRT ..... ==> Y   WLM ..... ==> -
XESDATA .. ==> -   (*) = The NOxxx option is used when not selected.

Structure Dump Options (SUMMARY and ADJUNCT/ENTRYDATA are mutually exclusive)
COCLASS .. ==> -   EMCONTROLS ==> -   LISTNUM .. ==> -   STGCLASS . ==> -
ADJUNCT .. ==> -   ENTRYDATA ==> -   SUMMARY .. ==> -

Command ==>>>
F1=Help      F2=End      F3=Return    F4=PrevPnl  F5=Dump      F6=Roll
F12=Retrieve
    
```

Figure 82. INGPLEX SVCDUMP Dump Option Panel

The panel shows the default dump options that are set on invocation. After specifying the dump title, press F5 to issue the dump. When the dump is taken, the function returns to the address space selection panel with all selections cleared. The SORT, FIND and RFINDD commands are supported for selection panels only. For further information about the panel fields refer to the online help.

Executing this command in line-mode requires the following 5 steps:

1. Execute the command:


```
INGPLEX SVC sysname [REQ=LIST] OUTMODE=LINE
```
2. Remove the first 5 lines and the last line from the output. Then select the address spaces that you want to dump and save the entries using a PIPE command:


```
PIPE ... | SAFE INGRX260
```

Keep the same format that is returned in the REQ=LIST output.
3. Execute the command:


```
INGPLEX SVC sysname REQ=COMP OUTMODE=LINE
```
4. Again remove the first 5 lines and the last line from the output. Then select the address spaces and the associated components, such as data spaces, XCF group members, and cache and list structures and save these entries using a PIPE command:


```
PIPE ... | LIT \dump title/sdata options/stropt\ |SAFE INGRX260
```

Keep the same format that is returned in the REQ=COMP output. The dump options passed by the LIT stage correspond exactly to the values in Figure 82.
5. Execute the command:


```
INGPLEX SVC sysname REQ=DUMP OUTMODE=LINE
```

```

"PIPE NETV INGPLEX SVC "sysname" OUTMODE=LINE" ,
"| SEP" ,
"| NOT TAKE 5" ,
"| NOT TAKE LAST" ,
"| STEM z."

"PIPE STEM z.",
"| LOCATE 1.6 /RASP /" , /* locate RASP and */
"| 1.6 /TRACE /" , /* TRACE address space */
"| SAFE INGRX260"

"PIPE NETV INGPLEX SVC "sysname" REQ=COMP OUTMODE=LINE" ,
"| SEP" ,
"| NOT TAKE 5" ,
"| NOT TAKE LAST" ,
"| STEM z."

dumpopt = 'Dump RASP and TRACE in line mode' || ,
          '/ALLNUC ALLPSA CSA GRSQ LSQA PSA RGN SQA SWA TRT'

"PIPE STEM z.",
"| NLOC 17.1 /M/" , /* don't process XCF group members */
"| LIT \"dumpopt\"" ,
"| SAFE INGRX260"

"PIPE NETV INGPLEX SVC "sysname" REQ=DUMP OUTMODE=LINE" ,
"| CONS ONLY"

```

Figure 83. INGPLEX SVC Line Mode Sample

INGPLEX SLIP

Purpose

With the INGPLEX SLIP command you can display serviceability level indication processing (SLIP) traps being set at all systems in the sysplex. With INGPLEX SLIP you can view, enable, disable, and delete the SLIP trap defined in the sysplex.

Example

```

INGLX270                SA z/OS - Command Dialogs                Line 1 of 96
Domain Id = IPSFP      ----- INGPLEX SLIP -----                Date = 02/26/02
Operator Id = NETOP1                                         Time = 18:20:21

System . . . . . ==> _____ (leave blank for all systems)
Slip Trap Id . . ==> _____ (leave blank for all ids)
Sysplex . . . . . ==> KEY1PLEX      Permission . . . . . : ALL
-----
Cmds: +/- display/hide settings D disable E enable R remove

  System  Id    Status  Settings
-----
- KEY1    XB37  ENABLED
- KEY1    XD37  ENABLED
- KEY1    XE37  ENABLED
- KEY1    X0E7  ENABLED
- KEY1    X0F3  ENABLED
- KEY1    X013  ENABLED
- KEY1    X028  ENABLED
- KEY1    X13E  ENABLED

Command ==>
F1=Help      F2=End      F3=Return   F6=Roll
              F8=Forward  F9=Refresh  F12=Retrieve
    
```

Figure 84. INGPLEX SLIP Main Panel

The following command codes are available:

- + Shows the settings of the SLIP trap.
- Hides the settings of the SLIP trap.
- D** Disables the SLIP trap.
- E** Enables the SLIP trap.
- R** Deletes the SLIP trap.

The SORT, FIND and RFIND commands are supported.

Note: The user must be authorized to enable, disable, and delete a SLIP trap. The authorization can be any of those that are used for controlling coupling facilities and couple data sets.

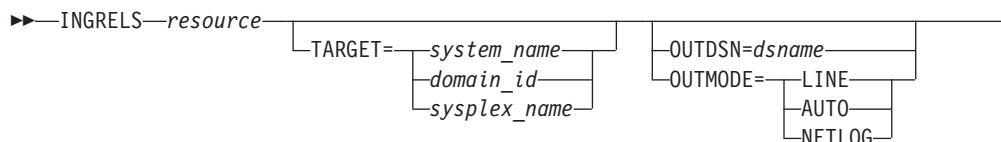
For information about the panel fields refer to the online help.

INGRELS

Purpose

The INGRELS command shows the relationships that are defined for the given resource.

Syntax





Parameters

resource

Specifies the name of the resource to be displayed. The format is *name/type[/system]*.

TARGET

For information on the TARGET parameter, see “TARGET Parameter” on page 10.

OUTDSN

For information on the OUTDSN parameter, see “OUTDSN Parameter” on page 13.

OUTMODE

For information on the OUTMODE parameter, see “OUTMODE Parameter” on page 12.

WAIT

Specifies the number of seconds to wait before reporting that a timeout occurred if the automation manager does not provide the requested data. The maximum time interval is 999 seconds.

If omitted, the time interval is 30 seconds.

SHOW

Specifies whether or not to show just the relationships or also the relationship conditions. It can be:

EXPANDED

This shows relationships and their conditions. This is the default.

COLLAPSED

This shows just the relationships.

Restrictions and Limitations

None.

Usage

The INGRELS command operates sysplexwide. For an overview see “Overview of Commands that Operate Sysplexwide” on page 9.

Examples

If you enter `ingrels` and the name of a resource, a panel similar to that in Figure 85 on page 196 is displayed.

```

INGKYRL0          SA z/OS - Command Dialogs          Line 1    of 115
Domain ID   = IPUN8   ----- INGRELS -----         Date = 01/02/03
Operator ID = NETOP1          Sysplex = AOC8PLEX          Time = 13:15:00

Resource  => NETVIEW/APL/AOC8
Target    => _____ System name, domain id or sysplex name

Cmd:  - Collapse  + Expand  E INGVOTE  F INGINFO  J INGGROUP  S Focus

Cmd Name      Type System  Dir Relationship
-----
-  ALWAYSUP   APL  AOC8    B  HasParent - Strong
                        Cond: stopDependency - UNSATISFIED
                        Cond: reallyDown - UNSATISFIED
                        Cond: allExpectedDown
-  AOC8        SYG  AOC8    B  HasMember
                        Cond: startDependency
                        Cond: stopDependency
                        Cond: extStart - UNSATISFIED
                        Cond: extStop - UNSATISFIED
                        Cond: extStopDelayed
                        Cond: prestartDependency
                        Cond: prestopDependency
                        Cond: groupTriggerStartupInhibited - YES
                        Cond: groupTriggerShutdownInhibited - YES
                        Cond: groupAutomationDisabled - UNSATISFIED
-  BZOENEW    APL  AOC8    B  HasParent - Strong
                        Cond: stopDependency - UNSATISFIED

Command ==>>
PF1=Help      PF2=End      PF3=Return   PF5=Collapse all   PF6=Roll
PF8=Forward   PF9=Refresh  PF11=Expand all  PF12=Retrieve
    
```

Figure 85. INGRELS Command Dialog Panel

- The **Cmd** field lets you specify command codes. To use one of the command codes shown, type the appropriate letter next to the resource name and press Enter. The following command codes are available:
 - + Shows the condition details that exist for the selected relationship. This is only applicable if the relationship conditions are collapsed.
 - Collapses the condition details so that only the relationship is shown.
 - E Shows the requests and votes of the resource (it displays the INGVOTE panel for the resource).
 - F Shows detailed information about the resource (it displays the INGINFO panel for the resource).
 - J Displays the INGGROUP panel for the resource.
 - S Focuses on the selected resource. This is equivalent to specifying the selected resource name in the Resource field at the top of the panel.
- The **Name** field shows the name of the resource that the specified resource has a relationship with. This is referred to as the relationship partner and is also called the supporting resource.
- The **Type** field shows the type of the resource.
- The **Target** field shows the name of the system where the resource resides.
- The **Dir** field shows the direction of the relationships as seen from the specified resource.
 - F Forward. The relationship exists from the specified resource to the partner resource.
 - B Backward. The relationship exists from the partner resource to the specified resource.

- The **Relationship** field shows the name of the relationship that exists between the two resources. This defines the dependency that exists between the two resources. The status of all descendants will be considered for a relationship with strong chaining. For weak chaining only the direct descendants are checked. Weak is the default. Strong chaining causes SA z/OS to check all relationships of the involved resources along the dependency graph.
If the relationship name contains 'active', this means that an attempt is made to bring the supporting resource in the required state to satisfy the dependency. Active is the default.

The following PF keys are supported:

- Use the PF5 key to collapse the visible relationship conditions for all relationships.
- Use the PF11 key to see the relationship condition details for all relationships.

If you collapse all condition details, the INGRELS panel looks like Figure 86.

```

INGKYRLO                SA z/OS - Command Dialogs          Line 1   of 27
Domain ID = IPUN8      ----- INGRELS -----          Date = 01/02/03
Operator ID = NETOP1   Sysplex = AOC8PLEX                Time = 13:15:41

Resource => NETVIEW/APL/AOC8
Target   => _____ System name, domain id or sysplex name

Cmd:  - Collapse  + Expand  E INGVOTE  F INGINFO  J INGGROUP  S Focus

Cmd Name      Type System  Dir Relationship
-----
- ALWAYSUP    APL  AOC8    B  HasParent  - Strong
- AOC8        SYG  AOC8    B  HasMember
- BZOENEW     APL  AOC8    B  HasParent  - Strong
- ECICAOR     APL  AOC8    B  HasParent  - Strong
- ECICSTOR    APL  AOC8    B  HasParent  - Strong
- EDB2IRLM    APL  AOC8    B  HasParent  - Strong
- EDM2MSTR    APL  AOC8    B  HasParent  - Strong
- EIMSCTL1    APL  AOC8    B  HasParent  - Strong
- EIMSDBRC    APL  AOC8    B  HasParent  - Strong
- EOPCCNTL    APL  AOC8    B  HasParent  - Strong
- EOPCTRK     APL  AOC8    B  HasParent  - Strong
- HASPASPR    APL  AOC8    B  HasParent  - Strong
- MOVSYS1     APL  AOC8    B  HasParent  - Strong
- MOVSYS2     APL  AOC8    B  HasParent  - Strong
- MOVSYS3     APL  AOC8    B  HasParent  - Strong
- MULTIEVT    APL  AOC8    B  HasParent  - Strong
- MULTISTR    APL  AOC8    B  HasParent  - Strong

Command ==>
PF1=Help    PF2=End    PF3=Return  PF5=Collapse all  PF6=Roll
PF8=Forward PF9=Refresh PF11=Expand all  PF12=Retrieve

```

Figure 86. INGRELS Command Dialog Panel with All Details Collapsed

INGREQ

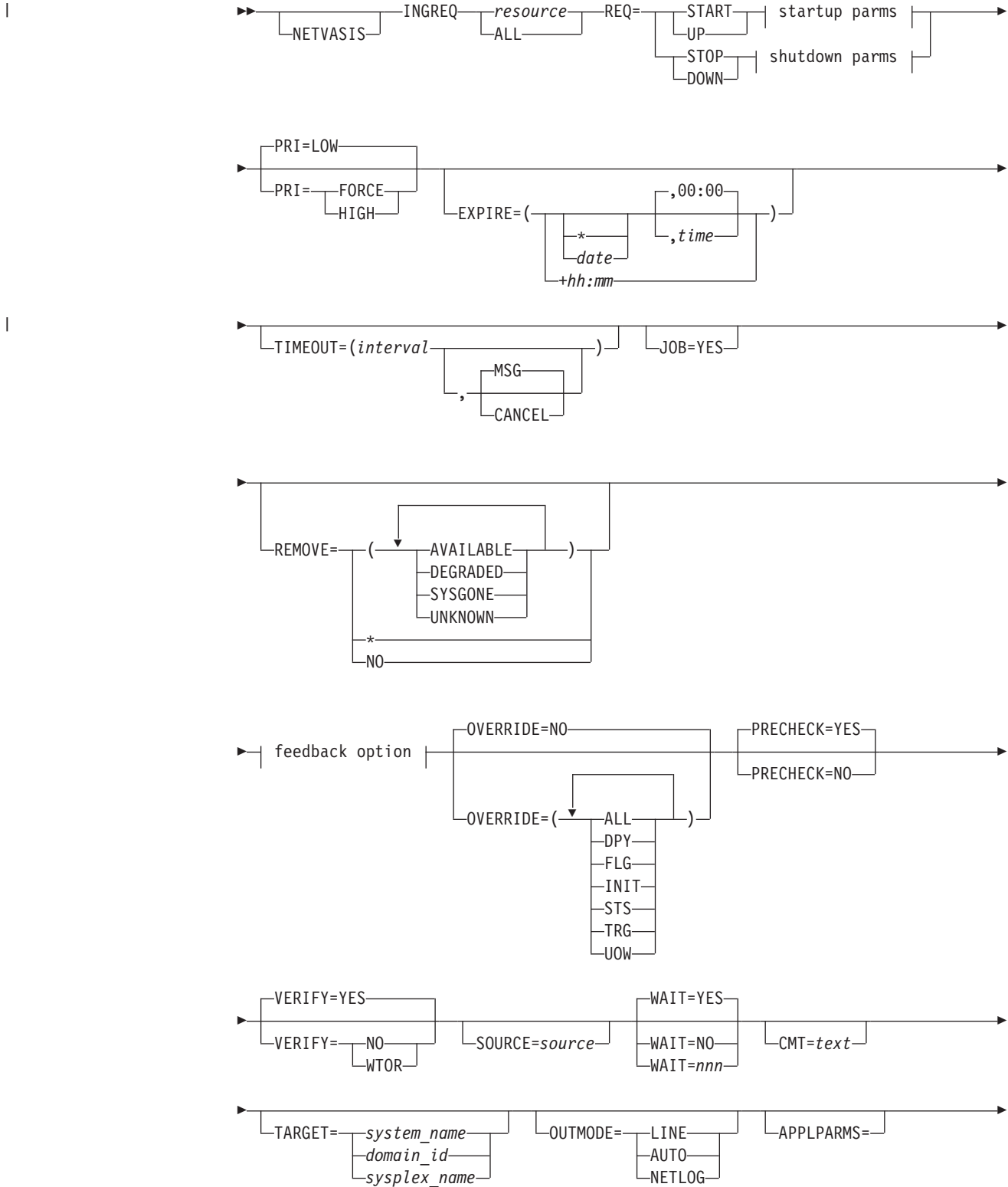
Purpose

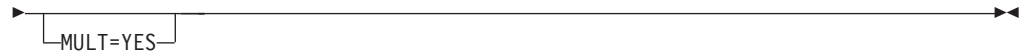
The INGREQ command lets you:

- Initiate the shutdown process for one or more resources
- Initiate the startup process for one or more resources
- Cancel a request that was previously made for the specified resource

Syntax

To start up or shut down resources:

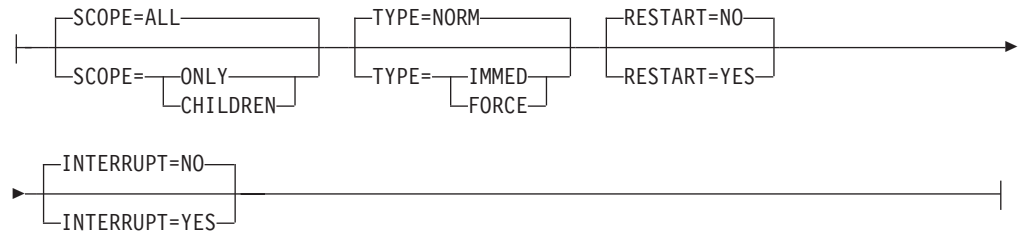




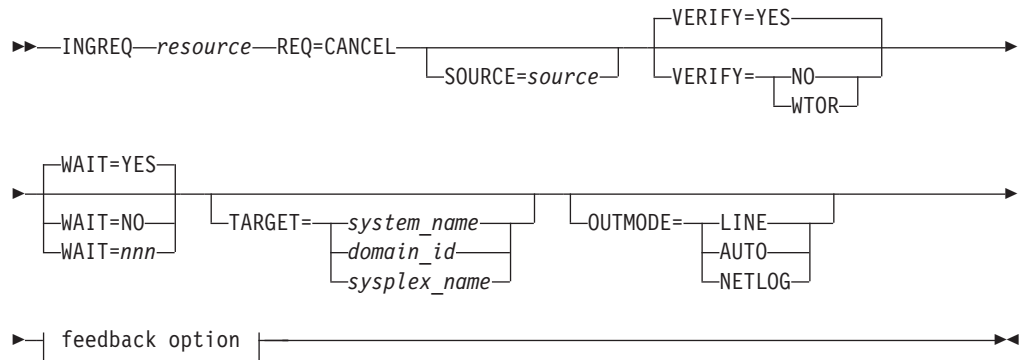
Startup parms:



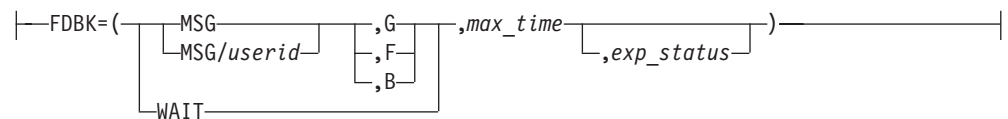
Shutdown parms:



To cancel a request:



Feedback option:



Parameters

NETVASIS

Prefix the INGLIST command with NETVASIS if you want to pass the description text in lower or mixed case.

resource

Specifies the name of the resource to be processed. The format is *name[/type[/system]]*. Wildcards are supported. In fullscreen mode, if more than one resource matches the wildcard specification, a selection panel is displayed.

|
|
|

INGREQ

In line mode, if more than one resource matches the wildcard specification and MULT=YES is specified, all selected resources are processed. Multiple resource specification in line mode without MULT=YES causes an error message to be displayed.

To shut down all resources for a system, specify *name/SYG/name*, where *name* is the system name. Alternatively, you can specify ALL.

Note: You need not specify the full name of the resource. This applies to the system as well as to the type. If the resource name is unique within the name space of the automation manager, the system name need not be specified. If the resource name is unique within the appropriate types, the type need not be specified. A valid resource name could be, for example, CICSPROD.

REQ

Specifies the request to be carried out. It can be either START or STOP. Alternatively you can use UP or DOWN.

Specify CANCEL if you want to cancel a request.

PRI

Specifies the priority given to the request. It can be:

FORCE

Takes precedence over requests posted with HIGH priority, for example, INGREQ=START PRI=FORCE overrules an INGREQ=STOP PRI=HIGH request.

HIGH High priority.

LOW Low priority. This is the default.

EXPIRE

Specifies the expiry date and time of the request. The request is automatically removed when it expires. The date format is yyyy-mm-dd. The time format is hh:mm.

Alternatively, you can specify a relative time, for example, +04:00. The relative time will be automatically converted into the absolute date/time. The maximum relative time interval is 24:00 hours.

TIMEOUT

Specifies the interval used to check whether the request has been successfully completed. Either a message is issued, or the request is cancelled if the request has not been satisfied after that time. The format is mm.

MSG

Specifies that a message should be issued telling the notify operator that the request was not satisfied within the expected time interval. The default is to issue a message.

CANCEL

Specifies that the request should be canceled.

JOB

Indicates the specified resource is a job name. The job name can contain a wildcard.

REMOVE

Indicates the condition when the request is automatically removed, regardless of whether the request is satisfied or not. If the specified condition matches the observed status of the resource, the request is deleted.

AVAILABLE

When starting a resource and specifying REMOVE=AVAILABLE, this causes the request to be removed from the system as soon as the resource becomes available.

DEGRADED

As soon as the observed status of the resource becomes DEGRADED, the start request is removed. Thus there will be no requests outstanding for the resource and a SHUTSYS ALL will go through even with low priority.

SYSGONE

If the system where the automation agent runs leaves the sysplex, the observed status of all resources running on that system becomes SYSGONE.

UNKNOWN

If the automation agent stops, the observed status of all resources controlled by the automation agent becomes UNKNOWN.

Alternatively you can specify an asterisk (*) or NO to reset the installation-defined default.

OVERRIDE

Specifies the overrides to be considered for the request. These can be one or more of the following:

NO Specifies that no override is done. For example, a resource will not be started unless its startup flag is set on and its trigger, if used, is satisfied. This is the default.

ALL

Sets the DPY, FLG, INIT, STS, TRG, and UOW, flags to on. For startup this means that the resource is made available regardless of the automation flag settings, its trigger setting or the state of the start dependencies defined for the resource. For shutdown this means that the resource is made unavailable regardless of its automation flag settings, the trigger state and the state of the stop dependencies.

DPY

Causes the status of the relevant START/STOP dependencies that are defined for the resource to be ignored.

Note: This parameter should only be used with STOP SCOPE=ONLY.

FLG

The appropriate automation flags will be ignored for the resource.

INIT

The current INITIAL start required status will be ignored for a CICS subsystem. There are certain conditions when CICS abnormally ends and an INITIAL start is required. CICS Automation will detect these conditions and perform the next start with type INITIAL. This override can be used to ignore the INITIAL start tests, for example, if the problem has been fixed externally.

This option only applies to CICS subsystems on systems with SA z/OS releases prior to V3.3.

STS

The current observed status of the resource is ignored by the agent during INGREQ precheck processing. Override STS does not affect automation

INGREQ

manager processing. Therefore, the automation manager may still reject the request after the agent has forwarded it to the automation manager.

TRG

The current trigger settings will be ignored when determining whether or not the resource can be started or stopped.

UOW

The current Outstanding Unit of Work status will be ignored for a CICS subsystem. If there are Outstanding Units of Work for a CICS subsystem, CICS Automation will start the subsystem with type AUTO (based on user-specified policy). This override can be used to ignore the UOW tests.

This option only applies to CICS subsystems on systems with SA z/OS releases prior to V3.3.

PRECHECK

Specifies whether or not the startup or shutdown process should pre-validate any actions before actually performing them. The value can be:

YES Validation is performed for the entry resources. This is the default.

NO Validation is not performed before the command is issued.

The following validation is done for each resource that is to be affected by the INGREQ request:

- START or STOP ability, depending on current status
- Automation flag checks, depending on the request type
- Extra feature (CICS or DB2) start or stop ability checks

These checks are made on each automation agent that hosts a specific resource before any automation manager involvement in the request. Any failure that is detected during the precheck phase results in an INGREQ request failure. This is indicated by a non-zero return code and a relevant error message that is issued and delivered as set by the OUTMODE parameter.

VERIFY

Specifies whether the startup or shutdown process should be verified. The following specifications are valid:

YES Depending on the NetView task type that the INGREQ command is running on, the verification is either displayed on a fullscreen panel or, in line mode, shown on the console. The latter is also done when OUTMODE=LINE is coded.

WTOR

The list of affected resources is displayed before the startup or shutdown begins. The operator is prompted to verify the list via WTOR.

NO No verification is performed. VERIFY is set to NO for unattended tasks. Otherwise it is set to YES.

The default depends on the type of task that the INGREQ command runs on.

SOURCE

Specifies the originator of the request. The default is OPERATOR for an OST and AUTOOPS for an autotask. When REQ=CANCEL, this parameter is used as a filter. Only those requests from the named source are cancelled. Wildcards are supported, for example, OP*. An asterisk (*) matches a string of arbitrary length and a percentage sign (%) matches a single character.

WAIT

Specifies whether or not to wait until the request is complete. The default is YES.

The variable *nnn* is the number of seconds to wait before giving up and reporting that a timeout has occurred. The maximum time interval is 999 seconds.

CMT

Specifies descriptive information about the request. The maximum length is 120 characters. If the text contains embedded blanks, it must be enclosed in quotation marks or parentheses.

TARGET

For information on the TARGET parameter, see “TARGET Parameter” on page 10.

OUTMODE

For information on the OUTMODE parameter, see “OUTMODE Parameter” on page 12.

APPLPARMS

The content of APPLPARMS is put into the &APPLPARMS variable.

MULT

Specifies that more than one resource will be accepted when running in line mode, if the resource wildcard specification results in multiple resources.

SCOPE

Specifies whether the startup or shutdown affects a resource or its descendants, or both. Valid options are:

ONLY

Specifies that only the specified resource is started or stopped. This is the default for startup.

ALL

Specifies that the resource and its descendants are started or stopped. This is the default for shutdown.

CHILDREN (shutdown only)

Specifies that only the descendants of the resource are stopped.

TYPE

Specifies the type of the startup or shutdown. Each type must be defined in the policy database. Valid options are:

NORM (startup or shutdown)

Specifies a normal startup or shutdown. This is the default.

IMMED (shutdown only)

Specifies an immediate shutdown.

FORCE (shutdown only)

Specifies a forced shutdown.

user (startup only)

Specifies a user-defined startup type.

Note: If no startup commands are defined for the specified start type, the startup commands for start type NORM are issued.

Note: The value specified here will be overridden by the INGSET STARTTYPE/STOPTYPE value if previously specified. However, a stop type of FORCE, wherever specified, will always be honored.

Use the VERIFY option to view the TYPE value that will be used for this request.

Once a shutdown has got to a PROBLEM or DENIED state, you can submit another shutdown request against the resource, specifying a different shutdown type or override parameters or both.

If you want to escalate the shutdown of a child subsystem, you can issue the INGREQ directly against it, but you must use a higher priority than the shutdown request against the parent was made with.

RESTART (shutdown only)

Specifies whether the resource should be restarted automatically when it has been shutdown completely. Valid options are:

NO Specifies that no restart is performed. This is the default.

YES

Specifies that a restart is performed.

INTERRUPT (shutdown only)

Specifies whether or not to interrupt the startup or shutdown phase of the resource. Valid options are:

NO If the resource is starting, the automation manager waits for the resource's UP message before proceeding with the shutdown.

If the resource is shutting down, the automation manager waits until the shutdown is complete. This is the default.

YES

If the resource is starting, the automation manager interrupts the startup process and starts shutting down the resource.

Interrupting the shutdown process means breaking the former stop request that is in a locked state because the agent has not yet indicated that the shutdown is complete. A typical scenario where the INTERRUPT=YES option is used is when escalating to a higher stop type.

FDBK

Specifies the feedback parameter that causes the final result of the command to be reported back to the designated instance.

MSG Causes message signaling of the successful or unsuccessful completion of the command to be performed.

The message is sent back to the originator of the command. The originator is determined by the NetView OPID(S) function unless the user ID is specified. Depending on the status, either message ING300I or ING301I is issued. The message text contains the command that was processed successfully or failed.

userid

Identifies the NetView user ID of the person to be notified if different to the originating user.

Use the following values to specify when to issue the message:

G Issue the message only when the resource has reached its expected status.

F Issue the message only if the resource did not reach its expected state in the specified time interval.

B Issue the message in all cases.

WAIT To wait for the completion of the command (denoted by the *max_time* parameter). Note that the WAIT option is rejected when the INGREQ command executes on a work operator.

max_time

The time interval in NetView format (mm:ss, :ss, mm or hh:mm:ss) that SA z/OS will wait. If the specified resource has not reached the expected state, the command is considered to have failed and the operation is posted in error.

exp_status

The observed status that the resource should be in to consider command processing to be complete. The status can be abbreviated, for example, AV for Available. More than 1 status can be specified.

Restrictions and Limitations

To use the INGREQ command system operations must be initialized.

The FDBK parameter will only monitor resources within the local sysplex.

Usage

The INGREQ command operates sysplexwide. For an overview see “Overview of Commands that Operate Sysplexwide” on page 9.

Examples

If you enter INGREQ a panel similar to Figure 87 is displayed.

INGKYRU0	SA z/OS - Command Dialogs	Page 1 of 2
Domain ID = IPSFP	----- INGREQ -----	Date = 04/27/06
Operator ID = NETOP1		Time = 18:52:41
Resource =>	CICS/APL/KEY4	format: name/type/system
Target =>	_____	System name, domain ID or sysplex name
Request =>	START	Request type (START/UP, STOP/DOWN or CANCEL)
Type =>	NORM	Type of processing (NORM/IMMED/FORCE/user) or ?
Scope =>	_____	Request scope (ONLY/CHILDREN/ALL)
Priority =>	LOW	Priority of request (FORCE/HIGH/LOW)
Expire =>	_____ , _____	Expiration date(yyyy-mm-dd), time(hh:mm)
AutoRemove =>	_____	- see help for list
Restart =>	NO	Restart resource after shutdown (YES/NO)
Override =>	NO	(ALL/NO/TRG/FLG/DPY/STS/UOW/INIT)
Verify =>	YES	Check affected resources (YES/NO/WTOR)
Comment =>	_____	
Appl Parms =>	,CN	
Command ==>>		
PF1=Help	PF2=End	PF3=Return
		PF6=Ro11
		PF11=Next
		PF12=Retrieve

Figure 87. INGREQ Command Dialog Panel 1

INGREQ

- The **Resource** field shows the name of the resource to be processed. The format is *name/type[/system]*. Wildcard is supported.
- The **Target** field shows the name of the system (system name, domain ID, or sysplex name) that the command should be routed to. Specifying this is only necessary if the resources are not part of the local sysplex.
- The **Request** field shows the request to be carried out. This is either START or STOP. Alternatively you can use UP or DOWN. To remove a previously made request from the same source specify CANCEL.
- The **Type** field shows the type of the startup or shutdown. Valid shutdown types are NORM, IMMED and FORCE as well as any other type defined in the policy database for the resource. Specify a question mark (?) to display the list of defined startup types.
- The **Scope** field shows whether the startup or shutdown affects this resource or its descendants, or both.
- The **Priority** field shows the priority given to the request.
- The **Expire** field shows the expiry date and time when the request will be removed.
- The **AutoRemove** field shows the condition when the request is automatically removed regardless of whether the request is satisfied or not.
- The **Restart** field shows whether the resource should be restarted automatically when it has been shutdown completely. This applies only when requesting a shutdown of a resource.
- The **Override** field shows the overrides to be considered for the request. The parameter can be used to bypass the conditions or settings that would otherwise prevent a resource, or resources, from starting or shutting down.
- The **Verify** field shows whether the startup or shutdown process should be verified. If YES or WTOR is entered, the list of affected resources is displayed before the startup or shutdown begins. You will be prompted to verify the list. If WTOR is specified, you will be prompted via a WTOR. If NO is entered, the startup or shutdown begins immediately. The default is YES.
- The **Comment** field lets you specify descriptive information, for example, why the request was made.
- The **Appl Parm**s field shows modifications or parameters to the START or STOP request.

If you press PF11 a panel similar to Figure 88 on page 207 is displayed.

```

INGKYRU2          SA z/OS - Command Dialogs          Page 2 of 2
Domain ID = IPSFP ----- INGREQ -----          Date = 04/27/06
Operator ID = NETOP1                                Time = 18:53:03

Resource  => CICS/APL/KEY4                          format: name/type/system
Target    => _____ System name, domain ID or sysplex name

Timeout   => 0 / MSG Interval in minutes / Option (MSG/CANCEL)
Precheck  => YES Precheck for flags and passes (YES/NO)
Interrupt => NO Specify YES to terminate Startup processes

Command ==>
PF1=Help   PF2=End   PF3=Return
PF10=Previous PF6=Roll PF12=Retrieve

```

Figure 88. INGREQ Command Dialog Panel 2

- The **Timeout** field shows the time period that the request must complete in. After this time interval either a message is issued, or the request is canceled.
- The **Precheck** field shows whether or not the startup or shutdown process should perform up-front validation.
- The **Interrupt** field shows whether or not a request to shut down a resource should interrupt the startup phase of a resource:
 - YES** The automation manager interrupts the startup process as soon as this stop request is submitted.
 - NO** If the resource is starting, the automation manager waits for the resource's UP message before proceeding with the shutdown. This is the default.

INGRPT

Purpose

The INGRPT command displays statistical information about the automation agent and some basic information about the automation manager. Two types of reports are produced:

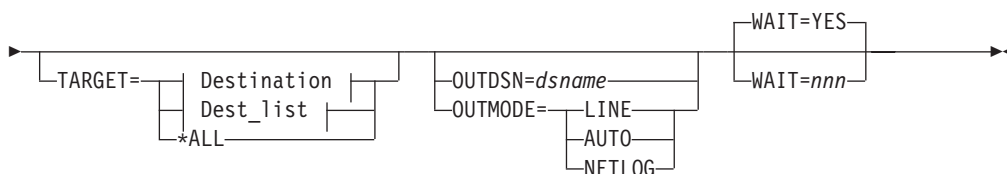
- Summary report.
- Detail report.

Syntax

```

▶▶ INGRPT [RESET] | Report options | [RESOURCE=name] ▶▶

```



Report options:



Destination:



Dest_list:



Parameters

The following parameters are supported:

RESET

Resets the counters to 0. This option can be specified with the STATS parameter to get the statistics information and subsequently reset the counters.

RESOURCE

Is the name of the subsystem that you want to collect the statistics for, for example, TSO. Wildcard is supported, for example, INGRPT STATS=D RESOURCE=abc*. The wildcard can be leading or trailing, for example *abc*.

TARGET

For information on the TARGET parameter, see "TARGET Parameter" on page 10.

OUTDSN

For information on the OUTDSN parameter, see "OUTDSN Parameter" on page 13.

OUTMODE

For information on the OUTMODE parameter, see "OUTMODE Parameter" on page 12.

WAIT

Specifies whether or not to wait until the request is complete. The default is YES.

nnn is the number of seconds to wait before giving up and reporting that a timeout has occurred. The maximum time interval is 999 seconds.

STATS

Specifies whether to generate a summary report or a detail report. Detail statistics include information about each resource or subsystem that is automated by the agent. The following options are valid:

SUMMARY

This is the default.

DETAIL

Specifies to show detailed information for each resource (subsystem in the automation agent terminology).

NONE

No report is produced. The NONE option is only useful if the reset option is specified.

Restrictions and Limitations

None.

Usage

Issuing ACF COLD resets the statistic counters.

The statistic counters for a subsystem removed with INGAMS REFRESH are not erased. However, the statistic counters for a subsystem are cleared if ACF COLD or INGRPT RESET is issued.

Examples

If you enter INGRPT you will see the start of a summary report for your system that is similar to Figure 89.

```

INGKYRP0                SA z/OS - Command Dialogs          Line 1    of 53
Domain ID   = IPUN8      ----- INGRPT -----          Date = 10/31/03
Operator ID = NETOP1     System = AOC8                    Time = 13:04:14

***** Summary Statistics *****
System   : AOC8                                           31 Oct 2003 13:04:12
-----

Begin of statistics : 10/30/03 11:32:25          Domain   : IPUN8
End   of statistics : 10/31/03 13:04:12          Sysplex  : AOC8PLEX
Elapsed time (hours) : 25:32 (1532 min)

Automation Agent Statistics
CPU time used (seconds)           : 344.87

Total number of resources defined   : 69
Total number of resources managed   : 22

Total number of messages automated : 0
Average number of messages per hour : 0.0

Command ==>
PF1=Help    PF2=End    PF3=Return    PF6=Roll
PF8=Forward PF9=Refresh PF12=Retrieve

```

Figure 89. INGRPT Command Dialog Panel

This panel shows statistical information about the automation agent and some basic information about the automation manager. The report shows information that has been gathered during the SA z/OS session. The SA z/OS session begins with either SysOps initialization or the last INGRPT RESET command (whichever comes last) until the INGRPT STATS=SUMMARY/DETAIL command is issued. The counters are not retained across SysOps sessions.

INGRPT

The summary report for a particular subsystem shows:

- The total number of messages automated for the resource.
- The average number of messages automation per hour.
- The total number of resulting commands.
- The total number of Start commands issued.
- The total number of Stop commands issued.
- The total number of critical threshold reached hits.

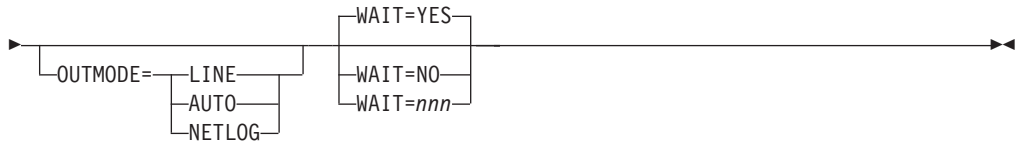
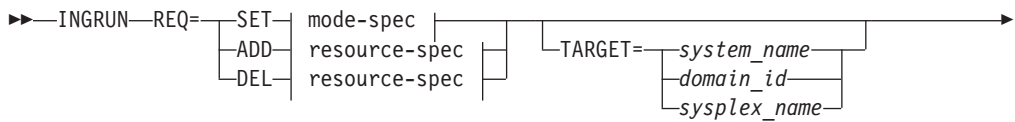
INGRUN

Purpose

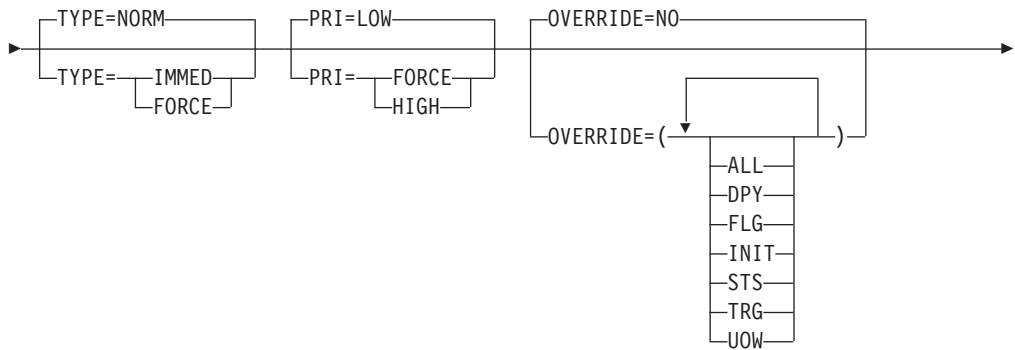
The INGRUN command lets you:

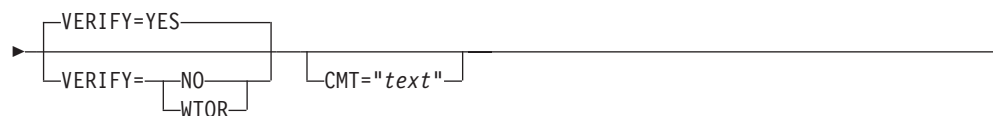
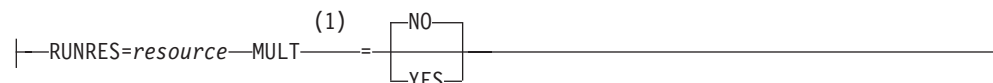
- Set a runmode for a system
- Add the qualification of one or more resources for any runmode
- Delete runmode qualification for one or more resources

Syntax



mode-spec:



**resource-spec:****Notes:**

- 1 Line-mode only

Parameters**REQ**

The request to be carried out.

SET Specifies a new runmode is set

ADD Qualifies one or more individual resources for a runmode

DEL Deletes the runmode qualification for the given resource

RUNMODE

Specifies the runmode to be activated. The runmode must be specified in the policy database. In full-screen mode, a question mark(?) can be specified to display a selection list. Use *ALL to disable runmode consideration.

PERSISTENT

Specifies whether the request should be kept across system IPL. Valid options are:

NO The runmode request is removed as soon as the system leaves the sysplex. For more information, see REMOVE=SYSGONE of the "INGREQ" on page 197 command. This is the default setting.

YES The runmode request is kept in the takeover file.

RUNRES

Specifies the resource to be considered qualified for any runmode. The format is *name/type[/system]*. In full-screen mode, if more than one resource matches the specification, a selection panel is displayed. In full-screen mode, for a DEL request a question mark(?) can be specified to display a selection list of all resources previously specified on an ADD request.

MULT

Specifies that more than one resource will be accepted when running in line mode, if the resource wildcard specification results in multiple resources. This command is available in line mode only.

NO The resource specification must resolve to a single resource.

YES Multiple resources can be processed with a single invocation of the INGRUN command.

SYSTEM

Specifies the system for which the runmode is set.

INGRUN

TYPE

Specifies the type of shutdown to be used for resources that do not qualify for the new runmode. For more information, see the “INGREQ” on page 197 command.

PRI / PRIORITY

Specifies the priority for the shutdown of the resources that do not qualify for the new runmode. For more information, see the “INGREQ” on page 197 command.

OVERRIDE

Specifies the overrides that are to be considered when shutting down resources that do not qualify for the new runmode. For more information, see the “INGREQ” on page 197 command.

VERIFY

Specifies if the shutdown process of resources that do not qualify for the new runmode should be verified.

CMT / COMMENT

Specifies descriptive information, for example, why the request was made.

TARGET

For information on the TARGET parameter, see “TARGET Parameter” on page 10

OUTMODE

For information on the OUTMODE parameter, see “OUTMODE Parameter” on page 12.

WAIT

Specifies whether to wait or not for the request to complete. The default is YES.

nnn is the number of seconds to wait before giving up and reporting that a timeout has occurred. The maximum time interval is 999 seconds. For more information, see the “INGREQ” on page 197 command.

Restrictions and Limitations

To use the INGRUN command, system operations must be initialized.

Usage

The INGRUN command operates sysplexwide.

Examples

If you enter ingrun a panel similar to Figure 90 on page 213 is displayed.

```

INGKYRMO          SA z/OS - Command Dialogs
Domain ID = IPUFJ ----- INGRUN ----- Date = 08/11/11
Operator ID = NETOPER1                               Time = 12:10:38

Request  => _____ Request type (SET, ADD or DEL)
Target   => _____ System name, domain ID or sysplex name

--- Parameters for SET request -----
System   => _____ System name
Runmode  => _____ Runmode name (mode or ?)
Persistent => _____ Keep request across IPL (YES/NO)
Type     => _____ Type of processing (NORM/IMMED/FORCE)
Priority  => _____ Priority of request (FORCE/HIGH/LOW)
Override => _____ (ALL/NO/TRG/FLG/DPY/STS/UOW/INIT)
Verify   => _____ Check affected resources (YES/NO/WTOR)
Comment  => _____

-----
--- Parameters for ADD or DEL requests -----
Resource => _____ format: name/type/system
AOF710A VERIFY/REVISE INPUT AND THEN PRESS ENTER
Command ==>
PF1=Help   PF2=End   PF3=Return   PF6=Roll
PF12=Retrieve

```

Figure 90. INGRUN Command Dialog Panel

Request

Valid request types are SET, ADD, and DEL.

Target

Specifies the name of the system (system name, domain ID or sysplex name) that the command should be routed to. This is only necessary when you want to operate outside of the local sysplex.

The following parameters are valid for SET only:

System

Specifies the name of the system that you want to set a runmode for.

Runmode

Specifies the name of the runmode that you want to set. You can specify a question mark (?) to select a from a list of all available resources.

Persistent

Specifies whether the request should be kept across system IPL. For more information, see REMOVE=SYSGONE of "INGREQ" on page 197 command.

Type

Specifies the type of shutdown to be used for resources that do not qualify for the new runmode. For more information, see the "INGREQ" on page 197 command for further details.

Priority

Specifies the priority for the shutdown of the resources that do not qualify for the new runmode. For more information, see the "INGREQ" on page 197 command for further details.

Override

Specifies the overrides that are to be considered when shutting down resources that do not qualify for the new runmode. For more information, see "INGREQ" on page 197 for further details.

INGRUN

Verify

Specifies whether the shutdown process of resources that do not qualify for the new runmode should be verified. For more information, see "INGREQ" on page 197 for further details.

Comment

Specifies descriptive information ,for example, why the request was made.

The following parameter is set for ADD and DEL requests:

Resource

Specifies the name of the resource for which you want to add or delete the qualification. The format is name/type/system or name/type for sysplex resources. Wildcards and incomplete specifications are supported. For DEL requests a question mark (?) can be specified which lets you choose from a list of resources previously specified on an ADD request.

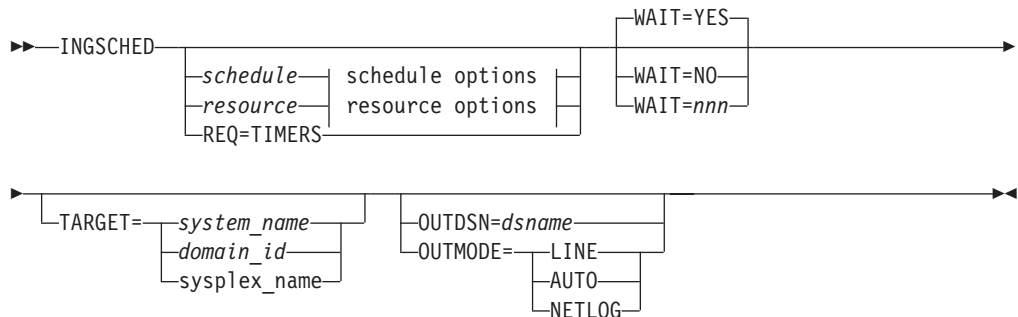
INGSCHED

Purpose

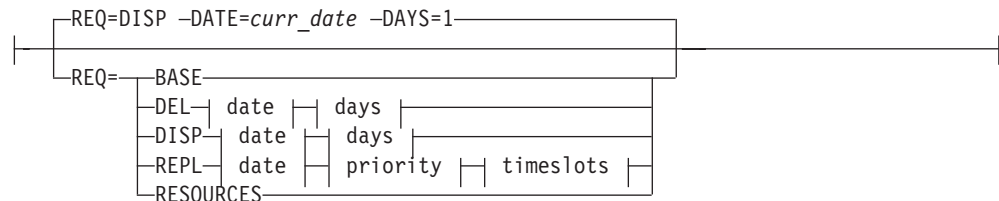
INGSCHED displays a list of all defined schedules (service periods). It lets you:

- Update the time slots (this is referred to as a schedule override).
- Display the list of resources that are associated with the schedule.
- Delete schedule or resource overrides.

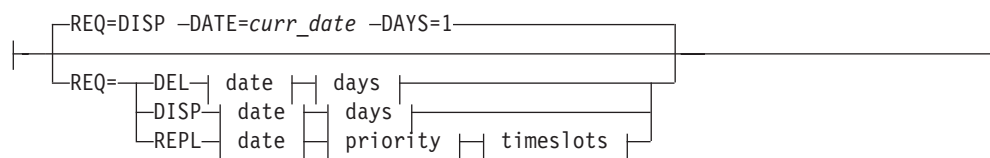
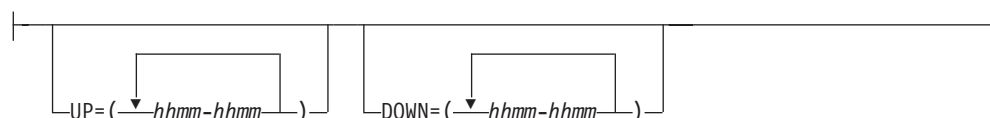
Syntax



schedule options:



resource options:

**date:****days:****priority:****timeslots:**

Parameters

schedule

Is the name of the schedule to be displayed.

resource

Specifies the resource that the schedule overrides are to be displayed for. The format is *name/type[/system]*.

REQ

Specifies the request. The request can be:

BASE

Displays the base schedule information.

DEL

Deletes the overrides for the specified date.

DISP

Displays the base schedule, schedule override or resource overrides starting with the specified date.

REPL

Replaces the schedule or resource override with a new one.

RESOURCES

Displays the resources that use the specified schedule (service period).

INGSCHED

TIMERS

Displays the list of timers that are currently scheduled.

DATE

Specifies the date in *yyyymmdd* format that the delete or replace of the override should be done for.

curr_date

The current date.

DAYS

Specifies the number of days for which the overrides should be displayed or deleted.

PRIORITY

Specifies the priority to be assigned to the override. The first value is the UP priority and the second value is the DOWN priority. Valid values are:

HIGH High priority.

LOW Low priority.

Both priorities are optional. The default is LOW. The priority values can be abbreviated.

UP Specifies the UP start and stop times in the format *hhmm-hhmm*. Up to five time slots can be specified separated by a comma. The UP time slots define the time windows where the resource must or should be available. A priority of HIGH means that the resource must be available, while a priority of LOW means that the resource should be available.

DOWN

Specifies the DOWN start and stop times. The format is *hhmm-hhmm*. Up to five time slots can be specified separated by a comma. The DOWN time slots define the time window where the resource must or should be *not* available (that is, unavailable). A priority of HIGH means that the resource must be unavailable, while a priority of LOW means that the resource should be unavailable. If you specify DOWN, specifying the UP priority becomes mandatory.

WAIT

Specifies whether or not to wait until the request is complete. The default is YES.

nnn is the number of seconds to wait before giving up and reporting that a timeout has occurred. The maximum time interval is 999 seconds.

TARGET

For information on the TARGET parameter, see "TARGET Parameter" on page 10.

OUTDSN

For information on the OUTDSN parameter, see "OUTDSN Parameter" on page 13.

OUTMODE

For information on the OUTMODE parameter, see "OUTMODE Parameter" on page 12.

Restrictions and Limitations

The INGSCHED command can only be used when system operations is initialized.

Service period overrides cannot be modified immediately after a system time change where the system clock was set back, for example, in case of daylight savings. Overrides cannot be modified until the new local time passes the original pre-adjustment local time.

Usage

The INGSCHED command operates sysplexwide. For an overview see “Overview of Commands that Operate Sysplexwide” on page 9.

The automation agent as well as the automation manager verify each time slot being modified. Due to the delay between these verifications, a time slot of the current day that is still valid when the agent checks it could already be invalid when the automation manager checks it. For example, the agent passes an override request to the manager at 10:59:59. The automation manager scheduler receives the request at 11:00:01 and rejects it because the start time has already elapsed. This is indicated by return code 8 and reason code X'10C4' in message INGY1004. If this error occurs, you can fix it by correcting the time slot in error and reissuing the override.

Examples

If you enter ingsched a panel similar to Figure 91 is displayed.

```

INGKYSP0          SA z/OS - Command Dialogs      Line 1   of 3
Domain ID = IPSNM  ----- INGSCHED -----      Date = 08/25/03
Operator ID = NETOP1                               Time = 13:56:24

Cmd:  A Show Details  B Show Overrides  C Show Resources

Cmd Schedule  Description
-----
-  STD_SERV  Standard Service Period
-  TSOPLUS   Special service period for TSOPLUS
-  ONLINE    Schedule for CICS applications

Command ==>>
PF1=Help      PF2=End      PF3=Return    PF6=Ro11
               PF9=Refresh   PF12=Retrieve

```

Figure 91. INGSCHED Initial Command Dialog Panel

- The **Cmd** field allows you to specify command codes. To use one of the command codes shown, type the appropriate letter next to the resource name and press Enter. The following command codes are available:
 - A** Show Details. Displays the service periods for the selected schedule without any override.
 - B** Show Overrides. Displays the overrides for the selected schedule starting with the current day for the next *n* days filling one panel.
 - C** Show Resources. Displays the list of resources or application groups that make use of the schedule. This can then be used to modify the service periods for the resource.

- The **Schedule** field shows the schedule (service period) defined in the sysplex.
- The **Description** field shows the description specified for the resource.

Showing Schedule Details

Overrides are shown in white.

The base time slots for a selected schedule are displayed when specifying command code A in front of the schedule. The panel in Figure 92 is displayed (note that INGSCHED REQUEST=BASE shows a similar panel).

```

INGKYSP1                SA z/OS - Command Dialogs          Line 1   of 14
Domain ID = IPSFO      ----- INGSCHED -----          Date = 08/25/03
Operator ID = NETOP1   Sysplex = KEY1PLEX                Time = 14:36:07

Schedule. . : SHIFT1           Weekday A.M. (06:00 - 11:59)

  Day    Pri  Strt/Stop  Strt/Stop  Strt/Stop  Strt/Stop  Strt/Stop
  ---    --  - - - - -  - - - - -  - - - - -  - - - - -  - - - - -
MON  UP   H   0600-1159  -          -          -          -          -
      DN   H   0000-0559  1200-2400  -          -          -          -
TUE  UP   H   0600-1159  -          -          -          -          -
      DN   H   0000-0559  1200-2400  -          -          -          -
WED  UP   H   0600-1159  -          -          -          -          -
      DN   H   0000-0559  1200-2400  -          -          -          -
THU  UP   H   0600-1159  -          -          -          -          -
      DN   H   0000-0559  1200-2400  -          -          -          -
FRI  UP   H   0600-1159  -          -          -          -          -
      DN   H   0000-0559  1200-2400  -          -          -          -
SAT  UP   L   -          -          -          -          -
      DN   H   0000-2400  -          -          -          -          -
SUN  UP   L   -          -          -          -          -
      DN   H   0000-2400  -          -          -          -          -

Command ==>
PF1=Help    PF2=End          PF3=Return      PF6=Ro11
              PF9=Refresh          PF12=Retrieve
    
```

Figure 92. INGSCHED Command Dialog Panel Showing Schedule Details

- The **Schedule** field shows the name of the schedule as defined in the sysplex.
- The **Day** field shows the day of the week.
- The **Pri** field shows the priority associated with the day of the week. It can have the following values:
 - H** High priority. The resource must be down or up.
 - L** Low priority. The resource should be down or up.
- The **Strt/Stop** field shows the begin and end times of the service window.

Showing Schedule Overrides

To display detailed information for a particular schedule, specify command code B in front of the schedule. The panel displayed, as shown in Figure 93 on page 219, shows the start and stop times starting from the requested date. The default starts from the current day. For each day, two rows are displayed:

- The first row (UP) shows the time slots when the associated resources should be up (available).
- The second row (DN) shows the time slots when the associated resources should be down (unavailable).

To modify the start and stop times for the various days, overwrite them. Start and stop times that have been overwritten are shown in yellow. The overrides for a

particular day can be removed with command code D, except for time slots that are affected by the current time. The time slots will then be restored to the original values.

```

INGKYSP2                SA z/OS - Command Dialogs
Domain ID = IPSFO      ----- INGSCHED -----      Date = 08/25/03
Operator ID = AFRANCK   Sysplex = KEY1PLEX           Time = 14:53:15

Schedule. . : SHIFT1      Weekday A.M. (06:00 - 11:59)
Starting date => 08 / 25 / 2003 (mm/dd/yyyy)

C Date          Pri  Strt/Stop  Strt/Stop  Strt/Stop  Strt/Stop  Strt/Stop
-----
08/25/03 Mon UP  H  0600 1159      -          -          -          -
                   DN  H  0000 0559  1200 2400      -          -          -
08/26/03 Tue UP  H  0600 1159      -          -          -          -
                   DN  H  0000 0559  1200 2400      -          -          -
08/27/03 Wed UP  H  0600 1159      -          -          -          -
                   DN  H  0000 0559  1200 2400      -          -          -
08/28/03 Thu UP  H  0600 1159      -          -          -          -
                   DN  H  0000 0559  1200 2400      -          -          -
08/29/03 Fri UP  H  0600 1159      -          -          -          -
                   DN  H  0000 0559  1200 2400      -          -          -
08/30/03 Sat UP  L  -          -          -          -          -
                   DN  H  0000 2400      -          -          -          -
08/31/03 Sun UP  L  -          -          -          -          -
                   DN  H  0000 2400      -          -          -          -
09/01/03 Mon UP  H  0600 1159      -          -          -          -
                   DN  H  0000 0559  1200 2400      -          -          -
09/02/03 Tue UP  H  0600 1159      -          -          -          -
                   DN  H  0000 0559  1200 2400      -          -          -

Command ==>
PF1=Help      PF2=End      PF3=Return      PF6=Roll
PF7=Backward  PF8=Forward  PF9=Refresh     PF12=Retrieve
    
```

Figure 93. INGSCHED Command Dialog Panel Showing Schedule Overrides

To delete individual overrides, blank out the appropriate time slot.

Showing Resources Related to a Schedule

A list of resources that use the selected schedule is displayed when specifying command code C in front of the schedule. A panel similar to Figure 94 on page 220 is displayed.

```

INGKYSP3                SA z/OS - Command Dialogs          Line 1   of 6
Domain ID = IPSFO      ----- INGSCHED -----          Date = 08/25/03
Operator ID = NETOP1   Sysplex = KEY1PLEX                Time = 14:57:29

Schedule. . : SHIFT1          Weekday A.M. (06:00 - 11:59)

Cmd: S Show Overrides
Cmd Resource   Type  System  Description
-----
- MSCSUBSYS    APL  KEY3   test application
- MSCSUBSYS    APL  KEY4   test application
- STDT001AA00  APL  KEY1   A. M. shift (6:00 - 11:59)
- STDT001AA00  APL  KEY2   A. M. shift (6:00 - 11:59)
- STDT001AA00  APL  KEY3   A. M. shift (6:00 - 11:59)
- STDT001AA00  APL  KEY4   A. M. shift (6:00 - 11:59)

Command ==>
PF1=Help      PF2=End      PF3=Return   PF6=Ro11
               PF9=Refresh  PF12=Retrieve
    
```

Figure 94. INGSCHED Command Dialog Panel Showing Resources Related to a Schedule

- The **Cmd** field allows you to display specific information for each system. The following command code is available:
 - S** Shows overrides. Changes service periods for the resource group.
- The **Resource** field shows the name of the resource that uses the specified schedule.
- The **Type** field shows the type of the resource.
- The **System** field shows the name of the system that the resource resides on.
- The **Description** field shows the description specified for the resource.

The FIND/RFIND subcommands are supported. See “Varying the Format of the Command Output” on page 13 for information.

Showing Resource Overrides

A panel similar to Figure 95 on page 221 shows schedule overrides for the selected resource.

```

INGKYS P2          SA z/OS - Command Dialogs
Domain ID = IPUFA  ----- INGSCHED -----   Date = 08/26/03
Operator ID = NETOP1      Sysplex = AOCPLEX      Time = 14:56:08

Resource . . . : STDT005AA00/APL/AOCA          Schedule . . . : SHIFT5
Starting date => 07 / 04 / 2000 (mm/dd/yyyy)

C Date           Pri  Strt/Stop  Strt/Stop  Strt/Stop  Strt/Stop  Strt/Stop
-----
08/26/03 Tue UP   L           0000 1900
                   DN   H           0000 1900
08/27/03 Wed UP   L           1600 1800
                   DN   H           1800 1900
08/28/03 Thu UP   L
                   DN   H           0000 1900
08/29/03 Fri UP   L
                   DN   H           0000 1900
08/30/03 Sat UP   L
                   DN   H           0000 1900
08/31/03 Sun UP   L
                   DN   H           0000 1900

Command ==>
PF1=Help      PF2=End      PF3=Return    PF6=Roll
PF7=Backward  PF8=Forward  PF9=Refresh   PF12=Retrieve
    
```

Figure 95. INGSCHED Command Dialog Panel Showing Resource Overrides

The panel shows the service windows currently defined for the resource. The service windows are determined as follows:

- Base service periods from the associated schedule, if any are defined.
- Override service periods from the associated schedule, if any are defined.
- Override service periods associated with the resource.
- The **Day** field shows the day of the week.
- The **Pri** field shows the priority associated with the day of the week. It can have the following values:
 - H** High priority.
 - L** Low priority.
- The **Strt/Stop** fields show the beginning and end times of the service window. For each day, two rows are displayed.
 - The first row (UP) shows the time slots when the associated resources must be up (available).
 - The second row (DN) shows the time slots where the associated resources must be down (unavailable).

Time slots that are overrides for the resource are shown in pink. Time slots defined for the base schedule are shown in green, while its overrides are shown in yellow. Time slots that are already passed cannot be deleted or overridden. To set an override, type over the appropriate time field.

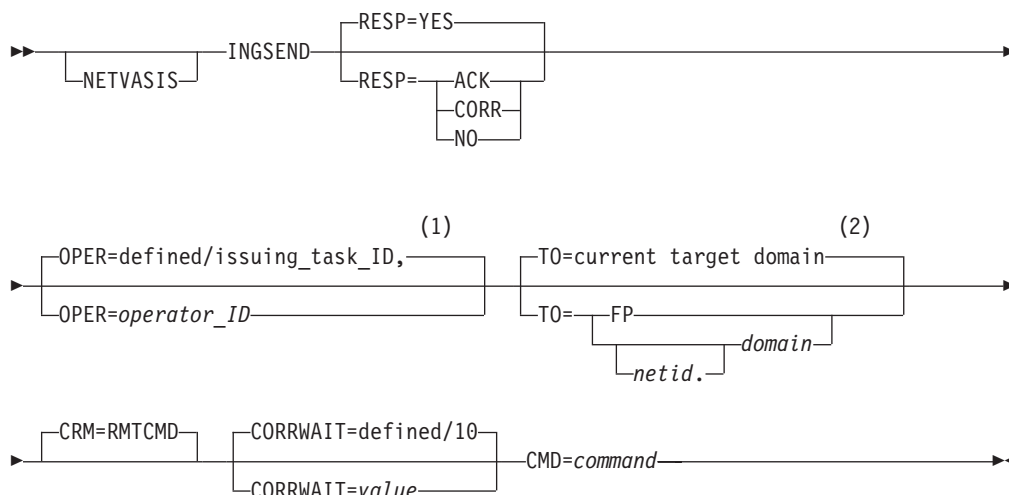
INGSEND

Purpose

INGSEND routes commands to other domains using NetView RMTCMD.

You should use the TARGET parameter with system operations commands if possible.

Syntax



Notes:

- 1 The default value can be defined using the SA z/OS customization dialog. If it has not been defined, SA z/OS provides the default.
- 2 This value is set by the command routing process. That is, the last target domain that you sent a command to is remembered and used as the default.

Parameters

NETVASIS

Prefix the INGSSEND command with NETVASIS if you want to pass the command text in lower or mixed case.

RESP

Specifies whether you want to receive an asynchronous response or acknowledgement when you issue the command. Valid options are:

ACK

If you use this option:

- A message is displayed on the operator's NCCF console stating whether or not the command executed successfully.
- If the command executed successfully, message AOF672I will be displayed.
- If the command executed but failed, message AOF671I will be displayed.
- If the command could not be delivered to the target domain or RMTCMD autotask, or was delivered and failed to begin execution, the appropriate NetView RMTCMD message will be displayed to explain the failure.

NO Specifies that you do not want to receive any output from the command.

YES

Specifies that you want the output from the command displayed on your NCCF console.

CORR

Specifies that you want the output from the command to be displayed by

the NetView WINDOW command. See “Restrictions and Limitations” on correlating command output.

OPER

Specifies the operator to use to issue the command.

operator_ID can be defined using the customization dialog for each domain. If not defined, it will default to the issuing task ID.

Notes:

1. If the operator alias GATOPER or BASEOPER is specified, the operator ID will default to the issuing task ID.
2. If *orig.operid* = *target.operid* in the OPER keyword, the command *will* be issued.

TO Specifies the domain that the command is being issued to.

[netid].domain

Specifies the domain that the command is being issued to. It can be defined using the customization dialog. Netid is optional.

FP Specifies that the command is to be routed to the current focal point.

Notes:

1. When INGSSEND is issued on the current focal point, and TO=FP is specified, the command *will* be issued.
2. If this parameter (TO=) is omitted, the current target domain (that is, the last domain you sent a command to) is used, if one is set. If none is set, error message AOF102I will be issued.

CRM

Specifies that the command routing mechanism to be used is the NetView RMTCMD command. Only CRM=RMTCMD is valid. The parameter is for compatibility only.

CORRWAIT

Specifies the CORRWAIT value (in seconds) to be used when INGSSEND uses NetView PIPES. The Corrrwait PIPE stage is necessary to trap asynchronous command output. A default for this value can be predefined for each target system, using the customization dialog. If not predefined, the default is 10 seconds. For more information on the use of this value, see the discussion of the PIPE command in *NetView Operation*.

CMD

Specifies the command to be executed. The length of the command can be up to 280 characters.

Restrictions and Limitations

- The INGSSEND command will not execute under the primary POI task (PPT).
- INGSSEND uses the NetView PIPE command to trap the message output from the routed command. Not all commands are PIPE-enabled, which means that the command may not be treated as requested in the RESP keyword. Some examples of commands that are not PIPE-enabled are:
 - MVS commands on a NetView not exploiting EMCS.
 - Commands that produce fullscreen output.
 - A NetView command that is not PIPE-enabled.

For more information on RMTCMD and PIPE commands, see *Tivoli NetView for z/OS User's Guide*.

Usage

If the command you are issuing contains either a space, a comma, or a delimiter, you should delimit the command.

You can delimit the command you are sending with either single quotation marks, double quotation marks, or '/'. If you want to include an occurrence of the delimiter character within the delimited string, the character must be preceded by another delimiter character. The delimiter character must appear as the first character of the string after the 'CMD='. INGSSEND sends the command defined by the start and end delimiter. Examples of INGSSEND with commands that use delimiters are shown in "Examples."

Examples

The following examples show how INGSSEND is used and correctly delimited:

1. Consider the following example:

```
"INGSSEND RESP=ACK,TO=CNM01,CMD=START TASK=DSILOG"
```

Command START TASK=DSILOG will be routed with the following:

Keyword	Value	Reason
TO	CNM01	Specified
RESP	ACK	Specified
OPER	OPER4	Predefined
CRM	RMTCMD	Default

The following message will be issued to OPER2's NCCF console:

```
"AOF672I COMMAND (START TASK=DSILOG) WAS EXECUTED IN DOMAIN CNM01 BY A
RMTCMD COMMAND FROM OPERATOR OPER2"
```

OPER4 is defined using the customization dialog. The above example does not use delimiters.

2. The following example does not use delimiters as far as INGSSEND is concerned even though there are delimiter characters in it:

```
INGSSEND RESP=ACK,TO=CNM01,CMD=MVS $D'RMF'
```

3. The following is correctly delimited:

```
INGSSEND RESP=ACK,TO=CNM01,CMD='ACT CHP123'
```

4. The following example is also correctly delimited and contains the delimiter character within the delimiters. This command is equivalent to the second example:

```
INGSSEND RESP=ACK,TO=CNM01,CMD='MVS $D'RMF'
```

5. The following example is also correctly delimited and is an alternative way to type the previous example:

```
INGSSEND RESP=ACK,TO=CNM01,CMD=/MVS $D'RMF'/'
```

6. The following example will be passed as correctly delimited but only 'MVS \$D' will be sent because the end delimiter follows the D thus defining the command:

```
INGSSEND RESP=ACK,TO=CNM01,CMD='MVS $D'RMF' "
```

If you enter INGSND without specifying any parameters, a panel similar to Figure 96 will be displayed.

```

INGKYSND                SA z/OS - Command Dialogs
Domain ID = IPUN8      ----- INGSND -----      Date = 11/04/03
Operator ID = NETOPER                                     Time = 16:58:22

Specify or revise the following parameters:

Response      => YES           Enter ACK, YES, NO or CORR
Operator id   => _____   Leave blank for default
Target (TO)  => _____   format: [netid.]domain
Corrwait     => _____
Command ...

_____
_____
_____

Command ==>
PF1=Help   PF2=End   PF3=Return   PF6=Roll   PF12=Retrieve

```

Figure 96. INGSND Command Dialog Panel

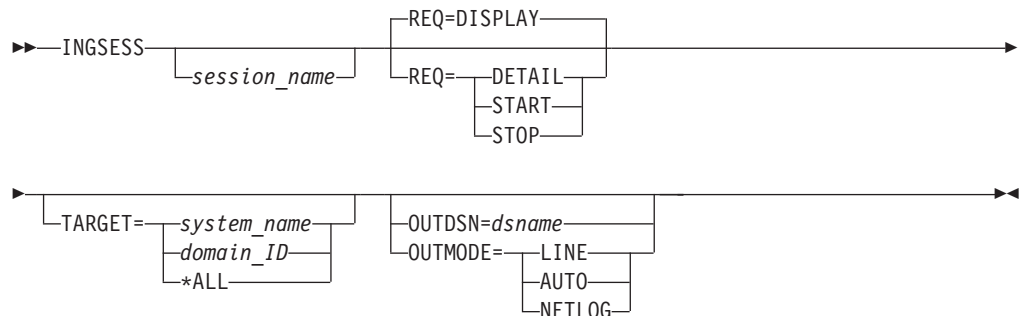
The available fields correspond to the parameters of the INGSND command (see “Parameters” on page 222 for details).

INGSESS

Purpose

INGSESS displays OMEGAMON® session definitions, the session status and statistical information about the session.

Syntax



Parameters

session_name

The name of the OMEGAMON session that an action is requested for. This parameter is only useful in line mode.

INGSSESS

More than one name can be specified for the REQ=DISPLAY function. Wildcards are supported. The session name is mandatory for the Start, Stop, and Detail request.

REQ=action

The action that you want to perform for *session_name*. It can be one of the following:

DISPLAY

Returns the list of sessions that match the specified filter criteria. This is the default.

DETAIL

Returns details for the named session.

START

Creates a new session using the session attributes for *session_name*.

STOP Destroys the named session.

This parameter is only useful in line mode.

TARGET

For information on the TARGET parameter, see "TARGET Parameter" on page 10.

OUTDSN

For information on the OUTDSN parameter, see "OUTDSN Parameter" on page 13.

OUTMODE

For information on the OUTMODE parameter, see "OUTMODE Parameter" on page 12.

Examples

Figure 97 is displayed when you enter the INGSSESS command at the NetView command line.

```
INGKYSS0          SA z/OS - Command Dialogs          Line 1 of 8
Domain ID = IPSFM ----- INGSSESS ----- Date = 04/22/05
Operator ID = NETOP1      System = KEYA              Time = 14:18:55

CMD: B Start session  C Stop session  D Details

CMD Session      System  Type    Status  Appl-id  User id  Sess0per
-----
- C1CSKY41      KEYA   OMIICICS ACTIVE  IPSP0C0  SAOM    A0FSES01
- DB2SGG4      KEYA   OMIIDB2  ACTIVE  IPSPD2C  SAOM    A0FSES02
- DB2SG14      KEYA   OMIIDB2  SESSFAIL IPSPD2C  SAOM    A0FSES01
- IMS742CR     KEYA   OMIIMS   ACTIVE  IPSP0I0  SAOM    A0FSES02
- IMS743CR     KEYA   OMIIMS   MAINT   IPSP0I0  SAOM    A0FSES01
- JHSY4MVS     KEYA   OMIIMVS  ACTIVE  IPSPM2RC SAOM    A0FSES02
- JHSY4MV2     KEYA   OMIIMVS  INACTIVE IPSPM2RC SAOM    A0FSES01
- OMSY4MVS     KEYA   OMIIMVS  ACTIVE  IPSPM2RC SAOM    A0FSES01

Command ==>
PF1=Help      PF2=End      PF3=Return   PF6=Ro11
               PF9=Refresh  PF12=Retrieve
```

Figure 97. INGSSESS Command Dialog Panel

- The **Cmd** field allows you to display specific information for each system. The following command code is available:
 - B** Creates a new session with the appropriate OMEGAMON, if it does not already exist, that is, the session status is INACTIVE or MAINT. After successful session creation, the session status is ACTIVE. The session remains active until it is stopped, either explicitly (using command code C), or implicitly by NetView on behalf of OMEGAMON or session task termination.
 - C** Destroys the session with the appropriate OMEGAMON. The session status will be changed to MAINT. The session is disabled so as to prevent it from being created implicitly again.
 - D** Displays details for the selected session, such as the session attributes from the session definition, the current status, and statistical information.
- The **Session** column shows the name of the session that represents an OMEGAMON monitor.
- The **System** column shows the system that established the connection to OMEGAMON.
- The **Type** column shows the type of session, that is, the OS or middleware that the OMEGAMON monitor is monitoring.
- The **Status** column shows the status of the session. It can be ACTIVE, INACTIVE, MAINT, SESSFAIL, or AUTHFAIL.
- The **Appl-id** column shows the name of the OMEGAMON VTAM application as defined by the installation during customization of the OMEGAMON product.
- The **User id** column shows the user that is defined to log on to the OMEGAMON application. The user ID is needed to control access to the OMEGAMON application. It may be blank if product level security is not implemented for this OMEGAMON application.
- The **SessOper** column shows the automated function name that was assigned to the session by SA z/OS during initialization.

If command code D is selected, the detail screen as shown in Figure 98 on page 228 is displayed.

```

INGKYSS1          SA z/OS - Command Dialogs          Line 1    of 22
Domain ID = IPXNG ----- INGSSESS -----          Date = 04/22/05
Operator ID = NETOP1          System = KEYA          Time = 14:43:23

Session          : OMSY4MVS
System           : KEYA          in Sysplex   : KEYAPLEX
Type            : OMIIMVS
Description      : OMEGAMON for MVS on KEY4

Status          : ACTIVE
Session Operator : AOFSES01
Logical Unit     : TFNG#000

Application id   : IPSPM2RC
User id         : SAOM
Password        : SAFPW
Timeout         : 29
Logon data      :

Users...
                NETOP1

Statistics...
Total # Commands      : 13
Total # exception analysis : 14
Total # exceptions tripped : 630

Command ==>
PF1=Help   PF2=End   PF3=Return   PF6=Ro11
PF9=Refresh PF12=Retrieve

```

Figure 98. INGSSESS Command Dialog Detail Panel

- The **Session** field shows the name of the session that represents an OMEGAMON monitor
- The **System** field shows the system that established the connection to OMEGAMON.
- The **Description** field shows descriptive information for this session as specified in the automation policy.
- The **Status** field shows the status of the session. It can be ACTIVE, INACTIVE, MAINT, SESSFAIL, or AUTHFAIL.
- The **Session Operator** field shows the automated function name that was assigned to the session by SA z/OS during initialization.
- The **Logical Unit** field shows the name of the source LU that was assigned by NetView upon establishing a Terminal Access Facility (TAF) fullscreen session.
- The **Application id** field shows the name of the OMEGAMON VTAM application as defined by the installation during customization of the OMEGAMON product.
- The **User id** field shows the user that is defined to log on to the OMEGAMON application. The user ID is needed to control access to the OMEGAMON application. It may be blank if product level security is not implemented for this OMEGAMON application.
- The **Password** field shows the password in the form of a string of asterisks or 'SAFPW'. This is the password used to logon to the OMEGAMON application.
- The **Timeout** field shows the maximum time to wait for a response from OMEGAMON before the request is terminated.
- The **Logon data** field shows the data that is sent to the OMEGAMON session during logon.
- The **Users** field shows a list of operators or *AUTO that have interacted with the session since it became ACTIVE.

- The **Statistics** section shows:
 - The **Total # Commands** field shows the number of commands that have been issued on this session since the session became ACTIVE. The counter is reset each time the session becomes ACTIVE.
 - The **Total # exception analysis** field shows the number of exception trap analysis commands that have been issued since the session became ACTIVE. The counter is reset each time the session becomes ACTIVE.
 - The **Total # exceptions tripped** field shows the number of exceptions that actually tripped as reported by the session since it became ACTIVE. The counter is reset each time the session becomes ACTIVE.

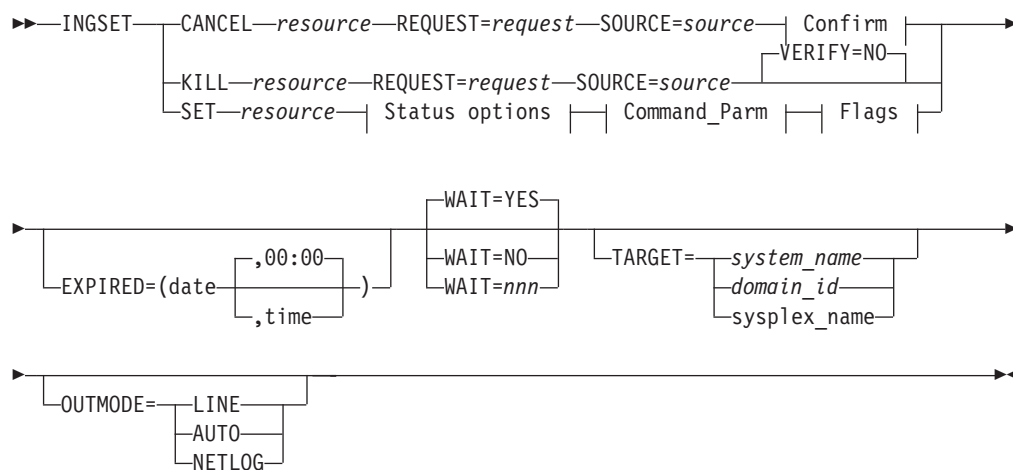
INGSET

Purpose

INGSET is a line-mode command that is primarily used in automation REXX scripts. With the INGSET command you can:

- Remove an operator's request
- Set a status attribute or automation flag for a resource or application group
- Clear or set the hold flag for a resource or application group
- Set the start or stop type for a resource

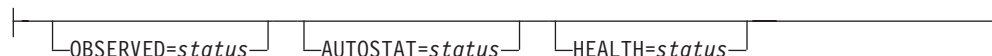
Syntax



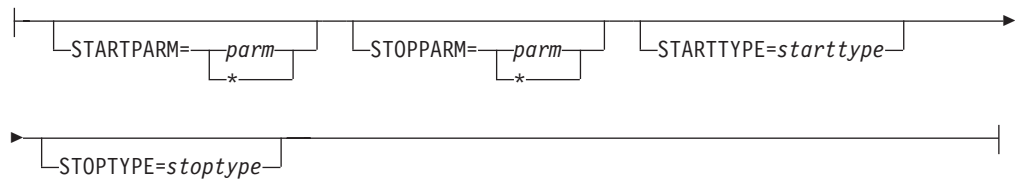
Confirm:



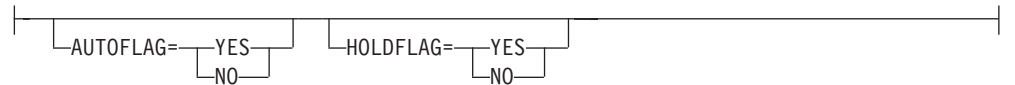
Status options:



Command_Parm:



Flags:



Parameters

CANCEL

Removes a request.

resource

Specifies the resource that the request is to be canceled for. The format is *name/type/system*. Wildcard is supported.

KILL

Removes a request without verifying. To perform verification specify the VERIFY parameter.

resource

Specifies the resource that the request is to be killed for. The format is *name/type/system*. Wildcard is supported.

SET

Sets one or more resource attributes. The following settings can be made:

- Observed status
- The health status
- Automation status
- Automation flags
- Hold flag
- Start type for next startup
- Stop type for next shutdown

Wildcard is supported for the SET parameter.

resource

Specifies the resource that an attribute is to be set for. The format is *name/type/system*. Wildcard is supported.

REQUEST

Causes the request to be canceled. You can specify one of the following:

- MAKEAVAILABLE
- MAKEAVAILABLESO
- MAKEUNAVAILABLE
- MAKEUNAVAILABLESC
- MAKEUNAVAILABLESO

Wildcard is supported, for example, REQUEST=MAKEUN*

A MakeAvailable vote on a resource reflects an INGREQ *resource,REQ=UP,SCOPE=ALL*. That is, the vote is inherited from the resource that it was issued against by all of its dependent resources.

A MakeAvailableSO vote on a resource reflects an INGREQ *resource,REQ=UP,SCOPE=ONLY*. That is, the vote is *not* inherited from the resource that it was issued against by all of its dependent resources, but only by that resource.

A MakeUnavailable vote on a resource reflects an INGREQ *resource,REQ=DOWN,SCOPE=ALL*. That is, the vote is inherited from the resource that it was issued against by the resource and all of its dependent resources.

A MakeUnavailableSC vote on a resource reflects an INGREQ *resource,REQ=DOWN,SCOPE=CHILDREN*. That is, the vote is inherited from the resource that it was issued against by all of its dependent resources, but it does not affect the resource itself.

A MakeUnavailableSO vote on a resource reflects an INGREQ *resource,REQ=DOWN,SCOPE=ONLY*. That is, the vote is *not* inherited from the resource that it was issued against by all of its dependent resources, but affects only that resource.

SOURCE

Specifies the source of the request, for example OPERATOR, or AUTOOPS. Wildcard is supported, for example, SOURCE=*

OBSERVED

Specifies the observed status to be assigned to the resource. The status can be abbreviated, for example, to AV for available.

AUTOSTAT

Specifies the automation status to be assigned to the resource. The status can be abbreviated, for example, to ID for idle.

HEALTH

Specifies the health status to be assigned to the resource. The status can be abbreviated, for example, to NO for normal.

EXPIRED

Specifies the expiry date and time of the request. Any request older than or equal to the specified timestamp is deleted when the other filter criteria are matched. The date format is yyyy-mm-dd and the time format is hh:mm. The time specification is optional.

Caution

Care must be taken when using the EXPIRED parameter for a remote sysplex that runs in a different time zone. The local time of the system where INGSET CANCEL/KILL command is issued determines whether or not the request is expired.

WAIT

Specifies whether or not to wait until the request is complete. The default is YES.

mmn is the number of seconds to wait before giving up and reporting that a timeout has occurred. The maximum time interval is 999 seconds.

INGSET

VERIFY

Specifies whether canceling the request is to be verified. The following specifications are valid:

YES Depending on the NetView task type that the INGREQ command is running on, the verification is either displayed on a fullscreen panel or, in line mode, shown on the console. The latter is also done when OUTMODE=LINE is coded.

NO No verification is performed. VERIFY is set to NO for AUTOTASKS. Otherwise it is set to YES.

WTOR

The list of affected resources is displayed before the request is removed. The operator is prompted to verify the list via WTOR.

The default depends on the type of task that the INGREQ command runs on.

TARGET

For information on the TARGET parameter, see "TARGET Parameter" on page 10.

OUTMODE

For information on the OUTMODE parameter, see "OUTMODE Parameter" on page 12.

STARTPARM

Is the START parameter that is passed to the next START command. The value that is specified here is used only once and takes precedence over the PARM value that is specified on the next INGREQ (REQ=START) command. Use * to reset its value.

STOPPARM

Is the STOP parameter that is passed to the next STOP command. The value that is specified here is used only once and takes precedence over the PARM value that is specified on the next INGREQ (REQ=STOP) command. Use * to reset its value.

STARTTYPE

Specifies the type of command to be issued for the resource's next startup. The value specified here is used only once and takes precedence over the TYPE value specified on the next INGREQ (REQ=START) command.

STOPTYPE

Specifies the type of command to be issued for the resource's next shutdown. The value specified here is used only once and takes precedence over the TYPE value specified on the next INGREQ (REQ=STOP) command. However, a stop type of FORCE, wherever specified, will always be honored.

AUTOFLAG

Specifies the automation flag. It can be either YES or NO. It can be abbreviated.

HOLDFLAG

Specifies whether the resource is to be started. It can be either YES or NO. The HOLD flag can only be set if the resource is down, that is if its observed status is either HardDown, SoftDown, SysGone or Unknown.

Return Codes

The following return codes can occur:

0 The request was processed successfully.

- 1 An error occurred while processing the request or exit requested.

Usage

Note that if you cancel the verification process of a list of affected resources, SA z/OS may issue a slightly misleading message. Although the verification has been canceled, message A0F099I FUNCTION COMPLETED may be returned.

Examples

To cancel a previously issued request to make a resource available, enter the following:

```
INGSET CANCEL TSO/APL/KEY1 REQUEST=MAKEAVAILABLE SOURCE=OPERATOR
```

To set the start type for the next startup of a JES2 resource to COLD, enter the following:

```
INGSET SET JES2/APL/KEY1 STARTTYPE=COLD
```

INGSTR

Purpose

The INGSTR command allows you to display and manipulate all the structures that are defined in your active policy and all allocated structures in the sysplex. You can rebuild or delete a selected structure or start and stop the duplexing of a structure, if applicable.

The command supports full mode and line mode but in line mode only the display function is available. Therefore, you cannot start an action when you issue INGSTR from an NCCF console.

Authorizations

The actions that you can initiate with INGSTR depend on your authorizations. You can see your authorization type on the panel. Note that the authorization types see the current function, and that your authorization type can be different for different functions.

The following authorization types exist:

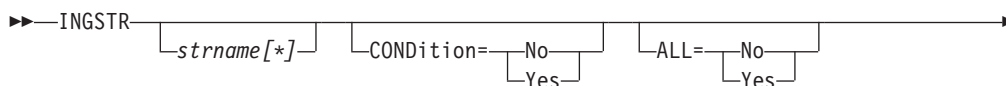
DISPLAY

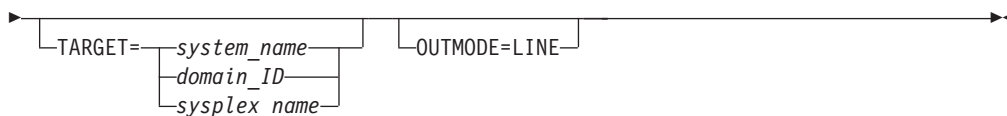
You cannot initiate any action that affects the sysplex configuration.

ALL You can initiate all actions from the corresponding panel.

Note: The codes or PF keys that you can initiate one of these actions with are only displayed if you are authorized to perform the action.

Syntax





Parameters

strname[*]

Specifies a name pattern that limits the display. The default is to show all structures that match the 'ALL' condition.

CONDITION

Defines whether or not the rebuild condition of each structure is to be determined and displayed.

ALL

Defines whether allocated and unallocated structures or just allocated structures are displayed.

TARGET

For information on the TARGET parameter, see "TARGET Parameter" on page 10.

OUTMODE

For information on the OUTMODE parameter, see "OUTMODE Parameter" on page 12.

Structure Conditions

The condition of an allocated structure can be:

Rebuild is not supported.

The structure can neither be rebuilt, nor can its deletion be forced.

The structure has at least one active connector that does not support user-managed rebuild, and at least one active connector that does not support system-managed rebuild.

System-managed processes not supported.

The structure cannot be rebuilt, nor can its deletion be forced.

System-managed rebuild, which is a system-managed process, is not possible for the following reason:

- The CFRM couple data sets have not been formatted to support system-managed processes (ITEM NAME(SMREBLD) NUMBER(1) was not specified).

Note: In certain rare cases system-managed processes are not supported although the condition that is displayed on the DRAIN panel seems to indicate the contrary. Then, the rebuild will be initiated, but will fail with message IXC367I indicating that system-managed processes are not supported for the structure.

No alternate coupling facility defined or available.

The structure can neither be rebuilt, nor can its deletion be forced.

The structure has an active connector and supports rebuild but does not have an alternate coupling facility defined in its preference list, or the alternate coupling facilities that are defined in the preference list are currently unavailable.

Insufficient space detected for rebuild.

The structure cannot or could not be rebuilt. Its deletion cannot be forced.

No alternate coupling facility has enough space to rebuild the structure.

Preference list is empty.

The structure cannot be rebuilt because its preference list is currently empty. A possible reason for this is a pending policy change; for pending policy changes, see "P column" on page 107.

Structure is pending deallocation.

XES accepted a forced deletion of the structure but does the real deallocation later.

Note: This status can only occur when MVS APAR OW39404 has not been installed.

Structure is being rebuilt.

The structure is being rebuilt to another coupling facility.

Duplex rebuild is being stopped.

Two instances of the structure were maintained on different coupling facilities. The application is being disconnected from that instance that is allocated on the target coupling facility. After disconnecting, the instance is deleted.

No connection exists.

The structure cannot be rebuilt, but you can force its deletion.

The structure does not have any connections and cannot be rebuilt with system-managed rebuild.

No alternate coupling facility for structure with no connections.

The structure cannot be rebuilt, but you can force its deletion.

The structure does not have any connections. It could be rebuilt with system-managed rebuild, but no alternate coupling facility is defined in its preference list or available.

No alternate coupling facility for structure with no active connections.

The structure cannot be rebuilt, but you can force its deletion.

The structure has only DISCONNECTING, FAILED, or FAILED-PERSISTENT connections. It could be rebuilt with system-managed rebuild, but no alternate coupling facility is defined in its preference list or available.

The structure's initial size is less than its actual size.

The structure can be rebuilt, but this can lead to loss of data.

An initial size is specified for the structure in the active CFRM policy. This initial size was used for the allocation of the structure. Afterwards, the size of the structure was increased either by the application itself or an operator command. However, the structure will only be rebuilt with its initial size. Subsequently, INGCF will expand the structure to its actual size again, but this will happen *after* the data have been transferred. To avoid a potential loss of data, the application has to change the initial size to the actual size.

No active connection exists.

The structure cannot be rebuilt, but you can force its deletion.

The structure has only DISCONNECTING, FAILED, or FAILED-PERSISTENT connections and cannot be rebuilt with system-managed rebuild.

Note: INGCF STRUCTURE accepts a rebuild request for structures with this condition, but deallocates them.

No connections. System-managed rebuild supported.

The structure can be rebuilt.

The structure does not have any connections, but can be rebuilt with system-managed rebuild.

No active connections. System-managed rebuild supported.

The structure can be rebuilt with system-managed rebuild.

User-managed rebuild is not possible for the structure because it has only DISCONNECTING, FAILED, or FAILED-PERSISTENT connections.

System-managed rebuild is supported

The structure can be rebuilt.

The structure has active connectors. At least one active connector does not support user-managed rebuild, but all active connectors support system-managed rebuild.

Duplex rebuild is active.

The application is connected to two instances of the same structure on different coupling facilities.

[No condition]

When no condition is displayed, the structure can be rebuilt.

The structure has at least one active connection, and all its active connectors support user-managed rebuild.

Structure is awaiting rebuild.

The structure has been selected for rebuild but has not been processed yet.

Structure is currently allocated on *cf_name*.

The structure can be rebuilt on the target coupling facility with the POPULATE action of the ENABLE function. It is currently allocated on the *cf_name* coupling facility, but the target coupling facility precedes *cf_name* in the structure's preference list. This condition is displayed only in the ENABLE command dialog.

Structure allocated in *cf_name* cannot be rebuilt to this CF.

The structure can probably not be rebuilt on the target CF with the POPULATE action of the ENABLE function. It is currently allocated in the *cf_name* CF, but the target CF precedes *cf_name* in the structure's preference list. And, the actual size of the structure is greater than the free space of the target CF. This condition is displayed only in the ENABLE command dialog.

Examples

If you enter `ingstr` without any parameters, a panel with all coupling facilities of the sysplex is displayed, as shown in Figure 99 on page 237.

```

INGLX906          SA z/OS - Command Dialogs          Line 6 of 52
Domain ID = IPXFI ----- INGSTR -----          Date = 11/23/04
Operator ID = NETOPER1                             Time = 11:17:27

Structure names . . ==> _____ Status . . . . . : NORMAL
Sysplex . . . . . ==> KEYAPLEX Permission . . . . . : ALL
Include condition . ==> NO (Yes/No - Condition retrieval takes longer)
Include unallocated ==> NO (Yes/No)
-----
Cmds: D display details / F force / P stop duplex / R rebuild / S start duplex

  Structure      P D Old      New      Pref. Location(s)
-----
DSNA_GBP0       U CFA      CFB
DSNA_GBP1       S          CFA      CFB
DSNA_GBP2       U CFA          CFB
DSNA_GBP32K     S          CFA      CFA
DSNA_LOCK1      S CFA      CFA      CFA
DSNA_SCA        S CFB          CFB      CFA
GRPXCSQ_ADMIN   CFB
-----
Command ==>
F1=Help          F2=End          F3=Return          F6=Roll
                  F8=Forward      F9=Refresh        F10=ReAlloc       F12=Retrieve

```

Figure 99. The INGSTR Panel without Structure Conditions.

The structure display shows all structures regardless of their allocation status or the coupling facility. You can limit the display by specifying a structure name pattern.

- The **P** column indicates whether a policy change is pending for the structure. Rebuilding the structure, if possible, will remove the pending status.
- The **D** column shows what type of duplexing is supported:
 - U** Indicates that user-managed duplexing is supported.
 - S** System-managed duplexing.
 - B** Both, where user-managed is preferred when possible.

Note that, for performance reasons, this status does not include a check of the SMDUPLEX flag in the CFRM couple data set. However, this flag is checked when you use command code S.

- The **Old** column shows where the structure is allocated or where it was first allocated when it is being duplexed.
- The **New** column shows where the duplexed structure is allocated.
- The **Pref. Location(s)** column shows the locations where the structure should preferably be allocated. When the structure is allocated to the preferred coupling facility this column is blank. A '*' in front of the coupling facility name (or names) indicates that the structure does not allow XCF to perform a reallocation.
- The following command codes are available:
 - D** Display details of the selected structure.
 - F** Force the deletion of the selected structure.
 - P** Stop duplexing of the selected structure.
 - R** Rebuild the selected structure.
 - S** Start duplexing of the selected structure.

When the **Include unallocated** option is set to YES, all structures that are defined in the policy are shown. When the **Include condition** option is set to YES, the

structure's current condition is also shown. Specifying this option increases the response time required to build the display. A panel similar to that shown in Figure 100 is displayed.

```

INGLX906          SA z/OS - Command Dialogs          Line 11 of 104
Domain ID = IPXFI ----- INGSTR -----          Date = 11/23/04
Operator ID = NETOPER1                             Time = 11:18:28

Structure names . . ==> _____ Status . . . . . : NORMAL
Sysplex . . . . . ==> KEYAPLEX Permission . . . . . : ALL
Include condition . ==> YES (Yes/No - Condition retrieval takes longer)
Include unallocated ==> YES (Yes/No)
-----
Cmds: D display details / F force / P stop duplex / R rebuild / S start duplex

  Structure      P D Old      New      Pref. Location(s)
-----
- DSN_A_GBP0      U CFA      CFB
  Condition ...: Duplex rebuild is active.
- DSN_A_GBP1      S          CFA      CFB
  Condition ...: *Structure is not allocated.
- DSN_A_GBP2      U CFA          CFB
  Condition ...:
- DSN_A_GBP32K           CFA
  Condition ...: *Structure is not allocated.
- DSN_A_LOCK1     S CFB      CFA      CFA      CFB
  Condition ...: Duplex rebuild is active.
- DSN_A_SCA       S CFA          CFB      CFA
  Condition ...: System-managed rebuild is supported.
- GRPXCSQ_ADMIN   CFB
  Condition ...: System-managed rebuild is supported.
- GRPXHSAQUEUE    CFB
  Condition ...: System-managed rebuild is supported.
- HSA_LOG         CFB          CFA
  Condition ...:
- IEFAUTOS           CFA
  Condition ...: *Structure is not allocated.
- IMSOSAMCACHE    *CFB
  Condition ...: *Structure is not allocated.
- IMSVSAMCACHE    *CFB
  Condition ...: *Structure is not allocated.
- ING_HEALTHCHKLOG CFA          CFB
  Condition ...:

Command ==>
F1=Help      F2=End      F3=Return      F6=Roll
              F8=Forward  F9=Refresh    F10=ReAlloc    F12=Retrieve

```

Figure 100. The INGSTR Panel with Structure Conditions

Depending on the status of the CFs and the systems in the sysplex you can use the PF10 key to perform the XCF REALLOCATE command to move the allocated structures to their preferred location. When you press PF10 to move the structures, a panel asking you to confirm the action is displayed, as shown in Figure 101 on page 239. Press PF10 to confirm the action, or PF11 to cancel the reallocation.

Note: You must be authorized to perform the FORCE, REBUILD, START, STOP, or REALLOC action.

```

INGLX92X          SA z/OS - Command Dialogs
Domain Id   = IPXFI   ----- INGSTR -----
Operator Id = NETOP1
Date = 11/23/04
Time = 12:32:58

Sysplex . . . . . : KEYAPLEX

                R E A L L O C A T E Confirmation

The XCF REALLOCATE process runs asynchronously on the next system in the
sysplex that has access to the CFRM couple data set. XCF processes all
structures in sequence. Once started use the refresh PF key for getting the
current status of the process. When the process has completed but not all
structures have been moved to their preferred location look for IXC544I
messages in the netlog. This message provides an explanation of the reason why
a structure wasn't adjusted.

Command ==>
                F2=End          F3=Return          F6=Roll
                F10=Go         F11=Cancel   F12=Retrieve
    
```

Figure 101. REALLOCATE Confirmation Panel

If you enter, for example, the command `INGSTR D* COND=Y ALL=Y OUTMODE=LINE`, this produces line command output, as shown in Figure 102.

```

Structures: D*
Sysplex...: KEYAPLEX

Structure P D Old      New      Pref. Location(s) Condition
-----
DSNA_GBP0 U CFA      CFB
DSNA_GBP1 S          CFA      CFB      *Structure is not allocated.
DSNA_GBP2 U CFA
DSNA_GBP32K          CFA      CFB      *Structure is not allocated.
DSNA_LOCK1 S CFB      CFA      CFA      CFB      Duplex rebuild is active.
DSNA_SCA   S CFA      CFB      CFB      CFA      Duplex rebuild is active.
*** End of Display ***
    
```

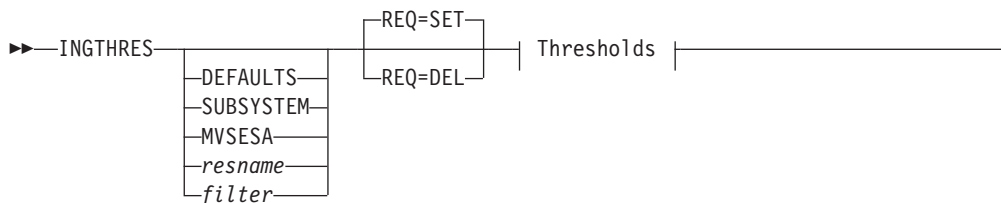
Figure 102. INGSTR Line Command Output

INGTHRES

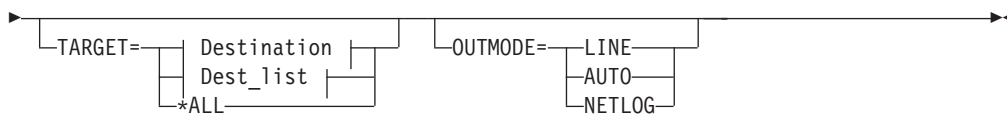
Purpose

The `INGTHRES` command displays all thresholds that are defined for a resource. `INGTHRES` lists the thresholds that were set using the `INGTHRES` command or that are defined in your automation control file. `INGTHRES` also lets you set, change or delete the threshold settings for a particular resource. `INGTHRES` also sets the defaults for all MVS subcomponents, for all subsystems, or for MVSESA components.

Syntax



INGTHRES



Thresholds:



Destination:



Dest_list:



Parameters

If you do not specify a subsystem, the INGTHRES panel is displayed.

DEFAULTS

Sets the default settings for all automated resources that: do not have their own threshold settings OR do not belong to a group that has its own threshold settings.

SUBSYSTEM

Sets defaults for all subsystems.

MVSESA

Sets defaults for all MVS subcomponents.

resname

Specifies a particular resource, for example, WTOBUF. You can specify any automated resource.

filter

Is the filter used for the output. Only resource names that match the filter criteria are displayed. Wildcard is supported. The filter consists of the major resource name and, optionally, of a minor resource name separated by a period, for example, CICS*.TRANS*, or .*CEMT. To view major resources specify *. To view minor resources specify xyz.*.

REQ

Specifies the request type which can be:

SET

Adds or updates the thresholds for the given resource. This is the default setting.

DEL

Deletes the thresholds for the given resource.

CRIT

Specifies values for the critical threshold.

FREQ

Specifies values for the frequent threshold.

INFR

Specifies values for the infrequent threshold.

nn Specifies the number of errors before the threshold is reached. You can specify a maximum of 50.

interval

Specifies the time period before the threshold is reached in the form *hh:mm[:ss]*, where:

hh Hours

mm

Minutes

ss Seconds

TARGET

For information on the TARGET parameter, see “TARGET Parameter” on page 10.

OUTMODE

For information on the OUTMODE parameter, see “OUTMODE Parameter” on page 12.

Restrictions and Limitations

The changes you make are active only until the next time the automation control file is loaded.

The INGTHRES command can only be used when SA z/OS is initialized.

Usage

SA z/OS uses threshold settings to determine when to stop trying to recover a component or restart a subsystem. The primary use of thresholds is to track subsystem abends and to make sure that the abend-and-recovery cycle does not become a loop.

When a threshold is crossed, SA z/OS performs the action specified for that threshold in the automation control file. For components, this action is customer-defined: contact your SA z/OS administrator for more information. For subsystems, SA z/OS performs the following actions:

Threshold exceeded	Action
Infrequent	Issues warning message
Frequent	Issues warning message
Critical	Stops Restart automation and issues a message to that effect

All three threshold values (CRIT, FREQ, and INFR) can be set with one invocation of the command.

The Critical threshold should specify more errors or a shorter time period than the Frequent and Infrequent thresholds.

Examples

To set defaults for all automated resources, enter:

```
ingthres defaults crit=(2,00:14) freq=(2,01:00) infr=(4,04:00)
```

To add or replace the critical threshold for the resource JES2, enter:

```
ingthres jes2 crit=(2,02:00)
```

If you enter `ingthres jes2`, you will see the command dialog shown in Figure 103.

```

INGKYTH0          SA z/OS - Command Dialogs          Line 1 of 4
Domain ID = IPSFM ----- INGTHRES -----          Date = 11/23/09
Operator ID = NETOP1                                     Time = 12:52:57

Cmd:  A Add thresholds   C Change thresholds   D Delete thresholds

Cmd System   Resource           Critical           Frequent           Infrequent
-----
-   KEY1     DEFAULTS           4 in 01:00:00     4 in 02:00:00     6 in 12:00:00
-   KEY1     MVSESA             1 in 01:00:00     1 in 02:00:00     1 in 04:00:00
-   KEY1     SUBSYSTEM          1 in 00:05:00     1 in 00:30:00     1 in 01:00:00
-   KEY1     JES2               1 in 01:00:00     1 in 04:00:00     1 in 08:00:00

Command ==>
PF1=Help    PF2=End        PF3=Return     PF6=Roll
              PF9=Refresh    PF12=Retrieve

```

Figure 103. Display of Threshold Settings for JES (INGTHRES JES)

If JES reaches the Critical threshold, Restart automation does not continue. If JES exceeds the Frequent or Infrequent threshold, a message is sent to notification operators to inform them.

- The **Cmd** field lets you modify the thresholds of a resource. The following command codes are supported:
 - A** Add new thresholds for a resource with the same values as the one selected.
 - C** Change existing thresholds for a selected resource.
 - D** Delete threshold settings for a selected resource.

To define thresholds for a resource you can either type the ADD command at the command line or specify command code A in front of the resource whose thresholds should be used as the default. You can then modify the settings as needed.

- The **System** field shows the name of the system where the resource resides.
- The **Resource** field shows the name of the resource that the thresholds are defined for. The entries are sorted alphabetically.
- The **Critical** field shows the critical threshold defined for the resource.
- The **Frequent** field shows the frequent threshold defined for the resource.
- The **Infrequent** field shows the infrequent threshold defined for the resource.

If you specify command code A, a panel similar to Figure 104 on page 243 is displayed.


```

AOFKAASR          SA z/OS - Command Dialogs
Domain ID = IPSFM  ----- INGTHRES -----   Date = 12/07/01
Operator ID = NETOP1                               Time = 16:30:54

Specify thresholds and resource changes:

Resource => _____ resource name, MVSESA, SUBSYSTEM or DEFAULTS
Minor name => _____ minor resource name
Target   => KEY4         System name, domain ID, sysplex name or *all

Critical => 04 errors in 01:00:00 Time (hh:mm:ss)
Frequent => 04 errors in 02:00:00 Time (hh:mm:ss)
Infrequent => 06 errors in 12:00:00 Time (hh:mm:ss)

Pressing ENTER will set the THRESHOLD values

Command ==>>>
PF1=Help      PF2=End      PF3=Return
PF6=Roll      PF12=Retrieve

```

Figure 104. INGTHRES Command Dialog Panel to Add Thresholds

INGTOPO

Purpose

The INGTOPO command collects SA z/OS topology information from the automation manager via the target systems and maintains the corresponding objects and their hierarchies within RODM.

Syntax



Parameters

INIT

INIT mode causes INGTOPO to build or update the SA z/OS objects in RODM in accordance with the automation managers of all sysplexes that are defined in the INGTOPOF file. INIT must be specified as the first mode of INGTOPO. The autotask that the Topology Manager is run under is also required.

Check the return code of message ING063I in the NetView log to provide information about the result of the INIT request.

You can call INGTOPO with INIT any time. INGTOPO then either rebuilds the SA z/OS objects from scratch or just performs the necessary update operations. In the former case all event-based minor resources that existed in RODM will be lost, because these minor resources do not exist within the automation manager and therefore cannot be built.

INGTOPO

task_name

Specifies the autotask that is used for status collection on the focal point system.

plex

Specifies the sysplex or processor operations focal point.

REBUILD

In REBUILD mode, INGTOPO removes all SA z/OS objects in RODM for the specified sysplex and rebuilds them from scratch. Note that after calling INGTOPO with REBUILD, all event-based minor resources that existed in RODM for this sysplex will be lost because these minor resources do not exist within the automation manager and therefore cannot be built.

Note that the INGTOPO INIT command must have been successfully run at least once before you can use the REBUILD option.

SWEEP

All SA z/OS topology manager objects in RODM are erased and all internal information is reset.

SWEEPSYS *plex*

Removes all SA z/OS objects in RODM for the specified sysplex or processor operations focal point and stops all monitoring services.

Restrictions and Limitations

To run the INGTOPO command the Multisystem Manager (MSM) must be active.

Usage

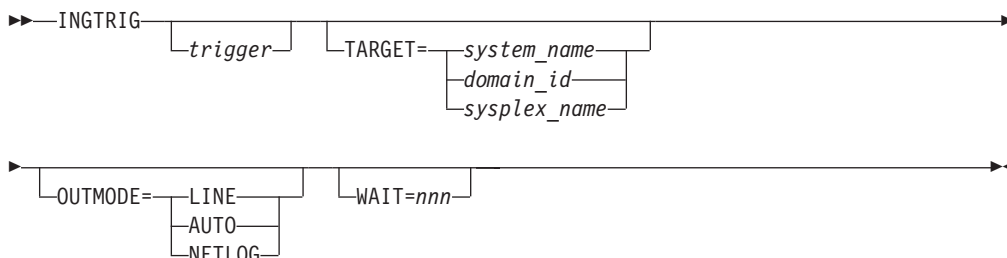
The INGTOPO command should be issued from the NetView that provides status updates to NMC.

INGTRIG

Purpose

INGTRIG shows all triggers that are defined and used by resources within the sysplex.

Syntax



Parameters

trigger

Specifies the name of a trigger so that all the resources that use the trigger are displayed.

TARGET

For information on the TARGET parameter, see “TARGET Parameter” on page 10.

OUTMODE

For information on the OUTMODE parameter, see “OUTMODE Parameter” on page 12.

WAIT

Specifies the number of seconds to wait before reporting that a timeout occurred if the automation manager does not provide the requested data. The maximum time interval is 999 seconds.

If omitted, the time interval is 30 seconds.

Restrictions and Limitations

Triggers for previous releases of SA z/OS cannot be shown.

Usage

The INGTRIG command operates sysplexwide. For an overview see “Overview of Commands that Operate Sysplexwide” on page 9.

Examples

If you enter ingtrig a panel similar to Figure 105 is displayed.

```

INGKYTR0                SA z/OS - Command Dialogs          Line 1    of 10
Domain ID = IPSFP      ----- INGTRIG -----           Date = 10/26/99
Operator ID = NETOP1   Sysplex = KEY1PLEX                Time = 10:55:16

Cmd: S show associated resources

Cmd Trigger  Description
-----
- BATCHSTP   Batch jobs B000P100,P200,P300
- BATCHSTR   Batch jobs B000S100,S200,S300
- MDOTRG13   Trigger3
- MDOTRIG1   Trigger1
- MDOTRIG2   Trigger2
- MSCTRG1    scheduling test trigger 1
- MSCTRG2    scheduling test trigger 2
- TRIGGER6   Hourly window + batch controlled events
- TRIGGER7   Command controlled events, No UNSET
- TRIGGER8   Command controlled events, diff. unsets

Command ==>
PF1=Help    PF2=End    PF3=Return  PF6=Ro11
              PF9=Refresh PF12=Retrieve

```

Figure 105. INGTRIG Initial Command Dialog Panel

This panel shows all triggers that are defined within the scope of the automation manager.

- The **Cmd** field allows you to display specific information for each system. The following command code is available:
 - S** Show associated resources. Displays all resources that use the trigger.
- The **Trigger** field shows the name of the trigger.
- The **Description** field shows the description of the trigger.

INGTRIG

The FIND/RFIND and SORT subcommands are supported. See “Varying the Format of the Command Output” on page 13 for information.

Showing Resources

Specify command code **S** in front of a trigger, or `ingtrig triggername` to display all resources that are associated with that selected trigger, as shown in Figure 106.

```
INGKYTR1          SA z/OS - Command Dialogs      Line 1    of 4
Domain ID   = IPSFP   ----- INGTRIG -----      Date = 10/26/99
Operator ID = AFRANCK      Sysplex = KEY1PLEX      Time = 11:16:54

Trigger . . : TRIGGER6      Hourly window + batch controlled events

Cmd: S show trigger details
Cmd Resource   Type System   Description
-----
- TRGG006AA10  APL  KEY1
- TRGG006AA10  APL  KEY2
- TRGG006AA10  APL  KEY3
- TRGG006AA10  APL  KEY4

Command ==>
PF1=Help      PF2=End      PF3=Return   PF6=Roll
               PF9=Refresh   PF12=Retrieve
```

Figure 106. INGTRIG Command Dialog Panel Showing Resources Associated with a Trigger

- The **Cmd** field allows you to specify command codes to display specific information for the trigger. The following command code is available:
 - **S** Show trigger details. Initiates the DISPTRG command dialog for the selected resource.
- The **Resource** field shows the name of the resource.
- The **Type** field shows the type of the resource.
- The **System** field shows the name of the system where the resource resides.
- The **Description** field shows the description specified for the resource.

The FIND/RFIND and SORT subcommands are supported. See “Varying the Format of the Command Output” on page 13 for information.

INGTWS

Purpose

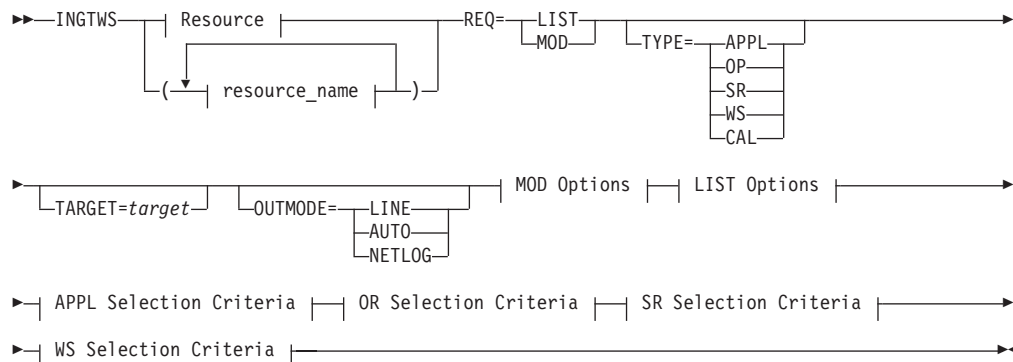
The INGTWS command lets you:

- Display Application, Operation, Special Resource, Work Station and Calendar information from the Current[®] Plan.
- Modify Application, Operation, Special Resource, Work Station information in the Current Plan.
- Issue a request against any controller defined to SA z/OS in a sysplex.

- Issue a request against a foreign controller where the local tracker is defined to SA z/OS.
- The output of the INGTWS command is either full screen or in pipeable line mode.

Note: INGOPC is a synonym for INGTWS.

Syntax



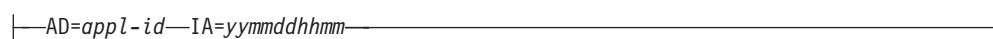
MOD options:



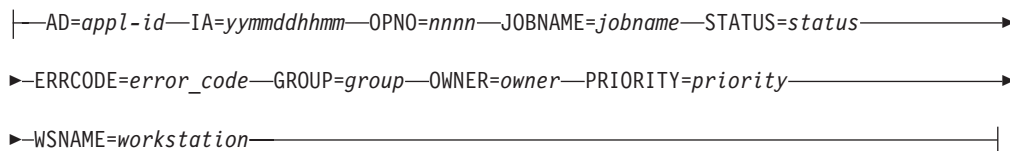
LIST options:



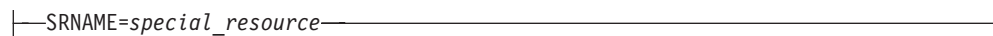
APPL Selection criteria:



OP Selection criteria:



SR Selection options:



WS Selection options:

 |—WSNAME=*workstation*—|
Parameters**resource**

| The resource specifies the TWS controller that is to be queried or modified.
 | Multiple specifications are allowed as well as system and sysplex application
 | groups. Wildcards % and * are supported.

| The command attempts to resolve the specification to a single appropriate
 | target resource. In all cases the groups are resolved to their members and
 | wildcards are resolved to specific sets of resources.

| The resulting list of resources is scanned to check whether there is a single
 | active controller. If a single active controller is found then it is used. If no
 | active controller is found then the list is scanned to check whether there is a
 | single active tracker (only active trackers with LUNAME policy entries are
 | checked because only these trackers can be used to communicate with TWS via
 | the PIF interface). If a single active tracker is found then it is used.

| If no viable resources are found an error message is displayed. If multiple
 | viable resources are found, and INGTWS is running in full screen mode, a
 | selection panel is displayed; when OUTMODE=LINE is specified an error
 | message is displayed.

| If an active controller could be found, a command is dispatched to the
 | appropriate system in the sysplex to execute the TWS API on the same system
 | as the active controller. If a tracker was found, the LUNAME parameter of the
 | trackers OPCCNTL entry may be used to specify a remote controller. In this
 | case the command is dispatched to the system where the tracker is running
 | and the APPC API is used to connect to the remote controller from that
 | system.

REQ

| Specifies the request to be issued to the TWS subsystem. It can be one of the
 | following:

| **LIST** Lists TWS Current Plan resources.

| **MOD** Modifies TWS Current Plan resources.

TYPE

| Specifies the type of Current Plan resource to be listed or modified. It can be
 | one of the following:

| **APPL** Specifies the Current Plan Application Description resource.

| **OP** Specifies the Current Plan Operation resource.

| **SR** Specifies the Current Plan Special resource.

| **WS** Specifies the Current Plan Workstation resource.

| **CAL** Specifies the Current Plan Calendar resource.

UPDATE

| Specifies the fields that are to be updated and the new contents of the field.
 | Multiple fields can be specified separated by a semi-colon ";". The names of the
 | fields are the same names as specified in the MODIFY command arguments in
 | *TWS for z/OS Programming Interfaces*.

An alternative to specifying all the fields to be updated using the UPDATE= parameter is to specify the fields and their contents in the default SAFE. Specify one field per message with the format of <fieldname><blank>=<blank><contents>. The blanks between the fieldname and the = symbol and the = symbol and the contents are required.

TWSPARM

Specifies additional fields to be used to locate a resource during LIST processing. Multiple fields may be specified separated by a semi-colon ";". The names of the fields are the same names as specified in the LIST command arguments described in the *TWS for z/OS Programming Interfaces* manual. The field names must match the TWS segment being searched. For example, CPOC fields are valid for TYPE=APPL and CPOP fields are valid for TYPE=OP, and so on. A TWS EQQ* message will be issued if the field specification is incorrect.

An alternative to specifying additional LIST fields using the TWSPARM= parameter is to specify the fields and their values in the default SAFE. Specify one field per message using the format <fieldname><blanks>=<blanks><contents>. The blanks are optional.

If the same field names are specified in both the TWSPARM and the default SAFE, the TWSPARM values will be used.

Additional LIST fields can only be specified with OUTMODE=LINE.

AD Specifies the Application Description selection criteria. For LIST requests, this may contain the trailing "*" wildcard character. For MOD requests, this must be the exact name of the application description to be updated.

IA[®]

Specifies the input arrival date/time of the application. The format is as specified by the system programmer when installing and customizing TWS. The default format is YYYYMMDDHHMM.

OPNO

Specifies the operation number selection criteria. This is the operation number of an operation in an application description.

JOBNAME

Specifies the TWS jobname. This field is used to qualify requests of type OP and is optional for all requests.

STATUS

Specifies the TWS status. This field is used to qualify requests of type OP and is optional for all requests.

ERRCODE

Specifies the TWS error code. This field is used to qualify requests of type OP and is optional for all requests.

GROUP

Specifies the TWS group. This field is used to qualify requests of type OP and is optional for all requests.

OWNER

Specifies the TWS owner. This field is used to qualify requests of type OP and is optional for all requests.

PRIORITY

Specifies the TWS priority. This field is used to qualify requests of type OP and is optional for all requests.

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SRNAME

Specifies the Special Resource selection criteria.

For LIST requests, this may contain the trailing "*" wildcard character. For MOD requests, this must be the exact name of the special resource.

If the special resource name contains special characters then it must be enclosed in single quotation marks.

WSNAME

Specifies the workstation name selection criteria. Specifies the workstation name selection criteria but may also be used to qualify TYPE=OP requests.

For LIST requests, this may contain the trailing "*" wildcard character. For MOD requests, this must be the exact name of the workstation.

TARGET

Specifies the name of the system (system, domain, or sysplex) that the command should be routed to. The TWS controller specified in the resource field must be active on this system or the command will return no data. This is only necessary when the resource is not part of the local sysplex.

For information on the TARGET parameter, see "TARGET Parameter" on page 10.

OUTMODE

For information on the OUTMODE parameter, see "OUTMODE Parameter" on page 12.

Restrictions and Limitations

To use the INGTWS command system operations must be initialized.

Usage

The INGTWS command operates sysplexwide. For an overview see "Overview of Commands that Operate Sysplexwide" on page 9.

Examples

If you type INGTWS a panel similar to Figure 107 on page 251 is displayed.


```

EVJKYRQ0          SA z/OS - Command Dialogs
Domain ID = IPSFM ----- INGTWS ----- Date = 05/08/03
Operator ID = NETOP1                               Time = 04:28:39

Resource => _____ format: name/type/system
Target   => _____ System name, domain ID or sysplex name

Request  => _____ Request type (LIST/MODIFY)
Type     => _____ Type of resource (APPL/OP/SR/WS/CAL)

Application => _____
IA Date/Time=> _____ (YYMMDDHHMM)

Operation # => _____ Group      => _____
Jobname    => _____ Owner      => _____
Status     => _____ Priority   => _____
Error Code => _____
Workstation => _____

SR Name    => _____

Command ==>
PF1=Help   PF2=End   PF3=Return          PF6=Ro11
                                           PF12=Retrieve

```

Figure 107. INGTWS Command Dialog Panel

- The **Resource** field shows the name of the TWS active controller subsystem to be used for issuing the requests. The format is *name/type[/system]*. Wildcards are supported.
- The **Target** field shows the name of the system (system name, domain, or sysplex name) that the command should be routed to. Specifying this is only necessary if the resources do not reside on the local sysplex.
- The **Request** field shows the request to be carried out. It can be LIST or MODIFY.
- The **Type** field shows the type of TWS Current Plan resource to be specified.
- The **Application** field specifies the TWS application ID. This field is used to qualify requests of type APPL or OP and is optional for LIST requests but is required for MODIFY requests.
- The **IA Date/Time** field specifies the TWS input arrival time. This field is used to qualify requests of type APPL or OP and is optional for LIST requests but is required for MODIFY requests.
- The **Operation #** field specifies the TWS operation number. This field is used to qualify requests of type APPL or OP and is optional for LIST requests but is required for MODIFY requests.
- The **Jobname** field specifies the TWS jobname associated with an operation. This field is used to qualify requests of type OP and is optional for all requests.
- The **Status** field specifies the TWS status associated with an operation. This field is used to qualify requests of type OP and is optional for all requests.
- The **Error Code** field specifies the TWS error code associated with an operation. This field is used to qualify requests of type OP and is optional for all requests.
- The **Group** field specifies the TWS group associated with an operation. This field is used to qualify requests of type OP and is optional for all requests.
- The **Owner** field specifies the TWS owner associated with an operation. This field is used to qualify requests of type OP and is optional for all requests.
- The **Priority** field specifies the TWS priority associated with an operation. This field is used to qualify requests of type OP and is optional for all requests.

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- The **Workstation** field specifies the TWS workstation for the operation. This field is used to qualify requests of type OP and type WS and is optional for all LIST requests but is required for type WS MODIFY requests.
- The **SR Name** field specifies the TWS special resource name. This field is used to qualify requests of type SR and is optional for LIST requests but is required for MODIFY requests.

To set the status of the special resource 'testnnnn' to available, enter the following command:

```
ingtws req=mod type=sr sname=testnnnn outmode=line Update=(resavail=y)
```

If you specify `INGTWS * REQ=LIST TYPE=APPL` a panel similar to Figure 108 is displayed.

```
INGKYSTO          SA z/OS - Command Dialogs Line 1 of 65
Domain ID = IPSFM ----- INGTWS ----- Date = 04/10/02
Operator ID = AFRANCK Sysplex = KEY1PLEX Time = 16:19:30
CMD: A Update B Operations / scroll
Application Occurrence List
CMD Application Id Input Arrival Error
Date Time Status Code Description
-----
- JKOPCTST1 02/01/23 00:01 Completed Test Batch Iface
- JKTEST1 02/01/23 00:08 Completed This is a test
- JKOPCTST1 02/01/24 00:01 Completed Test Batch Iface
- JKTEST1 02/01/24 00:08 Completed This is a test
- IEFBR14 02/01/24 08:01 Completed This is a test
- JKOPCTST1 02/01/25 00:01 Starting Test Batch Iface
- JKTEST1 02/01/25 00:08 Completed This is a test
- IEFBR14 02/01/25 08:01 Completed This is a test
- JKOPCTST1 02/01/26 00:01 Error Test Batch Iface
- JKTEST1 02/01/26 00:08 Completed This is a test
- IEFBR14 02/01/26 08:01 Completed This is a test
- JKOPCTST1 02/01/27 00:01 Error Test Batch Iface
- JKTEST1 02/01/27 00:08 Completed This is a test

Command ==>
PF1=Help PF2=End PF3=Return PF5=Filters PF6=Ro11
```

Figure 108. INGTWS REQ=LIST TYPE=APPL Command Dialog Panel

If you specify `INGTWS * REQ=LIST TYPE=OP` a panel similar to Figure 109 on page 253 is displayed.

```

INGKYSTO          SA z/OS - Command Dialogs Line 1 of 3
Domain ID = IPSFM ----- INGTWS ----- Date = 04/10/02
Operator ID = NETOP1 Sysplex = KEY1PLEX Time = 16:23:08
CMD: A Update / scroll

Operations List

Op. -----JES-----
CMD Num. Name Number Status Reason Err. Work Code Stn.
-----
- 1 EVJSJ001 Completed NV01
- 1 JKTST1 JOB06429 Completed N001
- 1 IEFBR14 JOB00325 Completed CPU1
- 1 EVJSJ001 JOB07522 Completed N001
- 1 JKTST1 JOB07521 Completed N001
- 1 IEFBR14 JOB07523 Completed CPU1
- 1 EVJSJ001 JOB00787 Interrupt N001
- 1 JKTST1 JOB07524 Completed N001
- 1 IEFBR14 JOB07526 Completed CPU1
- 1 EVJSJ001 JOB07528 Error JCL N001
- 1 JKTST1 JOB07527 Completed N001
- 1 IEFBR14 JOB07529 Completed CPU1
- 1 EVJSJ001 JOB07533 Error JCL N001

Command ==>
PF1=Help PF2=End PF3=Return PF5=Filters PF6=Ro11
    
```

Figure 109. INGTWS REQ=LIST TYPE=OP Command Dialog Panel

If you specify INGTWS * REQ=LIST TYPE=SR a panel similar to Figure 110 is displayed.

```

INGKYSTO          SA z/OS - Command Dialogs Line 1 of 26
Domain ID = IPSFM ----- INGTWS ----- Date = 04/10/02
Operator ID = NETOP1 Sysplex = KEY1PLEX Time = 16:27:11
CMD: A Update / scroll

Special Resources List

CMD Name --Actual-- -Default--
Av. Quant. Av. Quant.
-----
- ING.KEY1.APL.CICSK1G.DOWN No 1 Yes 1
- ING.KEY1.APL.CICSK1G.UP No 1 Yes 1
- ING.KEY1.APL.RMF.DOWN No 1 Yes 1
- ING.KEY1.APL.RMF.UP Yes 1 Yes 1
- ING.KEY1.APL.RMFIII.DOWN No 1 Yes 1
- ING.KEY1.APL.RMFIII.UP Yes 1 Yes 1
- ING.KEY2.APL.CICSK1G.DOWN Yes 1 Yes 1
- ING.KEY2.APL.CICSK1G.UP No 1 Yes 1
- ING.KEY2.APL.RMF.DOWN No 1 Yes 1
- ING.KEY2.APL.RMF.UP Yes 1 Yes 1
- ING.KEY2.APL.RMFIII.DOWN No 1 Yes 1
- ING.KEY2.APL.RMFIII.UP Yes 1 Yes 1
- ING.KEY3.APL.CICSK1G.DOWN Yes 1 Yes 1

Command ==>
PF1=Help PF2=End PF3=Return PF5=Filters PF6=Ro11
    
```

Figure 110. INGTWS REQ=LIST TYPE=SR Command Dialog Panel

If you specify INGTWS * REQ=LIST TYPE=WS a panel similar to Figure 111 on page 254 is displayed.

```

INGKYSTO          SA z/OS - Command Dialogs Line 1 of 7
Domain ID = IPSFM ----- INGTWS ----- Date = 04/10/02
Operator ID = NETOP1 Sysplex = KEY1PLEX Time = 16:29:02
CMD: A Update / scroll

Work Stations List
Reporting JCL Alt. Para.
CMD Name Status Type Attribute Prep STC WTO ReRoute WS Server
-----
- NV02 Unknown General Automatic No No No No No
- NV03 Unknown General Automatic No No No No No
- OPR1 Unknown General Completion No No No No No
- WT01 Active General Automatic No No Yes No No
- NV01 Unknown General Automatic No No No No No
- CPU1 Active Computer Automatic No No No No No
- N001 Active Computer Automatic No No No No No

Command ==>
PF1=Help PF2=End PF3=Return PF5=Filters PF6=Ro11
    
```

Figure 111. INGTWS REQ=LIST TYPE=WS Command Dialog Panel

If you specify INGTWS * REQ=LIST TYPE=CAL a panel similar to Figure 112 is displayed.

```

INGKYSTO          SA z/OS - Command Dialogs Line 1 of 2
Domain ID = IPSFM ----- INGTWS ----- Date = 04/10/02
Operator ID = NETOP1 Sysplex = KEY1PLEX Time = 16:31:46
CMD: / scroll

Calendar List
CMD Name Days Shift Description
-----
- APC 7 0000 general APC calendar
- DEFAULT 8 0000 general APC calendar

Command ==>
PF1=Help PF2=End PF3=Return PF5=Filters PF6=Ro11
    
```

Figure 112. INGTWS REQ=LIST TYPE=CAL Command Dialog Panel

Press PF10 and PF11 to display more information for each resource type. Issuing the command code A Update command against a resource in the CMD field displays a panel that lets you modify the resource. The Application Description list supports the B Operations command code. Issuing this command code against an application resource displays a list of operations for that resource. SORT/FIND/RFIND commands are supported. See “Varying the Format of the Command Output” on page 13 for further information.

Pressing PF5 displays a filter selection panel similar to Figure 113 is displayed.

```

EVJKFLT          SA z/OS - Command Dialogs
Domain ID = IPSFM ----- EVJFILT -----   Date = 04/10/02
Operator ID = NETOP1                          Time = 16:36:48

Specify or revise the filter criteria:

Active Controller ==> OPCF/APL/KEY1
OPC/TWS resource  ==> CAL          APPL, OP, SR, WS or CAL

Generic Filter strings in the format NAME = value
==> _____ ==> _____
==> _____ ==> _____
==> _____ ==> _____
==> _____ ==> _____
==> _____ ==> _____
==> _____ ==> _____
==> _____ ==> _____
==> _____ ==> _____
==> _____ ==> _____

Command ==>
PF1=Help  PF2=End  PF3=Return  PF4=Clear  PF5=Reset  PF6=Ro11

```

Figure 113. INGTWS Filter Command Dialog Panel

Specify filter strings in the format *field-name op contents* where:

- *field-name* is a valid field name as specified by the MODIFY command arguments in *TWS for z/OS Programming Interfaces*.
- *op* can have the following values:
 - =
 - ^=
 - <
 - <=
 - >
 - >=
- *contents* are the desired values to be matched by the *op*. The trailing wildcard character '*' may be used for *op*.

The operands must be separated by a blank.

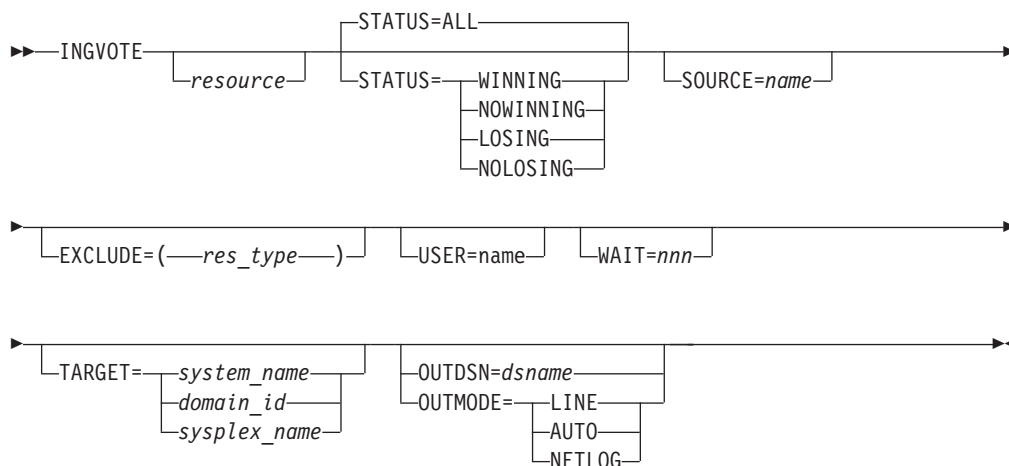
INGVOTE

Purpose

The INGVOTE command displays:

- All pending requests that were entered from the automation manager.
- All pending votes of a specified resource.

Syntax



Parameters

resource

Specifies the resource to be displayed. The format is *name/type[/system]*. Wildcard is supported.

STATUS

Specifies whether to display the winning or losing requests or votes only. The default is ALL. The STATUS parameter can have the following values:

WINNING Displays the winning requests or votes.

NOWINNING Displays the losing requests or votes.

LOSING Displays the losing requests or votes.

NOLOSING Displays the winning requests or votes only.

ALL Displays all winning and losing requests or votes. This is the default.

The values can be abbreviated. Note that if you specify a resource name the vote status is examined, otherwise the request status is examined.

SOURCE

This is used as a filter. Only those requests that originate from the named source are shown. Wildcards are supported, for example, OP*. An asterisk (*) matches a string of arbitrary length and a percentage sign (%) matches a single character.

TARGET

For information on the TARGET parameter, see "TARGET Parameter" on page 10.

OUTDSN

For information on the OUTDSN parameter, see "OUTDSN Parameter" on page 13.

OUTMODE

For information on the OUTMODE parameter, see "OUTMODE Parameter" on page 12.

EXCLUDE

Specifies the resource type to be excluded from the display. More than one value can be specified. For example, INGVOTE EXCLUDE=SVP causes all service period resources to be filtered out from the display. Specify NO or * to reset the installation-provided default.

USER

This is used as a filter. Only those requests that originate from the specified user id are shown. Wildcard is supported. An asterisk (*) matches a string of arbitrary length and a percentage sign (%) matches a single character.

WAIT

Specifies the number of seconds to wait before reporting that a timeout occurred if the automation manager does not provide the requested data. The maximum time interval is 999 seconds.

If omitted, the time interval is 30 seconds.

Restrictions and Limitations

None.

Usage

The INGVOTE command operates sysplexwide. For an overview see “Overview of Commands that Operate Sysplexwide” on page 9.

Examples

If you enter ingvote a panel similar to Figure 114 is displayed.

```

INGKYRQ2                SA z/OS - Command Dialogs          Line 1    of 25
Domain ID   = IPUFA      ----- INGVOTE -----         Date = 09/08/08
Operator ID = NETOP1     Sysplex = AOCPLX                 Time = 19:05:50

Cmd:  C Cancel request  K Kill request   S Show details   V Show votes
Cmd Name   Type System  Request Data
-----
-  BNKNACHT  SVP          Req : MakeUnAvailable
                        At  : 2008-09-08 09:39:58
                        Org : SCHEDULE
                        Pri : 01120000 Should Be Down - Schedule
                        Stat: Winning/Unsatisfied
-  BZOMSCMV  SVP          Req : MakeAvailable_Only
                        At  : 2008-09-08 09:39:58
                        Org : SCHEDULE
                        Pri : 02140000 Must Be Up - Schedule
                        Stat: Winning/Unsatisfied
-  HOURLY    SVP          Req : MakeAvailable_Only
                        At  : 2008-09-08 10:00:01
                        Org : SCHEDULE

Command ==>
PF1=Help    PF2=End      PF3=Return   PF6=Ro11
PF8=Forward PF9=Refresh  PF12=Retrieve

```

Figure 114. INGVOTE Command Dialog Panel

- The **Cmd** field allows you to specify command codes. To use one of the command codes shown, type the appropriate letter next to the resource name and press Enter. The following command codes are available:

C Cancels the request.

K Cancels the request without showing the verification panel.

INGVOTE

S Shows details about the request.

V Shows all the votes or requests that have been entered for that resource.

- The **Type** field shows the type of the resource.
- The **Name** field shows the name of the resource that the request was made against.
- The **Request Data** field shows details about the request. See the online help for further information.

The subcommands FIND/RFIND are supported. See “Varying the Format of the Command Output” on page 13 for more information.

Line-mode Output

The line-mode output of the INGVOTE command shows additional information about the request:

- Timeout option
- Application parameters
- Request options (command type, Restart option, Override option, Autoremove option)

Figure 115 shows an example.

```
INGKYRQ0          SA z/OS - Command Dialogs      Line 1   of 5
Domain ID = IPUNA  ----- INGVOTE -----      Date = 12/14/11
Operator ID = NETOPER1      Sysplex = AOCAPLEX      Time = 17:03:16

Resource ==> SVPDOWN/SVP
System ==>          System name, domain id or sysplex name

Cmd: C cancel request  K Kill request  S show request details
Cmd Action WIN Request/Vote Data
-----
STOP   Y Request   : MakeUnAvailable
       Created    : 2011-12-14 16:23:19
       Originator : SCHEDULE
       Priority    : 02120000      Must Be Down - Schedule
       Status     : Winning
```

Figure 115. INGVOTE Command Output

MONITOR

Purpose

The MONITOR command causes the SA z/OS monitoring routine to be run.

Syntax



Parameters

subsystem

Is the name of the subsystem you want monitored. It can be a list of subsystems. The default is that all subsystems will be monitored.

You can also specify wildcards. This applies a filter for monitoring. Only resource names that match the filter criteria are monitored. Wildcard is supported. Valid specifications are, for example, **abc*, *abc**, or **abc**.

TARGET

For information on the TARGET parameter, see “TARGET Parameter” on page 10.

Restrictions and Limitations

The MONITOR command can only be used when SA z/OS is initialized.

The output of the MONITOR command is always in line mode.

Usage

MONITOR can be used whenever you want to validate your current automation agent status information.

Examples

To monitor TSO, VTAM and all subsystems that start with CICS, enter the following:

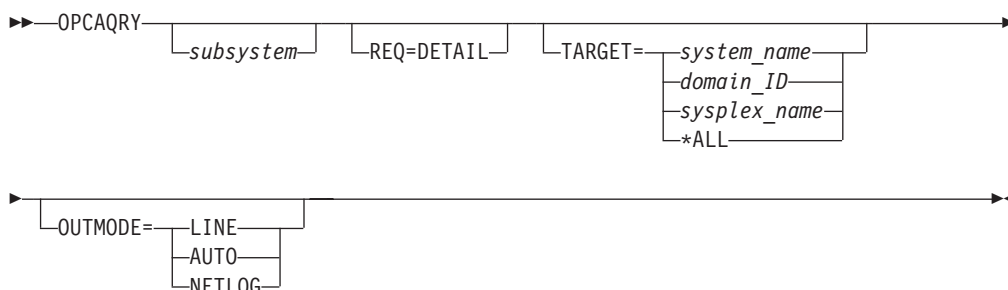
```
monitor TSO VTAM CICS*
```

OPCAQRY

Purpose

The OPCAQRY command displays the status of TWS Automation operations, including all commands that are received via the request interface.

Syntax



Parameters

subsystem

The name of the subsystem. Unless you specify REQ=DETAIL, more than one subsystem name as well as a wildcard can be specified. The wildcard can be, for example, *SAP**, **SAP* or **SAP**

OPCAQRY

REQ=DETAIL

Displays TWS-related information for the specified subsystem. The resource name is mandatory when REQ=DETAIL is specified.

TARGET

For information on the TARGET parameter, see "TARGET Parameter" on page 10.

OUTMODE

For information on the OUTMODE parameter, see "OUTMODE Parameter" on page 12.

Restrictions and Limitations

The OPCAQRY command can only be used when SA z/OS is initialized.

Examples

If you enter the OPCAQRY command without the REQ=DETAIL parameter, a panel similar to Figure 116 is displayed. The panel shows information about TWS-controlled subsystems that match the filter criteria.

```
EVJKYQRY          SA z/OS - Command Dialogs          Line 1    of 3
Domain ID   = IPSFP          ----- OPCAQRY -----          Date = 04/29/06
Operator ID = NETOP1          System = KEY4          Time = 18:08:27

CMD:  D Details      R Reset

CMD Subsystem  System  Application      Request  Date      Time  Status
-----
-  OPCA01      KEY4   OPCA0#TESTAD    STOP     04/28/06  17:00 Complete
-  OPCA02      KEY4   OPCA0#TESTAD    RECYCLE  04/28/06  17:14 Complete
-  RMF         KEY4   OPCA0#TESTAD    STOP     04/29/06  18:05 In progress
-             KEY4   OPCA0#TESTAD    COMMAND  04/29/06  18:07 In progress
-

Command ==>
PF1=Help    PF2=End      PF3=Return    PF6=Ro11
PF9=Refresh          PF12=Retrieve
```

Figure 116. OPCAQRY Command Dialog Panel

- The **Cmd** field allows you to specify command codes to invoke another command dialog. The following command codes are available:
 - D** Shows the TWS operation details for the subsystem.
 - R** Resets the timer and completion flags to a null value, and unlocks a specific subsystem after a user error has been detected and corrected. By resetting the timer and completion flags, SA z/OS again accepts requests from TWS.
- The **Status** field shows the status of the request or command in SA z/OS. For a request this is either complete, incomplete, timeout, in progress, or no request. A status of timeout indicates that the operation is marked in error because it did not complete within the time limit set by the system programmer in the OPCA code entry.

A status of incomplete indicates that the operation did not achieve the expected status set by the system programmer in the OPCA code entry.

Complete and no request are considered normal statuses.

For a command, the statuses are:

In progress

The command has been received

In error

The command completed but failed

Complete

The command completed successfully

Timeout

The command did not finish in time

Waiting

The command finished processing but is now waiting for completion

The FIND/RFIND and SORT subcommands are supported. See “Varying the Format of the Command Output” on page 13 for information.

If you enter command code D for a subsystem or specify the REQ=DETAIL option, a panel similar to Figure 117 is displayed.

```

EVJKYQR1          SA z/OS - Command Dialogs      Line 1    of 17
Domain ID   = IPSFP      ----- OPCAQRY -----      Date = 04/29/06
Operator ID = NETOP1          System = KEY4              Time = 18:10:48

Application      : OPCA0#TESTAD
Workstation      : NV04
Operation number : 10
IA Time         : 04/28/06 17:00
Job Name        : OPCA01
Owner           : NETOP1

Arrived in SA z/OS : 04/28/06 17:00
Command         : INGREQ CICS2/AP1/SYS1 REQ=START OUTMODE=LINE VERIFY=NO
Status          : In progress
Task            : CMD1

Checking Routine : CMD1$CHCK
Maximum wait time : 00:30
Maximum return code : 0

Command ==>
PF1=Help      PF2=End      PF3=Return      PF6=Roll
               PF9=Refresh      PF12=Retrieve

```

Figure 117. OPCAQRY Command Dialog Panel Showing Details for a Command

If the command is in an error condition, the details that are displayed are similar to those in Figure 118 on page 262.

RESTART

```
EVJKYQR1          SA z/OS - Command Dialogs      Line 1    of 17
Domain ID = IPSFP  ----- OPCAQRY -----      Date = 04/29/06
Operator ID = NETOP1      System = KEY4          Time = 18:10:48

Application       : OPCA0#TESTAD
Workstation       : NV04
Operation number  : 10
IA Time          : 04/28/06 17:00
Job Name         : OPCA01
Owner            : NETOP1

Arrived in SA z/OS : 04/28/06 17:00
Command          : INGLIST * OUTMODE=LINE
Status           : In error
Task             : Task

Error code        : U007
Error message     : AOF227I UNABLE TO PROCESS INGLIST - COMMAND NOT
                  : PERFORMED DUE TO USER EXIT

Checking Routine  : CMD1$CHCK
Maximum wait time : 00:30
Maximum return code : 0

Command ==>
PF1=Help   PF2=End       PF3=Return   PF6=Roll
PF9=Refresh PF12=Retrieve
```

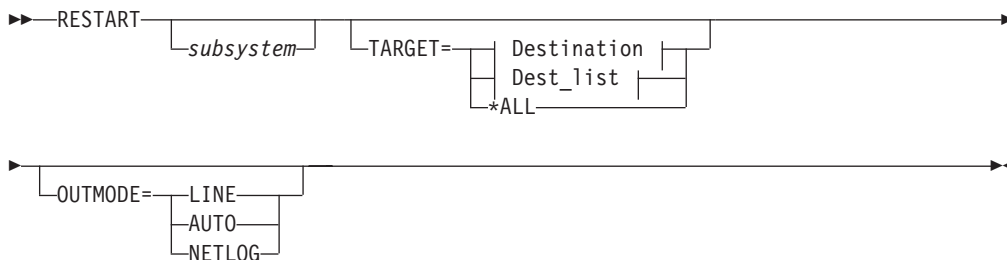
Figure 118. OPCAQRY Command Dialog Panel Showing Details for a Command in Error

RESTART

Purpose

The RESTART command checks a specified subsystem or all subsystems that are defined to SA z/OS on a particular system, and sets the HOLD flag to No.

Syntax



Destination:



Dest_list:



Parameters

subsystem

Specifies the name of the subsystem to be allowed to start. If you do not specify a subsystem name, SA z/OS attempts to restart all subsystems.

TARGET

For information on the TARGET parameter, see “TARGET Parameter” on page 10.

OUTMODE

For information on the OUTMODE parameter, see “OUTMODE Parameter” on page 12.

Restrictions and Limitations

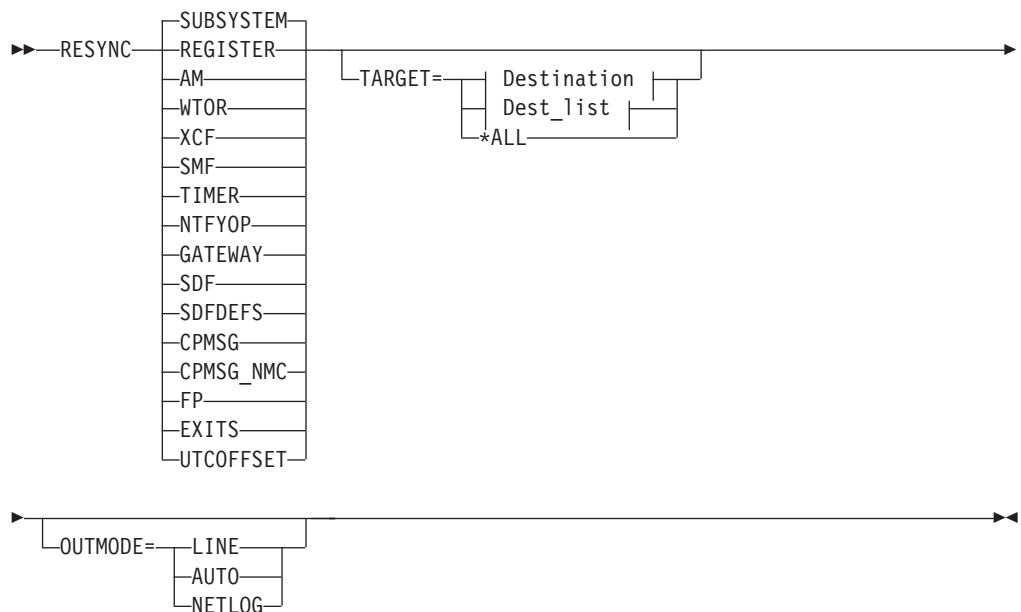
You can only use the RESTART command when SA z/OS is initialized.

RESYNC

Purpose

This command causes SA z/OS to rerun selected parts of its initial status determination routines or to reinitialize parts of its environment setup.

Syntax



Destination:**Dest_list:****Parameters****SUBSYSTEM**

Reinitializes the status of all subsystems on the local agent and clears the status file from deleted subsystems.

REGISTER

Registers all subsystem resources and monitor resources on the local agent and cross system to all agents in the sysplex.

AM Status synchronization of all subsystem resources and monitor resources with the automation manager.

WTOR

Retrieves the list of outstanding WTORs from the system, and updates the stored WTOR data in SA z/OS to refresh their display in SDF and NMC.

XCF

Retrieves information from MVS and updates the stored data in SA z/OS about:

- The status of the sysplex timer and the IDs of each active side
- The coupling facilities that are known to MVS
- The status of the couple data sets that are in use by the sysplex

SMF

Checks the SMF data sets and, if any of the SMF data sets are found in the DUMP status, issues the commands that are defined to SMFDUMP in the MESSAGES/USER DATA automation policy for the MVSESA entry.

TIMER

The timers for the general subsystem monitor and the gateway monitor are reset.

NTFYOP

Resets the hold settings at all notify operators via SETHOLD AUTO and subscribes the receivers of class 8x and 9x messages to the automation manager.

GATEWAY

The gateway connections to remote systems that are controlled by SA z/OS are restarted.

SDF

Reinitializes the status information for the local SDF and forwards it to the SDF focal point.

SDFDEFS

Generates the SDF panels using the advanced automation option (AAO) AOF_AAO_SDFROOT_LIST for the SDF root names that are to be applied.

CPMSG

Forwards the captured exceptional messages to SDF. An exceptional message is a message with a severity of Unusual, Important or Critical.

CPMSG_NMC

Forwards the captured exceptional messages to NMC. An exceptional message is a message with a severity of Unusual, Important or Critical.

FP Resends the status information for the local SDF to the SDF focal point.

EXITS

Reregisters SA z/OS exit routines if applicable. This includes dropping or loading the SA z/OS USS process exit and the SA z/OS ARM exit. In addition, the existence of user exits AOFEXSTA, AOFEXX02, AOFEEEXX03 and AOFEXX04 is verified and the exits are enabled or disabled as appropriate.

UTCOFFSET

Reevaluates the time zone offset relating to the Coordinated Universal Time (UTC), formerly known as Greenwich Mean Time (GMT).

TARGET

For information on the TARGET parameter, see “TARGET Parameter” on page 10.

OUTMODE

For information on the OUTMODE parameter, see “OUTMODE Parameter” on page 12.

Restrictions and Limitations

- The RESYNC command can only be used when SA z/OS is initialized.

Usage

This command should only be used when your statuses have gone out of synchronization with actual statuses. Possible causes of this are SSI task failure, problems with your NetView automation table, or communication problems with the automation manager.

SETHOLD

Purpose

SETHOLD lets you select which AOF messages are held for your operator ID. This command is used by the INGNTFY command but can be invoked separately.

Syntax

```

▶▶—SETHOLD—CONFIG—
                |
                |—AUTO—
                |
                |—i a e d w—
  
```

Parameters

CONFIG

Specifying this option changes your hold settings to match the settings specified for your operator ID in the automation control file. If your operator ID is not defined as a notification operator, no messages will be held.

AUTO

Specifying this option changes your hold settings to match the settings INGNTFY has currently defined for your operator ID. If your operator ID is not a notification operator, or its definition as a notification operator has been deleted, no messages will be held.

i a e d w

Each character specifies the hold setting for the corresponding type of message. If a Y is specified, messages of that type will be held, if any other character is specified, messages of that type will not be held. A character must be specified for each type.

Restrictions and Limitations

The SETHOLD command is only useful on an OST task. If issued on an NNT or RMT task, the message-holding flags in the remote domain will be ignored, because the automation table on the OST task will override whatever message attributes may have been specified in the remote domain.

SETHOLD does not update the INGNTFY globals, so if you use it with anything other than the AUTO parameter, the hold settings shown by INGNTFY QUERY may not reflect reality.

Usage

SA z/OS issues SETHOLD at SA z/OS initialization, when you log on to NetView interface, and when INGNTFY is used.

When you log on, an entry in the sample automation table (in member AOFMSGMS) will invoke SETHOLD AUTO for your operator ID. When INGNTFY is used to change an operator's HOLD settings, SETHOLD AUTO will be issued on the appropriate OST task after the global information has been updated.

A more efficient usage would be to modify your initial REXX scripts to issue SETHOLD with specific settings and to not have any hold settings specified in the automation control file or through INGNTFY. If you choose to do this, you will need to remove the automation table entry for the OST (in member AOFMSGMS) and set the AOFLOCALHOLD advanced automation option to 1. Doing this will stop INGNTFY from using EXCMD to issue SETHOLD AUTO, which can disrupt the hold settings specified from your profiles.

Note that the attributes for held messages are defined as automation table synonyms in the AOFMSGSY member.

It is recommended that you do not hold information messages because SA z/OS can generate quite a few of them. If you do hold them, use the CLRHELD command to remove them. You may want to modify the attributes for held information messages (held in the AOFMSGSY ACF member) so that held information messages will not actually be held.

Examples

To hold the messages that INGNTFY says you should have held, enter SETHOLD AUTO. Messages will be held according to the task INGNTFY setting.

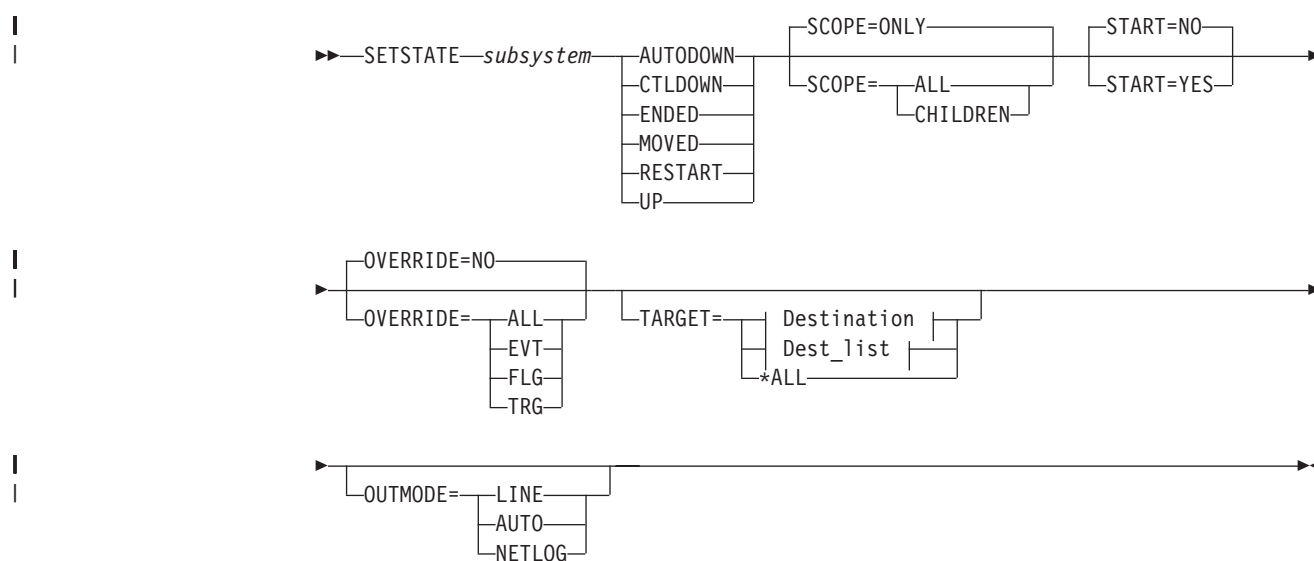
To hold all but information messages, enter SETHOLD N Y Y Y Y. All AOF messages, except informational ones, will be held.

SETSTATE

Purpose

SETSTATE changes the agent automation status of a given subsystem.

Syntax



Destination:



Dest_list:



Parameters

subsystem

Specifies the subsystem whose status (or whose dependent resource's status) you want to change. You can also specify the subsystem's job name.

SETSTATE

AUTODOWN

Changes the status from CTLDOWN, STOPPED, BROKEN, MOVED or FALLBACK to AUTODOWN. It is primarily used to return the resource to automation control after the operator has fixed the problem.

CTLDOWN

Changes the status to CTLDOWN so that the subsystem cannot be started by automation.

ENDED

Changes the status to ENDED.

MOVED

The effect of this parameter depends on how the subsystem is defined:

- If the subsystem does not have any secondary system associations, the effect of the MOVED operand is the same as the effect of the CTLDOWN operand: the status of the subsystem is changed to CTLDOWN.
- If the subsystem does have secondary system associations:
 - If the command is issued on one of the subsystem's primary systems, the subsystem's status is changed to MOVED
 - If the command is issued on one of the subsystem's secondary systems, the subsystem's status is changed to FALLBACK.

RESTART

Changes the status to RESTART so that the subsystem can be restarted. Specify this if your Initstart flag is set to No. This can only be used when:

- SCOPE=ONLY or SCOPE=ALL
- The application monitor status of the subsystem is INACTIVE

UP Changes the status to UP/RUNNING if the subsystem's UPMSG has been missed. This can only be used when:

- SCOPE=ONLY
- The application monitor status of the subsystem is ACTIVE
- If the subsystem is enabled for automatic restart management, its automatic restart management status must be AVAILABLE or AVAILABLE-TO.

Note: For transient subsystems, UP becomes RUNNING.

SCOPE

Specifies what is affected by this command:

ONLY Changes the status of this resource only. This is the default.

ALL Changes the status of this resource and its dependent resources.

CHILDREN

Changes the status of the dependent resources only.

OVERRIDE

Specifies the overrides to be considered for the request. It can be one of the following:

NO Specifies that no override will be done. This is the default.

ALL Sets the FLG, TRG as well as DPY and STS overrides on. For DPY and STS see the "INGREQ" on page 197 command for more details.

EVT | TRG

The startup or shutdown trigger conditions will be ignored.

FLG The appropriate automation flags will be ignored for the resource.

START

Specifies whether the resource is started after the status has been updated.

NO No request is sent to the automation manager. The automation agent status is updated. This is the default.

YES A default start request is sent to the automation manager.

TARGET

For information on the TARGET parameter, see “TARGET Parameter” on page 10.

OUTMODE

For information on the OUTMODE parameter, see “OUTMODE Parameter” on page 12.

Restrictions and Limitations

The SETSTATE command will not execute under the primary POI task (PPT).

The SETSTATE command can only be used when SA z/OS is initialized.

Usage

Use SETSTATE to:

- Resume handling an application after a manual operator shutdown or after any other event that causes an application to get into a non-automatable status (for example STOPPED, CTLDOWN, BROKEN, ACTIVE)
- Prevent automation from restarting an application if you specify CTLDOWN.
- Alert the automation that an application that was shut down will be moved to another system.
- The SETSTATE command issues an automation manager request with a priority of HIGH (unless overridden by the advanced automation global INGREQ_PRI). Because requests entered by the operator are persistent, it may be necessary to manually remove the associated vote before subsequent requests are activated.

Examples

If you enter setstate TS0 a panel similar to Figure 119 on page 270 is displayed.

SETTIMER

```
AOFKSAST          SA z/OS - Command Dialogs
Domain ID = IPSNO  ----- SETSTATE -----   Date = 07/19/00
Operator ID = NETOP1                               Time = 18:53:29

Specify subsystem and new state:

Subsystem => TSO          Subsystem to be processed
Target   => _____ System name, domain ID, sysplex name or *ALL
State    => _____ Put subsystem in the following state:
                        (RESTART / AUTODOWN / CTLDOWN / UP / ENDED /
                        MOVED)

Scope    => ONLY         Change state for:
                        ONLY   - only this subsystem
                        CHILDREN - only dependant subsystems
                        ALL     - resource and dependants

Start    => NO           Start or restart subsystem now (YES/NO)
Override => NO           Override(Start=YES) (NO/FLG/TRG/SVP/EVT/ALL)

Command ==>
PF1=Help   PF2=End   PF3=Return
PF6=Roll   PF12=Retrieve
```

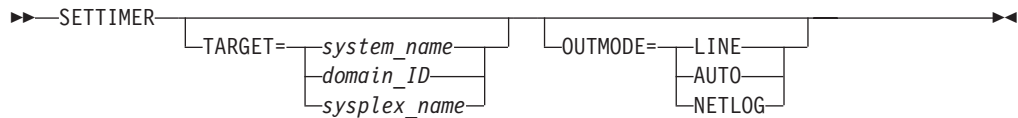
Figure 119. SETSTATE Command Dialog Panel

SETTIMER

Purpose

SETTIMER displays all scheduled timers. You can add, change, delete, suspend, and reactivate timers.

Syntax



Parameters

TARGET

For information on the TARGET parameter, see "TARGET Parameter" on page 10.

OUTMODE

For information on the OUTMODE parameter, see "OUTMODE Parameter" on page 12.

Restrictions and Limitations

The SETTIMER command can only be used when SA z/OS is initialized.

If you want to use the SETTIMER command instead of the NetView SETTIMER command, you must change the command synonyms. For further information see "Step 6: Customize NetView" in *IBM Tivoli System Automation for z/OS Planning and Installation*.

Usage

For instructions on how to add, change, or delete timers, see “Setting Timers” in *IBM Tivoli System Automation for z/OS User’s Guide*.

Examples

If you enter settimer a panel similar to Figure 120 is displayed.

```

AOFKATI                SA z/OS - Command Dialogs                Line 1    of 43
Domain ID = IPSFP      ----- SETTIMER -----                Date = 09/09/08
Operator ID = NETOP1   System = KEY4                            Time = 09:21:21
Enter ADD on the COMMAND line to create a new timer entry
or use CMD selections A add, C change, or D delete to delete existing timers.
                        U Suspend timer, or R Resume to re-activate timer
CMD TIMER-ID SCHEDULED TIME  TYPE TASK  INTERVAL  CLOCK SAVE CTUP
-----
- AOFI0014 09/09/08 15:41:10 AFTER PPT                                GMT NO
  Cmd: AOFRASCD HOPER INGRYHBT NOTIFY_NMC
- MEMSTORE 09/09/08 15:42:03 EVERY AUTO2 000 00:02:00 GMT NO
  Cmd: MEMSTORE 5% 5
- RGTAMCPU ** SUSPENDED ** CHRON AUTRGTA 000 00:05:00 GMT NO
  Cmd: CHRON EVERY=(INTERVAL=(00.05.00)) ROUTE=AUTRGTA ID=RGTAMCPU COMMA
      ND='RGTAMCPU'
- AOFI000F 09/09/08 15:45:52 AFTER PPT                                GMT NO
  Cmd: AOFRASCD AOFWRK10 AOFRSMTR MONITOR,HGDDSMTR/MTR/KEY4
- AOFI0010 09/09/08 15:45:52 AFTER PPT                                GMT NO
  Cmd: AOFRASCD AOFWRK13 AOFRSMTR MONITOR,HGMTRINFORM/MTR/KEY4

Command ==>>
PF1=Help      PF2=End      PF3=Return    PF6=Ro11
               PF8=Forward  PF9=Refresh   PF12=Retrieve
  
```

Figure 120. SETTIMER Command Dialog Panel: Display of Scheduled Timers

- The **CMD** field allows you to add, change, or delete a timer. Valid values are:
 - A** Add a new timer with the same values as the one selected.
 - C** Change an existing timer.
 - D** Delete a timer.
 - U** Suspend a timer. The timer is deleted from NetView but all its relevant data is kept in common global variables. Only CHRON timers can be suspended.
 - R** Resume (or reactivate) a suspended timer. Timers that are associated with a subsystem have a new timer ID (ITMRxxx) assigned to them.
- The **TIMER-ID** field shows the name assigned to the timer. It cannot be ALL or begin with a number or the words SYS, RST, AOF, or ING. Valid characters are A–Z, 0–9, #, @, \$, , !, _ and ?.
- The **SCHEDULED TIME** field shows the next scheduled day and time that this timer is set to expire.
- The **TYPE** field shows the type of timer. There are three types:
 - After** Set to occur only after the elapsed time that was specified when the timer was scheduled. For example, if at 12:00 am, you specify 2 hours, the timer will expire at 02:00 pm.
 - At** Set to occur at the specified date and time. Occurs only once.
 - Every** Set to occur at the time intervals indicated in the Interval field, or at a specific time each day or week.
- The **TASK** field shows the operator where the timer runs. This can be a primary programmed operator interface task (PPT), an automation operator, or a human operator. This task must be logged on when the timer is set and when it expires.

SETTIMER

It can also specify a group name. Group names must begin with a plus (+) sign. If a group name is specified, the command runs on the first task in the group that is active when the timer expires.

Note: Not all commands can run under the PPT.

- The **INTERVAL** field is only valid for Every type timers. It indicates the time intervals that the timer is set to occur at. For example, a value of 00:30:00 means that the timer will issue the command specified every 30 minutes.
- The **CLOCK** field specifies the time format. It can be GMT, which means that a local time change does not affect the command processing, or LOCAL, so that the time is to be adjusted automatically when daylight saving time changes, or when the z/OS time is adjusted by an operator for other reasons.
- The **SAVE** field specifies whether the timer is to be saved to an external file. This allows the timer to be restored after a NetView outage. This applies to timers created using either the customization dialog or the operator interface. Valid values are YES or NO. The default is YES.
- The **CTUP** field specifies whether to activate the timer if it occurs at a time when NetView is down. Valid values are Yes or No. If CTUP is set to YES, the command specified in the timer definition is issued when NetView is restarted, if the timer expired while NetView was down.

The field can only be set to YES if:

- This is an At type timer (it occurs once at a specific time and date).
- The timer was created using the customization dialog.
- The Save field is set to YES.

- The **Cmd** field below the timer ID specifies the command to be issued when the timer expires.

Adding a new timer or changing an existing one leads to the Add/Change Timer panel, similar to Figure 121.

```

AOFKATIR                SA z/OS - Command Dialogs
Domain ID = IPSFP        ----- SETTIMER -----      Date = 11/27/06
Operator ID = NETOP1     Add/Change Timer              Time = 12:38:41

Timer ID      => MEMSTORE    on System : SAT1
Type          => EVERY      AFTER, AT or EVERY
When?
- Interval    => ___ days  0-365    and  00:02:00 hh:mm:ss (AFTER EVERY)
               From => _____ hh:mm:ss To  _____ hh:mm:ss (EVERY)
- Day of Week => _____ at _____ (AT or EVERY)
- Specific date => _____ mm/dd/yy at _____ (AT)

Task          => AUTO2      Operator ID, PPT or Group name
Save         => NO         No, Yes   Timer clock => GMT   GMT, LOCAL

CHRON parameters => _____

Timer command => MEMSTORE 5% 5
                _____
                _____

Command ==>
PF1=Help      PF2=End      PF3=Return    PF6=Ro11
PF8=Forward   PF9=Refresh   PF12=Retrieve
  
```

Figure 121. SETTIMER Command Dialog Panel: Adding or Changing Timers

To set the timer, fill in the fields (note that if you are changing a timer the **Timer ID** field cannot be altered).

Use the following fields on this panel to define when the different types of timers are to expire:

Timer Type	Fields
AFTER	Interval: The number of days (0–365) to elapse before the timer is run.
AT	<p>Day of Week: Specify the day of the week (Monday through Sunday). Only the first three characters are required (for example, FRI for FRIDAY).</p> <p>Specific date: Specify the date (in mm/dd/yy notation) and time (in hh:mm:ss notation). Hours and seconds default to zero if not entered. If the time begins with an X or multiple Xs instead of a number, the command is set to begin at the next increment of time.</p>
EVERY	<p>Interval: The number of days (0–365) to elapse before the timer is run.</p> <p>From/To: You can also specify the date and time that the interval is to start and to end. If omitted, the timer runs from midnight to midnight.</p> <p>Day of Week: Specify the day of the week (Monday through Sunday). Only the first three characters are required (for example, FRI for FRIDAY). You can also specify DAILY for every day of the week, WEEKDAY, or WEEKEND.</p>

Use the **CHRON Parameters** field to specify additional CHRON parameters, such as REFRESH or NOTIFY. You can also specify suboptions of the EVERY parameter such as REMOVE, REMAFTER, DAYSMON, CALENDAR, MXREPEAT, OFF, or FOR.

Enter the command that is to be run when the timer expires in the **Timer command** field. The command can span the three input fields, which are protected if the timer command does not fit in the fields. You can use the PF4 key to clear the command fields.

SETTIMER

Part 3. SA z/OS I/O Operations Commands

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This part describes SA z/OS I/O operations (I/O-Ops) commands in detail: their purpose, format, and specifics of how to use them.

For general information about SA z/OS commands, see *IBM Tivoli System Automation for z/OS User's Guide*.

Chapter 3. I/O Operations Commands

Using I/O Operations Commands

You can issue I/O operations commands by entering the command through:

- ISPF dialogs
- The operator console

Not all commands can be issued in both ways. For detailed information about where the commands can be used and about the authorization levels they require, see Appendix B, “General Considerations for I/O Operations Commands,” on page 527.

Note that the LSN in all output messages will show “- -” when this value is not valid. This can happen only to cascaded switches that have no channel attachment, which is normally the case. For this reason, it is recommended that all switches are defined to Hardware Configuration Definition (HCD) including their device numbers. This allows I/O Operations to resolve the LSN also for the above-mentioned switches.

Consensus Processing

Consensus processing means a connectivity command is routed to all I/O operations applications that are affected by the command and the results are rated and accumulated until all of them have been received or the timeout value has expired whichever occurs first.

Unless the command is being forced any vote against the command causes the issuing I/O operations application to fail the command. A vote against the command is assumed when:

- a remote I/O operations application has not been excluded from consensus processing (see ““Reset Host” command”) while the communication to it could not be established or is interrupted.
- the timeout value expires and a response is still missing.
- an I/O operations application responds with a negative vote.

For backout processing see “Making Connectivity Changes” on page 511.

Safe Switching

I/O-Ops varies paths online or offline when, because of port manipulation, the path from a channel to a device either becomes valid or is no longer valid.

The term *safe-switching* means that *all* vary path offline requests due to an I/O-Ops connectivity command are backed out if *one* of these requests fails and BACKOUT was specified at command invocation. All requests means those requests on all systems that have access to the switch (or switches) that are affected by the command.

For FICON® switches, safe-switching also includes the entire vary process for connectivity commands that affect Inter-Switch-Link ports (E-ports). Because I/O-Ops does not know the topology between the entry switch and the destination

switch of a path, paths that go through an ISL link will not be varied when an E-port is the target of a connectivity command.

The following conditions result in the failure of a request:

- A vary path offline request fails when the request would disable the last path to a device that is currently in use.
- If no VTAM connection could be established between two systems that have access to a switch and run I/O-Ops, I/O-Ops on the local system (that is, where the command is entered) assumes that the command fails on the remote system. To avoid this, exclude this system from consensus processing using the command `RESET HOST vtamname PURGE`.
- For other reasons refer to “Making Connectivity Changes” on page 511.

FICON Switches

FICON switches allow imbedded space characters on port names. Consequently, I/O-Ops will not issue message IHVD106I when detecting imbedded blanks in port names of FICON switches.

However, I/O-Ops does not support imbedded blanks on port names, either in the ISPF dialogs or in the console command interface. The reason is that generic names and port names must not contain imbedded blanks when used in I/O-Ops console commands.

FICON Cascaded Switches

I/O-Ops supports cascaded switches with some restrictions:

1. For CTC connections on cascaded switches, I/O-Ops can neither display CTC control unit data nor manage CTC devices. The reason for this is that when I/O-Ops attempts to determine the attached NDs of such a device, it can get stuck behind a never-ending channel program on the device.
2. The Block command is not supported on Inter-Switch-Link ports (E_Ports). When an E_Port is affected by the command, it is rejected with return code 8 and reason code X'49'. In addition, the message IHVC913I is issued, showing the first or only port that is affected by the command.
3. All other I/O-Ops commands affecting E_Ports (Allow, Prohibit, Unblock, and WRITEPORT) must specify the command option `IGNore` when an E_Port is involved. Otherwise the command is rejected with return code 8 and reason code X'49'. In addition, the message IHVC913I is issued, showing the first or only port that is affected by the command.
The `IGNore` option makes the issuer of the command aware that *safe-switching* can no longer be guaranteed.
4. If an attached Node Descriptor of a device cannot be determined because the path or channel is offline, the Display Device command does not show any control unit data for the particular channel path id.
5. A dynamic configuration change that results in the allocation or deallocation of a cascaded switch is currently *not* supported.

Note: It is recommended that all switches are defined to the Hardware Configuration Definition (HCD) including their device numbers. This allows I/O-Ops to also show the LSN for cascaded switches.

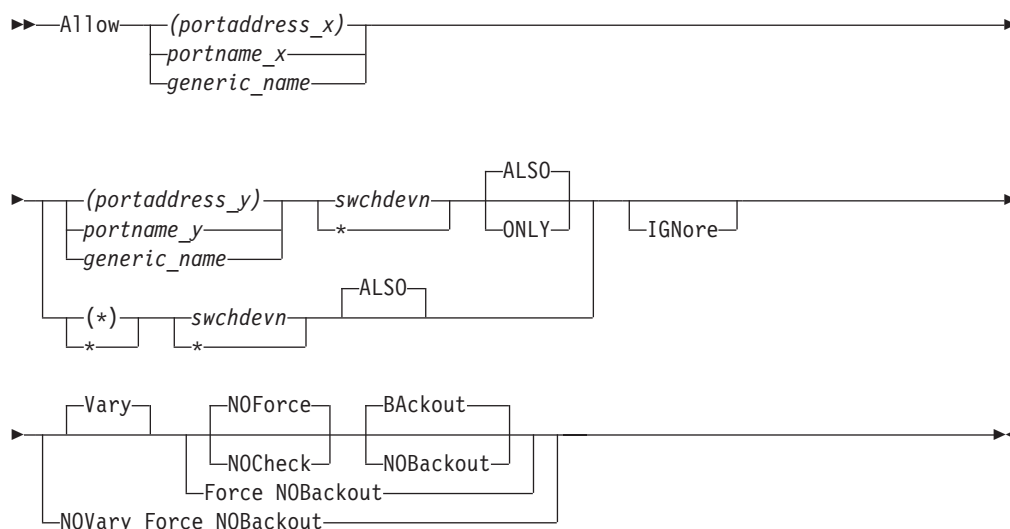
ALLOW

Purpose

Use the `ALLOW` command to define a dynamic connection between ports on one switch or on all the switches allocated to the issuing I/O operations.

You can allow the dynamic connections that are shown in the following syntax diagram. With the `ALLOW` command, you can, for example, define partitions within a system to facilitate maintenance. For information on the reciprocal command, see “`PROHIBIT`” on page 312.

Syntax



Parameters

(portaddress_x) | portname_x | generic_name

Specifies the target port by its port address (enclosed in parentheses), by its individual port name, or by a generic port name. For a discussion, see “Switching Commands” on page 514.

(portaddress_y) | portname_y | generic_name | (*) | *

Specifies one of the following: the port address of a second port (enclosed in parentheses), the port name of a second port, a generic port name, all other port addresses (* enclosed in parentheses), or all other port names (* not enclosed in parentheses). For a discussion, see “Switching Commands” on page 514.

swchdevn | *

Specifies one switch or all switches (* not enclosed in parentheses) that are allocated to the issuing I/O operations. For a discussion, see “Switch Identifiers” on page 507.

Options

ALSO | ONLY

ALLOW

ALSO (default) specifies that the ports affected by the command will connect dynamically to each other, regardless of whether they connect dynamically to other ports on the same switch.

ONLY specifies that the ports affected by the command will connect dynamically to each other, but each port is disallowed a dynamic connection to any other port on the switch.

IGNore

You must specify this option when an Inter-Switch-Link port (E_Port) is involved. Otherwise the command is rejected with return code 8 and reason code X'49'. The reason is I/O operations can no longer guarantee "safe-switching" when an E_Port is involved.

Connectivity options

For a discussion on Vary|NOVary, NOForce|NOCheck|Force, and BAckout|NOBAckout see "Making Connectivity Changes" on page 511.

For a discussion of why it sometimes isn't obvious that the status of a path or a device has changed after an operator has issued a connectivity command, see "Device and Path Status After Connectivity Commands" on page 530.

Usage

- If you specify an individual or generic port name, all the switches involved must have at least 1 port implemented with an applicable port name.
- If you specify the same port in both operands and do not specify a generic name, the command will fail because I/O operations will not allow that port to have a dynamic connection with itself.
- If you specify 1 or 2 generic names and at least 1 port in each operand is unique and valid, the command will succeed. I/O operations will allow the valid dynamic connections and disallow a port to connect to itself.
- Although you cannot use the ONLY option and specify either all port addresses (*) or all port names *, you can specify a generic port name. Assume, for example, that all the ports on switch 100 are named and the names start with F: FC1, FC2, FC3, and so on. Although you cannot specify A * * 100, you can specify A F* F* 100.
- When you specify the ONLY option, all paths to the specified ports are varied offline. The dynamic path between the two ports is varied online.
- If a parallel channel and CV converter are involved, you should consider the information provided in "A Parallel Channel in Block (BL) Mode" on page 523.

Examples

In the following example, port FB is allowed to have a dynamic connection only with port D6 on switch 100. The dynamic connections that port FB had with other ports are now prohibited.

```
A (FB) (D6) 100 ONLY
IHVC000I ALLOW      command successful
```

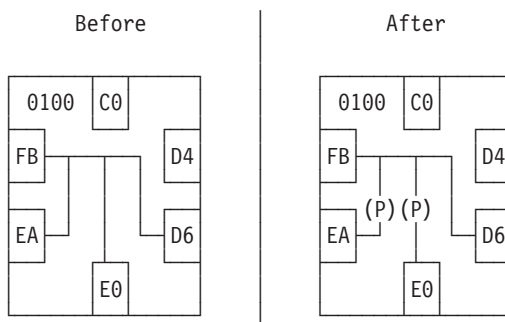


Figure 122. ALLOW Command: Sample 1

In the following example of using a generic port name, all the ports whose port names start with the characters HB.CHP_39 are allowed to have dynamic connections with ports that begin with CU. on switch 200.

```
ALLOW HB.CHP_39 CU.* 200
IHVC000I ALLOW      command successful
```

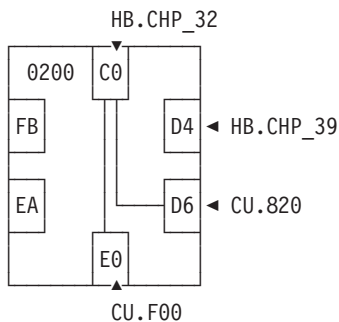


Figure 123. ALLOW Command: Sample 2

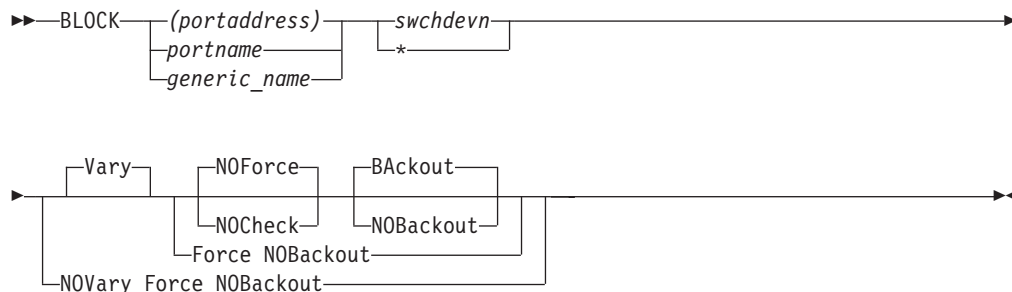
BLOCK

Purpose

Use the BLOCK command to prevent data transfer through the specified port on one or on all the switches allocated to the issuing I/O operations.

See “UNBLOCK” on page 327 for information on the reciprocal command.

Syntax



Parameters

(portaddress) | portname | generic_name

Specifies the ports to be blocked by an individual port address, by an individual port name, or by a generic port name. For a discussion, see “Switching Commands” on page 514.

swchdevn | *

Specifies one switch or all switches (* not enclosed in parentheses) allocated to the issuing I/O operations. For a discussion, see “Switch Identifiers” on page 507.

Options

Connectivity options

For a discussion on Vary | NOVary, NOForce | NOCheck | Force, and BACkout | NOBACkout see “Making Connectivity Changes” on page 511.

For a discussion of why it sometimes isn't obvious that the status of a path or a device has changed after an operator has issued a connectivity command, see “Device and Path Status After Connectivity Commands” on page 530.

Restrictions and Limitations

The command is rejected with return code 8 and reason code X'49' when an Inter-Switch-Link port (E_Port) is affected. The reason is that I/O operations does not know the paths and devices to be varied offline.

Usage

- If a CVC CHPID is involved, “An ESCON-in-Converted-Mode (CVC) Path” on page 523 provides more information.
- If a parallel CHPID is involved, “A Parallel Channel in Block (BL) Mode” on page 523 provides more information.

Examples

```
B (D6) 100
IHVC000I BLOCK      command successful
```

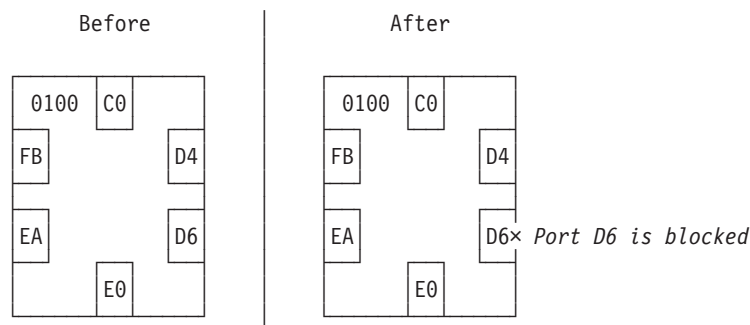


Figure 124. BLOCK Command: Sample 1

In the following example of using a generic port name, all ports whose port names start with the characters CU.F are blocked on all the switches allocated to the issuing I/O operations.


```
B CU.F* *
IHVC000I BLOCK      command successful
```

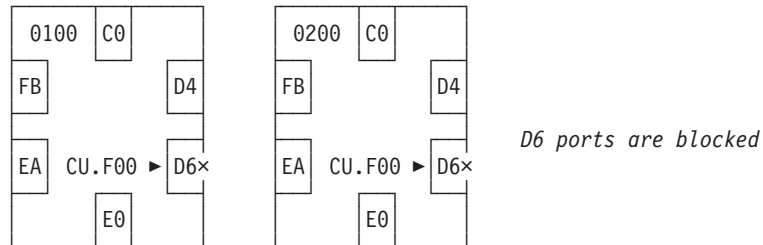


Figure 125. BLOCK Command: Sample 2

CHAIN

Purpose

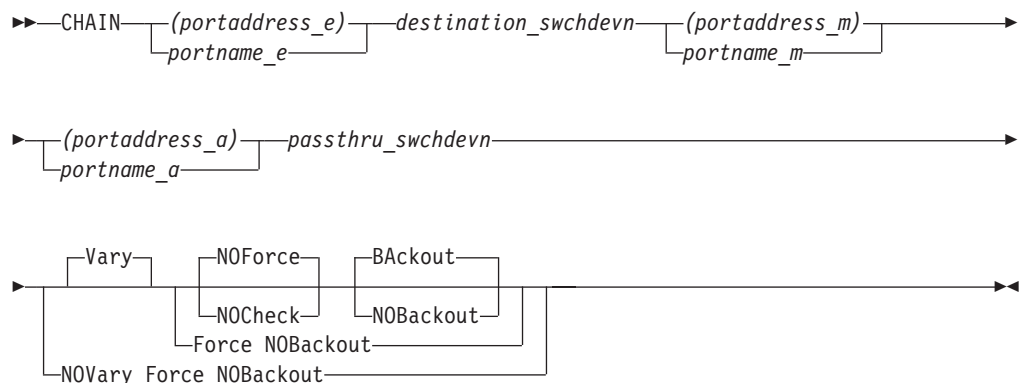
Use the CHAIN command to define a chain in a chained path that traverses two switches that are physically linked to each other.

One switch acts as a fiber repeater and is called the passthru switch. Two ports in the chain are statically connected to each other in the passthru switch. The other switch is called the destination switch because the chain “ends” in that switch.

For more information, see “Chain and Unchain a Switchable Path (ESCON only)” on page 519. See “UNCHAIN” on page 329 for the reciprocal command.

Note: The CHAIN command is not applicable to FICON switches.

Syntax



Parameters

(portaddress_e) | portname_e

Specifies the port ending the chain on the destination switch by its port address (enclosed in parentheses) or by its port name. For a discussion, see “Switching Commands” on page 514.

CHAIN

destination_swchdevn

Specifies the device number of the destination switch, which is the switch that ends the chain. For a discussion, see “Switch Identifiers” on page 507.

(portaddress_m)|portname_m

Specifies middle port by its port address (enclosed in parentheses) or by its port name. For a discussion, see “Switching Commands” on page 514.

(portaddress_a)|portname_a

Specifies the port to which the CHPID or control unit is physically attached to the beginning of the chained path by its port address (enclosed in parentheses) or by its port name. For a discussion, see “Switching Commands” on page 514.

passthru_swchdevn

Specifies the device number of the passthru switch, which is the switch that has the static connection between ports *a* and *m*. For a discussion, see “Switch Identifiers” on page 507.

Options

Connectivity options

For a discussion on Vary|NOVary, NOForce|NOCHECK|Force, and BACkout|NOBACkout see “Making Connectivity Changes” on page 511.

Usage

- Additional steps may be required. See “Chain and Unchain a Switchable Path (ESCON only)” on page 519.
- If you need to define a chain, consider entering the Chain command when I/O operations is started so that the program can take the definition into account for all vary path processing.
- Chaining can add complexity to I/O operations' vary path processing. See “Chain and Unchain a Switchable Path (ESCON only)” on page 519 for more information.

Examples

```
CHAIN (F2) 200 (D4) (C1) 100
IHVC000I CHAIN          command successful
```

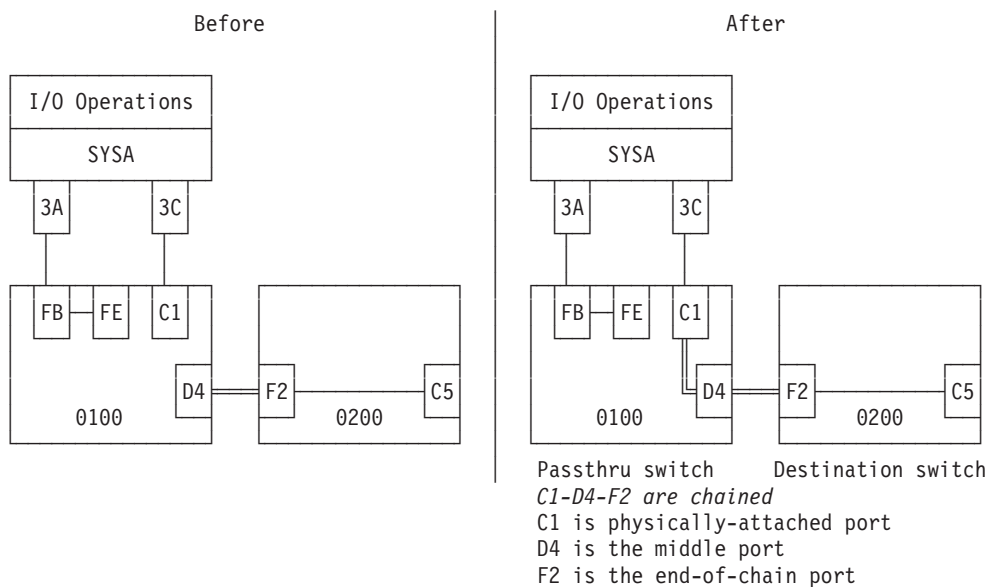


Figure 126. CHAIN Command: Sample 1

```
CHAIN (E0) 100 (D6) (CB) 200
IHVC000I CHAIN          command successful
```

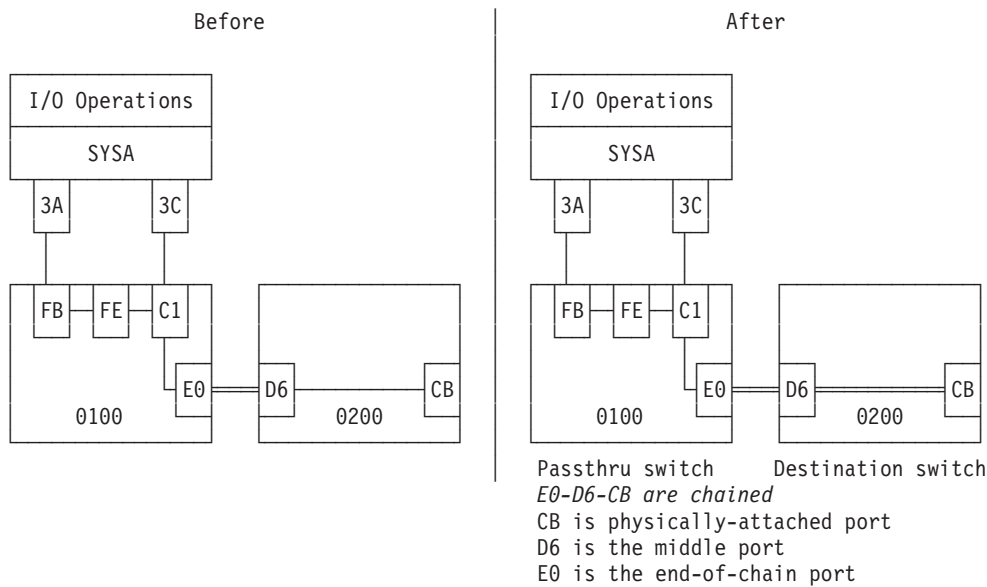


Figure 127. CHAIN Command: Sample 2

CONNECT

Purpose

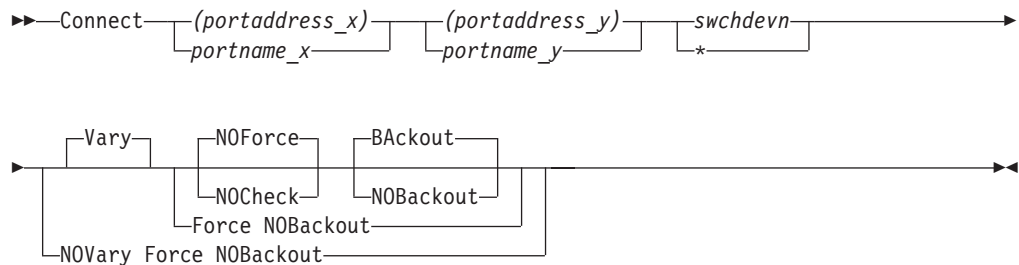
Use the CONNECT command to establish a static, or dedicated, connection between two ports on the same switch or those same two ports on all switches allocated to the issuing I/O operations.

See "DISCONNECT" on page 287 for the reciprocal command.

CONNECT

Note: The CONNECT command is not applicable to FICON switches.

Syntax



Parameters

(portaddress_x) | portname_x

Specifies one target port on the switch by its port address (enclosed in parentheses) or by its port name. For a discussion, see “Switching Commands” on page 514.

(portaddress_y) | portname_y

Specifies the other target port by its port address or by its port name. For a discussion, see “Switching Commands” on page 514.

swchdevn | *

Specifies one switch or all switches (* not enclosed in parentheses) allocated to the issuing I/O operations. For a discussion, see “Switch Identifiers” on page 507.

Options

Connectivity options

For a discussion on Vary | NOVary, NOForce | NOCheck | Force, and BACkout | NOBACkout see “Making Connectivity Changes” on page 511.

Usage

The two ports on the passthru switch of a chain are implicitly connected by the Chain command. Under some circumstances, however, you will need to enter the Connect command in addition to the Chain command. See “Chain and Unchain a Switchable Path (ESCON only)” on page 519 for more information.

Examples

In the following example, ports C0 and D6 become statically connected. In the hierarchy of port attributes, a static connection overrides a dynamic connection. Therefore, port EA cannot communicate with port C0 as long as the latter remains statically connected.

```
C (FB) (D6) 100  
IHVC000I CONNECT command successful
```

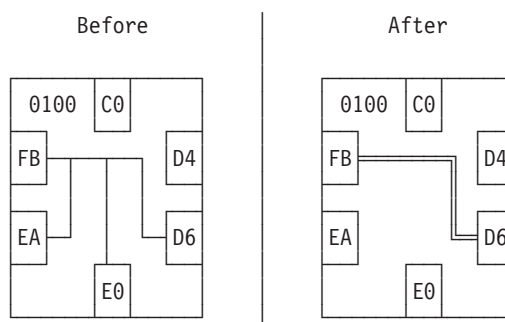


Figure 128. CONNECT Command Sample

DISCONNECT

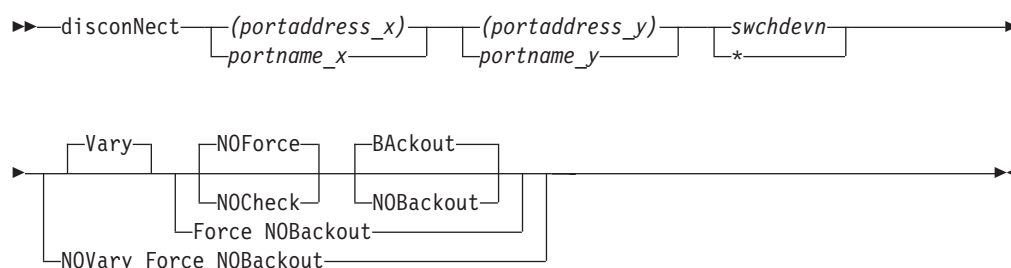
Purpose

Use the DISCONNECT command to cancel the definition of a static, or dedicated, connection between two ports on the same switch or those same two ports on all switches allocated to the issuing I/O operations.

See “CONNECT” on page 285 for the reciprocal command.

Note: The DISCONNECT command is not applicable to FICON switches.

Syntax



Parameters

(portaddress_x) | portname_x

Specifies one target port on the switch by its port address (enclosed in parentheses) or by its port name. For a discussion, see “Switching Commands” on page 514.

(portaddress_y) | portname_y

Specifies the other target port by its port address or by its port name.

swchdevn | *

Specifies one switch or all switches (* not enclosed in parentheses) allocated to the issuing I/O operations. For a discussion, see “Switch Identifiers” on page 507.

Options

Connectivity options

DISCONNECT

For a discussion on Vary | NOVary, NOForce | NOCheck | Force, and BAckout | NOBAckout see “Making Connectivity Changes” on page 511.

Usage

If a CVC CHPID is involved, “An ESCON-in-Converted-Mode (CVC) Path” on page 523 provides more information.

Examples

```
N (FB) (D6) 100
IHVC000I DISCONNECT command successful
```

DISPLAY CHANGECHECK

Purpose

Use the DISPLAY CHANGECHECK command to display the current setting of the option which indicates whether all opened switches (ON) are checked for a data change prior to a connectivity command or only those (OFF) that are actually affected by a connectivity command. The default setting on the startup of I/O Operations is ON.

Syntax

DISPLAY CHANGECHECK

►►—Display—ChangeCheck—►►

Examples

```
D CC
IHVC861I Option CHANGECHECK is set to ON.
```

DISPLAY CHP

Purpose

Use the DISPLAY CHP command to display data about one or all of the channel path identifiers (CHPIDs) online to the operating system (host) image that the issuing I/O operations is running on.

Syntax

►►—Display—Chp—*chpid*—►►
 *

Parameters

chpid

Specifies a single channel path identifier (CHPID).

* All CHPIDs that are known to the issuing I/O operations.

Usage

For more information on the data that is displayed, see the references under the fields:

```

IHVC221I
IHVC812I      Chp  Swch      Port
IHVC813I Chp Type  Devn  LSN Port  H S C P  Port name
IHVC814I ..  .....  ....  ..  ..  ..  ..  ..  ..
A      B  C      D  E  F  G      H
    
```

```

IHVC815I
IHVC816I      Chp  Swch      Port
IHVC817I Chp Type  Devn  LSN Port  H S C P  Port name
IHVC818I ..  .....  ....  ..  ..  ..  ..  ..  ..
A      B  C      D  E  F  G      H
[
IHVC210I Connected to:      ..  ..  ..  ..  ..  ..  ..
IHVC211I Chained to:  .... ..  ..  ..  ..  ..  ..
IHVC224I .. connected to:  ..  ..  ..  ..  ..  ..  ..
IHVC225I .. chained to:.... ..  ..  ..  ..  ..  ..
]
    
```

A Message identifier

Note: The message ID is not shown in the actual display.

B Channel path ID (see “Channel Types” on page 510)

C Channel type (see “Channel Types” on page 510)

D Switch device number (see “Switch Identifiers” on page 507)

E Logical switch number (see “Logical Switch Number (LSN)” on page 508)

F Port address (see “Port Addresses” on page 508)

G Port status codes (see “Switch Port Hardware Status on a Display Command” on page 509)

H Port name (see “Using Port Names as a Tool in Switching Commands” on page 518)

Examples

```

D C 3C
IHVC999I I/O-OPS display
      Chp  Swch      Port
Chp  Type  Devn LSN Port  H S C P  Port name
3C   CNC_S 0200 02  F2  C           HA.CHP_3C
Chained to: 0100 01  D4  C  C1  LINK.200
D4 connected to:      C1  C  D4  HA.CHP_3C
    
```

DISPLAY CHP

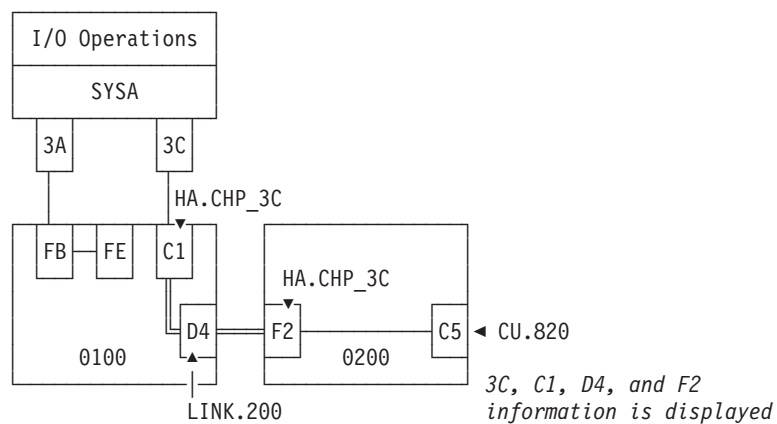


Figure 129. DISPLAY CHP Command: Sample 1

```

D C 3A
IHVC999I I/O-OPS display

```

Chp	Chp Type	Swch Devn	LSN	Port	Port Status				Port name
					H	S	C	P	
3A	CNC_S	0100	01	FB				P	HA.CHP_3A

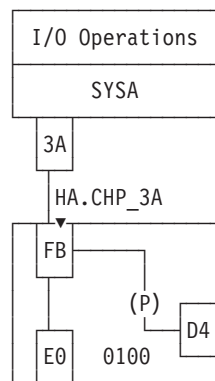


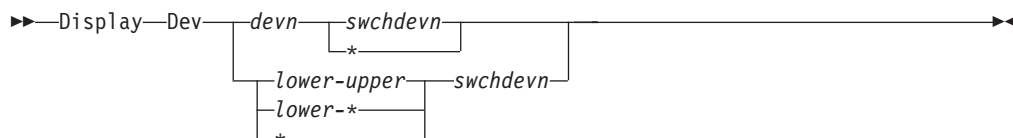
Figure 130. DISPLAY CHP Command: Sample 2

DISPLAY DEV

Purpose

Use the DISPLAY DEV command to display data about one, a range, or all the devices connected to one or all the switches that are allocated to the issuing I/O operations.

Syntax



Parameters

devn

A specific device number.

lower-upper

The range of device numbers from the *lower* limit, followed by a hyphen - and the *upper* limit.

lower-*

The range of device numbers from the *lower* limit, followed by a hyphen - and an asterisk (* not enclosed in parentheses) to indicate the highest number.

* All the device numbers (* not enclosed in parentheses).

swchdevn

Specifies one switch allocated to the issuing I/O operations.

* All switches allocated to the issuing I/O operations. For a discussion, see “Switch Identifiers” on page 507.

Restrictions and Limitations

If an attached Node Descriptor (ND) of a device on a cascaded switch cannot be determined because the path or channel is offline, no control unit data is shown for the particular channel path ID.

This is always true for CTC connections on cascaded switches. The reason is that I/O operations can get stuck behind a never-ending channel program on a CTC device when attempting to determine the attached NDs of the device.

Usage

For more information on the displayed output, see the references under the fields.

```

IHVC824I
IHVC825I          Chp Swch          Port
IHVC826I Devn Chp Type  Devn LSN Port  H S C P Port name
A   B   C   D   E   F   G   H   I
IHVC827I ..... .. ..... .. .. .. .. .. .. ..
[
IHVC220I Cntl unit data:.... .. .. .. ..
IHVC828I Connected to: .. .. .. ..
IHVC829I Chained to:  .... .. .. .. ..
IHVC830I .. connected to: .. .. .. ..
IHVC831I .. chained to: .... .. .. .. ..
]
  
```

A Message identifier

Note: The message ID is not shown in the actual display.

- B** Channel path ID (see “Channel Types” on page 510)
- C** Channel type (see “Channel Types” on page 510)
- D** Switch device number (see “Switch Identifiers” on page 507)
- E** Logical switch number (see “Logical Switch Number (LSN)” on page 508)
- F** Port address (see “Port Addresses” on page 508)
- G** Port status codes (see “Switch Port Hardware Status on a Display Command” on page 509)
- H** Port name (see “Using Port Names as a Tool in Switching Commands” on page 518)

DISPLAY DEV

Examples

```

D D F01 *
IHVC999I I/O-OPS display
      Chp  Swch      Port
      Devn Chp Type  Devn LSN Port  H S C P Port name
0F01 3A  CNC_S 0100 01  FB      HA.CHP_3A
Cntl unit data:0100 01  D6      CU.F00
0F01 3D  CNC_S 0200 02  F7      HA.CHP_3D
Cntl unit data:0200 02  D6      CU.F00
    
```

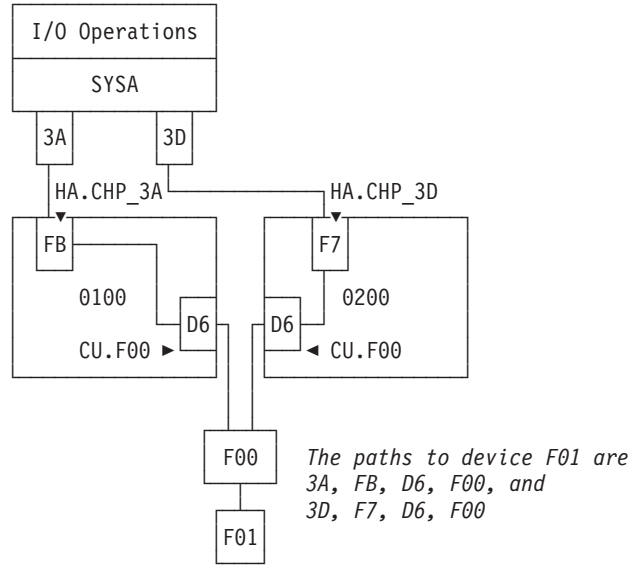


Figure 131. DISPLAY DEV Command Sample

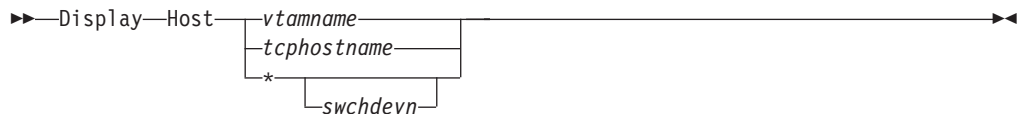
DISPLAY HOST

Purpose

Use the DISPLAY HOST command to display status about the specified I/O operations(host).

See “DISPLAY RESULTS” on page 300 for the related command, and “Processing a Vary Path Request” on page 524 for more information.

Syntax



Parameters

vtamname | *tcphostname* | *
 Specifies one or all I/O operations hosts known to the issuing I/O operations.

vtamname

Specifies an I/O operations by its VTAM application name (VTAM ID). You can specify THIS-SYS in uppercase characters if the issuing I/O operations is the target program and any of the following conditions holds:

- The issuing I/O operations does not have a valid VTAM application name and TCP/IP host name.
- The issuing I/O operations' VTAM name and the TCP/IP host name are not available.
- VTAM and TCP/IP are not available.

tcphostname

Specifies an I/O operations by its TCP/IP host name. You can specify THIS-SYS in uppercase characters if the issuing I/O operations is the target program and any of the following conditions holds:

- The issuing I/O operations does not have a valid VTAM application name and TCP/IP host name.
- The issuing I/O operations' VTAM name and TCP/IP host name are not available.
- VTAM and TCP/IP are not available.

*** (asterisk)**

Specifies all the I/O operations known to the issuing I/O operations.

For a discussion, see “Switching Commands” on page 514.

swchdevn | *

Specifies one switch allocated to the issuing I/O operations. If you do not specify a switch device number, the issuing I/O operations displays status about all its participating hosts. For a discussion, see “Switch Identifiers” on page 507.

Usage

- See the following example for the type of data that is displayed.
- If the DISPLAY RESULTS, LOGREC, SYNC SWITCH, or WRITE command is entered, the data that could be displayed by DISPLAY HOST is refreshed.
- For more information on the displayed output, see the references under the fields:

```

IHVC803I This Host: ...../..... Sysplex/System: ...../.....
IHVC804I Name      Level Physical identifier      Sysplex System
IHVC202I .....  . . . . .
A      B
IHVC206I .....  .....
      C      D
IHVCxxxI One or more status messages
    
```

- A** Message identifier
- B** VTAM name (see “VTAM Application Name” on page 525)
- C** TCP/IP host name (see “TCP/IP Host Name” on page 525)
- D** IPv4 or IPv6 address

DISPLAY HOST

```
IHVC805I The following switches are attached:
IHVC806I Swch
IHVC807I Devn LSN Unique id
IHVC200I .... ..
A B C D
```

- A Message identifier
- B Switch device number (see "Switch Identifiers" on page 507)
- C Logical switch number (see "Logical Switch Number (LSN)" on page 508)
- D Switch ID number (see "Switch Unique Identifier" on page 508)

```
IHVC884I Sysplex system(s) not associated with a host name detected:
IHVC885I Sysplex <- Systems ----->
IHVC886I ..... , ..... , ..... , ..... , ..... ,
A B C
```

- A Message identifier
- B Sysplex name
- C System name (or names) in the sysplex that are not associated with a VTAM name or a TCP/IP host name

Examples

```
D H IHVHOST1
IHVC999I I/O-OPS display
IHVC803I This Host: IHVAPPL1/IHVHOST1 Sysplex/System: IHVPLEX1/IHVSYS1
IHVC804I Name Level Physical identifier Sysplex System
IHVC202I IHVAPPL1 V3 R2 002084B16IBM02000000016F7A IHVPLEX1 IHVSYS1
IHVC206I IHVHOST1 9.123.47.11
IHVC537I VTAM communication is initialized on this host
IHVC537I TCP/IP communication is initialized on this host
IHVC805I The following switches are attached:
IHVC806I Swch
IHVC807I Devn LSN Unique id
IHVC200I 0100 01 009032005IBM510000000A7260
IHVC200I 0200 02 009032005IBM510000000A7465
```

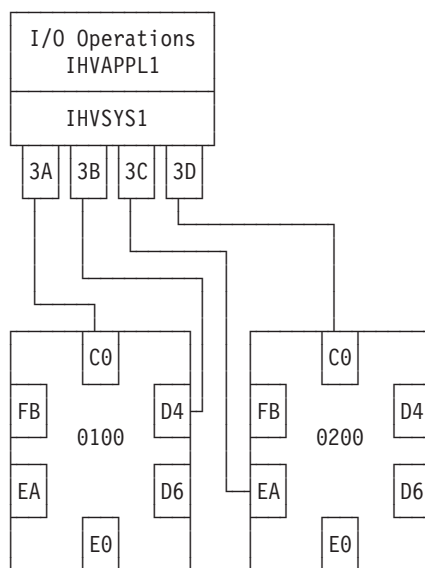


Figure 132. DISPLAY HOST Command: Sample 1

```

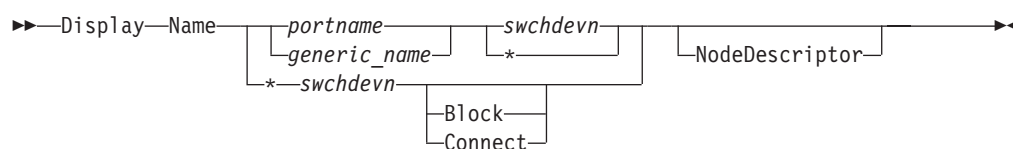
D H *
IHVC999I I/O-OPS display
IHVC803I This Host: IHVAPPL1/IHVHOST1 Sysplex/System: IHVPLEX1/IHVSYS1
IHVC804I Name      Level Physical identifier      Sysplex System
IHVC202I IHVAPPL1  V3 R2 002084B16IBM02000000016F7A IHVPLEX1 IHVSYS1
IHVC206I IHVHOST1   9.123.47.11
IHVC537I VTAM communication is initialized on this host
IHVC537I TCP/IP communication is initialized on this host
IHVC202I IHVAPPL2  V3 R1 002084B16IBM0200000001795A IHVPLEX1 IHVSYS2
IHVC535I VTAM session established with this host
IHVC202I IHVAPPL3  V3 R1
IHVC525I This host has been RESET off
IHVC516I VTAM or TCP/IP session NOT established with this host
IHVC202I IHVHOSTA  V3 R2 002084B16IBM02000000016F7A IHVPLEXA IHVSYSA
IHVC206I IHVHOSTA  0123:4567:89AB:CDEF:0123:4567:89AB:CDEF
IHVC535I TCP/IP session established with this host
IHVC884I Sysplex system(s) not associated with a host name detected:
IHVC885I Sysplex  <- Systems ----->
IHVC886I IHVPLEX1  IHVSYS5, IHVSYS8,      ,      ,      ,
  
```

DISPLAY NAME

Purpose

Use the DISPLAY NAME command to display data about the implemented ports on a switch that port names have been assigned to. (See "WRITE" on page 331 for the command used to assign port names.)

Syntax



Parameters

portname|generic_name|*

Specifies that data be displayed about a specifically named port, all ports with the specified generic logical port name, or all named addressable ports (* not enclosed in parentheses). If you specify * in this operand, you cannot specify * in the next operand, but you can specify Block or Connect as options. For a discussion, see "Switching Commands" on page 514.

swchdevn|*

Specifies one switch or all switches (* not enclosed in parentheses) allocated to the issuing I/O operations. If you specify *, you must specify either an individual or a generic port name, but not all port names. For a discussion, see "Switch Identifiers" on page 507.

Options

Block|Connect

Specifies that data be displayed only about those named ports that are blocked or statically connected to another port. If you specify this option, you must also specify * for all port names.

NodeDescriptor

Specifies that you want to display data of the attached hardware. For all ports except the CUP device port, the node descriptor of the attached hardware is displayed on a separate line when the I/O DEF column shows an unambiguous attachment.

Usage

For more information on the displayed output, see the references under the fields.

IHVC844I							Port
IHVC845I			Swch				Status I/O
IHVC846I	Port Name		Devn	LSN	Port	H S C P Def	
A	B		C	D	E	F	G
IHVC247I			[ND]
			H				

A Message identifier

- Note:** The message ID is not shown in the actual display.
- B** Port name (see "Using Port Names as a Tool in Switching Commands" on page 518)
- C** Switch device number (see "Switch Identifiers" on page 507)
- D** Logical switch number (see "Logical Switch Number (LSN)" on page 508)
- E** Port address (see "Port Addresses" on page 508)
- F** Port status codes (see "Switch Port Hardware Status on a Display Command" on page 509)
- G** I/O definition (see "Switch Ports" on page 508)
- H** Node descriptor including tag field

Examples

```

D N * 100
IHVC999I I/O-OPS display

```

Port Name	Swch Devn	LSN	Port	Port Status			I/O Def
				H	S	C	
HA.CHP_88.CVC	0100	01	C0		E0	P	CH
HA.CHP_3C	0100	01	C1		D4		P
LINK.200	0100	01	D4	C			P
CU.F00	0100	01	D6				P CU
CU.B20.9034	0100	01	E0			C0	P CU
CU.190	0100	01	EA				P CU
HA.CHP_3A	0100	01	FB				P CH

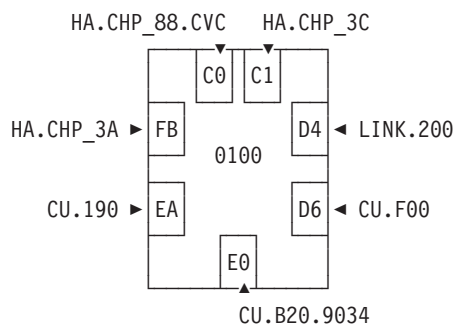


Figure 133. DISPLAY NAME Command: Sample 1. Display all port names

```

D N CU.F00 *
IHVC999I I/O-OPS display

```

Port Name	Swch Devn	LSN	Port	Port Status			I/O Def
				H	S	C	
CU.F00	0100	01	D6				P CU
CU.F00	0200	02	D6				CU

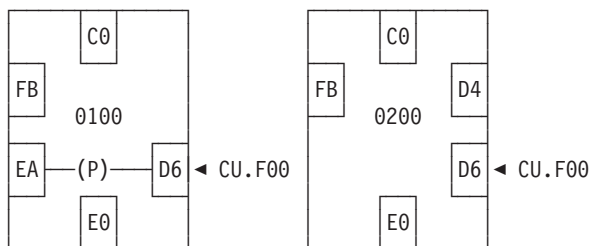


Figure 134. DISPLAY NAME Command: Sample 2. Display D6 port names

DISPLAY PORT

```

D N * 100B ND
IHVC999I I/O-OPS display

```

Port Name	Swch		Port	Port Status			I/O Def
	Devn	LSN		H	S	C	
Dan2-17B(0.1B)	100B	0B	C0				
Dan2-26B(1.1B)	100B	0B	C1				
150A	100B	0B	C2	+			CU
	ND 009394.002.IBM.73.0000000C0440 0003						
3174-1E0	100B	0B	C5	+			
150B	100B	0B	C9	+			
G14-429(36)	100B	0B	CA				CH
	ND 002084.B16.IBM.02.000000016F7A 8036						
G30-111(0.21)	100B	0B	D2				
G30-112(0.22)	100B	0B	D3				
F09-2A	100B	0B	D4				
RAP2-23	100B	0B	D5				
F09-2B	100B	0B	D6				
F09-2D	100B	0B	D8				
SWCH-0B(100B)12.11.2007	100B	0B	FE				CU

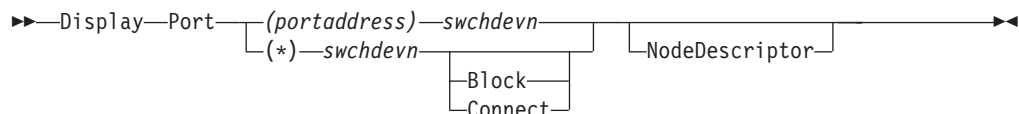
Figure 135. DISPLAY NAME Command: Sample 3. Display all port names and node descriptors

DISPLAY PORT

Purpose

Use the DISPLAY PORT command to display data about one or all the ports that are implemented and installed on the specified switch.

Syntax



Parameters

(portaddress) | (*)

Specifies that data should be displayed about one addressable port or all (* enclosed in parentheses) the addressable ports. For a discussion, see "Port Addresses" on page 508.

swchdevn

Specifies the switch device number that the port is located on. The switch must be allocated to the issuing I/O operations. For a discussion, see "Switch Identifiers" on page 507.

Options

Block|Connect

Specifies that you want data displayed about only those ports that are blocked or statically connected. (If a port is both blocked and statically connected, it would be listed if either alternative is chosen.) If you specify this option, you must specify all addressable ports as an operand (* enclosed in parentheses).

NodeDescriptor

Specifies that you want to display data of the attached hardware. For all ports

except the CUP device port, the node descriptor of the attached hardware is displayed on a separate line when the I/O DEF column shows an unambiguous attachment.

Usage

Unlike the Display Name command, Display Port can apply to only one switch at a time.

For more information on the displayed output, see the references under the fields:

```

IHVC844I
IHVC845I
IHVC846I PORT NAME
A B
IHVC247I
SWCH
DEVN LSN PORT H S C P DEF
C D E F G
[ND .....]
H
    
```

A Message identifier

Note: The message ID is not shown in the actual display.

B Port name (see “Using Port Names as a Tool in Switching Commands” on page 518)

C Switch device number (see “Switch Identifiers” on page 507)

D Logical switch number (see “Logical Switch Number (LSN)” on page 508)

E Port address (see “Port Addresses” on page 508)

F Port status codes (see “Switch Port Hardware Status on a Display Command” on page 509)

G I/O definition (see “Switch Ports” on page 508)

H Node descriptor of the attached hardware including the tag field

```

IHV849I Allow/Prohibit mask for this port:
IHV240I A/P Port I/O-Def Port name
A B C D E
IHV241I . .. ....
or
IHV849I Allow/Prohibit mask for this port:
IHV245I A/P Port I/O-Def Port name / Node descriptor
A B C D E F
IHV241I . .. .... /
IHV246I .....
    
```

A Message identifier

Note: The message ID is not shown in the actual display.

B Allow or prohibit mask (see “Allow | Prohibit Mask of a Port” on page 509)

C Port address (see “Port Addresses” on page 508)

D I/O definition (see “Switch Ports” on page 508)

E Port name (see “Using Port Names as a Tool in Switching Commands” on page 518)

F Node descriptor of the attached hardware including the tag field

DISPLAY PORT

Examples

```

D P (D6) 100
IHVC999I I/O-OPS display

Port Name          Swch      LSN   Port   Port
                  Devn    Port  H S C   Status I/O
                  0100   01    D6     H S C   P Def
                  0100   01    D6     P CU

Allow/Prohibit mask for this port:
A/P  Port  I/O-Def  Port name
A    C0    CH    HA.CHP_88.CVC
P    C1    CH    HA.CHP_3C
A    C2
A    C3
A    C4
:
A    FB    CH    HA.CHP_3A
A    FE    CU
    
```

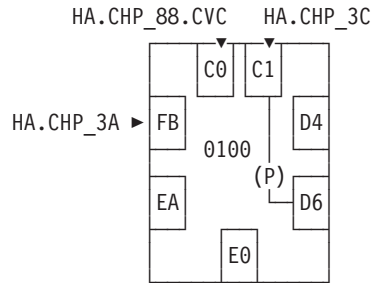


Figure 136. DISPLAY PORT Command: Sample 1

```

D P (*) 1011 ND
IHVC999I I/O-OPS display

Port Name          Swch      LSN   Port   Port
                  Devn    Port  H S C   Status I/O
                  1011   11    04     H S C   P Def
                  ND 006064.001.MCD.01.000001311AB9 3003
                  1011   11    05     H S C   P Def
                  ND 006064.001.MCD.01.000001311AB9 3002
                  1011   11    06     H S C   P Def
                  1011   11    07     H S C   P Def
                  1011   11    08     H S C   P Def
                  1011   11    09     H S C   P Def
                  1011   11    0A     H S C   P Def
                  1011   11    0B     H S C   P Def
                  1011   11    0C     H S C   P Def
                  :
                  1011   11    FE     H S C   P Def
                  FE     CU
    
```

Figure 137. DISPLAY PORT Command: Sample 2. Display all ports of a switch including the node descriptors.

DISPLAY RESULTS

Purpose

Use the DISPLAY RESULTS command to display the results of the issuing I/O operations' most recently processed connectivity (except REMOVE and RESTORE Dev), LOGREC, SYNC SWITCH, or WRITE command. The DISPLAY RESULTS command is a useful tool to help you analyze the resulting configuration status, especially in cases where one or more vary path requests failed.

For related commands, see “DISPLAY HOST” on page 292 and “DISPLAY VARY” on page 308.

Syntax

►►—Display—Results—◄◄

Usage

- In addition to displaying data about its most recently processed connectivity command (except Remove and Restore Dev), the issuing I/O operations displays any subsequent command up to the next connectivity, Logrec, Sync Switch, or Write command.
- To review any additional failed vary path requests resulting from the same command, use the “DISPLAY VARY” on page 308.
- For more information on the displayed output fields, see the references under the fields:

```

IHVC803I This Host: vtamappl/tcphost Sysplex/System: plexname/sysname
IHVC808I VTAMname/TCP host Sysplex System
IHVC201I vtamnn1 /tcpname1 plexnam1 sysname1
IHVCnnnI One or more status messages
IHVC500I Swch devn LSN Unique id Status Code
IHVC501I ..... ..
A B C D E F
IHVCnnnI One or more status messages
    
```

A Message identifier

Note: Message IDs in italics are not shown in display.

- B** Switch device number (see “Switch Identifiers” on page 507)
- C** Logical switch number (see “Logical Switch Number (LSN)” on page 508)
- D** Unique identifier (see “Switch Unique Identifier” on page 508)
- E** Switch status
- F** Switch status code

IHVCnnnI can be one of the following:

- IHVC205I** Cannot CHAIN a port to itself
- IHVC301I** Port name xxxxxxxxxxxxxxxxxxxxxxxx already on this switch
- IHVC404I** Current switch data unavailable
- IHVC405I** Switch data has been changed
- IHVC409I** Port xx does not exist
- IHVC410I** Commands cannot affect port xx (switch control unit)
- IHVC411I** Unable to return this switch to original state
- IHVC413I** I/O-Ops internal error
- IHVC414I** Attempted to CONNECT port xx to itself
- IHVC415I** Port xx already CONNECTed
- IHVC416I** Port xx not installed, cannot CONNECT
- IHVC417I** No available paths to the switch for the command
- IHVC419I** No port names exist which can be affected by this command
- IHVC420I** Attempted to ALLOW port xx to itself
- IHVC431I** Switch has been REMOVED
- IHVC433I** Switch has been RESTORED
- IHVC434I** Name xxxxxxxxxxxxxxxxxxxxxxxx not valid
- IHVC435I** Attempted to ALLOW FC port xx to FC port xx
- IHVC436I** Cannot connect xx, because it is a fibre channel port
- IHVC437I** Settings on switch prevent configuration changes

DISPLAY RESULTS

```

IHVC502I      Switch not defined as a device
IHVC506I      No failures detected by this switch
IHVC520I      Command not sent to this switch
IHVC522I      Could not communicate with the switch
IHVC523I      Could not write host names to the switch
IHVC524I      Switch data has been changed during command execution
IHVC533I      Port xx cannot be CONNECTed while in maintenance mode
IHVC622I      ESCON® Converter Model 2 paths may require xxxxxxxxxx:
IHVC623I      Id Type Mod Serial number Port Logical name / Unique id
IHVC624I      Chained path associated with: xx xxxxxxxxxxxxxxxxxxxxxxxx
IHVC625I      Data follows for chained switch: xxxxxxxxxxxxxxxxxxxxxxxx
IHVC626I      CU xxxxxx xxx xxxxxxxxxxxxxx xx xxxxxxxxxxxxxxxxxxxxxxxx
IHVC627I      CV xxxxxx xxx xxxxxxxxxxxxxx xx xxxxxxxxxxxxxxxxxxxxxxxx
IHVC641I      SWCH does not support the requested function
IHVC645I      Switch file in use, no access
IHVC646I      Maximum number of files saved at the switch
IHVC647I      File name xxxxxxxx does not exist on switch
IHVC649I      Required resources not available to access file
IHVC651I      Connectivity attributes for port xx conflict with port xx
IHVC653I      Incorrect number of implemented ports for switch
IHVC657I      Cannot delete IPL file at the switch
IHVC659I      Switch initialization not complete
IHVC843I      xxxxxxxxxxxxxxxxxxxxxxxx does not exist on switch xxx
IHVC903I      Port xx already CHAINED
IHVC906I      Cannot xxxxxxxx CHAINED port xx
IHVC908I      Ports xx and xx are not CONNECTed to each other
IHVC909I      Execution of the CHAIN command will form a closed loop
IHVC910I      Port xx is not part of a CHAINED path
IHVC911I      Ports xx and xx are not part of the same CHAINED path
IHVC912I      Ports not in the correct CHAINED path order
  
```

Examples

Example 1

As shown in Figure 138, a chain has been defined so that ports CB and D6 are statically connected on the passthru switch 200.

A user entered N (D6) (CB) 200 and the command failed.

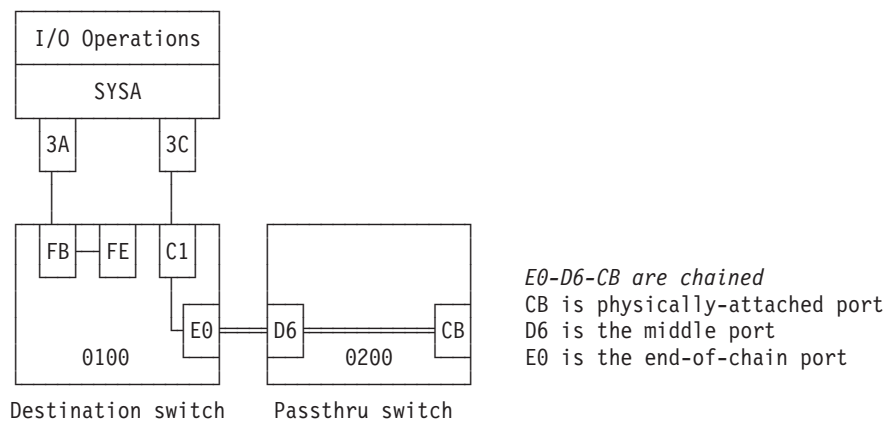


Figure 138. DISPLAY RESULTS Command: Scenario 1

The user then entered the DISPLAY RESULTS command to analyze the cause of failure.

```

D R
IHVC999I I/O operations display
IHVC803I This Host: IHVAPPLA/TCPHOSTA Sysplex/System: SYSPLEX1/SYSTEM12
IHVC808I VTAMname/TCP host Sysplex System
IHVC201I IHVAPPLA/TCPHOSTA SYSPLEX1 SYSTEM66
IHVC505I No failures detected by this host
IHVC808I VTAMname/TCP host Sysplex System
IHVC201I IHVAPPLB/ SYSPLEX1 SYSTEM22
IHVC505I No failures detected by this host
Swch devn LSN Unique id Status Code
0100 01 009032002IBM01000000034893 OPERATIONAL 00
Command not sent to this SWCH
Swch devn LSN Unique id Status Code
0200 02 009032002IBM02000000093622 OPERATIONAL 00
Cannot DISCONNECT CHAINED port D6
Cannot DISCONNECT CHAINED port CB
    
```

Example 2

The user tried to Block (C3) 200 NOF.

The command fails because an operational CV converter is attached to port C3.

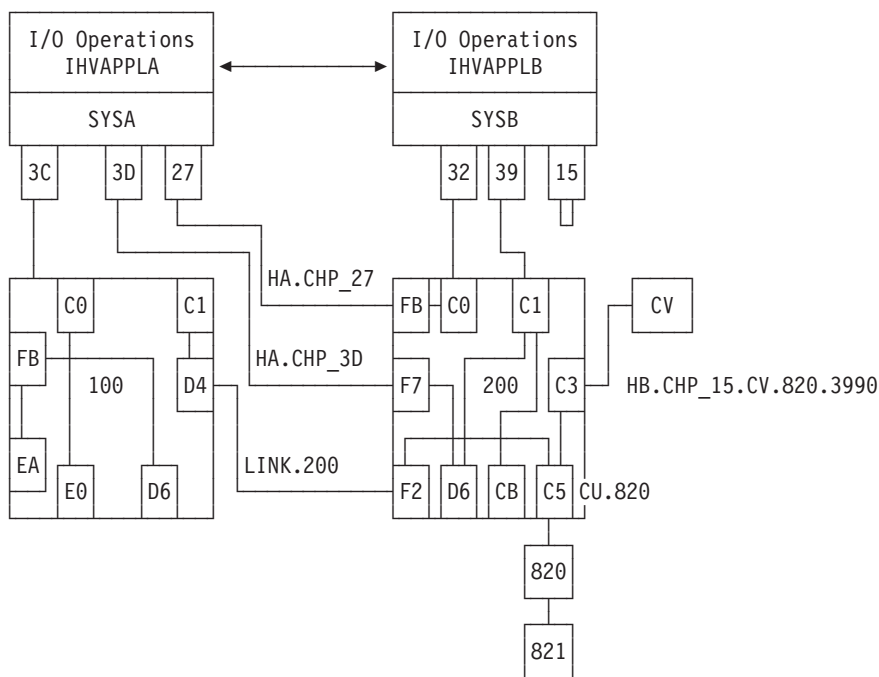


Figure 139. DISPLAY RESULTS Command: Scenario 2

The user entered the DISPLAY RESULTS command to analyze the cause of failure.

DISPLAY RESULTS

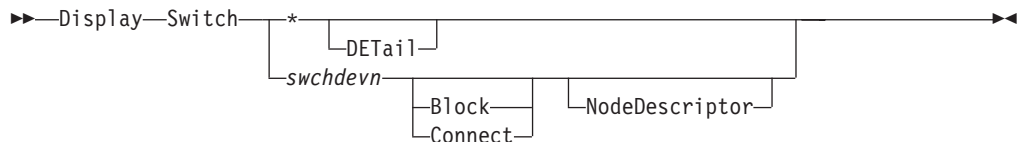
```
D R
IHVC999I I/O operations display
IHVC803I This Host: IHVAPPLA/TCPHOSTA Sysplex/System: SYSPLEX1/SYSTEM12
IHVC808I VTAMname/TCP host      Sysplex      System
IHVC201I IHVAPPLA/TCPHOSTA      SYSPLEX1     SYSTEM66
IHVC621I     ESCON Converter Model 2(s) detected
IHVC808I VTAMname/TCP host      Sysplex      System
IHVC201I IHVAPPLB/              SYSPLEX1     SYSTEM22
IHVC505I     No failures detected by this host
Swch devn LSN Unique id          Status      Code
0100 01 009032002IBM01000000034893 OPERATIONAL 00
      Command not sent to this SWCH
Swch devn LSN Unique id          Status      Code
0200 02 009032002IBM02000000093622 OPERATIONAL 00
ESCON Converter Model 2 paths may require DISABLEMENT:
Id Type Mod Serial number Port Logical name / Unique id
CU 003990 G03 000000090046 C5 CU.820
CV 009035 002 000000020466 C3 HB.CHP_15.CV.820.3990
```

DISPLAY SWITCH

Purpose

Use the DISPLAY SWITCH command to display data about one or about all the switches allocated to the issuing I/O operations.

Syntax



Parameters

* | swchdevn

Specifies one switch or all switches (* not enclosed in parentheses) allocated to the issuing I/O operations. For a discussion, see "Switch Identifiers" on page 507.

Options

DETail

Specifies that you want additional hardware information displayed along with the default information. This option is for problem determination purposes.

Block|Connect

Specifies that you want data displayed about only those ports that are blocked or are part of a static connection. (If a port is both blocked and statically connected, it is listed if either parameter is chosen.) You can enter this optional parameter only if you also specified an individual switch device number.

NodeDescriptor

Specifies that you want data of the attached hardware displayed. For all ports except the CUP device port the node descriptor of the attached hardware is displayed on a separate line when the I/O DEF shows an unambiguous attachment.

Usage

For more information on the displayed output, see the references under the fields:

IHVC834I	Swch	LSN	Unique id	Ins	Status	SC
A	B	C	D	E	F	G
IHVC838I

A Message identifier

Note: The message ID is not shown in the actual display.

- B** Switch device number (see "Switch Identifiers" on page 507)
- C** Logical switch number (see "Logical Switch Number (LSN)" on page 508)
- D** Unique identifier (see "Switch Unique Identifier" on page 508)
- E** Installed ports (see "HCD Term" on page 507)
- F** Switch status
- G** Switch status code

IHVC273I	Swch	LSN	Unique id	Tag	Status	SC	Flags
A	B	C	D	E	F	G	H
IHVC274I			LIC EC level	Sense bytes	0-15		
			I J	K			
IHVC275I			Ins Imp 1st LP	Sense bytes	16-31		
			L M N O	K			
IHVC276I
IHVC277I
IHVC278I

A Message identifier

Note: The message ID is not shown in the actual display.

- B** Switch device number (see "Switch Identifiers" on page 507)
- C** Logical switch number (see "Logical Switch Number (LSN)" on page 508)
- D** Unique identifier (see "Switch Unique Identifier" on page 508)
- E** Tag of the node element descriptor (NED)
- F** Switch status
- G** Switch status code
- H** Switch internal flags
- I** Switch licensed internal code (LIC) version and release
- J** Engineering change (EC) level
- K** Sense data
- L** Installed ports (see "HCD Term" on page 507)
- M** Implemented ports without CUP
- N** First implemented port
- O** Logical paths

DISPLAY SWITCH

```

IHVC835I          Port
IHVC836I          Status
IHVC837I   Port  H S C P  I/O-Def Port name
A           B   C           D       E
IHVC839I   ..  . . . . .  ....  .....

or

IHVC835I          Port
IHVC836I          Status
IHVC237I   Port  H S C P  I/O-Def Port name / Node descriptor
A           B   C           D       E         F
IHVC839I   ..  . . . . .  ....  ..... /
IHVC239I   ..  . . . . .  ....  .....

```

A Message identifier

Note: The message ID is not shown in the actual display.

B Port number (see “Port Addresses” on page 508)

C Port status code (see “Switch Port Hardware Status on a Display Command” on page 509)

D Port name (see “Using Port Names as a Tool in Switching Commands” on page 518)

E I/O definition (see “Switch Ports” on page 508)

F Node descriptor of the attached hardware including the tag field

Examples

Example 1

Display all information about switch 100.

```

D S 100 ND
IHVC999I I/O-OPS display
Swch LSN Unique id          Ins Status   SC
0100 01 009032002IBM01000000034893 61 OPERATIONAL 00

          Port
          Status
Port  H S C P  I/O-Def Port name / Node descriptor
C0    E0 P  CH   HA.CHP_88.CVC /
      002084.B16.IBM.02.000000016F7A C088
C1    D4 P  CH   HA.CHP_3C /
      002084.B16.IBM.02.000000016F7A C03C
C2    P
C3    P
:
D4    C1 P  CU   LINK.200 /
      002107.932.IBM.75.0000000CC481 0230
:
FB    P  CH   HA.CHP_3A /
      002084.B16.IBM.02.000000016F7A C03A
FE    CU

```

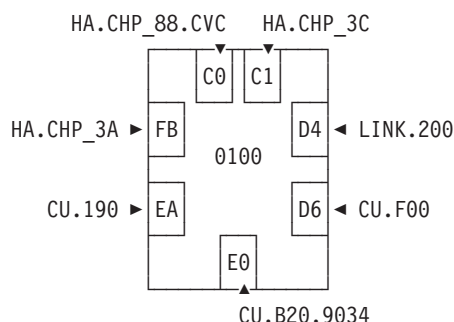



Figure 140. DISPLAY SWITCH Command: Sample 1. Display all information about Switch 100

Example 2

Display detailed information about all switches.

```
IHV D S * DET
IHVC999I I/O-OPS display
Swch LSN Unique id Tag Status SC Flags
LIC EC level Sense bytes 0-15
Ins Imp 1st LP Sense bytes 16-31
1E NOT OPEN 1C
1001 01 009032005IBM510000000A7260 0000 OPERATIONAL 00 20000000
05.04 n/a 00000000 00000004 05040000 00000000
242 248 4 255 00000000 00000000 00000000 00000000
1002 02 009032005IBM510000000A7465 0000 OPERATIONAL 00 20000000
05.04 n/a NO SENSE DATA
241 248 4 255
100A 0A 009032003IBM5100000002013 0000 OPERATIONAL 00 20000000
04.03 n/a 00000000 00000002 04030000 00000000
125 124 128 255 00000000 00000000 00000000 00000000
1011 11 006140001MCD010000013124DA 0000 OPERATIONAL 00 00000000
09.06 00000000 00000045 09060000 00000000
133 144 4 256 00000000 00000000 00000000 00000000
101A 1A 009032003IBM5100000002483 0000 OPERATIONAL 00 20000000
04.03 n/a 00000000 00000002 04030000 00000000
101 124 128 255 00000000 00000000 00000000 00000000
101B 1B 010000002MCD0100000131191M 0000 OPERATIONAL 00 00000000
09.07 00000000 00000046 09070000 00000000
32 254 0 256 00000000 00000000 00000000 00000000
```

DISPLAY TIMEOUT

Purpose

Use the DISPLAY TIMEOUT command to display the maximum number of seconds that the issuing I/O operations will wait to receive votes from the I/O operations that form its voting constituency and that have not been reset off with the command described under “RESET HOST” on page 318. If one or more votes is still outstanding when the time interval lapses, the issuing I/O operations declares a negative consensus.

Syntax

►►—Display Timeout—◄◄

DISPLAY TIMEOUT

Examples

```
D T  
IHVC860I Current timeout value is 60 seconds
```

DISPLAY VARY

Purpose

Use the DISPLAY VARY command to display a specified number (up to 1500) of failed vary path requests that have resulted either from the issuing I/O operations's most recently processed connectivity command or that were built with the Sync Switch command.

The data displayed depends on the type of command that failed and the options that you specify on the Display Vary command.

See "DISPLAY HOST" on page 292 and "DISPLAY RESULTS" on page 300 for related commands, and "Processing a Vary Path Request" on page 524 for more information.

Syntax

```
►► Display Vary vtamname tcphostname number_of_varys FAIL SYNC ◄◄
```

Parameters

vtamname

Specifies the participating I/O operations by its VTAM application ID. The failed vary requests will be listed in the output for that I/O operations (host), but only for a command that was initiated by the issuing I/O operations.

You can specify THIS-SYS in uppercase characters if the issuing I/O operations is the target program and any of the following conditions holds:

- The issuing I/O operations does not have a valid VTAM application name and TCP/IP host name.
- The issuing I/O operations' VTAM name and the TCP/IP host name are not available.
- VTAM and TCP/IP are not available.

tcphostname

Specifies the participating I/O operations by its TCP/IP host name. The failed vary requests will be listed in the output for that I/O operations (host), but only for a command that was initiated by the issuing I/O operations.

You can specify THIS-SYS in uppercase characters if the issuing I/O operations is the target program and any of the following conditions holds:

- The issuing I/O operations does not have a valid VTAM application name and TCP/IP host name.
- The issuing I/O operations' VTAM name and the TCP/IP host name are not available.
- VTAM and TCP/IP are not available.

number_of_varys | *

Replace *number_of_varys* with a decimal integer from 1 through 1500. The asterisk (*) specifies all (up to the maximum of 1500). The number of failed vary path requests displayed is independent from similar data displayed by other commands. For example, if you had already displayed three vary path requests using the Display Vary command and want to display 15 *additional* vary path requests with the Display Vary command, specify 18 vary path requests.

Options

FAIL

Specifies only the failed vary path requests (if any), or Varies from a connectivity command be displayed.

SYNC

Specifies that the vary path requests built with the Sync Switch command be displayed.

Usage

- Failed vary path requests listed in this command relate to the path from a CHPID to a device.
- If a vary path request fails, the path through the port or ports specified in the connectivity command could not be brought offline or online, depending on the command that was entered.
- One or more of the following messages are displayed:

```

IHVC212I      (.....)(.....)(.....)(.....)
IHVC213I      ..... caused VARYs by ..... on .....
IHVC214I      ONLINE .... .... (.....,".....")
IHVC215I      BACKOUT .... .... (.....,".....")
IHVC231I      ..... caused CONFIGs by ..... on .....
IHVC232I      Config type Tried Failed 1st .... failures (Chp)
IHVC233I      OFFLINE .... .... (.....)
IHVC234I      BACKOUT .... .... (.....)
IHVC235I      ONLINE .... .... (.....)
IHVC244I      (.....)
IHVC271I      SYNC SWITCH detected VARYs by ..... on .....
IHVC272I      SYNC SWITCH detected CONFIGs by ..... on .....
IHVC525I      This host has been RESET off
IHVC811I      Vary type Tried Failed 1st .... failures (Dev,Chp,Msg)
IHVC819I      OFFLINE .... .... (.....,".....")
IHVC822I      (.....,".....")
IHVC853I      Config type Number 1st .... CONFIGs (Chp)
IHVC854I      OFFLINE .... (.....)
IHVC855I      ONLINE .... (.....)
IHVC856I      CVC CHPIDs may require ENABLEMENT: .....
    
```

DISPLAY VARY

```
IHVC857I      .....
IHVC871I      No failed VARYs on previous command
IHVC872I      SYNC type Number 1st .... VARYs (Dev,Chp)
IHVC873I      OFFLINE .... (.....)(.....)(.....)(.....)
IHVC874I      ONLINE .... (.....)(.....)(.....)(.....)
IHVC875I      No SYNC VARYs detected on previous command
IHVC877I      No SYNC CONFIGs detected on previous command
IHVC879I      No failed CONFIGs on previous command
```

Note that the message IDs are suppressed, otherwise some messages do not fit onto the text line of a multiline message.

Examples

```
D V name *
IHVC999I I/O operations display
Vary type   Tried   Failed 1st 90 failures (Dev,Chp,Msg)
OFFLINE      5       3 (0190,3A)(019E,3A)(019D,3A)(,)
BACKOUT      2       0 (,)(,)(,)(,)
Config type  Tried   Failed 1st 90 failures (Chp)
No failed CONFIGs on previous command
SYNC type    Number    1st 90 VARYs (Dev,Chp)
No SYNC VARYs detected on previous command
Config type  Number    1st 90 CONFIGs (Chp)
No SYNC Configs detected on previous command
```

GETLOCK

Purpose

Use the GETLOCK command to obtain the processing lock for a user ID that enters a command to any instance of I/O operations within the same set of I/O operations. (A set of I/O operations incorporates all the base programs that can participate in consensus processing of a connectivity command initiated by the issuing instance of I/O operations and those that can communicate with one of these participants via VTAM.)

See "UNLOCK" on page 330 for the reciprocal command.

Syntax

▶▶ GETLOCK ◀◀

Usage

- The GETLOCK command is used when a user wants to perform a series of I/O operation commands without interruption.
- You may need to enter the GETLOCK command if another user ID has the lock and will not, or cannot, release it. Such a situation could arise, for example, if the other user's terminal is inactive.

- Note that default conditions for obtaining the processing lock are provided with the I/O operations the sample ISPF dialog. You can accept these defaults or customize them for your ISPF user ID.
- The GETLOCK command takes control of I/O operations processing and can, therefore, potentially interrupt a series of connectivity commands being entered by another user ID with unpredictable results.
- If your user ID has control authorization required to enter the Getlock command, be sure you have considered all pertinent aspects of the system I/O environment before issuing this command.
- Note that you can release the lock with the Unlock command and should, of course, do so when you are finished entering I/O operations commands for the session.

Examples

```
GETLOCK
IHVC000I GETLOCK      command successful
```

LOGREC

Purpose

Use the LOGREC command to have I/O operations instruct the specified switch or switches to send their log data to the host (system control program) that the issuing I/O operations is running on.

Syntax

```
▶▶ LOGREC swchdevn ▶▶
      *
```

Parameters

swchdevn | *
 Specifies one switch or all the switches (* not enclosed in parentheses) allocated to the issuing I/O operations. For a discussion, see “Switch Identifiers” on page 507.

Usage

- The LOGREC command remains in effect across I/O operations sessions, unless the host image becomes dysfunctional.
- If you enter the LOGREC command, it is advisable to do so when the I/O operations base program is started.
- The LOGREC command causes any data that I/O operations has accumulated for display with the DISPLAY RESULTS command to be refreshed.

Examples

```
LOGREC 100
IHVC000I LOGREC      command successful
```

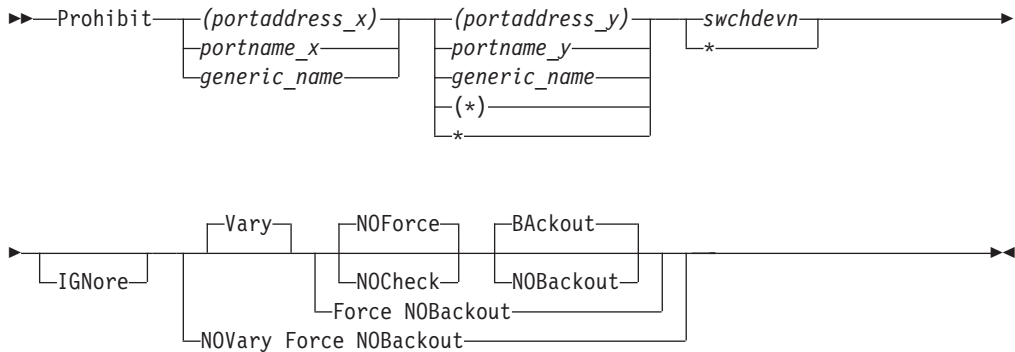
PROHIBIT

Purpose

Use the PROHIBIT command to prevent data transfer between ports on the same switch or on all switches allocated to the issuing I/O operations.

Unlike the BLOCK command, the PROHIBIT command allows the two ports to have dynamic connections with other ports. You can prohibit data transfer between ports according to the following syntax diagram. See "ALLOW" on page 279 for the reciprocal command.

Syntax



Parameters

(portaddress_x) | portname_x | generic_name

Specifies the port to be prohibited by its port address (enclosed in parentheses), by its individual port name, or by a generic port name. For a discussion, see "Switching Commands" on page 514.

(portaddress_y) | portname_y | generic_name | (*) | *

Specifies the other ports in one of the following ways: a port address (enclosed in parentheses), an individual port name, a generic port name, all other port addresses (* enclosed in parentheses), or all other port names (* not enclosed in parentheses). For a discussion, see "Switching Commands" on page 514.

swchdevn | *

Specifies one switch or all the switches (* not enclosed in parentheses) allocated to the issuing I/O operations. For a discussion, see "Switch Identifiers" on page 507.

Options

IGNore

You must specify this option when an Inter-Switch-Link port (E_Port) is involved. Otherwise the command is rejected with return code 8 and reason code X'49'. The reason is I/O operations can no longer guarantee "safe-switching" when an E_Port is involved.

Connectivity options

For a discussion on Vary | NOVary, NOForce | NOCheck | Force, and BBackout | NOBACKout see "Making Connectivity Changes" on page 511.

For a discussion of why it sometimes isn't obvious that the status of a path or a device has changed after an operator has issued a connectivity command, see "Device and Path Status After Connectivity Commands" on page 530.

Usage

- If you specify an individual or generic port name, all the switches involved must have at least one port implemented with an applicable port name.
- If a parallel channel path and CV converter are involved, consider the information in "A Parallel Channel in Block (BL) Mode" on page 523.

Examples

```
P (FB) (D6) 100
IHVC000I PROHIBIT command successful
```

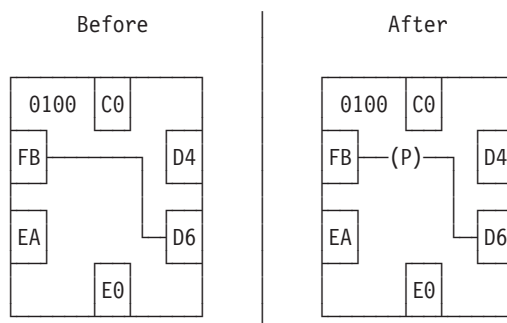


Figure 141. PROHIBIT Command: Sample 1

```
P HB.CHP_39 CU.* 200
IHVC000I PROHIBIT command successful
```

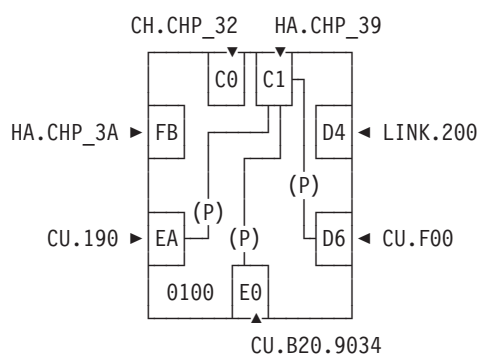


Figure 142. PROHIBIT Command: Sample 2

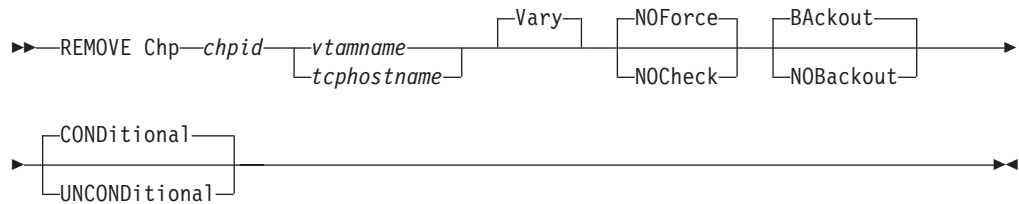
REMOVE CHP

Purpose

Use the REMOVE CHP command to configure the specified CHPID offline to the host image of the target I/O operations in the command. See "RESTORE CHP" on page 323 for information on the reciprocal command.

REMOVE CHP

Syntax



Parameters

chpid

Specify the CHPID as a hexadecimal number in the range X'00' through X'FF'.

vtamname

Specify the VTAM application name of the target I/O operations.

The target I/O operations is the program that instructs its host image to configure the specified CHPID offline.

The target system can be any I/O operations host that a VTAM session is established with.

You can specify THIS-SYS in uppercase characters if the issuing I/O operations is the target program and any of the following conditions holds:

- The issuing I/O operations does not have a valid VTAM name and TCP/IP host name.
- The issuing I/O operations' VTAM name and TCP/IP host name are not available.
- VTAM and TCP/IP are not available.

To review a list of applicable VTAM names, you can use the Display Host command. If you enter D H *, you can determine whether the issuing I/O operations calls itself THIS-SYS.

tcphostname

Specify the TCP/IP host name of the target I/O operations.

The target I/O operations is the program that instructs its host image to configure the specified CHPID offline.

The target system can be any I/O operations host that a TCP/IP connection is established with.

You can specify THIS-SYS in uppercase characters if the issuing I/O operations is the target program and any of the following conditions holds:

- The issuing I/O operations does not have a valid VTAM name and TCP/IP host name.
- The issuing I/O operations' VTAM name and TCP/IP host name are not available.
- VTAM and TCP/IP are not available.

Options

VARY

VARY is the default and NOVary is *not* an alternative.

I/O operations issues the appropriate vary path-offline requests for all the paths that have been defined to the specified CHPID in the relevant host I/O Control Data Set (IOCDS).

Only after all these paths have been varied offline does the target I/O operations request the target host image to configure the specified CHPID offline.

For a discussion of why it sometimes isn't obvious that the status of a path or a device has changed after an operator has issued a connectivity command, see "Device and Path Status After Connectivity Commands" on page 530.

NOForce | NOCheck

NOForce is the default. Although you can specify NOCheck, that alternative has no additional effect in this command.

BAckout | NOBackout

If you specify BAckout, I/O operations attempts to vary those paths back online that had been varied offline successfully if either:

- At least one vary path-offline request failed.
- All the vary path requests were successful, but the program could not configure the CHPID offline.

CONDitional

This is the default option for both the REMOVE CHP and RESTORE CHP commands. It indicates that no special configure offline or configure online action should be performed.

UNCONDitional

For the REMOVE CHP command, this option puts the specified chpids immediately into pending offline status, even if the chpids are currently active, allocated, or reserved.

For the RESTORE CHP command, this option brings the specified chpids online, even if there are no paths to the chpids, or if the chpids are pending offline and boxed.

Usage

- The CHPID type must be known to the target I/O operations.
- If the REMOVE CHP command causes one or more devices to be removed from the host image that the target I/O operations is running on, I/O operations automatically attempts to delete these devices from its internal configuration map.
- I/O operations does not attempt to configure the channel offline if any of the relevant vary path requests failed.
- I/O operations does not attempt to configure the channel offline if the target I/O operations is reset off or purged from intersystem communication.
- If the target I/O operations is running in an MVS environment and if the program timed out with the state of the CHPID unknown, I/O operations attempts to configure the channel back online.
- If you are considering specifying a CVC channel for this command, note that SA z/OS automatically configures a CVC CHPID offline when it processes any of the following commands for a path defined with that CHPID: BLOCK, DISCONNECT, REMOVE SWITCH, and UNCHAIN.
- The command is not supported if the target I/O operations is running on a host system that is operating as a guest in a VM environment.

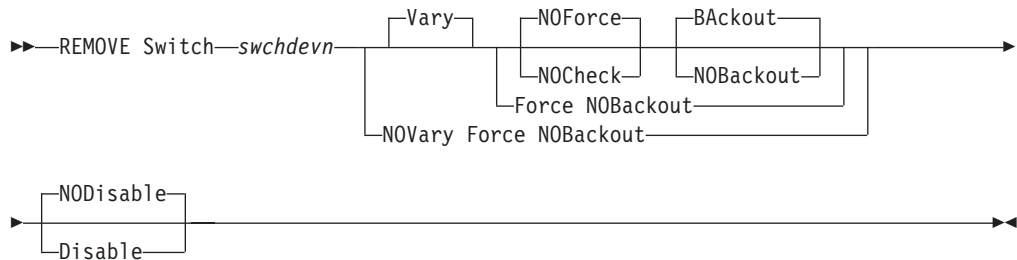
REMOVE SWITCH

Purpose

Use the REMOVE SWITCH command to vary all logical paths through the specified switch offline and, optionally, to disable the unit.

The switch must be allocated to the issuing I/O operations. See “RESTORE SWITCH” on page 325 for the reciprocal command, and “Remove (Quiesce) a Switch” on page 518 for discussion.

Syntax



Parameters

swchdevn

Specifies the switch to be varied offline and optionally to be disabled. The switch must be allocated to the issuing I/O operations. For a discussion, see “Switch Identifiers” on page 507.

Options

NODisable|Disable

NODisable (default) specifies that every path that passes through the switch is varied offline. (The path to the control unit port, or CUP, is not varied offline.) The switch is not deallocated, or detached, from I/O operations.

Disable specifies that every path that passes through the switch is varied offline. (The path to the control unit port, or CUP, is not varied offline.) The switch is then deallocated, or detached, from I/O operations.

Connectivity options

For a discussion on Vary|NOVary, NOForce|NOCheck|Force, and BAckout|NOBAckout see “Making Connectivity Changes” on page 511.

For a discussion of why it sometimes isn't obvious that the status of a path or a device has changed after an operator has issued a connectivity command, see “Device and Path Status After Connectivity Commands” on page 530.

Usage

- If a path through the switch is chained and you intend to remove the switch, physically cancel the definition of the chain first.
- If you specify the Disable option, power to the switch must be turned off and then on before communications can be restored to the unit. See “RESTORE SWITCH” on page 325.

Attention:

Issuing the REMOVE Switch command with the Disable option will switch power off to the IBM 9032 Model 2 ESCON Director but will just cycle the power (power stays switched on) for the IBM 9032 Model 3 ESCON Director.

- If you specify the Disable option, and if you plan to restore what is physically the same switch using the RESTORE S command later, do not change the switch device offline to MVS or z/OS. However, if you are planning to restore a physically different switch, for example, when replacing a 9032-003 ESCON Director with a 9032-005 ESCON Director, the correct sequence of operations is as follows:
 1. Issue REMOVE S.
 2. Change the switch device offline to the operation system.
 3. Perform the physical replacement of the switch.
 4. Change the switch online to the operating system.
 5. Then issue RESTORE S.

SA z/OS's REMOVE DEVICE and RESTORE DEVICE can be used to vary the device offline or online to multiple systems as one operation. For further information, see the description of "REMOVE and RESTORE DEV (API)" in *IBM Tivoli System Automation for z/OS Programmer's Reference*.

- If the command fails, display pathing status with "DISPLAY HOST" on page 292, "DISPLAY RESULTS" on page 300, or "DISPLAY VARY" on page 308. Consider rerunning the command with the Force and Disable options.

Examples

```
REMOVE S 200 D
IHVC000I REMOVE      command successful
```

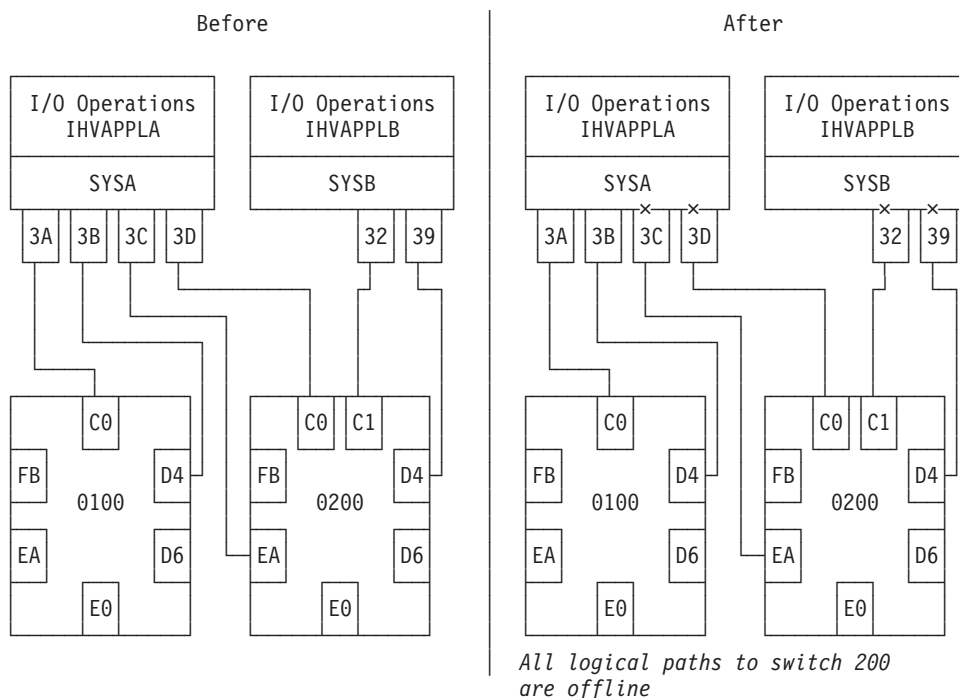


Figure 143. REMOVE SWITCH Command Sample

RESET CHANGECHECK

Purpose

Use the RESET CHANGECHECK command to limit the check for data changes in a switch or not when processing a connectivity command. Normally, all opened switches are checked for a data change prior to the execution of a connectivity command. If any switch responds with a data change indication or cannot respond to the check the connectivity command is rejected. Limiting the check to the switches that are actually affected by the connectivity command avoids the rejection of the command by any other switch.

Syntax

RESET CHANGECHECK



Parameters

- OFF** Specifies that only those switches are checked for a data change prior to a connectivity command which are actually affected by the command.
- ON** Specifies that all opened switches are checked for a data change prior to a connectivity command. This is the default setting on the startup of I/O Operations.

Usage

Prior to a connectivity command all opened switches are checked for a data change. If any switch responds with a data change indication or cannot respond to the check for whatever reason the connectivity command is rejected. In case the switch causing the rejection of the command is actually not affected by the connectivity command you can turn off the CHANGECHECK option forcing I/O Operations only to check the switches that are affected by the command.

Examples

```
R CC OFF  
IHVC000I RESET command successful.
```

RESET HOST

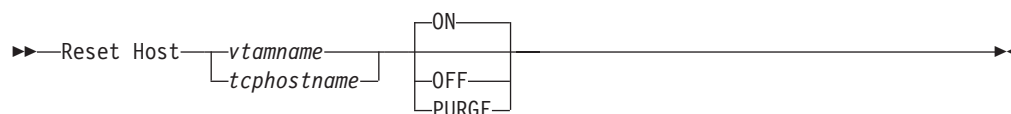
Purpose

Use the RESET HOST command to include or exclude any participant in the issuing I/O operations's consensus processing.

With this command, you can avoid having the issuing I/O operations stop the command from completing because, for example, a participant could not return a vote.

See “DISPLAY HOST” on page 292 for the related command.

Syntax



Parameters

vtamname

Specifies the VTAM application name, or VTAM ID, of the I/O operations targeted in the command.

When I/O operations is started, it writes its VTAM ID and the TCP/IP host name to all the switches allocated to it. Should the I/O configuration have no use or restricted use of switches, dynamic communication between I/O operations may not be achieved, in which case the RESET HOST command is used. The RESET HOST command allows an operator or automated program to declare the VTAM IDs of peers to I/O operations. I/O operations that are participating in consensus processing use these VTAM IDs to communicate with each other.

tcphostname

Specifies the TCP/IP host name of the I/O operations targeted in the command.

When I/O operations is started, it writes its VTAM application name and the TCP/IP host name to all the switches allocated to it. Should the I/O configuration have no or restricted use of switches, dynamic communication between I/O operations may not be achieved, in which case, the RESET HOST command is used. The RESET HOST command allows an operator or automated program to declare the TCP/IP host name of peers to I/O operations. I/O operations that are participating in consensus processing use these TCP/IP host names to communicate with each other.

ON Is the default. It specifies that the issuing I/O operations will include the target I/O operations in its consensus processing. (The issuing I/O operations can include itself.) Should the VTAM ID or TCP/IP host name not be recognized, I/O operations records the name and attempts to establish a communication session with the peer. The new peer is included in all subsequent consensus processing. If the name resolves to a TCP/IP host name, I/O operations attempts to establish a TCP/IP connection to the host. Otherwise, a VTAM application name is assumed and I/O operations attempts to establish a VTAM session.

OFF

Specifies that the issuing I/O operations will exclude the target I/O operations in consensus processing. (The issuing I/O operations can exclude itself.)

PURGE

Specifies that the issuing I/O operations will exclude the targeted I/O operations from participating in its consensus processing until the target host re-registers its VTAM name or TCP/IP host name when it sends a command to one of the switches allocated to both the purged I/O operations and the I/O operations that issued the purge, when the purged I/O operations is restarted, or when a RESET HOST command with the ON operand is issued. Use this option to exclude systems that have ended abnormally or when an incorrect

RESET HOST

VTAM ID or TCP/IP host name was entered using the RESET HOST command with the ON operand. (The issuing I/O operations cannot purge itself.)

Usage

The RESET HOST command affects an I/O operations's participation only in consensus processing initiated by the issuing I/O operations. It does not affect consensus vary path processing initiated by any other I/O operations, including a broadcast initiated by a host that has been reset off.

When the VTAM ID or TCP/IP host name is not known command processing for RESET HOST *name* ON is as follows:

1. The VTAM ID or TCP/IP host name is recorded by I/O operations and is included in subsequent consensus processing. Should the name not be successfully recorded the following messages are issued:
IHVC002I Reset command failed. RC = 8 Reas= 5000000A
IHVC401I Host(s) unable to process the RESET command
 2. If the name resolves to a TCP/IP host name an attempt is made to establish a TCP/IP connection. Otherwise, an attempt to establish a VTAM session is made. If the session is successfully established with the peer its VTAM ID or TCP/IP host name is automatically passed to other I/O operations in the domain. Then each I/O operations dynamically establishes its own session to the peer. The following message is issued:
IHVC000I RESET command successful
 3. If the TCP/IP connection or the VTAM session is not successfully established the TCP/IP host name or VTAM ID is retained by I/O operations, but the name is not broadcast to other peers. This can be caused, for example, by the specification of an incorrect TCP/IP host name or VTAM ID. Should this occur the following messages are issued:
IHVC001I Reset command successful. RC = 4 Reas= 5000000A
IHVC401I Host(s) unable to process the RESET command
- Additional information is presented in the Display Results output that indicates the VTAM session was not established.

Examples

```
R H IHVAPPLB OFF
IHVC000I RESET      command successful
```

```
R H IHVAPPLB ON
IHVC000I RESET      command successful
```

```
R H IHVAPPLB PURGE
IHVC000I RESET      command successful
```

Examples of Using RESET HOST to Declare Peer I/O Operations

No Switch Configuration:

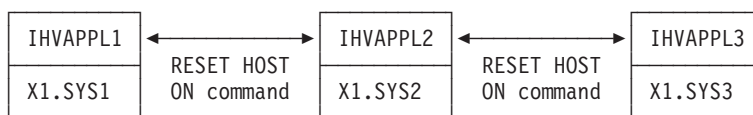


Figure 144. RESET HOST Command: Scenario 1

In the above figure all three I/O operations start without the knowledge of their peers. To establish communication among them, two RESET HOST commands are required, issued on any of the I/O operations. For example, on IHVAPPL1, the following commands are issued:

```
R H IHVAPPL2 ON
IHVC000I RESET      command successful
R H IHVAPPL3 ON
IHVC000I RESET      command successful
```

This results in all I/O operations establishing a communication session between them.

Restricted Switch Configuration:

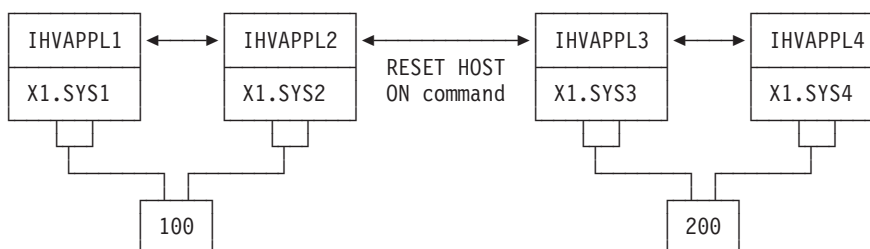


Figure 145. RESET HOST Command: Scenario 2

In the above figure, I/O operations IHVAPPL1 and IHVAPPL2 dynamically establish a session with one another at startup. IHVAPPL3 and IHVAPPL4 do so as well. However, neither group knows about the other due to a lack of a switch attachment. To establish communication among the two groups, only a single RESET HOST command is required and may be issued on any of the I/O operations. For example, on IHVAPPL1, the following command is issued:

```
R H IHVAPPL4 ON
IHVC000I RESET      command successful
```

This results in all I/O operations establishing a communication session between themselves.

RESET SWITCH

Purpose

Use the RESET SWITCH command to update the issuing I/O operations' configuration map about a single switch or all the switches that are allocated to it.

RESET SWITCH

Syntax

Reset Switch `swchdevn`

Parameters

`swchdevn` | *

Specifies one switch or all switches (* not enclosed in parentheses) allocated to the issuing I/O operations.

For a discussion, see “Switch Identifiers” on page 507.

Usage

- If you specify R S *, thus resetting all the switches, the issuing I/O operations tries to allocate, or attach, all the switches defined to its host image. In this way, you can provide access to a new switch device number to the issuing I/O operations.
- Make sure you enter this command when you add or modify a switch allocated to the issuing I/O operations during operations.
- Issues a RESET SWITCH command if manipulation of CHPDs or Channel Paths is performed outside I/O operations (for example, using the system console).

Examples

```
R S 100  
IHVC000I RESET      command successful
```

The following data is updated:

- The VTAM application names of the I/O operations that participate in consensus vary-path processing initiated by the issuing I/O operations application.
- Switch device number. (See “Switch Identifiers” on page 507.)
- Port names and port attributes. (See “Switching Commands” on page 514.)
- Chaining information.

RESET TIMEOUT

Purpose

Use the RESET TIMEOUT command to specify the limit of the time interval, in seconds, that any participating I/O operations will wait for votes to be returned when it broadcasts as the issuing I/O operations.

Syntax

Reset Timeout `seconds`

Parameters

seconds | *

Specifies the number of seconds from 0 up to and including 999,999 or the IBM-supplied default of 60 seconds (* not in parentheses).

Usage

- If the issuing I/O operations receives responses from all eligible voters (all voters except any that have been reset off by the issuing I/O operations) before the time limit is reached, and if all the votes are affirmative, command processing continues.

Unless the command is being forced, either a negative vote or a failure to respond within the time limit causes the issuing I/O operations to fail the command.

Examples

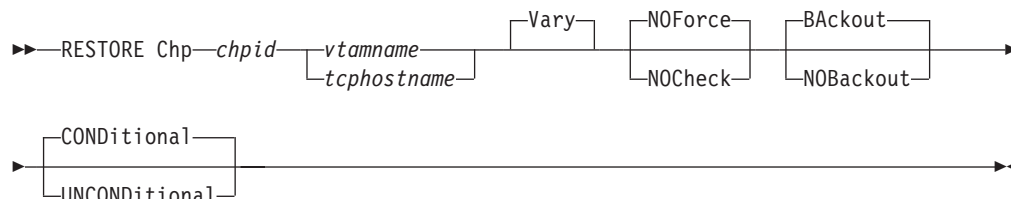
```
R T 120
IHVC000I RESET      command successful
```

RESTORE CHP

Purpose

Use the RESTORE CHP command to configure a specified channel online to the host image that the target I/O operations is running on. See "REMOVE CHP" on page 313 for information on the reciprocal command.

Syntax



Parameters

chpid

Specify the CHPID to be restored as a hexadecimal number in the range X'00' through X'FF'.

vtamname

Specify the VTAM application name of the target I/O operations. The target program is the I/O operations that instructs its host image to configure the specified CHPID online.

The target system can be any I/O operations host that a VTAM session is established with.

You can specify THIS-SYS in uppercase characters if the issuing I/O operations is the target program and any of the following conditions holds:

RESTORE CHP

- The issuing I/O operations does not have a valid VTAM name and TCP/IP host name.
- The issuing I/O operations' VTAM name and TCP/IP host name are not available.
- VTAM and TCP/IP are not available.

Note: Use the Display Host * command to see if the issuing I/O operations calls itself THIS-SYS.)

tcphostname

Specify the TCP/IP host name of the target I/O operations.

The target I/O operations is the program that instructs its host image to configure the specified CHPID offline.

The target system can be any I/O operations host that a TCP/IP connection is established with.

You can specify THIS-SYS in uppercase characters if the issuing I/O operations is the target program and any of the following conditions holds:

- The issuing I/O operations does not have a valid VTAM name and TCP/IP host name.
- The issuing I/O operations' VTAM name and TCP/IP host name are not available.
- VTAM and TCP/IP are not available.

Options

VARY

VARY is the default and NOVary is *not* an alternative.

The target I/O operations configures the CHPID online before issuing the vary path-online requests for all the relevant paths that are defined to the specified CHPID in the host I/O Control Data Set (IOCDs).

For a discussion of why it sometimes isn't obvious that the status of a path or a device has changed after an operator has issued a connectivity command, see "Device and Path Status After Connectivity Commands" on page 530.

NOForce | NOCheck

NOForce is the default. Although you can enter NOCheck, it has no additional effect in this command.

BAckout | NOBackout

BAckout is the default. Although you can enter NOBackout, I/O operations's processing is not different for this command.

For both BAckout and NOBackout, I/O operations:

- Attempts to configure the channel back offline if the program is running under MVS and timed out with the status of the channel uncertain.
- Does not attempt to vary any paths back offline if one or more relevant vary path-online requests fail.

CONDitional

This is the default option for both the REMOVE and RESTORE CHP commands. It indicates that no special configure offline or configure online action should be performed.

UNCONDitional

For the REMOVE CHP command, this option puts the specified chpids immediately into pending offline status, even if the chpids are currently active, allocated, or reserved.

For the RESTORE CHP command, this option brings the specified chpids online, even if there are no paths to the chpids, or if the chpids are pending offline and boxed.

Usage

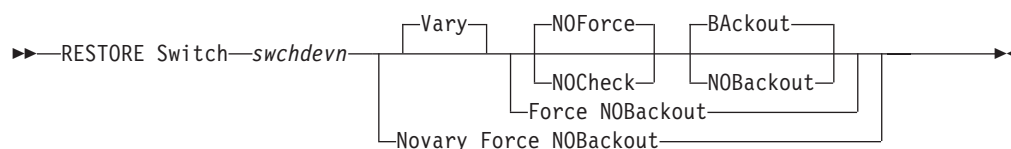
- The CHPID type must be known to the target I/O operations.
- If the RESTORE CHP command causes one or more devices to be made available to the host image that the target I/O operations is running on, I/O operations automatically attempts to add these devices to its internal configuration map.
- I/O operations does not attempt to configure the channel online if the target I/O operations is reset off or purged from intersystem communication.
- The target I/O operations cannot bring a channel online if that channel is not available to the host image that the target program is running on.
- If the target I/O operations is running in an MVS environment and if the program timed out with the state of the CHPID unknown, I/O operations attempts to configure the channel back offline.
- If you are considering specifying a CVC channel for this command, note that I/O operations does *not* automatically attempt to configure a CVC CHPID offline when it processes any of the following commands for a path defined with that CHPID: Chain, Restore Switch, or Unblock. You can, however, use the RESTORE CHP command to configure the CVC CHPID online.
- The command is not supported if the target I/O operations is running on a host system that is operating as a guest in a VM environment.

RESTORE SWITCH**Purpose**

Use the RESTORE SWITCH command to restore logical path status through a switch. I/O operations automatically issues any vary path requests that are needed to synchronize path status with the current physical settings stored at the switch.

If the switch is not allocated that will now be done.

See “REMOVE SWITCH” on page 316 for the reciprocal command and “Restore (Enable) a Switch” on page 518 for a discussion.

Syntax

RESTORE SWITCH

Parameters

swchdevn

Specifies the switch to be restored. For a discussion, see “Switch Identifiers” on page 507.

Options

Connectivity options

For a discussion on Vary|NOVary, NOForce|NOCheck|Force, and BAckout|NOBAckout see “Making Connectivity Changes” on page 511.

For a discussion of why it sometimes isn't obvious that the status of a path or a device has changed after an operator has issued a connectivity command, see “Device and Path Status After Connectivity Commands” on page 530.

Usage

- The Restore Switch command restores paths attached to the switch according to the current switch settings-to units.
- If you have previously issued the command “REMOVE SWITCH DISABLE” you must do the following before you issue the “RESTORE SWITCH” command:
 - For ESCON switches, either POWER[®]-ON or IML the switch.
 - For FICON switches, use the Fabric Manager to set the switch online.
- If you replace a switch that was disabled with the Remove Switch command with another switch, any previous chaining data is made void. Chaining data in the new switch is used, instead. If the replacement switch is physically linked to another switch, you must define the chained path. See “Chain and Unchain a Switchable Path (ESCON only)” on page 519 for more information.

Examples

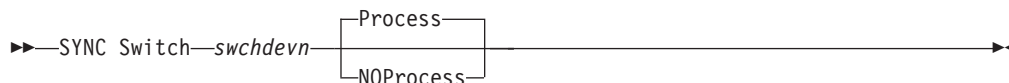
```
RESTORE S 100  
IHVC000I RESTORE      command successful
```

SYNC SWITCH

Purpose

Use the SYNC SWITCH to build and, optionally, to issue vary path requests that would be required to synchronize path status with the current settings maintained at the specified switch.

Syntax



Parameters

swchdevn

Specifies the switch. For a discussion, see “Switch Identifiers” on page 507.

Options

Process

(default) instructs the issuing I/O operations to issue the appropriate vary path requests.

NOProcess

instructs I/O operations to build the list, but not to process it.

Usage

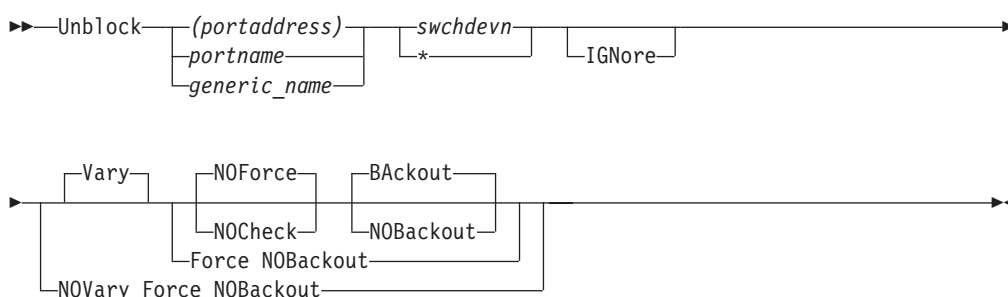
- Use the command described in “DISPLAY VARY” on page 308 to display the vary path requests that would be required if you choose the NOProcess option or the failed vary path requests if you chose the process option.
- Consider using the command if you have entered one or more connectivity commands with the Force option, knowing that pathing status will no longer be synchronous with the switch settings.
- Consider using the SYNC SWITCH command if connectivity changes have been made to the switch at the switch console.
- SYNC SWITCH differs from RESET SWITCH in that the latter command synchronizes the issuing I/O operations' internal configuration map with the physical settings of the switch, but does not synchronize path status.

UNBLOCK

Purpose

Use the UNBLOCK command to permit data transfer through a port that had been blocked. See “BLOCK” on page 281 for the reciprocal command.

Syntax



Parameters

(portaddress) | portname | generic_name

Specifies the port to be unblocked by its port address (enclosed in parentheses), by its individual port name, or by a generic port name. For a discussion, see “Switching Commands” on page 514.

swchdevn | *

Specifies one switch or all switches (* not enclosed in parentheses) allocated to the issuing I/O operations. For a discussion, see “Switch Identifiers” on page 507.

UNBLOCK

Options

IGNore

You must specify this option when an Inter-Switch-Link port (E_Port) is involved. Otherwise the command is rejected with return code 8 and reason code X'49'. The reason is I/O operations can no longer guarantee "safe-switching" when an E_Port is involved.

Connectivity options

For a discussion on Vary|NOVary, NOForce|NOCheck|Force, and BACkout|NOBACkout see "Making Connectivity Changes" on page 511.

For a discussion of why it sometimes isn't obvious that the status of a path or a device has changed after an operator has issued a connectivity command, see "Device and Path Status After Connectivity Commands" on page 530.

Usage

If a CVC or parallel CHPID is involved, see "A "Partially-ESCON" Path" on page 522 for more information.

Examples

```
UNBLOCK (D6) 100  
IHVC000I UNBLOCK      command successful
```

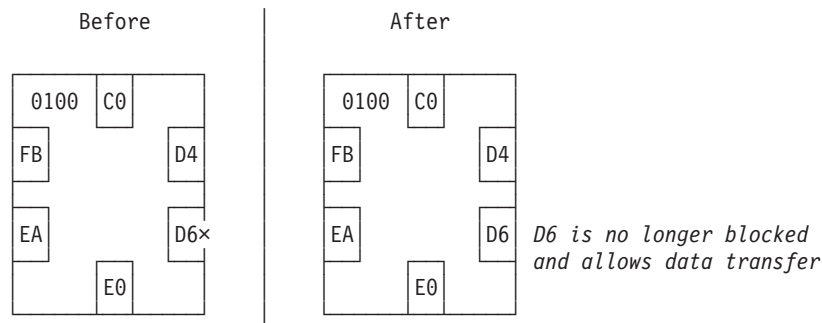


Figure 146. UNBLOCK Command: Sample 1

```
U CU.F00 *  
IHVC000I UNBLOCK      command successful
```

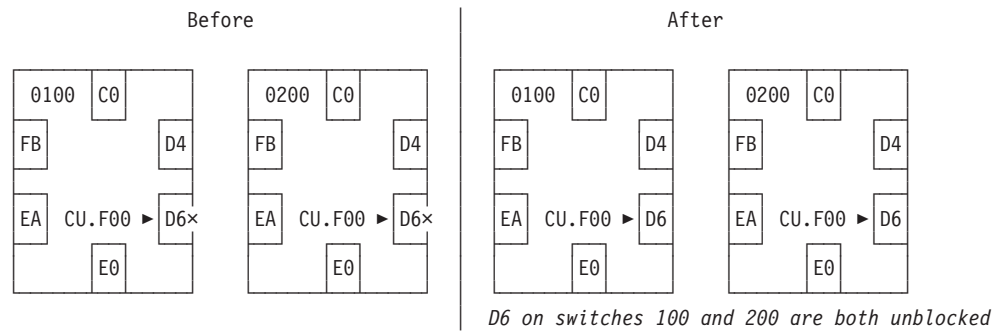


Figure 147. UNBLOCK Command: Sample 2

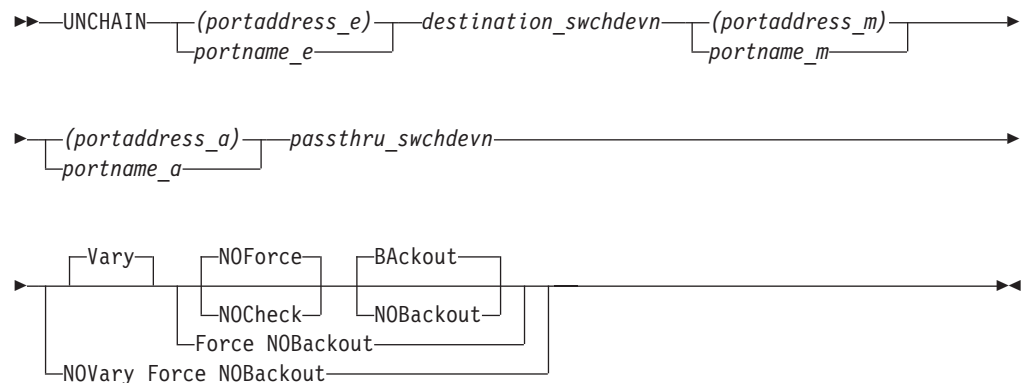
UNCHAIN

Purpose

Use the UNCHAIN command to cancel the definition of a chain in a chained path. See “Chain and Unchain a Switchable Path (ESCON only)” on page 519 for more information. See “CHAIN” on page 283 for the reciprocal command.

Note: The UNCHAIN command is not applicable to FICON switches.

Syntax



Parameters

(portaddress_e) | portname_e

Specifies the end port by its port address (enclosed in parentheses) or by its port name. For a discussion, see “Switching Commands” on page 514.

destination_swchdevn

Specifies the device number of the destination switch in the chained path. For a discussion, see “Switch Identifiers” on page 507.

(portaddress_m) | portname_m

Specifies middle port by its port address (enclosed in parentheses) or by its port name. For a discussion, see “Switching Commands” on page 514.

(portaddress_a) | portname_a

Specifies the port in the chained path that the CHPID or control unit is physically attached to by its port address (enclosed in parentheses) or by its port name. For a discussion, see “Switching Commands” on page 514.

UNCHAIN

passthru_swchdevn

Specifies the device number of the passthru switch in the chained path. For a discussion, see "Switch Identifiers" on page 507.

Options

Connectivity options

For a discussion on Vary|NOVary, NOForce|NOCHECK|Force, and BAckout|NOBAckout see "Making Connectivity Changes" on page 511.

Usage

- Use the Force option to remove a chained path that is supporting the last path to the switch.
- Make sure that you cancel the definition of a chain before you recable either of the chained switches of the chained ports that are affected.
- The definition of a chain is made void if either of the chained switches is replaced.

Examples

```
UNCHAIN (F2) 200 (D4) (C1) 100  
IHVC000I UNCHAIN      command successful
```

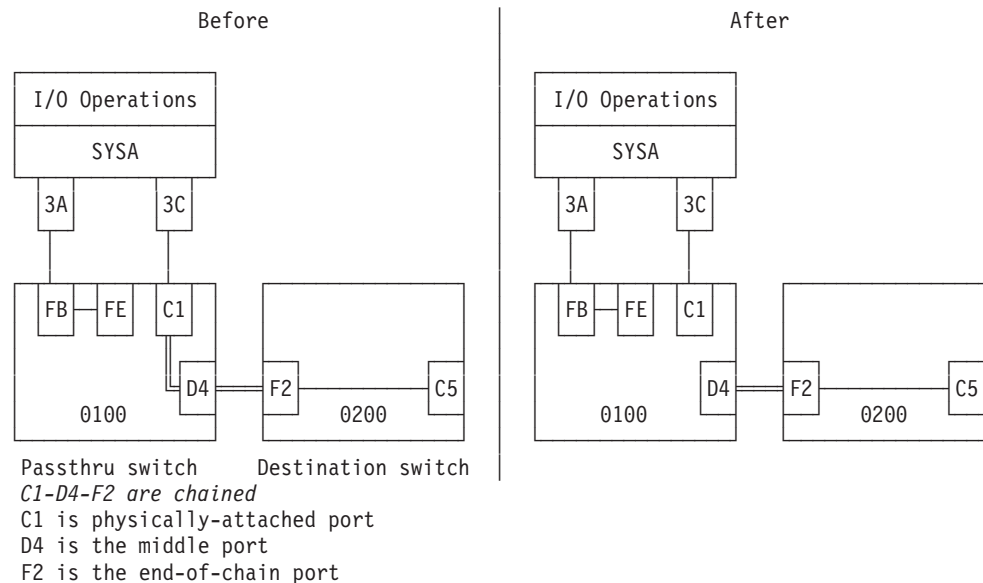


Figure 148. UNCHAIN Command Sample

UNLOCK

Purpose

Use the UNLOCK command to release I/O operations processing from your user ID, so that another user ID can use an I/O operations within the same set. (A set of I/O operations consists of the participants in the issuing I/O operations' vary-path processing and those I/O operations that can communicate with any of the participants.)

See “GETLOCK” on page 310 for the reciprocal command.

Syntax

▶▶ UNLOCK ◀◀

Examples

```
UNLOCK
IHVC000I UNLOCK      command successful
```

WRITE

Purpose

Use the WRITE command to assign or write a port name to an addressable port on one or on all the switches that are allocated to the issuing I/O operations.

Syntax

▶▶ Write *portname* (*portaddress*) *swchdevn* ◀◀

Parameters

portname

Specifies the port name you want to be assigned. To avoid assigning a port name that contains an unprintable character, specify the name in uppercase letters and use only the following special characters: digits, period, underscore. Do not exceed 24 characters. See “Using Port Names as a Tool in Switching Commands” on page 518 for more information.

(portaddress)

Specifies the addressable port that the port name is being assigned to.

swchdevn | *

Specifies one switch or all switches (* not enclosed in parentheses) allocated to the issuing I/O operations. For a discussion, see “Switch Identifiers” on page 507.

Usage

- When assigning a name to a port, consider whether you want that port to be targeted by a generic name.
- The Write command refreshes the data that could be displayed with the Display Results command. Therefore, it is advisable to assign port names when I/O operations is started.
- If you are using the sample ISPF dialog, you can assign a switch device name to a switch. The name will be displayed in the dialog's display of that switch configuration in matrix format.
 - Either name the name of the switch in the SWCH Name field of the matrix, as described in “A Sample Way to Modify a Switch Matrix” in *IBM Tivoli System Automation for z/OS User's Guide*.

WRITE

- Or, use the Write command to write a port name to the switch's control unit port (CUP). If you do not know the CUP address, you can find out with the DISPLAY DEV command. (For example, enter D D 0500 * for switch 500. In the displayed output, the CUP is to the right of CONTROL UNIT DATA.)

Examples

```
W HA.CHP_88.CVC (C0) 100  
IHVC000I WRITE      command successful
```

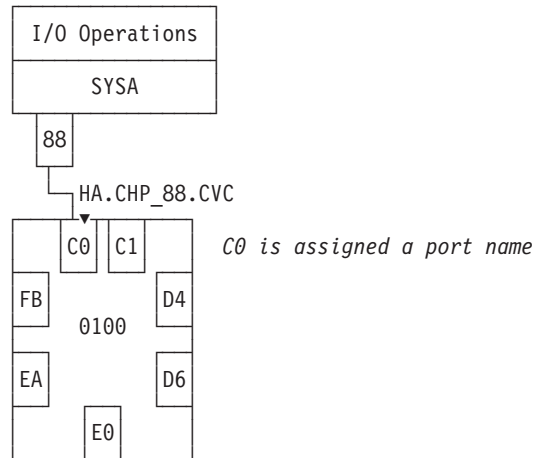


Figure 149. WRITE Command: Sample 1

```
WRITE CU.F00 (D6) *  
IHVC000I WRITE      command successful
```

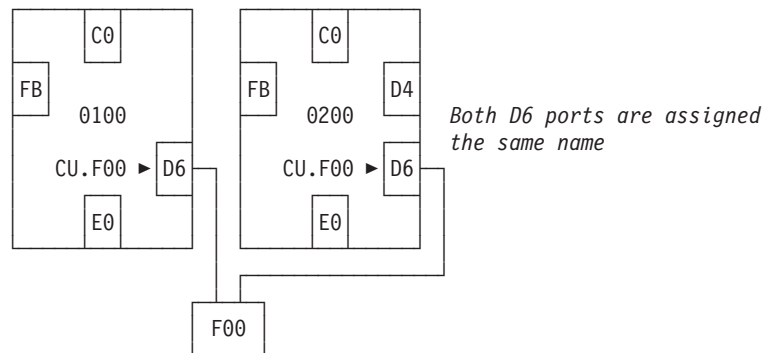


Figure 150. WRITE Command: Sample 2

Part 4. SA z/OS Processor Operations Commands

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This part describes SA z/OS processor operations commands in detail — their purpose, their format, and specifics of how to use them.

For general information about the SA z/OS commands, see *IBM Trivoli System Automation for z/OS User's Guide*.

Chapter 4. Using Processor Operations Commands

General Information

Processor operations commands consist of the following basic types:

- Host-based commands
- Common commands

You generally issue processor operations commands at a NetView console from the focal-point system. Alternatively, you can use an NMC, customized for SA z/OS exploitation to issue context-sensitive processor operations commands for target hardware or target system objects by supplementing the prepared command templates.

Commands that start with ISQ are issued as shown in the syntax diagrams, starting with the command name.

Except for the common commands, processor operations commands whose names do not start with ISQ are preceded by the ISQSEND command.

Host-Based Commands

The ISQSEND command sends the command to a target operating system for processing, using the processor operations connection to the processor hardware. Processor operations connections from the focal-point to the target hardware use either the support element of the addressed target hardware or can be customized to use an HMC, connected to the target hardware LAN for communication. Because the connection to a target hardware and the operating systems running on that hardware is available at target system initialization time or system shutdown time, the ISQSEND command can be used to respond to IPL prompt messages or to answer outstanding replies at system shutdown time.

The ISQSEND command addresses the operating system running on a processor hardware. The command ISQCCMD addresses the processor hardware or a processor hardware image (logical partition). The processor hardware that can be monitored and controlled by processor operations provide the OCF (operations command facility). This system management interface is called by ISQCCMD to perform hardware commands, for example, ACTIVATE or SYSRESET.

Other host-based processor operations commands control the start and the stop of the processor operations component of SA z/OS, invoke the status display system, control the monitoring of messages from the target systems, and allow the display and modification of processor operations configuration information.

Common Commands

Common commands are preceded by the ISQCCMD command (described in detail on page 337). Use common commands in APIs whenever possible because they provide a single product image across various hardware and software implementations. Regardless of the processor type or the operating system running at your target system, the common command is the same. This can potentially

minimize the need for future modifications to your automation routines should you modify or upgrade your processor hardware or operating system type.

Ensemble Commands

Ensemble commands are preceded by the ISQECMD command (described in detail in Chapter 7, “Ensemble Commands,” on page 471). They provide a single operator interface and API for the System zEnterprise Blade Extension (zBX) and its resources, like blades or virtual servers.

In a zEnterprise mainframe environment, up to 8 zEnterprise CPCs, with or without a zBX attachment can be defined as zEnterprise ensemble nodes. You can use the ISQECMD to monitor, control, and automate the zBX resources in this environment.

For the zEnterprise CPC itself, its logical partitions, and the operating systems running in the LPARs, use the ISQCCMD common command and ISQSEND commands for monitoring, control and automation.

PSM Commands

A special VM service machine, the ProcOps Service Machine (PSM) is required to monitor and control VM guest systems, which are defined as ProcOps target systems. For problem determination and maintenance purposes a set of PSM commands is provided.

If a VM user is logged on as PSM, these commands can be entered from the PSM's terminal. Because a PSM normally runs in VM disconnected mode, a subset of the PSM commands can be routed from a ProcOps focal point NetView to the PSM, using command ISQXPSM. See “ISQXPSM” on page 403 for more information about the ISQXPSM command.

Chapter 5. Host-based Commands

ISQCCMD

Purpose

The ISQCCMD command issues a processor operations common command (connection types 'SNMP' and 'TCPIP') or an SA z/OS LPAR management command (connection type 'INTERNAL').

Syntax

```
▶▶ ISQCCMD target_system_ProcOps_name common_command ▶▶
           |
           | target_hardware_name.LPAR_name
           |
           | group_name
           |
           | subgroup_name
           |
           | target_hardware_name
```

Requirements

ProcOps command environment

- Processor operations must be active.
- The addressed target system must be initialized unless the specified common command is ACTIVATE (see “ACTIVATE” on page 407).

LPAR management environment

- SA z/OS must be fully initialized.
- The processor hardware of the addressed target system or target hardware LPAR must be configured for connection type INTERNAL in the SA z/OS customization dialogs.

Parameters

target_system_ProcOps_name

Is the name of a target system in the ProcOps or LPAR management environment.

target_hardware_name.LPAR_name

Is the identifier of the target system using its LPAR location on the specified target hardware. The period is used to separate the hardware from the LPAR name.

group_name

Is the name of a valid group for ProcOps. The group must contain subgroup names or target system names or both.

subgroup_name

Is the name of a valid subgroup for ProcOps. The subgroup must contain target system names.

target_hardware_name

Is the name of the target hardware definition that is associated with the target system.

common_command

Represents the common command and any associated parameters to be processed. Multiple parameters are separated from each other by a blank space.

Defaults

None.

Usage

Use the ISQCCMD command to issue a HW common command to the specified target object of a ProcOps or LPAR management environment.

Restrictions and Limitations

ProcOps environment

- *Target_hardware_name* is valid for the common commands CBU, CCNTL, CONDATA, CPCDATA, CTRLCONS, DEACTIVATE, GETCLUSTER, GETSDGR, GETSINFO, GETSSTAT, OOCOD, PROFILE, TCDATA, TCM, STPDATA, STP, and POWERMOD.
- *Group_name* or *subgroup_name* must be processor operations-enabled as defined in the SA z/OS customization dialogs to be a valid parameter.

LPAR management environment

- *Target_hardware_name* is valid for the common commands CCNTL, CONDATA, CPCDATA, CTRLCONS, GETCLUSTER, GETSDGR, GETSINFO, GETSSTAT, PROFILE, TCDATA and STPDATA.

Using LPAR management and ProcOps for processors defined with multiple connection protocols.

With the SA configuration dialogs you can specify ProcOps SNMP and INTERNAL(BCPii) connections in a single processor entry. If both connections are configured as active, you can no longer use the ISQCCMD *target_system_name* form for LPAR Management commands; instead you must use the ISQCCMD *target_hardware_name.LPAR_name* form.

Failure to do so will result in always executing the LPAR Management request over the SNMP connection. If the system name is not defined to SA, message ISQ400I will be issued, informing you that the target system name is not known.

The dual protocol selection allows only using the target hardware names that have to be specified for each protocol, as the differentiator between the protocols, but not the target system name.

If you still want to use the target system name to differentiate between the LPAR management and ProcOps common commands for a single processor, you must define separate processor entries and associate system entries to them through the SA dialogs. Define one processor-system set for the ProcOps SNMP connection, and the other set for the INTERNAL connection protocol.

Specifying an SNMP Timeout Value

The default timeout value can be modified by setting the NetView task global variable ISQ.SNMP.WAIT to another value. The timeout format is hh:mm:ss, where 'hh' represents the hours of the timeout, 'mm' the minutes and 'ss' of the period to wait for hardware command completion before terminating ISQCCMD. The value

of the variable is checked each time before a ISQCCMD request is performed. If the timeout variable is not set, or it has an invalid format, the default value of the corresponding command is used.

In the following REXX example a timeout value of 8 minutes and 30 seconds is set prior calling ISQCCMD to perform an EXTERNAL interrupt hardware command:

```
tme = 'ISQ.SNMP.WAIT' // SNMP timeout varname //
mytgt = 'KEY6' // our TGT system name //
Interpret tme=" '00:08:30'" // Set timeout to use //
'GLOBALV PUTT 'tme // Update task variable//
Say 'SNMP Timeout value set to 'Tglobal(tme) // Send info msg //
'ISQCCMD 'mytgt' EXTINT' // External irpt to Sys//
If RC > 0 Then Do // Error occured //
End // ...more to add //
Else Do // All went well //
End // ...more to add //
```

Using Immediate ISQCCMD Common Command Responses

The immediate command responses cannot be captured with TRAP and WAIT in programs that issue the ISQCCMD command. You can retrieve the immediate HW responses by using a PIPE KEEP stage in your programs. Use 'ISQ.SNMP' as the KEEP name. Note that this command set is also the LPAR management command set and that the KEEP ISQ.SNMP is valid for the LPAR management commands:

- CCNTL
- CONDATA
- CPCDATA
- ICNTL
- GETCLUSTER
- GETIINFO
- GETIPSW
- GETISTAT
- GETSDGR
- GETSINFO
- GETSSTAT
- PROFILE
- STPDATA
- TCDATA

In the following REXX example, the maximum weight that is allowed for a system's LPAR is retrieved and the HW response report containing this information is displayed:

```
mytgt = 'KEY4' // our TGT system name //
'ISQCCMD 'mytgt' ICNTL CMD(READ) VAR(PWMX)' // Max weight //
If RC > 0 Then Do // Error occurred //
End // ...more to add //
Else Do // All went well //
'PIPE KEEP ISQ.SNMP | CONS ONLY' // ...display HW report//
End // ...more to add //
```

Return Codes

- 0 Command completed execution.
- 8 Command processing has been rejected.
- 12 Command processing has failed.
- 32 The required environment for processor operations or LPAR Management does not exist. The ISQCCMD command was not processed.

ISQCHK

Purpose

The ISQCHK command checks whether processor operations is active.

Syntax

►—ISQCHK—┐
└─*command_name*—┘

Requirements

None.

Parameters

command_name

Is the name of an automation procedure.

Defaults

None.

Usage

This command is intended for use in automation procedures to determine whether processor operations is active. It provides a method of exiting from the automation procedure cleanly when processor operations is not active. If you issue ISQCHK from an operator station and processor operations is running, you will receive no response.

The optional *command_name* parameter is placed in the text of the error message generated when processor operations is not active. This identifies the automation procedure that cannot run because processor operations is not active.

For example, place the following statements near the beginning of a processor operations automation procedure that is written in REXX:

```
'ISQCHK STARTALL'  
If RC<>0 then; Exit;
```

If you issue the STARTALL command when processor operations is not active, the error message will inform you that “the STARTALL command” cannot be run until processor operations is active, rather than simply informing you “the command” cannot be run until processor operations is active.

You can issue ISQCHK from an operator station task (OST) or from automation.

Restrictions and Limitations

None.

Return Codes

- 0 Processor operations is active.
- 32 Processor operations is not active.

ISQCMON

Purpose

The ISQCMON command causes the current NetView task to be added to or removed from the list of tasks to receive processor operations communications management messages.

Syntax



Requirements

None.

Parameters

ON Adds the current NetView task to the list of tasks to receive processor operations communications management messages. This is the default.

OFF Removes the current NetView task from the list of tasks to receive processor operations communications management messages.

Defaults

ISQCMON defaults to ON, adding you to the list.

Usage

You can issue ISQCMON when processor operations is not running to add or delete yourself from the interested operators list for messages relating to the control of processor operations-managed resources. These messages are not associated with a specific target system.

Messages not associated with a specific target system are sent only to operators who used ISQCMON to place themselves on the interested operators list for such messages. These messages are not sent to the ISQXMON interested operator list. You are automatically added to the ISQCMON interested operator list when you issue the ISQSTART command (see "ISQSTART" on page 353).

See *IBM Tivoli System Automation for z/OS User's Guide* for further information about these two types of messages and interested operator lists.

Restrictions and Limitations

Do not issue this command with ISQEXEC.

Return Codes

- 0 The ISQCMON command completed successfully.
- 8 You used incorrect command syntax.

ISQECMD
Purpose

The ISQECMD command shell issues a Processor operations ensemble command to manage zEnterprise Ensemble and zBX (Blade Center Extension) resources.

Syntax

```

▶▶ ISQECMD { target_hardware_ProcOps_name | ensemble_ProcOps_name | real_ensemble_name } ensemble_command ▶▶

```

Requirements

- Processor operations must be active.
- Processor operations must be in session with the ensemble HMC that has the targeted resource in its scope. Session initialization to a ensemble HMC can be configured to happen at ISQSTART time automatically, or can be done when processor operations is already active, using the ISQXIII command.

Parameters

target_hardware_ProcOps_name

Is the name of a defined target hardware. It must be selected as member in an ensemble definition. For a target hardware only membership to a single ensemble is supported.

ensemble_ProcOps_name

Is the entry name of an ensemble definition in the SA z/OS policy data base. The configuration dialogs enforce that the name is unique and in uppercase.

real_ensemble_name

Ensemble name as defined using an ensemble HMC. See “Restrictions and Limitations” on page 343 for additional information.

ensemble_command

Represents the actual ensemble command and any associated parameter to be processed. Multiple parameters are separated from each other by a blank space.

Defaults

None.

Usage

Use the ISQECMD command to issue an ensemble command to the specified target ensemble. The individual ensemble command may address additional zBX resources that can be managed over the ensemble HMC connection used.

Ensemble commands can be grouped in the following categories:

- zBX resource notification subscription
- zBX resource discovery
- zBX resource query and list and

- zBX resource management

For Online Help information about the available ensemble commands you can use the ISQHELP interface and select: **E Access Help panels for ProcOps Ensemble Commands**

Restrictions and Limitations

- If a ISQECMD command target or ensemble command parameter value is defined in mixed case on the ensemble zBX environment, you must use the 'NetVasis ISQECMD' form to make sure that the data is passed without uppercase translation to the case-sensitive ensemble zBX environment. Failure to do so may result in ISQECMD command or ensemble command errors.
- In the ensemble definitions of the System Automation policy, you must define the real ensemble name exactly as it is defined on the HMC. You cannot use the real ensemble name as ISQECMD target parameter if this name contains any blanks.
- If you have multiple sessions to different ensemble HMCs active on a processor operations FP domain and these HMCs are located in different HW LAN environments, duplicate real ensemble names may be present. The ISQECMD does not recognize this. Always the first occurrence of the real ensemble name satisfies the internal name search.

Specifying a Timeout Value

The default timeout value can be modified by setting the NetView task global variable ISQ.ZBX.WAIT to another value. The timeout format is hh:mm:ss, where 'hh' represents the hours of the timeout, 'mm' the minutes and 'ss' the seconds of the period to wait for hardware command completion before terminating ISQECMD. The value of the variable is checked each time before a ISQECMD command request is performed. If the timeout variable is not set, or it has an invalid format, the default value of the corresponding command is used.

In the following REXX example a timeout value of 4 minutes and 30 seconds is set prior calling ISQECMD to perform a DISCOVERY of all virtual servers in this ensemble domain.

```
tme = 'ISQ.ZBX.WAIT'           // zBX timout varname //
myens = 'R35ZBX'              // our ENS name      //
'PIPE LIT /00:04:30/ | VAR (TASK) 'tme // Our Tgbl timeout  //
Say 'zBX Timeout value set to 'Tglobal(tme) // Send info msg     //
'ISQECMD 'myens' DISCOVERY VS' // Do the discovery  //
If RC > 0 Then Do             // Error occurred    //
End                             // ...more to add   //
Else Do                         // All went well     //
End                             // ...more to add   //
```

Using ISQECMD Ensemble Command Responses

Immediate command responses cannot be captured with TRAP and WAIT in programs that issue the ISQECMD. You can retrieve the immediate responses by using a PIPE KEEP stage in your programs. Use 'ISQ.ZBX' as the KEEP name. All ensemble commands support this PIPE KEEP. In the following REXX example, a blade extension summary is requested from the addressed ensemble. If the information is available, it is displayed using the 'ISQ.ZBX' data KEEP.

```
myens = 'R35ZBX'              // our ensemble      //
'ISQECMD 'myens' ZBXDATA'    // Get a ZBX Summary //
If RC > 0 Then Do             // Error occurred     //
End                             // ..more to add     //
Else Do                         // All went well      //
'PIPE KEEP ISQ.ZBX | CONS ONLY' // ..display ZBX report//
End                             // ..more to add     //
```

ISQECMD

If you issue a ISQECMD from the NetView console, the immediate command responses are returned as ISQ800I messages in the netlog. If you used the ISQXMON command to add yourself to the interested operator list for messages and notifications from the targeted ensemble, you will receive copies of these messages as ISQ801I messages on the screen.

Asynchronous ensemble command responses (for example, ACTIVATE) will not provide the complete response in the 'ISQ.ZBX' PIPE KEEP. In order to see the asynchronous parts of an ensemble command response you must have subscribed your operator/task to receive at least JOB and STATUS notifications from the ensemble object (for example, VS, BL). At ensemble connection initialization time, the processor operations ISQXIII command subscribes the ensemble target control task (ISQET*) assigned to the targeted ensemble to receive JOB and STATUS notifications automatically. Use the SUBSCRIBE/UNSUBSCRIBE ensemble commands to modify the processor operations standard subscriptions for the ensemble notifications.

You can find notifications as ISQ800I messages in the netlog. If you want to see copies of the notification messages on your NetView screen, use the ISQXMON command to add your operator/task as an interested operator for messages and notifications from the ensemble.

The following ensemble commands are implemented as asynchronous commands: ACTIVATE, DEACTIVATE.

Note, that the ISQECMD command shell issues message ISQ856I as its final message. There may be notification messages outstanding, related to a just executed asynchronous command, arriving after the ISQECMD command completed.

Return Codes

- 0 Command completed execution successfully.
- 8 The command syntax is not correct.
- 12 Command failed.
- 32 The processor operations environment does not exist. The ISQECMD command was not processed.

ISQEXEC

Purpose

The ISQEXEC command sends a command to a target control task to be processed. Commands sent by ISQEXEC are processed by the target control task in the order in which they are presented.

Syntax

```
ISQEXEC -target_system_name-SC-  
        -target_hardware_name-S-  
        -target_ensemble_name-  
        -command_name-
```

Requirements

The requirements for this command to complete successfully are:

- Processor operations must be active.
- The target entity specified with *target_system_name* or *target_ensemble_name* must be initialized. If *target_ensemble_name* was specified, at least one target system running on that hardware must be initialized.

Parameters

target_system_name

Specifies the name of the target system.

SC Specifies the active system console connection.

target_hardware_name

Specifies the name of the target hardware (processor).

S Specifies the active system console connection.

target_ensemble_name

Specifies the name of the target ensemble. (zEnterprise ensemble for zBX management)

command

Is the name of the user automation command to be processed.

Defaults

None.

Usage

The main advantage of the ISQEXEC command is that it frees the operator station task (OST) for other work because commands issued by ISQEXEC are processed by a target control task rather than in the OST.

You may require that a set of commands to a target connection are processed in the order in which the commands are presented (that is, serially). ISQEXEC is processed by a target control task, which ensures that the commands are processed in the correct order. A set of commands to be processed serially can be packaged in an automation procedure and be called by the ISQEXEC command, for example:

```
ISQEXEC target_system_name console_connection exec_name exec_operands
```

You can write automation procedures that issue ISQSEND commands. ISQSEND sends commands to a target system. You can enter the ISQEXEC command in the NCCF command line to cause an automation procedure to be processed.

Restrictions and Limitations

The following restrictions or limitations apply to this command:

- Do not issue ISQXDST, ISQHELP, or ISQXOPT with ISQEXEC.
- Do not issue any user automation with ISQEXEC that results in a full-screen panel.
- ISQEXEC does not lock a target console connection; the serialized commands can be interrupted by commands from other tasks. See “Usage.”

Return Codes

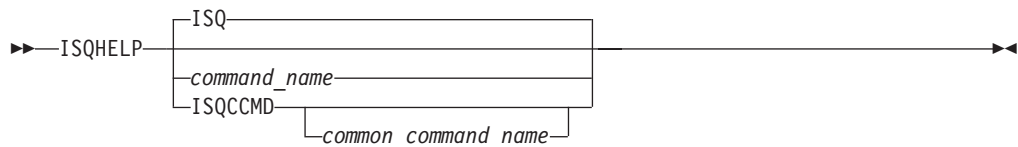
- 0 The ISQEXEC command completed successfully and it caused the command to be queued to a target control task.
- 8 The command syntax is not correct.
- 10 The specified target system was not initialized.
- 12 An internal error occurred.
- 32 The processor operations environment does not exist. The ISQEXEC command was not processed.

ISQHELP

Purpose

The ISQHELP command provides help on using processor operations commands.

Syntax



Requirements

The NetView program must be running for this command to complete successfully.

Parameters

ISQ

Indicates the processor operations Main Help Panel is being requested. Not specifying any parameters with the ISQHELP command also presents the processor operations Main Help Panel.

command_name

Is the name of any parameter with which you need help. This can be a processor operations host-based or any parameter valid to the NetView help processor.

ISQCCMD

Indicates that the variable following it is the name of a common command.

common_command_name

Is the name of the common command for which you want help; only the first 3 characters of the common command need to be specified.

Defaults

The processor operations Main Help Panel.

Usage

The ISQHELP command does not require the processor operations environment.

Issue the ISQHELP command to obtain high-level information about processor operations, to obtain help about the syntax of a processor operations command, to obtain help with the output generated by the command, or to see examples of using the command.

See *IBM Tivoli System Automation for z/OS User's Guide* for further information on the ISQHELP command and for a description of other help functions.

Restrictions and Limitations

The ISQHELP command cannot be issued from a program.

Return Codes

Return codes are not applicable because the ISQHELP command cannot be issued from a program.

ISQIPSWT

Purpose

The ISQIPSWT command is used to switch IP addresses stored in the processor operations variables:

SEADDR The IP address or host name of the SE (or HMC) that the target hardware is connected to. This value is used by processor operations as the primary information to connect to the target hardware.

HMCADDR The IP address or host name that is used by processor operations as alternate information to connect to the target hardware.

This command can be used, for example, to switch to the secondary SE network adapter card if the connection to the primary adapter card of the SE fails.

Syntax

```

▶▶ ISQIPSWT—target-hardware-name — [ FORCE (NO) ]
                                     [ FORCE (YES) ]
▶▶

```

Requirements

Processor operations must be active.

For the target hardware, both variables SEADDR and HMCADDR must be set (that is, not be blank).

Parameters

target-hardware-name

Is the name of the target hardware.

FORCE

FORCE (NO)

Check the connection to SEADDR; switch IP addresses only if the connection to SEADDR fails.

FORCE (YES)

Switch IP addresses even if the current SEADDR can still be connected.

Defaults

If no FORCE parameter is specified, FORCE(NO) is assumed by the command.

Usage

It is assumed that the processor operations variable HMCADDR contains the IP address or host name of the secondary network adapter card of the SE.

Use the ISQIPSWT command to switch the connection address that is used to connect to the target hardware. By default, processor operations will use the value that is stored in the variable SEADDR to connect to the target hardware. Upon execution, the command will:

- Close active systems running on the target hardware
- Switch values between processor operations variables SEADDR and HMCADDR
- Re-start the previously closed systems using the alternate IP address

In order to restore the original settings, simply execute ISQIPSWT command again.

Restrictions and Limitations

The command can be executed only for target hardware connected using SNMP.

The specified target hardware name must be defined for processor operations.

Return Codes

- 0 Command executed successfully.
- 4 Target hardware name blank or invalid.
- 5 Invalid FORCE option specified.
- 6 Processor operations variable SEADDR or HMCADDR is (or both are) blank.
- 8 Error occurred retrieving a processor operations variable.
- 9 Connection to SEADDR still active and FORCE(YES) not specified.
- 10 Connection test to alternate address (HMCADDR) failed.
- 12 Target hardware name is not SNMP connected.
- 14 Reactivate of systems failed.
- 32 Processor operations not started or active.

ISQOVRD

Purpose

The ISQOVRD command unconditionally removes an entity lock. Entities can be either target system names together with a console designator or ensemble names.

Syntax

```

  >> ISQOVRD target_system_ProcOps_name [OC] [SC]
           [target_hardware_name—S]
           [ensemble_ProcOps_name]
  <<<

```

Requirements

The requirements for this command to complete successfully are:

- The use of this command usually requires special authorization.
- Processor operations must be active.

- The *target_system_ProcOps_name* syntax requires that the addressed target system be initialized.

Parameters

target_system_ProcOps_name

Is the name of the target system.

OC Specifies the active operator console (not valid for the coupling facility).

SC Specifies the active system console

target_hardware_name

Is the name of the target hardware.

S Specifies the active system console.

ensemble_ProcOps_name

Is the ProcOps name of a zBX ensemble.

Defaults

None.

Usage

The ISQOVRD command removes the entity lock established by any command or automation procedure.

This command is intended to be used for emergencies only. Overriding a reserve can cause processing to fail, with unpredictable results.

Restrictions and Limitations

The following restrictions or limitations apply to this command:

- This command does not establish an entity lock for the issuing operator, it simply removes the lock on the entity.
- This command does not interrupt or cancel any command or automation procedure currently running.

Return Codes

- 0** The ISQOVRD command completed successfully; the lock has been removed.
- 4** You used syntax that is not valid, specified an entity name that is not valid, or specified a target system that is not initialized.
- 8** A NetView CNMLOCK service problem occurred.
- 32** The processor operations environment does not exist; the ISQOVRD command was not processed.

ISQRROUTE

Purpose

The ISQRROUTE command sends a command to a control task to be processed. Commands sent by ISQRROUTE are processed by the control task in the order in which they are presented.

Syntax

```
ISQROUTE—entity_name—command_name
```

System environment

The requirements for this command to complete successfully are:

- Processor operations must be active.

Parameters

entity_name

Target hardware name:

Specifies the name of the target hardware.

Target system name:

Specifies the name of the target system.

Ensemble name:

Specifies the name of the ensemble.

command

Is the name of the user automation command to be processed.

Defaults

None.

Usage

The main advantage of the ISQROUTE command is that it frees the operator station task (OST) for other work because commands issued by ISQROUTE are processed by a processor operations control task rather than in the OST.

This is similar to the ISQEXEC command, however ISQROUTE accepts target system, target hardware, or ensemble names for control task selection. In addition, the entity needs not to be in a required status as this is the case for ISQEXEC, where target systems must have a status of INITIALIZED.

You can require that a set of commands to a target entity are processed in the order in which the commands are presented (that is, serially). ISQROUTE is processed by a control task, which ensures that the commands are processed in the correct order. A set of commands to be processed serially can be packaged in an automation procedure and be called by the ISQROUTE command, for example:

```
ISQROUTE target_system_name exec_name exec_operands
```

You can write automation procedures that issue ISQSEND commands. ISQSEND sends commands to a target system. You can enter the ISQROUTE command in the NCCF command line to cause an automation procedure to be processed.

Restrictions and Limitations

The following restrictions or limitations apply to this command:

- Do not issue ISQXDST, ISQHELP, or ISQXOPT with ISQROUTE
- Do not issue any user automation with ISQROUTE that results in a full-screen panel.

- ISQROUTE does not lock a target console connection; the serialized commands can be interrupted by commands from other tasks. See “Usage” on page 350.

Return Codes

- 0** The ISQROUTE command completed successfully and it caused the command to be queued to a control task.
- 8** The command syntax is not correct or entity name is not defined.
- 12** An internal error occurred.
- 32** The processor operations environment does not exist. The ISQROUTE command was not processed.

ISQSEND

Purpose

The ISQSEND command sends a command to a target system for execution, using the processor operations target hardware connection and the console integration facility.

Note: This is an Application Programming Interface.

Syntax

```

  >> [NETVASIS] ISQSEND [target_system_ProcOps_name] [OC] command >>
      [target_hwname.Lparname] [SC]
  
```

Requirements

The requirements for this command to complete successfully are:

- Processor operations must be active.
- The addressed target system connection must have been initialized.

Parameters

NETVASIS

Prefix the ISQSEND command with NETVASIS if you want to pass the command text in lower or mixed case.

target_system_ProcOps_name

The name of the target system.

target_hwname.Lparname

The target hardware name and logical partition name, separated by a period.

This is an alternative to the target system name notation, for all operating systems running on a target hardware activated in LPAR mode.

OC Specifies the active operator console function as the target for an operating system command.

SC Specifies the active system console function as the target for an operating management command.

command

The command that is to be processed and any parameters that are associated with that command. Use the ISQSEND command to send operating system

ISQSEND

commands or operations management commands. If you want to pass the command text in lower or mixed case, prefix the ISQSEND command with NETVASIS.

Note that if you omit the command parameter, a nullstring is sent to the hardware, which is received and may be acknowledged by the target operating system or hardware. See your hardware or operating system documentation for more information.

Operating System Commands

This ISQSEND command type is valid for all ProcOps connections. The following operating systems are supported: MVS (z/OS), VM (z/VM), VSE (z/VSE), LINUX (Linux on System z), and CF (Coupling Facility Control Code). In addition, Standalone Utility programs running on System z or CMOS/390 hardware, such as SADump (Standalone Dump).

Operations Management Commands

This type of ISQSEND commands is valid only for ProcOps TCPIP connections. For ProcOps SNMP connections, ISQCCMD must be used to perform Operations Management functions.

Operations management commands using TCPIP means that VM/CP commands can be sent to the virtual machine of a ProcOps target system, which is running as a VM guest. Only CP Query commands are supported. For all other operations management functions, use the ISQCCMD command.

Defaults

None.

Usage

For target systems running on processors supported by processor operations, operating system commands can be entered through ISQSEND. The commands are transmitted to the operating system through console integration, an interface provided by the operating system and the processor hardware support element (SE) or hardware management console (HMC).

Specifying an SNMP Timeout Value

For target hardware connections of type SNMP, the default timeout value of one minute can be modified by setting the NetView task global variable ISQ.SNMP.WAIT to another value. The timeout format is hh:mm:ss, where 'hh' represents the hours of the timeout, 'mm' the minutes and 'ss' the seconds of the period to wait for HW command completion before terminating ISQSEND. The value of the variable is checked each time a ISQSEND request for an SNMP connected target system is performed. If the timeout variable is not set, or it has an invalid format, the default value of one minute is used.

In the following REXX example a timeout value of 8 minutes and 30 seconds is set prior calling ISQSEND:

```
tme = 'ISQ.SNMP.WAIT'           // SNMP timout varname //
mytgt = 'KEY6'                  // our TGT system name //
Interpret tme=" '00:08:30'"     // Set timeout to use //
'GLOBALV PUTT 'tme             // Update task variable//
Say 'SNMP Timeout value set to 'Tglobal(tme) // Send msg //
'ISQSEND 'mytgt' D T'          // External irpt to Sys//
If RC > 0 Then Do              // Error ocured //
```

```

End // ...more to add //
Else Do // All went well //
End // ...more to add //

```

Restrictions and Limitations

The following restrictions or limitations apply to this command:

- With SA z/OS, the ISQSEND command is the only way to send data to the operating system of a target through the console integration connection. The information that is passed to the target system is not interpreted by SA z/OS.
- Successful ISQSEND completion does not indicate successful completion of the command itself. It only indicates that the command was successfully delivered to the receiver. Your automation routines should interpret the asynchronous message responses of the command to determine the command execution results.
- Note that the operating systems supporting console integration may have commands to activate or deactivate this function, or may provide facilities and commands to prevent response messages from being routed to console integration. For MVS operating systems, the VARY CN(*), DEACTIVATE and VARY CN(*), ACTIVATE commands are available for the deactivation and reactivation of console integration.

Return Codes

- 0 The ISQSEND command completed successfully and the message was sent.
- 8 Either the message was not sent, the message was sent with errors, or the specified target system was not initialized.
- 32 The processor operations environment does not exist. The ISQSEND command was not processed.

ISQSTART

Purpose

The ISQSTART command starts processor operations. It establishes the processor operations environment with the NetView program and permits the control of target resources with processor operations commands. Such resources are: Target systems or virtual systems, mainframe processors or virtual machines, and zEnterprise BladeCenter Extensions. This command can be issued from an automation routine.

Syntax

```

▶▶ ISQSTART [ACF] [ACFCLEAN] [Optionfile] [DEBUG]

```

Requirements

If you specify:

- With parameter ACF or ACFCLEAN, SA z/OS initialization must be complete before ISQSTART can be used
- With the *Optionfile* parameter, the NetView program must have at least read authority to the dataset

ISQSTART

You may need special authorization to use this command.

Parameters

ACF

If specified, processor operations is started, taking the required configuration information from the current active automation control file (ACF).

ACFCLEAN

If specified, the INGCLEAN command is called to perform a clean up of the in-storage data model on the processor operations focal point NetView domain, before the ISQSTART ACF processing starts.

The processor operations configuration information is stored in ACF entry types like: PROCESSOR, SYSTEM, AOF?ENS, and GROUP. Since none of these entry types is associated with type SUBSYSTEM, a delete or rename of a processor operations related ACF entry will not result in an automatic cleanup of the no longer valid associated global variables during a System Automation refresh.

This can cause problems or ISQSTART time for processor operations runtime, especially when no longer available HW resources are still present in the processor operations data model.

Using the INGCLEAN before starting processor operations is one way to avoid such problems.

Optionfile

An additional debug or configuration source. This parameter is for IBM Service support only.

DEBUG

Provides additional diagnostics that are written to the NetView log.

Defaults

There are no defaults for this command when processor operations is first started: you must specify the ACF, ACFCLEAN or *Optionfile* parameter. When restarting, the command defaults to the parameter used for the previous initial start.

Usage

To perform an initial start, use the ACF or ACFCLEAN parameter. For a restart (warmstart), this parameter is not needed.

An initial start loads the processor operations configuration data from the active ACF and starts all processor operations tasks to establish the processor operations task environment. The configuration data also indicates which, if any, target system or ensemble connection should be initialized (not the IPL process).

The initial start with the ACF parameter takes the available configuration data for processor operations from the loaded ACF to build the processor operations runtime environment. In case processor operations configuration data was changed using the configuration dialogs and a new ACF file was built, you first refresh the ACF on the processor operations FP system with the new user configuration, before this new configuration data is available for processor operations. Use the ISQSTOP command to processor operations before issuing the ISQSTART ACF or ISQSTART ACFCLEAN command to activate the changes in the ProcOps runtime environment.

You usually perform a restart after a processor operations task has failed to restart all processor operations tasks to reestablish the processor operations tasking environment. If the processor operations environment has not already been established by a previous ISQSTART command that specified ACF/ACFCLEAN or Optionfile, the restart will fail.

When you issue ISQSTART, it adds you to the interested operators list that is accessed by the ISQCMON command. This list is for messages that are not associated with a specific target system. The messages relate to the control of processor operations-managed resources.

Restrictions and Limitations

The following restrictions or limitations apply to this command:

- If the ACF or ACFCLEAN start parameters are used, SA z/OS on the processor operations focal point system must be fully initialized, otherwise ISQSTART processing will fail.

Note that this restriction also applies if ISQSTART is issued while an ACF REFRESH is in progress on the processor operations focal point system.

- A restart re-establishes the previous configuration. The processor operations environment must exist (an initial start must have already been performed) before a restart can be performed.
- Processor operations must be stopped before an initial start can be performed.
- The XML_config_file name cannot be DEBUG.
- The specified XML_config_file must be a sequential data set.

Return Codes

- 0 Command accepted.
- 4 You used incorrect syntax.
- 8 An internal command error occurred.

ISQSTOP

Purpose

The ISQSTOP command stops processor operations. It can be issued in an automation routine.

Syntax

```

>> ISQSTOP [DEBUG]

```

Requirements

You may require special authorization to use this command.

Processor operations must be active.

Parameters

DEBUG

Provides additional diagnostics, which are written to the NetView log.

ISQSTOP

Defaults

None.

Usage

The ISQSTOP command immediately stops the processor operations environment and all processor operations tasks. If you do not have the shutdown of processor operations automated via SA z/OS, issue ISQSTOP and ISQSTART as part of normal shutdown procedures to restart failed processor operations tasks or to establish a new operating environment (see the ISQSTART command).

Restrictions and Limitations

The ISQSTOP command does not shut down target systems.

All current processor operations status information is lost when you issue ISQSTOP. You should exit any displays presented by the ISQXDST, or ISQXOPT commands or ProcOps SDF Interface panels showing LPARs, before stopping processor operations.

Return Codes

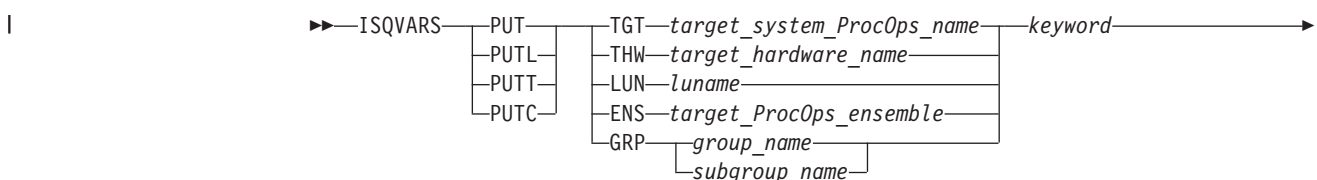
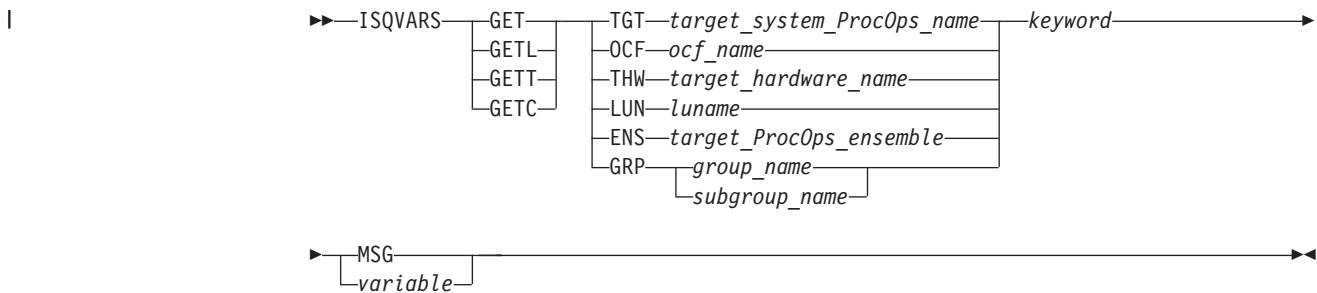
- 0 The ISQSTOP command completed successfully.
- 4 You used incorrect syntax.
- 8 An internal command error occurred.
- 32 The processor operations environment does not exist; the ISQSTOP command was not processed.

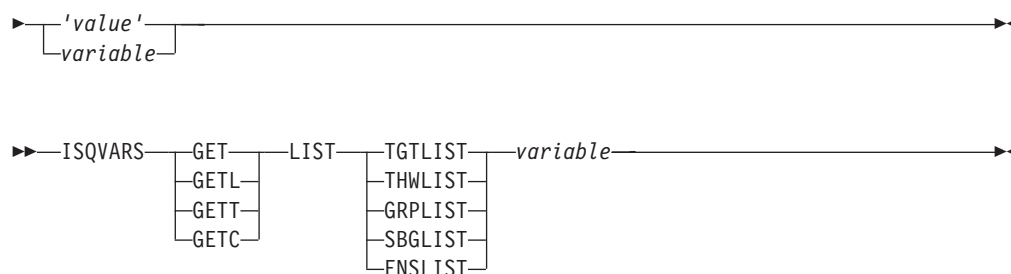
ISQVARS

Purpose

The ISQVARS command lets you view and change certain SA z/OS values. Table 3 on page 363 identifies the keywords for the values you can view or change with the ISQVARS command.

Syntax





Requirements

Processor operations must be active.

Parameters

GET

Specifies that you want to retrieve the value of a SA z/OS keyword to be displayed or to be placed into a specified NetView local variable.

GETL

Specifies that you want to retrieve the value of a SA z/OS keyword to be displayed or to be placed into a specified NetView local variable. This keyword is the same as the GET keyword. This is the default if you specify GET.

GETT

Specifies that you want to retrieve the value of a SA z/OS keyword to be displayed or to be placed into a specified NetView task variable.

GETC

Specifies that you want to retrieve the value of a SA z/OS keyword to be displayed or to be placed into a specified NetView common variable.

TGT

Indicates that the variable following it is the name of the target system.

target_system_ProcOps_name

Is the name of the target system.

OCF

Indicates that the variable following it is the name of the target system's secondary operations command facility (OCF). A secondary OCF is used on an OCF-based processor in LPAR mode to represent a logical partition and to process commands for that CPC image (logical partition). The name of the secondary OCF is specified on the "Target System Description" panel for OCF-based processors in the configuration dialogs. On a System/390[®] microprocessor cluster, the name of the secondary OCF is the same as the name of the logical partition and of the Image profile used to activate the partition.

ocf_name

Is the name of the target system's secondary OCF.

THW

Indicates that the variable following it is the name of the target hardware.

target_hardware_name

Is the name of the target hardware.

LUN

Indicates that the variable following it is the logical unit name.

luname

Is the logical unit name.

GRP

Indicates that the variable following is a group or subgroup name.

group_name

Is the name of the group of which the subgroup is a member.

subgroup_name

Is the name of the subgroup of which the target system is a member.

ENS

Indicates that the variable following it is the name of an ensemble.

target_ProcOps_ensemble

Is the name of the ensemble.

keyword

Is the name of the SA z/OS value to be retrieved or set. Table 3 on page 363 identifies the SA z/OS values that can be read or changed by the ISQVARS command.

MSG

Indicates the SA z/OS value is to be displayed on the console as line-mode output.

variable

Is the name of the NetView variable whose value is to be set to that of the specified SA z/OS keyword. Local variable names are most commonly used when values are being read and written from within automation procedures. The names of the SA z/OS values are defined in Table 3 on page 363.

PUT

Specifies that you want to set the value of a SA z/OS keyword to either the current value of a specified NetView local variable or to a value specified in the command string.

PUTL

Specifies that you want to set the value of a SA z/OS keyword to either the current value of a specified NetView local variable or to a value specified in the command string. This keyword is the same as the PUT keyword. This is the default if you specify PUT.

PUTT

Specifies that you want to set the value of a SA z/OS keyword to either the current value of a specified NetView task variable or to a value specified in the command string.

PUTC

Specifies that you want to set the value of a SA z/OS keyword to either the current value of a specified NetView common variable or to a value specified in the command string.

TGT

Indicates that the variable following it is the name of the target system.

target_system_ProcOps_name

Is the name of the target system.

THW

Indicates that the variable following it is the name of the target hardware.

target_hardware_name

Is the name of the target hardware.

LUN

Indicates that the variable following it is the logical unit name.

luname

Is the logical unit name.

GRP

Indicates that the variable following is a group or subgroup name.

group_name

Is the name of the group of which the subgroup is a member.

subgroup_name

Is the name of the subgroup of which the target system is a member.

ENS

Indicates that the variable following it is the name of an ensemble.

target_ProcOps_ensemble

Is the name of the ensemble.

keyword

Is the name of the SA z/OS keyword whose value is to be retrieved or set. Table 3 on page 363 identifies the values that can be read or changed by the ISQVARS command.

'value'

Is the value to be assigned to the SA z/OS keyword. The straight single quotation marks are required.

variable

Is the name of the NetView variable which contains the value to which the SA z/OS keyword is to be set (PUT). Local variable names are most commonly used when SA z/OS values are being read and written from within automation procedures. The keywords used for SA z/OS values are defined in Table 3 on page 363.

LIST

Indicates the keyword following it identifies which list is being referenced. This keyword is valid from automation programming only.

TGTLIST

Refers to the list of defined target system names.

THWLIST

Refers to the list of defined target hardware names.

GRPLIST

Refers to the list of defined target group names.

SBGLIST

Refers to the list of defined target subgroup names.

ENSLIST

Refers to the list of defined target ensemble names.

variable

Is the name of the NetView variable whose value is to be set to that of the specified SA z/OS keyword. Local variable names are most commonly used when values are being read and written from within automation procedures. The names of the SA z/OS values are defined in Table 3 on page 363.

Defaults

None.

Usage

There are several ways to specify the desired information:

Target system name

```
get|put TGT target_system_ProcOps_name keyword...
```

Target hardware name

```
get|put THW target_hardware_name keyword...
```

Group name

```
get|put GRP group_name keyword...
```

Subgroup name

```
get|put GRP subgroup_name keyword...
```

LU name

```
get|put LUN luname keyword...
```

Ensemble name

```
get|put ENS ensemble_name keyword...
```

OCF name

```
get OCF ocf_name keyword...
```

Return a list

```
get LIST keyword...
```

You can display (on the NetView console) the value of a NetView variable by using the MSG keyword.

The ISQVARS command allows access to SA z/OS values. Values relating to target systems or ports require the name of the component (target system processor operations name or port name). The *keyword* is a processor operations-defined character string identifying the name of the processor operations value.

If issued from a program, a NetView variable is specified to contain the SA z/OS value.

- In the GET case, the specified NetView variable (*variable*) is set to the specified SA z/OS value (*keyword*).
- In the PUT case, the specified SA z/OS value is set to the current value of the specified NetView variable, or to the value specified within straight single quotation marks.

For example, assume target system names *system1*, *system2*, and *system3* have been defined. The following command:

```
ISQVARS GET LIST TGTLIST TARGETS
```

will place the following character string into the NetView local variable *targets*:
system1 system2 system3

Restrictions and Limitations

The following restrictions or limitations apply to this command:

- SA z/OS values are defined through the use of configuration panels during installation. Not all of these values can be changed by the ISQVARS command. Table 3 on page 363 identifies the SA z/OS values that can be changed by the ISQVARS command.
- Any changes you make to a SA z/OS value with the ISQVARS command remain in effect only for the current session of SA z/OS. Stopping and then starting SA z/OS resets the variables.
- GET LIST is valid only from within automation programming. You cannot issue GET LIST from an OST.
- GET LIST has the following length restrictions:
 - The NetView variable is restricted to 32767 bytes when a REXX command processor calls the ISQVARS command using the NetView *local* variable form (GET|GETL LIST). The ISQVARS command truncates the data to this length if necessary.
 - The NetView variable is restricted to 255 bytes when a REXX command processor, high-level language, or NetView command list calls the ISQVARS command using the NetView *task* variable form or NetView *common* variable form (GETT|GETC LIST). The ISQVARS command truncates the data to this length if necessary.

Caution: Use ISQVARS with care. Value changes are made immediately and may seriously affect the running of SA z/OS.

Return Codes

- | | |
|-----|---|
| 0 | Processed without errors. |
| 30 | The processor operations environment does not exist; the ISQVARS command was not processed. |
| 32 | The processor operations environment does not exist; the ISQVARS command was not processed. |
| 131 | You did not enter enough parameters. |
| 132 | The second argument you specified is unknown. |
| 133 | You specified a form of the command that is not valid with the <i>list</i> option. |
| 134 | <i>msg</i> and <i>list</i> options are mutually exclusive. |
| 135 | Neither get nor put were specified. |
| 136 | You used an uneven number of single straight quotation marks. |
| 137 | You used single straight quotation marks other than for the last argument. |
| 138 | Unable to write to the specified variable. |
| 139 | Unable to read the specified variable. |
| 141 | <i>msg</i> is a keyword and cannot be used as a variable name. |
| 142 | Variable answer could not contain all of the data, variable truncated to 255 bytes. |
| 143 | Variable answer could not contain all of the data, variable truncated to 32767 bytes. |
| 144 | Addressed port not initialized to a target system. |
| 145 | System console not defined for addressed target system. |
| 161 | You specified a target hardware name that is not valid. |
| 162 | You specified an unknown keyword. |
| 163 | You specified a target system name that is not valid. |
| 166 | You specified a keyword restricted to LPAR systems. |
| 167 | The specified port is not connected to an operator console. |
| 168 | The specified port is not connected to a system console. |
| 169 | IOCDs cannot be located, system is in LPAR mode. |

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- 170 The port definition and the target hardware definition in the SA z/OS configuration panels conflict with one another — the system console cannot be found.
- 171 The port definition and the target hardware definition in the SA z/OS configuration panels conflict with one another — the operator console cannot be found.
- 172 You specified a keyword that is not valid for the PUT function.
- 173 NetView CNMLOCK failure.
- 174 Internal locking sequence error.
- 175 Unable to obtain lock for PUT function.
- 176 You specified a PUT function with non-hexadecimal characters for a keyword field that can contain only hexadecimal characters; the command is ignored.
- 177 You specified a PUT function with non-integer characters for a keyword field that can contain only integer characters; the command is ignored.
- 178 Unknown operating system type for specified target system.
- 179 The specified keyword only valid if the addressed target system is running the MVS or VM operating systems.
- 182 You tried to write (PUT) values to a keyword field that are not valid values for that field.
- 183 You tried to write (PUT) a value that is too large for the keyword field to which it is being written.
- 184 You tried to write (PUT) a time offset value that is not valid.
- 185 You specified a parameter that cannot be used with the keyword you specified (the parameter values that can be specified are *list*, *tgt*, *ens* or *thw*).
- 186 It is not valid to change the internal variable you specified from its current status value to the status value you specified.
- 188 It indicates that the status of the target system or logical partition cannot be identified.
- 189 You specified a logical partition name that is not valid.
- 191 You specified a variable that requires a qualified name (such as *target.lpar*), but the qualified name you provided is not valid.
- 192 Logical partition name missing. You specified a target hardware name, but it was not followed by a logical partition name (such as *target.lpar*).
- 193 The memory requested is larger than the maximum that can be installed.
- 194 The system name entered is not a valid target system name, but it is a valid target hardware name.
- 195 You specified a target ensemble name that is not valid.

ISQVARS Keywords

SA z/OS provides keywords you can use to define your configuration and to determine the status of the elements in your configuration.

When you develop automation routines, you need to read these keyword values and perhaps write to them as well. For example, a routine may change the primary IPL address used by automation. Assuming the old address was 03FE, the following command changes the address to 0123:

```
ISQVARS PUT TGT SILVER pip1a '0123'
```

This section explains the keywords and the valid values each keyword accepts. It also identifies the SA z/OS messages that trigger SA z/OS automation to update the keyword values. You may want to use these status messages to begin your own automation routines.

Variable Value Lengths: In addition to using the correct form of ISQVARS for the variable type, you must be aware of the length limits of variables for your particular programming environment. This is a particular concern when you are retrieving long data strings such as lists of defined target systems. If you are programming in REXX, the variable value length limit is 32 KB. For other programming environments supported by NetView, the variable value length limit is 256 bytes.

Keyword Valid Values: This column shows the values of SA z/OS keywords. You can retrieve or change these values with the ISQVARS command if they are valid values.

In Table 3, the SA z/OS values are sorted according to the contents of the Name column, which identifies the keyword name of the value. The Access column indicates the type of access allowed for the keyword through the ISQVARS command. A keyword may have either read-only access, designated by *read* (GET), or read/write access, designated by *write* (PUT).

The ISQVARS column indicates which command keyword you should use after the GET or PUT keyword of the ISQVARS command to access the SA z/OS value.

SA z/OS Keywords and Status Messages: Table 3 lists the ISQVARS keywords sorted by keyword name.

Table 3. ISQVARS Keywords Sorted by Keyword Name

Keyword Description	Name	Access	ISQVARS	Valid Values and Comments
Last activated THWNAME	acthw	write	LUN	Allows the obtaining or setting of the last target hardware (THWNAME) to be activated for a specified LUNAME corresponding to a NetView Connection Path. The setting of the THWNAME needs to be done before the THWNAME can be obtained. If PUT specified, input must be equal to a valid THWNAME.
THW: active target system name	atsname	read	OCF or THW	When OCF, the name of the active target system that is associated with OCF. When THW, the name of the active target system that initialized on the specified target hardware; one name for XA, ESA, and 370, multiple names for LPAR-mode target hardware.
Backup focal point	backfp	read	THW	Backup focal point NetView domain ID.
Number of retry steps for calling the Hardware Interface	cmdretry	write	THW	Processor Operations commands will call the Hardware Interface; this call may fail at first, and, for some return codes Processor Operations tries to re-execute the call. This variable defines how often a retry should be executed. The value is set to 10 at Processor Operations start time (ISQSTART). Valid number range is 00 to 99. Note: This variable is only used for SNMP connections.

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Table 3. ISQVARS Keywords Sorted by Keyword Name (continued)

Keyword Description	Name	Access	ISQVARS	Valid Values and Comments
Number of retry steps when calling the Ensemble to execute a command or function	cmdretry	write	ENS	Processor Operations commands will call the Ensemble Interface; this call may fail in the first place, and for some return codes Processor Operations tries to re-execute the call. This variable defines how often a retry should be executed. Valid number range is 00 to 99.
Wait time between retry steps for the Hardware Interface	cmdwait	write	THW	Processor Operations commands will call the Hardware Interface; this call may fail at first, and, for some return codes Processor Operations tries to re-execute the call. This variable defines the wait time in seconds between 2 retries. The value is set to 01 at Processor Operations start time (ISQSTART). Valid number range is 00 to 99. Note: This variable is only used for SNMP connections.
Wait time between retry steps for calling the Ensemble Interface function	cmdwait	write	ENS	Processor Operations commands will call the Ensemble Interface; this call may fail in the first place, and for some return codes Processor Operations tries to re-execute the call. This variable defines the wait time in seconds between 2 retries. Valid number range is 1 to 600.
Target hardware connection type	ctype	read	THW	Type of processor operations SNMP to focal-point NetView.
IPL message: response to duplicate volume IEA212A IPL message	dvolar	write	TGT	Allowed values are 'Y' (required) or 'N' (not required).
Alternate Ensemble Hardware Management Console Address	ensaddr	read	ENS	IP address or hostname of the Ensemble HMC, defined as the alternate one.
Ensemble anchor address information	ensanch	read	ENS	Returns the address of shared memory used to store internal data model and connection information in hexadecimal characters.
Blade center list	ensbcl	read	THW	For target THW, a list of the discovered zBX blade centers is returned in the form: <i>bcname/serial</i> . Multiple <i>bcname/serial</i> pairs are separated by one or more blanks. This list is filled at ISQXIII time for the ensemble where the target member is a member. If the Ensemble Management Flag for the THW is set to NO or blank, or no Blade Center information could be discovered, a blank is returned.
Target ensemble connection status	enscs	write	ENS	Connection status to the ensemble HMC, used as the SPOC for the targeted ensemble. Valid values are: "ACTIVE, ENS SESSION PROBLEM" or blank. For read, you may also get the following values in addition to the values you can write: "CLOSED", "DORMANT", "SUSPENDED" and "CONNECTING".

Table 3. ISQVARS Keywords Sorted by Keyword Name (continued)

Keyword Description	Name	Access	ISQVARS	Valid Values and Comments
Status panel error message	ensemsg	write	ENS	Status panel error message line.
Ensemble list	enslist	read	GET LIST	List of the defined ensemble entry names in the current ProcOps configuration. The names are separated by one or more blanks.
Ensemble lock	enslockn	read	ENS	Name of operator who issued the lock; blank if not set.
Ensemble management flag	ensmflag	write	THW	This flag controls the management of the Ensemble Blade Extension (zBX) for the specified THW. Allowed values are 'YES', 'NO' or blank. If the value is 'YES', ProcOps will try to discover zBX resources like Blade Centers and Blades of the specified THW and allow commands to manage the discovered resources. If the value is 'NO' or blank, no resource discovery is done for the zBX resources of the specified THW at ISQXIII time and subsequent ProcOps cmds to manage the zBX resources for this THW will fail.
Ensemble entry name	ensname	read	THW	Returns the ensemble entry name if the specified THW is defined as a member node of an ensemble. If no ensemble membership is defined, a blank value is returned.
List ensemble node information	ensnodes	read	ENS	Returns a list of all Processors (THW) that are part of the ensemble. List entries that are separated by one or more blanks.
Primary ensemble hardware management console address	enspaddr	read	ENS	IP address or hostname of the Ensemble HMC, defined as the primary one.
Password to be used for automatic logon	enspw	read	ENS	Password for Ensemble HMC user id to be used for automatic logon. Note that the ISQVARS response message may not contain a password in readable format. If the ISQVARS calling application specifies a target variable for the PW query result, it is this application's responsibility to ensure that the security guidelines that may be in place, are met.
Real ensemble name	ensrname	write	ENS	Name of the zEnterprise Ensemble as defined in the zManager environment. This name may contain mixed case characters and can be up to 16 characters long. This variable is filled if the ISQXIII processing was successful.
Userid used for automatic logon to Ensemble HMC	ensuser	read	ENS	This userid automatically logs on at the Ensemble HMC at ISQXIII time and logs off again when an ISQXCLS is performed for the ensemble.
Group name list	grplist	read	GET LIST	A list of group names. The names are separated by one or more blanks.

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Table 3. ISQVARS Keywords Sorted by Keyword Name (continued)

Keyword Description	Name	Access	ISQVARS	Valid Values and Comments
Hardware management console address	hmcaddr	write	THW	IP address or hostname of a HMC where the THW is defined. Before changing the value of this variable, make sure that all target systems that share this address as their target hardware connection have been closed using the ISQXCLS command. The modified address value will only be used if no more connections are active from the ProcOps FP to the HMC. Issue command ISQXIII to restart the connections with the changed address.
Target hardware processor type	htype	read	TGT or THW	Mainframe is valid for SA z/OS 3.3 9672, 9674, 3000, 2003, eServer, or zSeries machine type nbr are valid for SA z/OS 3.2 or earlier.
LPAR: partition initial state	ilpars	read	TGT	ACTIVE or INACTIVE (LPAR target systems only).
IPL message: response to master catalog action IEA347A IPL message	iplmsgmc	write	TGT	75 characters (MVS only).
IPL message: response to IEA101A IPL message	iplmsgsp	write	TGT	75 characters (MVS only).
IPL message: VM IPL start message	iplmsgvm	write	TGT	75 characters (VM only).
Name of the IP stack for the SNMP connection	ipstack	write	THW	The name of the IP stack on the ProcOps FP system that is to be used for this SNMP connection. If defined, the ProcOps FP TCP/IP must be configured for multiple IP stacks. If blank, the default IP stack is used, regardless of the TCP/IP stack configuration. Note that with SNMP connect over a HMC, the IPSTACK definition of the first CPC that is connected is used for all other CPCs of this HMC connection, regardless of the other IPSTACK definitions that may exist for the other CPCs. The ipstack value used must be a valid z/OS jobname, representing the alternate IP stack. Only length checking is performed in ISQVARS.

Table 3. ISQVARS Keywords Sorted by Keyword Name (continued)

Keyword Description	Name	Access	ISQVARS	Valid Values and Comments
Name of the IP stack for the ensemble connection	ipstack	write	ENS	The name of the IP stack on the ProcOps FP system to be used for this ensemble connection. If defined, the ProcOps FP TCP/IP must be configured for multiple IP stacks. If blank, the default IP stack is used, regardless of the TCP/IP stack configuration. The ipstack value used must be a valid z/OS jobname, representing the alternate IP stack. Only length checking is performed in ISQVARS.
LPAR: partition name in use?	lparact	read	THW	Null (not logically partitioned) or name of the initialized target system that has the specified LPAR name, in the form <i>target_hardware_name.LPAR_name</i> . The variable contains the name of the initialized target system that has LPAR name or a null value if none of the target systems initialized to the target hardware have that LPAR name.
NetView connection path LUNAME	nplu	read	TGT or THW	SNA LUNAME for connection to an OCF-based processor support element.
NetView connection path NETID	npnetid	read	TGT or THW	SNA NETID for connection to OCF-based processor support element.
NetView connection path Target Hardware Names	npthw	read	LUN	Returns all defined target hardware names for an SNMP connection.
NetView connection status summary	nvcs	write	THW	Valid values are: ACTIVE, SNMP SESSION PROBLEM or blank. For read, you may also get CLOSED and DORMANT in addition to the values that you can write.
Secondary OCF name	ocf2nd	read	TGT	Returns the value of the secondary OCF name
Operator console lock	oclockn	read	TGT	The name of operator who issued the lock. Blank if it has not been set.
Operator console status	ocstat	read	TGT	ACTIVE, CLOSED, UNKNOWN, LINK ERROR, UNDEFINED, and CONSOLE LOST
Target operating system type	ostype	read	TGT	MVS, VM, LINUX, VSE, or CF
IPL: primary IPL address	pipla	write	TGT	Specifies the device address to be used for the IPL.
IPL: primary IPL CP address	piplcpua	write	TGT	Specifies the central processor address (no longer used).
IPL: primary IPL parameter	piplp	write	TGT	8 characters allowed.
LPAR: partition status	pnstatus	write	TGT	I (inactive) or A (active).
Path poll frequency for the target hardware connection	pollfreq	write	THW	Defines how often (in minutes) SA z/OS Processor Operations should poll the support element for its status. Valid values are 0 to 99 minutes. Specify 0 to deactivate polling.

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Table 3. ISQVARS Keywords Sorted by Keyword Name (continued)

Keyword Description	Name	Access	ISQVARS	Valid Values and Comments
Path poll frequency for the ensemble connection	pollfreq	write	ENS	Defines how often (in minutes) SA z/OS Processor Operations should poll the ensemble HMC connection. Valid values are 0 to 359 minutes. Specify 0 to deactivate polling.
Path poll retries for the target hardware connection	pollrtry	write	THW	Defines the number of attempts SA z/OS Processor Operations should make to poll the support element for its status before notifying the operator that the connection failed. Valid values are 0 to 99 retries.
Path poll retries for the ensemble connection	pollrtry	write	ENS	Defines the number of attempts SA z/OS Processor Operations should try and poll the HMC connection for status before notifying the operator that the connection failed. Valid values are 0 to 99 retries.
Primary focal point	primfp	read	THW	Primary focal-point NetView domainid.
Force an IPv4 connection to PSM server	psmipv4	write	THW	Allowed values are 'Y' or 'N'. If set to 'Y', a IPv4 connection will be used although IPv6 could be tried. This is useful in environments where the IPv6 support is not fully enabled or IPv6 related connection problems may exist. In IPv4 only environments the setting of the flag is ignored. Note: This flag is only tested if the PSM server is defined using the Hostname address form.
Subgroup name list	sbglst	read	GET LIST	A list of subgroup names. The names are separated by one or more blanks.
System console lock	sclockn	read	TGT	The name of operator who issued the lock. Blank if it has not been set.
System console status	scstat	read	TGT	SNMP SESSION PROBLEM, ACTIVE, CLOSED, DORMANT, and blank.
Support Element address	seaddr	write	THW	IP address or hostname of THW's Support Element Before changing the value of this variable, make sure that all target systems that share this address as their target hardware connection have been closed using the ISQXCLS command. The modified address value will only be used if no more connections are active from the ProcOps FP to the HMC. Issue command ISQXIII to restart the connections with the changed address.
Target hardware site info	site	write	THW	Location information, if provided with the processor for the target hardware.
Target system attention	tattn	write	TGT	Blank, DCCF, EXCEPTIONS, DISABLED WAIT, SERIOUS ALERT, ALERT, and ENV ALERT.
Authorization token	tauth	read	TGT or THW	Authorization token or SNMP community name of the processor support element or HMC.

Table 3. ISQVARS Keywords Sorted by Keyword Name (continued)

Keyword Description	Name	Access	ISQVARS	Valid Values and Comments
Target system description	tdesc	read	TGT	Target system description which corresponds to the System Short Description in System Automation's Customization Dialog.
Desired Image profile	tdipf	write	TGT	Desired Image profile name for the specified target system name.
Desired Load profile	tdlpf	write	TGT	Desired Load profile name for the specified target system name.
Desired Reset profile	tdrpf	write	TGT	Desired Reset profile name for the specified target hardware name.
Status Panel Error Message	temsg	write	TGT or THW	Status panel error message line.
Target System Group name	tgrp	read	TGT or GRP	Target system names within a group and subgroups associated with this group or the group names for a target system.
Target system name list	tglist	read	GET LIST	A list of target system names. The names are separated by one or more blanks.
Target hardware name list	thwlist	read	GET LIST	A list of target hardware names. The names are separated by one or more blanks.
Target hardware name	thwname	read	TGT	Name of target hardware definition associated with the specified target system.
Target hardware status	thwstat	write	TGT	Blank, LPAR DEFINITION PROBLEM, TARGET HARDWARE PROBLEM, POWERED OFF, POWER-ON RESET REQUIRED, SERVICE, POWERSAVE, SERVICE REQUIRED, DEGRADED, UNKNOWN or OK.
Target time offset	timeoff	write	TGT	A number in the range of -23 through +23 the TGT time deviates from FP.
Status Panel Info Message	timsg	write	TGT or THW	Status panel informational message line.
Target system initialized?	tinit	read	TGT	YES or NO
LPAR: partition name	tlpar	read	TGT	Null or LPAR name for the specified target system if the target system is not in an LPAR. Use the TGT form of the command.
Target system mode	tmode	read	TGT	ESA, LINUX, or CF.
Target system console status summary	toca	read	TGT	Blank.
Target system console status summary	tocb	read	TGT	Blank.
Target system console status summary	tsca	read	TGT	Blank. SNMP SESSION PROBLEM and ACTIVE
Target system console status summary	tscb	read	TGT	Blank.

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Table 3. ISQVARS Keywords Sorted by Keyword Name (continued)

Keyword Description	Name	Access	ISQVARS	Valid Values and Comments
Target system name	tsname	read	THW or OCF	When THW, names of all defined target systems on specified target hardware name, whether initialized or not (one name for XA, ESA*, and 370, multiple names for LPAR-mode target hardware). When OCF, the target system name associated with a secondary OCF name.
Target system status	tstat	write	TGT	UNDECIDABLE, UNKNOWN, INITIALIZED, IPL COMPLETE, LOAD FAILED, IPL FAILED, CLOSED, WAITING FOR IEA101A MESSAGE, WAITING FOR IEA347A MESSAGE, WAITING FOR VM START MESSAGE, STAGE-1 ACTIVATE COMPLETE, NOT OPERATING, and NOT ACTIVE.
Target System SubGroup name	tsubgrp	read	TGT or GRP	Target system names within a subgroup or the subgroup names for a target system.
Group processor operations-enabled indicator	vgrp	read	GET	Y or N.
Subgroup processor operations-enabled indicator	vsubgrp	read	GET	Y or N.

ISQVARS Resource Type: The ISQVARS command syntax also includes a resource type. Use the correct resource type (TGT, THW, ENS, LIST, PUT LUN, or PUT GRP) for the requested keyword.

Automation from Status Messages: When SA z/OS processor operations detects a status change for any element of your SA z/OS configuration, it updates the appropriate status table variables and may generate a message or an alert. You can create a routine and a NetView automation table entry to automate the operator response to these status change messages. For the recommended operator response to each of these messages, see *IBM Tivoli System Automation for z/OS Messages and Codes*.

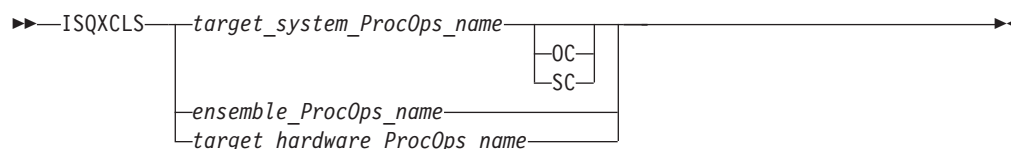
ISQXCLS

Purpose

End communication with a target system (console) or ensemble HMC and set the target system or ensemble connection status to CLOSED. For a target system, the communication with the SE/HMC of the target system's processor is also terminated if this was the last INITIALIZED target system on that processor.

When closing target hardware, ISQXCLS closes the console connections to all target systems defined, running on the specified hardware. This implicitly terminates the communication with the target hardware processor's SE/HMC.

Syntax



Requirements

The requirements for this command to complete successfully are:

- Processor operations must be active.
- The *target_system_ProcOps_name* syntax requires the addressed target system to be initialized.
- No console connection to be closed can be locked by another task.
- No ensemble connection to be closed can be locked by another task.

Parameters

target_system_ProcOps_name

Is the name of the target system to be closed.

OC Specifies the active operator console connection.

SC Specifies the active path for an SNMP connection.

ensemble_ProcOps_name

Is the name of ensemble to be closed.

target_hardware_ProcOps_name

Is the name of the target hardware. This is a required parameter, and must be a valid target hardware name.

Defaults

None.

Usage

You can close a target system, target ensemble, or target hardware to end the communication between the target entity and focal point over the processor operations path.

Closing communication for a Target System

Issue the following to close a target system:

```
ISQXCLS target_system_ProcOps_name
```

Closing a target system sets its status to CLOSED.

Closing communication for an ensemble HMC

Issue the following to close an ensemble:

```
ISQXCLS ensemble_ProcOps_name
```

Closing an ensemble connection sets its status to CLOSED.

Closing communication for a Target Hardware

Issue the following to close console communication to all target systems on a target hardware and finally end communication between the target hardware processor's SE/HMC and ProcOps:

ISQXCLS

ISQXCLS target_hardware_ProcOps_name

Using this command form allows you to close ProcOps console communication with all target systems running on a defined target hardware in one step. The individual ISQXCLS commands for the target systems are scheduled to run on the ProcOps control task of the target hardware.

Restrictions and Limitations

The following restrictions or limitations apply to this command:

- The close of a target system does not end the processing of that target system. Use the common command DEACTIVATE to perform this task.
- Do not close a system console on a logically partitioned system if any logical partition on that target hardware is active.

Return Codes

- 0 The ISQXCLS command completed successfully, no errors occurred.
- 8 You used syntax that was not valid.
- 12 A NetView or processor operations service problem occurred or the THW connection path status is SUSPENDED.
- 16 A severe error occurred.
- 32 The processor operations environment does not exist; the ISQXCLS command was not processed.

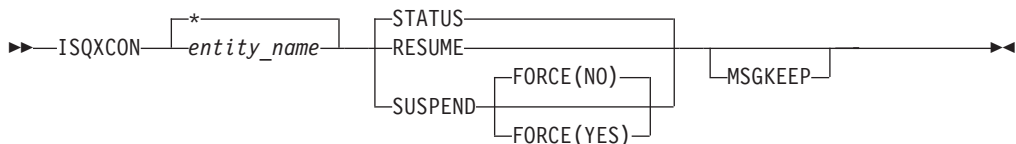
ISQXCON

Purpose

This command is used to manage Processor operations connections during events such as the planned maintenance of processor Support Elements (SEs) or Hardware Management Consoles (HMCs) (that are used by Processor operations). In order to prevent error retries and recovery actions by Processor operations, the SUSPENDED status for a target hardware connection and its associated target systems can be set while the SEs/HMCs are not available. After maintenance, a RESUME function allows normal Processor operations connection processing to continue.

In addition, the STATUS function provides a consolidated summary of important connection-related information in the multi-line message ISQ350I. This is an alternative to the ISQXDST status dialog panels, which provide similar information, available in different panel views.

Syntax



Requirements

The requirements for this command to complete successfully are:

- Processor operations must be active.

- The SUSPEND/RESUME functions of this command make use of the NetView DSISVRT VSAM DB to save status variables. If your NetView is not customized to use this facility, the ISQXCON SUSPEND/RESUME functions cannot be used, only the STATUS function will work.

Parameters

entity_name

Is the name of a configured target hardware (processor) in your active Processor operations policy.

or

Is the name of a configured zEnterprise ensemble (zBX) in your active Processor operations policy.

You can use the '*' wildcard as the last character in your *thwname* specification to let ISQXCON select all target hardware names, which match the partial string preceding the '*' for processing.

Using only the '*' wildcard character as *entity_name* selects all configured target hardware and ensemble names.

STATUS

Generates an ISQ350I multi-line message status report for the selected target entity name(s).

SUSPEND

For the selected entity name(s), the active connections are first CLOSED to end communication. Then the connection path status is changed to SUSPENDED. This status is saved in the DSISVRT to keep it available across NetView recycles. For target hardware, each configured target system of that target hardware is also set to SUSPENDED. In a SUSPENDED state, Processor operations commands that use this connection will not work. Use the ISQXCON RESUME function to re-enable the entity name connection again for normal Processor operations.

RESUME

For the selected entity name(s), the connection path status is first checked to see if it is currently SUSPENDED. If so, it is set to DORMANT. For target hardware connections the configured target system status is set to CLOSED. This enables normal Processor operations for them. In order to re-establish communication to an entity name, use the ISQXIII command.

FORCE (opt)

The parameter of the SUSPEND function request.

The supported options are YES | NO. With Force Option NO, the SUSPEND request is only processed if no active target system sessions exist to the target hardware over the connection path to be suspended. If Force Option YES is specified, existing target sessions are closed before the connection path is suspended.

For ensembles, force option YES must be specified to suspend an active connection.

MSGKEEP

The Message Output option. If specified, the message output of the command is written to a PIPE KEEP with the name ISQXCON. For compatibility reasons with other Processor operations commands, the successful completion response ISQ017I is not written to the message KEEP. Use a PIPE with KEEP ISQXCON

ISQXCON

as its first stage to analyse the message output. Each time the command ISQXCON is executed with the MSGKEEP option, the PIPE KEEP is re-initialized. If the MSGKEEP option is not specified, all ISQXCON messages are written to the NetView console.

Defaults

If no parameters are specified for ISQXCON, this will result in a STATUS request for all configured entity name connections. The resulting messages are written to the NetView console.

If the SUSPEND function is used, the FORCE(NO) option is in effect to prevent an unintended close of active target system or ensemble sessions.

Please note that for SUSPENDED connections, no Processor operations session polling is limited.

Usage

When using ISQXCON to manage a single or multiple entity name connections, it is recommended to use the ISQXCON STATUS function first, before suspending or resuming a connection.

Please note that for SUSPENDED connections, no Processor operations session polling is done.

Restrictions and Limitations

The SUSPEND and the RESUME functions of ISQXCON currently accept only the SNMP connection protocol for target hardware names and the HTTP connection protocol for ensemble names. TCP/IP connections to PSMs are not supported.

If multiple target hardware connections are processed in a request, the ISQXCON return code is always 0.

Return Codes

- 0** The command completed successfully. If multiple entity name connections are processed, but one or more connections have set return codes 6,8,10 and 16, use the responded messages ISQ357I - ISQ359I to determine which of the connections failed and the reason.
- 2** Function/option parameter invalid or missing. The ISQXCON command is not executed.
- 4** The entity name parameter is not specified or could not be resolved. The ISQXCON command is not executed.
- 6** Session is active, FORCE (YES) option is required.
- 8** Connection protocol is not supported.
- 10** Status is not SUSPENDED.
- 16** Suspend/Resume HW command failed.
- 32** The Processor operations environment does not exist; the ISQXCON command was not processed.

ISQXDRL

Purpose

The ISQXDRL command displays the outstanding MVS requests from a target system; the command is rejected for operating systems other than MVS. ISQXDRL

issues the following MVS command to the active operator console port of the target system, and sends the response to the requesting NetView operator:

```
D R,L,CN=(ALL)
```

Syntax

```
►►—ISQXDRL—target_system_ProcOps_name—◄◄
```

Requirements

The requirements for this command to complete successfully are:

- Processor operations must be active.
- The addressed target system must have a status of INITIALIZED.
- The addressed target system must be running MVS.
- The operator console must not be locked by another task.
- You must be on the interested operators list for the operator console to see the reply messages.

Parameters

target_system_ProcOps_name

Is the name of the target system. It is a required parameter, and must be a valid target system name.

Defaults

None.

Usage

The ISQXDRL command provides a convenient alternative to using the passthrough facility to issue the MVS D R,L command.

Each line of the MVS response to the D R,L command is displayed as a single-line message. Processor operations does not trap the responses. There is no prefix to the message lines and the last line is followed by a line of dashes. Other messages to the operator may be interspersed with these messages, especially for the last line of dashes. The line of dashes may be issued some time after the last real line of output from the MVS command.

Restrictions and Limitations

The ISQXDRL command works only when issued to systems running MVS.

Return Codes

- 0 The ISQXDRL command completed successfully.
- 4 You used syntax that is not valid, specified a target system that is not running MVS, or specified a target system that is not initialized.
- 8 A problem occurred during the processing of the ISQSEND command or the console is locked by another task.
- 32 The processor operations environment does not exist; the ISQXDRL command was not processed.

ISQXDST

Purpose

The ISQXDST command displays status panels, which provide the following information:

- Status summary (all target systems)
- Status summary (all blades of a zBX)
- Individual ensemble connection status
- Individual target hardware status
- Individual target hardware connection status
- Individual target system status
- Interested operator list

Syntax

```

  ┌───┬──────────────────────────────────────────────────────────────────────────────────┬───┐
  │ ISQXDST │ ┌──────────────────────────────────────────────────────────────────────────┐ │
  │ ISQXDSTI │ │ target_entity_name │ │
  └───┴──────────────────────────────────────────────────────────────────────────────────┴───┘

```

Requirements

Processor operations must be active.

Parameters

target_entity_name

This can be:

target_system_name

Is the name of a valid target system for which you want to see individual target system status. If omitted, the summary status of all target systems is displayed.

target_hardware_name

Is the name of a valid target hardware for which you want to see individual hardware information in ProcOps. If the hardware has a zBX attached, you can enter the zBX blade view from here.

ensemble_name

Is the name of a valid zEnterprise ensemble for which you want to see individual information and connection status.

Defaults

If your ProcOps configuration has target systems and the associated target hardware (processors) defined, issuing the ISQXDST command without a target entity parameter will show the overall status of all target systems.

If your ProcOps configuration has only ensemble definitions, but no target systems and no associated target hardware definitions, issuing the ISQXDST command without a target entity will show the ensemble selection panel.

While in the ISQXDST status sytem, the NetView OVERRIDE=NO option is in effect, which suppresses immediate messages sent to your NCCF screen, so the panel navigation is not interrupted. Note, that if you perform the NetView ROLL function, the DISPLAY=NO option is temporarily changed to DISPLAY=DEFAULT.

If you invoke the ProcOps status system using the ISQXDSTI command, the display option currently in effect for you, is not changed. As a result messages directed to your operator ID may interrupt the panel navigation flow.

Usage

Issue the ISQXDST command from an operator console to access the processor operations status facility. If you issue the command to access the status summary panel, you will be able to use the status facility to view multiple panels for multiple ProcOps entities without exiting the status facility. Refer to *IBM Tivoli System Automation for z/OS Defining Automation Policy* and *IBM Tivoli System Automation for z/OS User's Guide* for more information about how to set up and use the status facility.

To display the Status Summary, issue:

```
ISQXDST
```

This will invoke the target system summary.

To display the status of a specific target entity, issue:

```
ISQXDST target_entity_name
```

If you enter the status facility by issuing the ISQXDST command with no other parameters, all of the status panels give you access to the other status panels that are supported by the status facility, including the zBX blade and ensemble views. Some of these status panels cannot be directly accessed by command. Refer to *IBM Tivoli System Automation for z/OS User's Guide* for further information about how to use the status panels.

To display the status of a specific target entity, issue:

```
ISQXDST ensemble_name
```

From the displayed ensemble status screen, you can navigate to the views of the other ensembles you may have configured.

Restrictions and Limitations

The following restrictions or limitations apply to this command:

- Do not issue this command with ISQEXEC, ISQROUTE or from an automation procedure.
- You can issue the ISQXDST command only from an operator console.

Return Codes

Return codes are not applicable because the ISQXDST command cannot be issued from a program.

Examples

Figure 151 on page 378 shows an example of the ProcOps Ensemble view panel ISQEENS that is displayed when you enter the command ISQXCMD and you have ensembles defined in your ProcOps configuration, but no target systems.

Figure 154 on page 386 shows an example of the ProcOps Ensemble view panel ISQEENS that is displayed when you enter the command ISQXDST and you have ensembles defined in your ProcOps configuration, but no target systems.

```

ISQESUM          SA z/OS Proc-Ops Target Status Summary   Updates: Dynamic
Control file in use: ACF

I isqxiii C isqxcls O isqxopt  A,B view netlogs E events   Debug Mode: OFF
S Force a THW path suspend    R Resume a suspended THW path
Cmd   Target System  Status   Focal Points - Primary: IPSNO Backup: IPSFL

      BOEVMSPA        CLOSED
      BOEVMTSA (*)    INITIALIZED
      BOEVMT1         CLOSED
      BOEVM9 (*)      CLOSED
      KEY1            CLOSED
      KEY2            CLOSED
      KEY3            LOAD FAILED
      KEY4            CLOSED
      KEY6CFF         CLOSED
      KEY6CF1         CLOSED
      KEY7            IPL COMPLETE
      LNXT0           INITIALIZED
      LNXT1           NOT ACTIVE
      TRX1            SUSPENDED

Enter=Static  PF1=Help  PF3=Exit  PF4=Tgt Sys Summary  PF5=Debug On/Off
PF6=Roll     PF7=Up    PF8=Down  PF9=Tgt HW Summary  PF11=PATH Details  PF12=Quit

```

Figure 151. ISQXDST Status Summary Panel

The following values can be displayed on the ISQXDST panel to describe the status of target systems:

CLOSED

(Green) The target system has been closed.

DCCF (Red) A target system attention status indicating that a DCCF message has been detected.

DISABLED WAIT

(Red) A target system attention status indicating that a disabled wait condition has been detected.

INITIALIZED

(Green) The target system has been successfully initialized.

IPL COMPLETE

(Green, yellow, or red) The meaning of this status depends on the operating system:

- For a TPF or VSE system, the Load or Load Clear process started.
- For a z/OS system, processor operations automation responded to the IEA347A message.
- For a VM system, processor operations automation responded to the VM start message.

If this condition is displayed in red, it means that something is wrong (such as processor operations having lost its communication link with the target system) rather than that the IPL process failed. This condition reverts to green when the problem is corrected.

IPL FAILED

(Red) z/OS only. Error messages were generated during the initial program load process.

LOAD FAILED

(Red) The Load or Load Clear operation did not complete successfully.

NOT ACTIVE

(Yellow) Activate response was received from the target and did not indicate that stage 1 activation was completed. If the target is running in an LPAR, the logical partition found is not activated.

NOT OPERATING

(Red) Target hardware indicates a not operating condition for the image. No CP status is available for problem determination.

POWER-ON RESET REQUIRED

(Red) A POWER-ON RESET of the target system hardware is required before a BCP load.

POWERED OFF

(Red) The target hardware is physically powered off.

POWERSAVE

(Red) SNMP Path Only: Power[®] utility for the target hardware failed. Target hardware put in power save state.

SERIOUS ALERT

(Red) SNMP Path Only: Target system attention status indicating a serious alert has been detected.

SERVICE

(Red) SNMP Path Only: Service status enabled for the target hardware.

SNMP SESSION PROBLEM

(Red) SNMP Path Only: An attempt to use the SNMP Connection returned an error.

STAGE-1 ACTIVATE COMPLETE

(Yellow) The support element power-on reset has occurred but the load is not yet complete.

SUSPENDED

(Yellow) The connection path to the target hardware of the target system has been suspended. All defined target systems using the suspended connection path cannot be operated with Proc-Ops until the connection path is resumed again. For suspend/resume operation you can use the command characters of the ISQXDST panel ISQESUM or the ISQXCON command.

UNDECIDABLE

(Yellow) SNMP Path Only: The target hardware is not communicating with the support element or the support element is not communicating with the HMC.

UNKNOWN

(Green) No attempt has been made to initialize or activate this target system. This status can be set only by a cold start of processor operations.

WAITING FOR IEA101A START MESSAGE

(Yellow or red) MVS only: ACTIVATE, ISQXIPL, or ISQXLOD command processing has completed for an MVS system and processor operations is waiting for the IEA101A message on the operator console. If this condition is displayed in red, it means that something is wrong (such as processor operations having lost its communication link with the target system) rather than that processor operations has been waiting for the message too long.

WAITING FOR IEA347A MESSAGE

(Yellow or red) MVS only: processor operations has replied to the IEA101A message and is waiting for the IEA347A message on the operator console.

If this condition is displayed in red, it means that something is wrong (such as processor operations lost its communication link with the target system) rather than that processor operations has been waiting for the message too long.

WAITING FOR VM START MESSAGE

(Yellow or red) VM only: processor operations is waiting for the first VM IPL message on the operator console. ISQXLOD, ISQXIPL, or ACTIVATE command processing has completed for a VM system and processor operations is waiting for the first VM IPL message on the operator console.

If this condition is displayed in red, it means that something is wrong (such as processor operations having lost its communication link with the target system) rather than that processor operations has been waiting for the message too long.

If you issue ISQXDST with the name of a target system, the Target System Summary panel is displayed (Figure 152).

```
ISQETARG          SA z/OS Proc-Ops Target System Summary  Updates: Dynamic

Target System
  Name           : KEY3
  Description    :
  O.S.          : MVS
  Load Profile   :
  Status        : UNKNOWN
  Attention     :

Target Hardware
  Name           : FREEWAY      Mode : LPAR
  Attention     :
  Path Status   : DORMANT

Target Hardware LPAR
  Name           : KEY3        Mode : ESA
  Image Profile : KEY3

Last Significant Message:

Enter=Static PF1=Help PF3=Exit PF6=Roll PF7=Oper List
PF9=Target Hardware PF11=Path Detail PF12=Quit
```

Figure 152. Target System Summary Panel

This panel has the following PF keys:

- The PF7 key displays the Processor Operations Interested Operator List panel (the one accessed with the ISQXMON command).
- The PF9 key displays the Target Hardware Summary panel (Figure 153 on page 385). This panel provides detailed status information about the target hardware that the target system is defined on.
- The PF11 key displays the connection Path Detail panel. This panel provides detailed status information about a specific connection path.

The Target System Summary panel shows the following specific information:

Target System Name

The name assigned in the customization dialog to this target system.

Target System Description

Short textual description of this target system, defined in the customization dialog.

Status (Updated dynamically) The current value of the processor operations internal variable *tstat*.

You can change this status from INITIALIZED, LOAD FAILED, or IPL FAILED to IPL COMPLETE by issuing the ISQVARS command to change the internal variable *tstat*. (For more information about specifying *tstat* as a keyword on the ISQVARS command, see the description of the ISQVARS command in *IBM Tivoli System Automation for z/OS Operator's Commands*). You would want to do this when you perform a cold start of processor operations while a target system is already running.

After the cold start, you issue the ISQXIII command to the target system that is already running so that its status becomes INITIALIZED, then you change the value of *tstat* to IPL COMPLETE.

You may also want to change the status manually if the cause of the LOAD FAILED status was corrected by using the pass-through facility of processor operations, or if it was corrected locally at the site of the target system.

You can also issue the ISQVARS command to change the internal variable *tstat* from IPL COMPLETE to IPL FAILED. Processor operations sets a status of IPL COMPLETE when it initiates a load of a target system and receives an operating system specific message that indicates that the operating system received a level where it is ready to work. However, neither of these operating systems provide a sufficient indication that the load process failed, preventing processor operations from changing the target system status appropriately.

Valid values for this status field are as follows:

CLOSED

(Green) The target system has been closed.

INITIALIZED

(Green) The target system has been successfully initialized.

IPL COMPLETE

(Green, yellow, or red) For a TPF or VSE system, the Load or Load Clear process started. For an z/OS system, processor operations automation responded to the IEA347A message. For a VM system, processor operations automation responded to the VM start message. If this condition is displayed in red, this is done to get your attention to inform you that something is wrong (such as processor operations lost its communication link with the target system) rather than that the IPL process failed. This condition will revert to being displayed in green when the problem is corrected.

IPL FAILED

(Red) z/OS only: Error messages were generated during the initial program load process.

LOAD FAILED

(Red) The Load or Load Clear operation did not complete successfully.

NOT ACTIVE

(Yellow) Activate response was received from the target and did not indicate that stage-1 activation was complete. If the target is running in an LPAR, the logical partition is found not activated.

NOT OPERATING

(Red) Target hardware indicates a not operating condition for the image. No CP status is available for problem determination.

STAGE-1 ACTIVATE COMPLETE

(Yellow) The Support Element power-on reset has occurred but the load is not yet complete.

UNDECIDABLE

(Yellow) SNMP Path Only: The target hardware is not communicating with the support element or the support element is not communicating with the HMC.

UNKNOWN

(Green) No attempt has been made to initialize or activate this target system. This status can be set only by a cold start of processor operations.

WAITING FOR IEA101A START MESSAGE

(Yellow or red) z/OS only: ACTIVATE, ISQXIPL, or ISQXLOD command processing has completed for an z/OS system and processor operations is waiting for the IEA101A message on the operator console. If this condition is displayed in red, it is to get your attention to inform you that something is wrong (such as processor operations lost its communication link with the target system) rather than that processor operations has been waiting for the message too long.

WAITING FOR IEA347A MESSAGE

(Yellow or red) z/OS only: processor operations has replied to the IEA101A message and is waiting for the IEA347A message on the operator console. If this condition is displayed in red, this is done to get your attention to inform you that something is wrong (such as processor operations lost its communication link with the target system) rather than that processor operations has been waiting for the message too long.

WAITING FOR VM START MESSAGE

(Yellow or red) VM only: processor operations is waiting for the first VM IPL message on the Support Element CI. The ACTIVATE or LOAD command processing has completed for a VM system and processor operations is waiting for the first VM IPL message. If this condition is displayed in red, it is to get your attention to inform you that something is wrong (such as processor operations lost its communication link with the target system) rather than that processor operations has been waiting for the message too long.

Target Hardware

(Updated dynamically) The current value of the processor operations internal variable *thwstat*. Valid values are as follows:

blank (Not highlighted) No problem has been reported for the target hardware. You can also use the ISQVARS command to change *thwstat* to blanks after correcting an error condition reflected in this field.

DEGRADED

(Yellow) SNMP Path Only: Target hardware runs with degraded performance (specific hardware types only).

POWERED OFF

(Red) The CPC is physically powered off.

POWERSAVE

(Red) SNMP Path Only: Power utility for the target hardware failed. Target hardware put in power save state.

SERVICE

(Red) SNMP Path Only: Service status enabled for the target hardware.

SERVICE REQUIRED

(Yellow) SNMP Path Only: The next disruption in the target hardware will result in degraded capacity or will fail.

TARGET HARDWARE PROBLEM

(Red) The Support Element of the processor (CPC) reported a target hardware problem.

Attention

(Updated dynamically) The current value of the processor operations internal variable *tattn*. Valid values are as follows:

blank (Not highlighted) The target system has not encountered any of the following conditions. You can also use the ISQVARS command to change *tattn* to blanks after correcting an error condition reflected in this field.

ALERT

(Yellow) SNMP Path Only: Target system attention status indicating an alert has been detected.

DCCF (Red) z/OS only: Processor operations has detected a DCCF message.

DISABLED WAIT

(Red) Processor operations has detected a Disabled Wait condition.

ENV ALERT

(Yellow) SNMP Path Only: Target system attention status indicating an environment alert has been detected.

SERIOUS ALERT

(Red) SNMP Path Only: Target system attention status indicating a serious alert has been detected.

Target Hardware

The name of the target hardware that this target system is running on.

O.S. MVS, VM, VSE, LINUX, or CF

Mode LPAR, ESA, 370

LPAR name

The name of the logical partition that this target system is running in.

Connection Path Information

Identifies the connection type and current status of the connection between the processor operations focal point and the CPC support element or HMC.

Type NVC (SNA-based NetView connection), SNMP (IP-based Simple Network Management Protocol connection).

Status (Updated dynamically) The current value of the processor operations internal variable *scstat*.

blank (Not highlighted) Either the target system has not encountered any of the following conditions, or the condition has been resolved.

PATH PROBLEM

(Red) The focal point system cannot communicate with the Support Element on the NetView connection. View the Path Detail panel for more information (see Figure 157 on page 394).

ACTIVE

(Green) The path is ready for communications.

SNMP SESSION BUSY

(Red) Processor operations cannot presently communicate with the target Support Element, the problem appears to be recoverable.

SNMP SESSION PROBLEM

(Red) Processor operations cannot communicate with the target Support Element.

SUSPENDED

(Red) The connection path to the target hardware has been suspended. No ISQXIII command that is using this connection path will work until it is resumed again. For suspend/resume operation you can use the command characters of ISQXDST panel ISQESUM or the ISQXCON command. Note that this status is propagated to all affected target systems.

Lock Holder

(Updated dynamically) The current NetView operator that owns the lock for the target system and the connection path. Locks can be set using the ISQXLOC and ISQXUNL commands. Locks grant the exclusive use of the connection path of a target hardware and its associated target systems.

Last Significant Message

(Updated dynamically) The text of the last command response or report received from the target system. The date and time of the message is also displayed. The text of the message is truncated to 79 characters, including the message identifier but not including the time stamp. The message is not removed from the panel when the condition that generated the message is resolved.

Displaying Processor Resource Information (SNMP Connections)

To view target hardware summary of a processor, select PF9 from the Target System Summary panel (Figure 152 on page 380) or from the Status Summary panel (Figure 151 on page 378) on a NetView console.

```

ISQEHARP          SA z/OS Proc-Ops THW Summary          Updates: Dynamic
Target Hardware Name: R35      Type: 9672      Mode: LPAR
zBX Extensions:    YES        Model: M49      Serial Number: 02-0089F25
Ensemble Membership: R35ZBX   zBX Management: YES
THW Description:   Development/Test Mainframe
THW Site Information: LAB-BB, Block_19
-----Initialized Target Systems-----
TRX1      TRX2      TRX3      TRX4      TRX5      TRX6
SYSA      SYSB      SYSC      SYSD      SYSE      SYSF
KEY1      KEY2      KEY3      KEY4      KEY5      KEY6
KEYA      KEYB      KEYC      KEYD      KEYE      KEYF
AOC1      AOC2      AOC3      AOC4      AOC5      AOC6
AOC7      AOC8      AOC9      AOC10     AOC11     AOC12
TSCF1     TSCF2     TSCF3     TSCF4     TSCF5     TSCF6
TSCF7     TSCF8     TSCF9     TSCF10    TSCF11    TSCF12
BUMU      LAND      YDRAG     THBR      EMTI      HIRE09
WAS65     GFG11     GUNN10    HWRE34    SANDBX1   ALEXIRL
Communication Path Error Status:

Last Significant Message:

Enter=Static PF1=Help PF2=zBXcntl PF3=Exit PF6=Roll PF7=Oper List PF11=PATH DtlS
PF12=Quit

```

Figure 153. Target Hardware Summary Panel for OCF-Based Processors

This panel has the following PF keys:

- PF2 displays the zBX Base Operation Blade View panel ISQEZBX (see Figure 156 on page 391). This function is only available if the target hardware has a zEnterprise blade extension attached and if an ensemble definition exists, with this target hardware selected as a member.
- PF7 displays the Processor Operations Interested Operator List panel (accessed with the ISQXMON command).
- PF11 displays the Path Detail panel (Figure 157 on page 394). This panel provides detailed status information about a specific NetView path. First place the cursor on the line with the name of the path that you want more information about, and then press PF11.

The Target Hardware Summary panels show the following specific information:

Ensemble Membership

Ensemble entry name or n/a. Shows the name of the ensemble, this target hardware is assigned as a member.

Target Hardware Name

The name assigned to this definition of target hardware in the customization dialog.

Target Hardware Type

Indicates the machine type of a System z or 390-CMOS processor.

Target Hardware Mode

LPAR, ESA

Target Hardware Description

Short textual description of this definition of target hardware, defined in the customization dialog.

Initialized Target Systems

(updated dynamically) List of target systems currently initialized to this target hardware. For non-LPAR-mode target hardware, this field lists one

or none. For LPAR-mode target hardware, this field can list multiple target systems. This field is blank if no target systems are initialized to this target hardware.

Communication Path Error Status

(updated dynamically) Status information in case of a communication problem between the NetView focal point and the target hardware.

Valid values for the status of the NetView connection path are:

SNMP SESSION BUSY

(red) Processor operations cannot presently communicate with the target support element, the problem appears recoverable.

SNMP SESSION PROBLEM

(red) Processor operations cannot communicate with the target support element.

Last Significant Message

The last significant message or alert associated with this target hardware.

THW Site Information

THW location information for this target hardware as defined in the Policy Database.

ZBX Extensions

YES or NO. Indicates if the target hardware has a blade extension unit attached.

ZBX Management

YES, NO, n/a. If the target hardware has a zBX attached and is also defined as an ensemble member, the value is YES. If the target hardware has no zBX attached, the value is n/a. If a zBX is attached, but no ensemble membership is defined, the value is NO.

How to Monitor and Control Ensemble connections and zBX resources

If you have defined ensemble connections together with target hardware that has a zBX unit attached, you can use the ProcOps ISQXDST status system to monitor and control the following zEnterprise blade extension resources: blade centers, blades, the zBX unit, and the connection to the ensemble HMC, which is the communication end point for the ProcOps.

For a standard ProcOps configuration, with target systems and a ensemble connection to a target hardware with a zBX attachment, use the command form: ISQXDST <ensemble_name> to display the ensemble main selection panel ISQEENS.

For a ProcOps configuration with no target system definitions, the ISQXDST command entered without a parameter is sufficient to display the ensemble main selection panel ISQEENS.

Figure 154. Ensemble Main View


```

ISQEENS          SA z/OS - Proc-Ops  Ensemble View      Updates: Dynamic
Ensemble(s) 001 to 003 of 003: GRY2ZBX  HYDRA      R35ZBX      .....
Description   : Remote test Ensemble
Real EnsName  : Hydra
Conn Status   : ACTIVE
HMC Login User : TADDM03
Poll Frequency : 30
Poll Retries  : 3
Connection Type : HTTP
IP Stack      : TCPIP7
Lock Holder   :
Cmd Retries   : 3
Cmd Wait      : 15

(P)primary, (A)lternate HMC:
P: ensemble.hmc.ibm.com
A: ensemble.hmca.ibm.com

THW Nodes:      R91:IBM390PS.R91      R93:IBM390PS.R93
.....
.....
.....

Last Significant Message:

Enter=Static   PF1=Help   PF2=zBXCntl  PF3=Exit    PF4=ISQXIII  PF5=ISQXCLS
PF6=Roll       PF10=Previous PF11=Next    PF12=Quit

```

The panel has the following PF keys:

- The PF1 key displays the ISQEENS panel help.
- The PF2 key (zBXCntl) invokes the zBX Base Operation Blade View panel to manage zBX resources of the selected THW Node. Place the cursor on one of the 8 ensemble THW Node fields and press PF2. Note, that this function works only for THW node names shown in the format: <thwname>:<netid>.<nau>. For empty fields (...) or node members without a configured HTTP protocol, the zBXCntl function has no effect.
- The PF3 key returns from the ISQEENS panel to the previous panel view.
- The PF4 key schedules the ISQXIII command to initialize the current ensemble connection for execution on the associated ensemble control task. When the ISQXIII command is complete, the Conn Status field will be updated with the latest status.
- The PF5 key schedules the ISQXCLS command to close the current ensemble connection for execution on the associated ensemble control task. When the ISQXCLS command is complete, the Conn Status field will be updated with the latest status.
- The PF6 key invokes the NetView ROLL function.
- The PF10 key selects the ensemble previous to the currently selected one and refreshes the ISQEENS panel with the new selected ensemble. If the ensemble selected is the first one, pressing PF10 selects the last ensemble.
- The PF11 key selects the ensemble next to the currently selected one and refreshes the ISQEENS panel with the new selected ensemble. If the ensemble selected is the last one, pressing PF11 selects the first ensemble.
- The PF12 key terminates the ISQXDST dialog and returns to the NCCF screen.

The Ensemble View panel shows the following specific information:

Connection configuration and status fields:

Description

Shows the text you entered in the SA customization dialog as a short description of this ensemble.

Real EnsName

Is the ensemble name defined on the HMC for this ensemble. This name can be different to the ensemble entry name used in ProcOps. SA ProcOps requires the entry names for its operation. Real ensemble names can be longer than 8 character and can contain mixed case characters or blanks. Note, that the real ensemble name is required when you define an ensemble with the SA customization dialog. The real ensemble name is also a supported target parameter of the ISQECMD ensemble command interface.

Conn Status

Current status of the ensemble connection. Valid status values are:

Table 4. Ensemble Connection Status

Status Value	Color	Meaning
ACTIVE	green	Ensemble connection was successfully established and is currently active.
CLOSED	green	Ensemble connection is currently closed.
CONNECTING	yellow	Ensemble connection initialization failed. It will be retried after the specified polling frequency time period.
DORMANT	green	Ensemble connection not initialized since the last ProcOps start.
SUSPENDED	red	The ensemble connection has been suspended and cannot be used until it is resumed again, using the ISQXCON command. No polling is performed while an ensemble connection is suspended.
ENS SESSION PROBLEM	red	The ensemble connection experienced a PROBLEM problem after a successful initialization. If a polling frequency was defined for the connection, ProcOps will try to re-establish the connection at every polling time.

HMC Login User

This is the userid defined on the zEnterprise ensemble HMC, ProcOps uses for its HMC communication. Depending on the userid's task level and resource scope, which is set on the HMC when the userid is defined, zBX resources are accessible to be managed by ProcOps.

Poll frequency, poll retries (for the ensemble HMC connection)

The frequency is defined in minutes and represents the time period between two ensemble connection pollings. A polling frequency value of 0 means that no polling is performed. The frequency value for an ensemble can be set using the SA customization dialog, or at ProcOps runtime with the ISQVARS

command. The polling retry value is used by the polling routine to determine if and how often a failing ensemble communication command should be retried before giving up the polling.

Cmd retries, cmd wait (the ensemble HMC connection)

These are general ensemble command control values to define how often a failing ensemble command should be retried before reporting it as failed and how long to wait for a command response from the HMC before reporting a timeout condition. The command retry and command wait values for ensemble commands can be set using the SA customization dialog, or at ProcOps runtime with the ISQVARS command.

Connection Type

Always set to HTTP. ProcOps exploits the System z HMC Web Services API which is a HTTP based IP Stack (alternate to the default stack). If you want to use a different IP stack on the ProcOps FP system for the HTTP communication with the zEnterprise ensemble HMC, you can define this using the SA customization dialog, or at ProcOps runtime with the ISQVARS command. Note, that after you have specified an alternate IP stack at ProcOps runtime, you must recycle the HMC connection to activate this change.

Lock Holder

With ProcOps you can use the ISQXLOC/ISQXUNL commands to lock an ensemble connection, so that only your operator tasks can use it. Other operators or autotasks cannot use the ensemble connection while it is locked. The Lock Holder field shows the name of the operator or autotask, currently holding the lock. Note, that normally locks are set only for a short time period, to gain exclusive control for important ensemble work.

HMC Addresses

In a zEnterprise ensemble environment a primary and an alternate HMC must be configured. The primary HMC's IP address or hostname is required when you define an ensemble in the SA customization dialog. If an alternate HMC address is specified, the ProcOps ensemble connection polling will PING both HMC addresses and report bad results. Note, that in case of an HMC switch (primary becomes alternate) the IP address of the 'old' primary HMC will remain the IP address of the 'new' HMC.

THW Node information

In a zEnterprise ensemble, up to 8 nodes can be defined as members. A node is a IBM zEnterprise (TM) System, with or without a zEnterprise BladeCenter Extension (zBX) attached. In ProcOps, a node is a target hardware (processor) with a membership to an ensemble. The processor and the ensemble membership can be defined using the SA customization dialog.

Panel ISQEENS lists the THW ensemble member nodes in two columns each with four fields. Unused member fields are marked: '.....'. If a node is listed in the format <thw>:<netid>.<nau>, means that a zBX is expected to be attached and that management for the zBX resources is intended. This is configured by adding 'HTTP' to the connection protocol list for a processor with the SA configuration dialog. If only the <thw> target hardware name is displayed, the processor target hardware has an ensemble membership defined, however the zBX support protocol 'HTTP' is not configured.

How to Monitor and Control zBX resources

The ISQEZBX panel can be used to query information of the following zBX objects:

- The blade extension unit,
- The associated ensemble,

- The rack mounted blade centers,
- The blades mounted in the blade centers

For the mounted blades, the ACTIVATE and DEACTIVATE operations commands are available to manage them. The ISQEZBX panel has no data entry fields. It uses the cursor position on the displayed zBX screen objects to select them for the PF-key assigned functions. Especially the panel operation with a 3270 screen emulator is supported, where you can position the cursor using a pointing device. If your 3270 emulator provides a customizable on-screen keypad function, you can even have the ISQEZBX panel function keys on the keypad, which allows you to control your zBX resources just with a pointing device.

Note: The layout of the view for racks, blade centers, and blades in panel ISQEZBX does not represent the exact physical layout of a zBX and its components, only a schematic view of a zBX is displayed. The blades are not shown in a view that represents their exact physical location in a blade center.

Cursor sensitive panel areas (A ... F):

```

F
ISQEZBX ProcOps zBX Base Operation Blade View
      Ensemble / THW Node Member: A / MYCPC
--- Rack: B - B --- Rack: C --- RackD ----
B.1   B.2   C.1   C   n/a   n/a
=0=   D =p= ... D .. =x= ... ..
-o- ... X ... =x= ... P ... ..
0 ... -p- ... -x- ... =p= ... ..
      ( 14 Rows 8 Columns for detected blades )
+-----+
| E ( Report window for zBX query information )
+-----+
PF1=Hlp PF2=Reprt PF3=Exit PF6=Roll PF9=Show/Refr
          PF4=Act  PF5=Deact PF12=Quit

```

Figure 155. ISQEZBX cursor sensitive areas

A Ensemble

Field shows the ensemble name. When cursor selected, an Ensemble report will be displayed in the report window when the PF2 function is performed.

B Racks

The line lists the configurable racks of the zBX in the range rack B to rack D. Available, accessible rack IDs are displayed highlighted. When this line is cursor selected, a PF2 Report function will generate a zBX Unit report and display the results in the report window area.

C Blade Centers

The line lists all blade centers detected, when the ISQEZBX panel was invoked. Unavailable blade centers are shown with a name of 'n/a'. Blade centers available are shown with their names. Only the first 6 characters of their names are displayed in this line. If the cursor is positioned on a blade center name field, a PF2 report function will display the report for this blade center in the report window area.

D Blades

In this screen area, the mounted blades of a zBX are listed in columns. For each possible rack of a zBX and its two possible blade centers, two blade columns are shown as the display location for the individual blades. If the cursor position is on a mounted blade on one of the columns, the blade center

of that column and the rack of the blade center are used to locate the correct zBX blade. The PF2 report function displays the result in the report window area.

E zBX Report Output Window

This screen section is used as the output area for the zBX reports. They start all with a AOFBxxxx report id. The remaining report data is shown in a condensed form to make best use of the limited area size. If you wish to see the original zBX report, just position the cursor in the window area and perform PF2. A WINDOW panel is displayed showing the original AOFBxxxx report. If you need help information for a AOFBxxxx report id, use PF1 in the report window area.

F Any other screen area

With the cursor on any other area than A to E , performing the PF2 report function has no effects. When you use the PF1 Help function, this panel help will be displayed. Independent from the cursor location you can always perform the PF9 Show/Refresh function.

ISQEZBX Panel Example:

```

ISQEZBX          SA z/OS Proc-Ops zBX Base Operation Blade View
Ensemble / THW Node Member: HYDRA / R93
--- Rack B ---  --- Rack C ---  --- Rack D ---  --- Rack E ---
B.1   B.2   C.1   C.2   D.1   D.2   E.1   n/a
=p=   ...   ...   =p=   ...   =o=   ...   =x=   ...   =x=   ...   _P_   ...   ...
=p=   ...   ...   =p=   ...   =p=   ...   =x=   ...   =x=   ...   -p-   ...   ...
=x=   ...   ...   =x=   ...   =x=   ...   =x=   ...   =p=   ...   =p=   ...   ...
=x=   ...   ...   =p=   ...   =o=   ...   =p=   ...   =p=   ...   _O_   ...   ...
=p=   ...   ...   =x=   ...   =o=   ...   =p=   ...   =p=   ...   -o-   ...   ...
=p=   ...   ...   =p=   ...   =o=   ...   =x=   ...   =p=   ...   =o=   ...   ...
=x=   ...   ...   =p=   ...   =o=   ...   =x=   ...   =p=   ...   _X_   ...   ...
=x=   ...   ...   =x=   ...   =o=   ...   =x=   ...   =p=   ...   -x-   ...   ...
=p=   ...   ...   =p=   ...   ...   =x=   ...   =p=   ...   =x=   ...   ...
=p=   ...   ...   =x=   ...   ...   =x=   ...   =x=   ...   ...   ...
=x=   ...   ...   =p=   ...   ...   =x=   ...   =x=   ...   ...   ...
=x=   ...   ...   =p=   ...   ...   =x=   ...   =x=   ...   ...   ...
=p=   ...   ...   =x=   ...   ...   =x=   ...   ...   ...   ...
=x=   ...   ...   =p=   ...   ...   =x=   ...   ...   ...   ...

```

AOFB0011 ZBXDATA HYDRA STATUS(SUCCESS) TSTIME(120303085035) HYDRA CPC(R93)
ZBX NAME(2458-001-000000033333) MTYPE(2458) MMODEL(001)
MSERIAL(000000033333) DESC(Represents one zBX) CDPXI50E(6) CISAOPTE(3)
CPOWERE(29) CXE(35) MAXDPXI50E(112) MAXISAOPTE(112) MAXPOWERE(112) MAXXE(112)

PF1=Hlp PF2=Report PF3=Exit PF4=Act PF5=Deact PF6=Roll PF9=Show/Refr PF12=Quit

Figure 156. zBX Base Operation Blade View

In the above ISQEZBX panel snapshot the cursor was positioned on the Rack header line and PF2 key was pressed. As a result a zEnterprise Blade Extension unit report was returned in the ISQEZBX message window area.

Panel ISQEZBX provides the following PF key functions:

- The PF1 key invokes the AOFBxxxx report message specific help function, depending on the cursor position, either the general panel help, or if the cursor position is on the report window.
- The PF2 key executes the specific query command function for this object, if the cursor is positioned on a zBX object line or column. The result is displayed in a special report window at the lower part of the panel. The following ensemble commands are used: ZBXDATA, ENSDATA, BCDATA, and BLDATA. The reports are presented in a condensed form, however you can use the PF2

function again with the cursor positioned in the report window area to display a new panel with the original report messages. With BCDATA and BLDATA processing, the panel status of the selected blade or blade center object will automatically change to the new status shown in the report if there was a status change. Note, that when you place the cursor on an empty (...) blade column position, an empty report window is shown.

- The PF3 key returns from this panel to the next higher level in the ISQXDST panel hierarchy.
- The PF4 key ACTIVATES a blade, before the function starts, you must confirm it (PF10) to proceed or cancel (PF11) the request. This function activates the selected blade unit which is located in a Blade Center Chassis of a zBX rack. After a successful activation, the blade status of a BLDATA report (PF2) shows 'operating'. Note, that the zBX VH (virtual host) related to this blade will be automatically activated. The VS (virtual server) objects related to the VH must be extra configured for automatic activation. VSs not configured for automatic activation have a status of 'not-operating' after a successful blade activation. Activating a blade while the blade is still active and work is still running on the virtual servers of that blade, will interrupt this work because the blade is deactivated before it is activated again. The PF4 blade activation calls the ISQROUTE ProcOps function to schedule a ISQECMD with the blade activate ensemble command. This allows the user to perform other ISQEZBX functions immediately after the blade activation has been scheduled. You must use either PF9 or PF2 with the cursor on the blade position to get any blade status change information displayed on the panel.
- The PF5 key DEACTIVATES a blade, before the function starts, you must confirm it (PF10) to proceed or cancel (PF11) the request. This function deactivates the selected blade unit which is located in a Blade Center Chassis of a zBX rack. After a successful deactivation, the blade status of a BLDATA report (PF2) shows 'no-power'. Note, that the zBX VH (virtual host) related to this blade will be automatically deactivated. The VS (virtual server) objects related to the VH will automatically be deactivated and any work running is disrupted. After successful deactivation of a blade, the related VS objects have a status of 'not-operating'. The PF5 blade deactivation calls the ISQROUTE ProcOps function to schedule a ISQECMD with the blade deactivate ensemble command. This allows the user to perform other ISQEZBX functions immediately after the blade activation has been scheduled. You must use either PF9 or PF2 with the cursor on the blade position to get any blade status change information displayed on the panel.
- The PF6 key invokes the NetView ROLL function
- The PF9 key invokes the zBX Show/Refresh function. When panel ISQEZBX is initially displayed in a panel session, the list of the mounted blades on the zBX is empty. The initial panel display shows the available racks highlighted with their available blade center names displayed. The PF9 function must be performed first to fill the blades columns with the available mounted blade information. The PF9 function can also be used to refresh all blade columns.
- The PF12 key (Quit) returns from ISQEZBX panel and exit ISQXDST. This returns you to the NCCF screen.

Acceptable status properties for blades: With the exception of racks and workloads, the possible status values of other zBX objects can be configured to be an 'ACCEPTED' status. zBX objects with this status attribute set can be considered as not requiring special attention, regardless of their actual status. In fact, the HMC user interface marks all zBX objects in an acceptable status with a green status

indicator. You can use the HMC Ensemble Management task and set/unset the accepted status marker for a status value using the zBX object's Details view. Press the apply button to activate the changes.

The ISQEZBX panel displays all blades with the accepted status property set in green. The accepted status properties for blades are also shown in the AOFB0016 BLDATA reports. Acceptable status properties for other zBX objects than blades are currently ignored by the ISQEZBX panel display, but can be determined in the reports.

Blade type and status indicators: The following blade status indicators are shown in the rows/columns reserved for the zBX blades:

- Indicates an empty place, no blade is mounted:
... (color blue)
- Indicators for a mounted blade of type 'system-x':
=x= (color green, status is accepted)
-x- (color yellow reverse, status is transient)
X (color red reverse, status is unaccepted)
- Indicators for a mounted blade of type 'power':
=p= (color green, status is accepted)
-p- (color yellow reverse, status is transient)
P (color red reverse, status is unaccepted)
- Indicators for a mounted optimizer hardware component of type 'isaopt' or 'dpxi50z':
=o= (color green, status is accepted)
-o- (color yellow reverse, status is transient)
O (color red reverse, status is unaccepted)

How to Monitor Communications Path Status

The communications paths from the processor operations focal point system to target systems are of two types: NVC and SNMP. You can display details of the connection for these types of path.

Display Path Details: Press PF11 on the Target System Summary panel or Target Hardware Summary panel to display the Path Detail Panel, as shown in Figure 157 on page 394.

```

ISQEPNVC          SA z/OS PATH Detail          Updates: Dynamic

Target Hardware Name: FREEWAY          Connection Type: SNMP
Network ID        : DEIBMD1          LU Name          : X7F1E30A

Support Element IP Address or Hostname:
9.164.172.200

Hardware Management Console IP Address or Hostname:
SAHMC

Connection Authorization: POKLICKO Lock Holder   : IGORDON

PATH Status      : ACTIVE

Poll Frequency   : 30
Poll Retries     : 2

Last Significant Message:

Enter=Static      PF1=Help         PF3=Exit         PF6=Roll
PF7=Oper List    PF12=Quit

```

Figure 157. Path Detail Panel

The Path Detail panel shows the following information:

Target Hardware Name

The name assigned in the customization dialog for the processor that this connection path details belong to.

Connection Type

Type of path assigned in the customization dialog to be used for communication between the processor operations focal point and the target hardware. Connection types can be the following:

SNMP

IP-based communications protocol that requires that the address information for either SE or HMC are defined. If both addresses are customized in the customization dialog, the SE address has priority.

NVC SNA-based communications protocol that requires the CPC SNA address.

LU Name

The NAU part of the CPC SNA address, which is also the logical unit name assigned to the NetView connection path.

Network ID

The NETID part of the CPC SNA address, which is also the name of the SNA network ID for the NetView connection.

Support Element IP Address or Hostname

The name or IP address assigned in the customization dialog to the SE of this target hardware.

Hardware Management Console IP Address or Hostname

The name or IP address assigned in the customization dialog to the HMC of this target hardware.

Connection Authorization

In case of an NVC connection, the authorization token is displayed. For

SNMP connections the community value is shown. The authorization values are defined in the customization dialog for a selected target hardware.

Lock Holder

(Updated dynamically) The current NetView operator owning the lock for the connection path. Locks can be set and unset using the ISQXLOC and ISQXUNL command. Locks grant the exclusive use of a connection path.

Path Status

(Updated dynamically) The status of the NetView path. Valid values are:

UNKNOWN

(Green) No command was ever issued to this path name.

ACTIVE

(Green) The path is ready for communications.

PATH PROBLEM

(Red) The focal point system cannot communicate with the Support Element on the NetView connection. This status is accompanied by a Last Significant Message.

Poll Frequency

The time (in minutes) that processor operations should poll the Support Element for status.

Poll Retries

(Updated dynamically) The number of attempts to retry that should occur before processor operations notifies the operator that the connection failed.

Last Significant Message

(Updated dynamically) The text of the last command response or report received from the target system. The text of the message is truncated to 79 characters, including the message identifier but not including the time stamp. The message is not removed from the panel when the condition that generated the message is resolved.

ISQXIII

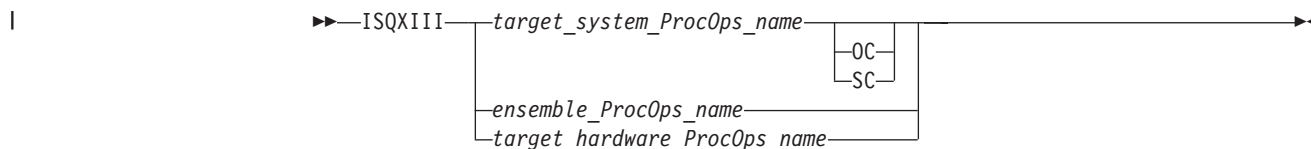
Purpose

The ISQXIII command initializes (or re-initializes) a target system, or a target system connection. When initializing a target system, ISQXIII establishes a connection to the target processor and enables its console connections.

| When initializing a target hardware, ISQXIII establishes a connection to the target
 | processor and enables the console connection for all target systems defined that
 | run on the specified target hardware.

| In addition, this command can be used to establish a session to an Ensemble HMC,
 | which is required to manage zBX Blade resources with ProcOps.

Syntax



Requirements

The requirements for this command to complete successfully are:

- Processor operations must be active.
- The addressed target system must have a status of UNKNOWN or CLOSED.
- The addressed target system must be initialized if you use the *target_system_ProcOps_name console_designator* syntax.
- No associated console or ensemble connection can be locked by another task.

Parameters

target_system_ProcOps_name

Is the name of the target system. This is a required parameter, and must be a valid target system name.

OC Specifies the active operator console (not valid for the coupling facility).

SC Specifies the system console connection.

ensemble_ProcOps_name

Is the ProcOps name of a zBX Ensemble.

target_hardware_ProcOps_name

Is the name of the target hardware. This is a required parameter, and must be a valid target hardware name.

Defaults

None.

Usage

Issue the ISQXIII command to a target system to prepare it for processor operations monitoring and control.

Issue the ISQXIII command to a zBX ensemble HMC to prepare it for processor operations monitoring and control.

Issue the ISQXIII command to a target hardware to prepare it and all defined target systems for processor operations monitoring and control.

Initializing a Target System

Initializing a target system starts communication with the target hardware and enables the console connections. It also updates the interested operator lists for consoles at the target system. The interested operator lists are updated because an operator can join an interested operator list by issuing the ISQXMON command after processor operations has been started but before the target system has been initialized.

Initializing an Ensemble HMC Connection

Initializing this connection starts by logging in at the addressed Ensemble HMC. It then starts to discover the zBX base resources such as blades, available for monitoring and control, using this ensemble connection. The defined userid for this ensemble remains connected to the HMC, until an ISQXCLS is performed or processor operations is eliminated.

Operators can use the ISQXMON command to join/leave the interested operator group of an ensemble to get notifications and reports from the ensemble and its resources.

Initializing a Target Hardware

Using this command form allows you to initialize target systems of a target hardware defined to ProcOps in one step. The individual ISQXIII commands for target systems are scheduled to run on the ProcOps control task of the target hardware. When a target system is already INITIALIZED while ISQXIII for a target hardware is running, it is ignored.

Restrictions and Limitations

The following restrictions or limitations apply:

- To re-initialize a target system, you must first close it with the ISQXCLS command (see “ISQXCLS” on page 370).
- To initialize a console connection, the target system must have been initialized previously.
- To re-initialize an ensemble session, you must first close it with the ISQXCLS command.

Return Codes

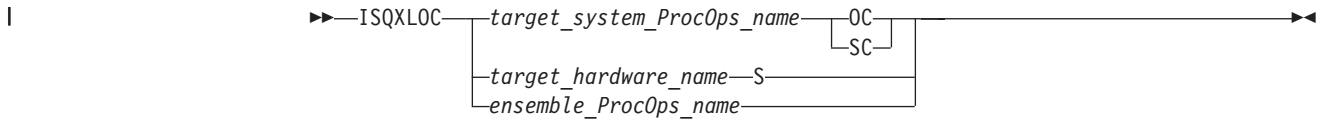
- 0** The ISQXIII command processed successfully and the processor operations environment for the specified target system or ensemble has been initialized or re-initialized.
- 4** During initialization of a target system or ensemble one or more of the following problems occurred:
 - No system consoles could be contacted.
 - No operator consoles could be contacted.
 - No ensemble HMC could be contacted.
- 8** You used syntax that is not valid, specified a target system that is not initialized, or specified an invalid ensemble name.
- 12** An internal error occurred or connection path status is SUSPENDED to either the processor hardware (SE/HMC) or ensemble HMC.
- 16** A severe error occurred.
- 32** The processor operations environment does not exist; the ISQXIII command was not processed.

ISQXLOC

Purpose

The ISQXLOC command locks access to a ProcOps entity to serialize operations to that console with other operator tasks. Entities can be either target system names together with a console designator or ensemble names.

Syntax



Requirements

The requirements for this command to complete successfully are:

- Processor operations must be active.
- The entity must not be locked by another task.
- The `target_system_ProcOps_name` syntax requires that the addressed target system be initialized.

Parameters

target_system_ProcOps_name

Is the name of the target system.

OC Specifies the active operator console (not valid for the coupling facility).

SC Specifies the active system console (not valid for the OCF-based processors).

target_hardware_name

Is the name of the target hardware.

S Specifies the active system console.

ensemble_ProcOps_name

Is the ProcOps name of a zBX ensemble.

Defaults

None.

Usage

All processor operations commands that require serialization automatically lock the entity when they start and unlock the entity when they complete.

The lock prevents processor operations from sending requests to an entity—they are rejected unless issued by the same task that issued the ISQXLOC command—until the lock is removed by the ISQXUNL command (see “ISQXUNL” on page 405).

If you are going to issue several commands to an entity, you can issue the ISQXLOC command to lock access to the entity to ensure the commands are processed without interruption by commands from other tasks. When you are finished with this sequence of commands, issue the ISQXUNL command to unlock access to the entity.

If the ISQXLOC command is issued within an automation procedure, or within a set of called automation procedures, the locked entity should be unlocked (using the ISQXUNL command) after all processing of the automation procedure is

completed. It is not normally necessary to lock an entity for the processing of an automation procedure because of the serialization of the ISQEXEC command.

Any change in lock status is reflected in the status facility.

Restrictions and Limitations

The following restrictions or limitations apply to this command:

- The parameters are not checked for validity.
- Once obtained by a task, another task cannot obtain the lock until it is released by the owning task.
- An ISQXLOC command issued from within a locked sequence of commands is rejected.

Return Codes

- 0** The ISQXLOC command completed successfully.
- 4** The entity was already locked by the current task.
- 8** You used syntax that is not valid, specified an entity that is not valid, or in the case that the entity is a target system, it is not initialized.
- 12** The entity is locked by another task.
- 32** The processor operations environment does not exist; the ISQXLOC command was not processed.

Any return codes greater than 8 that are not listed above indicate that an error occurred in the NetView CNMLOCK service.

ISQXMON

Purpose

The ISQXMON command adds you to or deletes you from the interested operator list for a target system console or an ensemble. When added, you can monitor a console and receive all message traffic from the target system or ensemble.

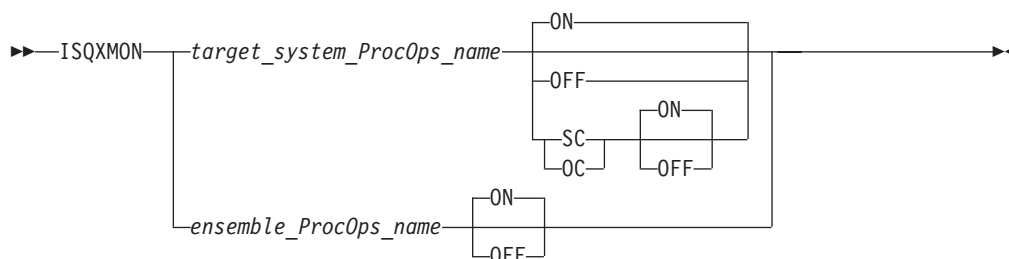
The following messages are sent to the interested operator's NetView screen:

- Operating system messages from target systems (target systems only)
- Processor hardware messages (target hardware only)
- Hardware status or Ensemble object status changes
- Command completion messages from the processor hardware or ensemble
- Query command responses from the processor hardware or ensemble

For target system and target hardware entities, messages for interested operators are all prefixed with the message ID ISQ901I and are copies of the original ISQ900I messages that ProcOps provides for its internal processing and automation.

For ensembles, messages for interested operators are prefixed with the message ID ISQ801I and are copies of the original ISQ800I messages that ProcOps provide for its internal processing and automation.

Syntax



Requirements

Processor operations must be active.

Parameters

target_system_ProcOps_name

Is the name of the target system you want to monitor. The name must be a valid target system name.

If the specified target system is a logical partition, you will receive messages from other LPARs running on the same target hardware if they are defined in your active ProcOps control file. The target system must be operational and its ProcOps status must not be UNKNOWN or CLOSED.

ON Indicates that you are to be added to the list of interested operators.

OFF Indicates that you are to be deleted from the list of interested operators.

SC Specifies the hardware connection that includes the operating system console and the hardware system console functions.

OC Specific operator console connection (no longer supported, message ISQ042I will be issued when specified).

ensemble_ProcOps_name

Is the name of the ensemble you want to monitor. The name must be a valid ensemble name.

ON Indicates that you are to be added to the list of interested operators.

OFF Indicates that you are to be deleted from the list of interested operators.

Defaults

ON.

Usage

The ISQXMON command may be issued at any time after processor operations has been started.

For target systems: Interested operator lists are maintained per console connection. There is one list for each target system. System console and operator console functions are supported. The maximum number of interested operators is 12 per connection (but only 10 can be specified through the configuration dialogs).

As an alternative to ISQXMON, clist script ISQGMSRT is available as a sample application. Member INGEI002 in your SINGSAMP library contains the REXX

source code, together with the instructions to install and use the application. ISQGMSRT allows you to maintain interested operator lists for single target systems and to colorize the ISQ901I messages.

For ensembles: Interested operator lists for ensembles cannot be pre-defined using the configuration dialogs. If you are interested in messages from ensemble objects to be displayed on your screen, you must first use ISQXMON to receive them, after ProcOps is started.

Restrictions and Limitations

The following restrictions or limitations apply:

- Issuing ISQXMON ON for a target system running on a target hardware in LPAR mode has the effect that you will receive messages from other target systems that are running on the same target hardware.
- Issuing ISQXMON OFF for a target system running on a target hardware in LPAR mode has the effect that, as long as other target systems on that hardware still have set ISQXMON ON, you will receive messages from all target systems that share the connection.
- There is a maximum of 12 interested operators per console.
- A NetView group name cannot be added or removed from a list with the ISQXMON command.
- There can be no more than 256 unique operator names in all interested operator lists.
- ISQ901I messages sent to the interested operators are suppressed in the NetView log by ProcOps.
- ISQ801I messages sent to the interested operators are suppressed in the NetView log by ProcOps

Return Codes

- 0** The ISQXMON command processed successfully. The operator who issued the ISQXMON command has been added to or deleted from the interested operators list of the specified console, as requested.
- 4** You specified incorrect command syntax.
- 6** The interested operator list is full.
- 8** You specified a NetView group name for the list to which you want to be added as an interested operator.
- 16** An internal error occurred.
- 32** The processor operations environment does not exist; the ISQXMON command was not processed.

ISQXOPT

Purpose

The ISQXOPT command displays target system information. Some information can be changed at this panel.

Syntax

►►—ISQXOPT—*target_system_ProcOps_name*—◄◄

Requirements

Processor operations must be active.

Parameters

target_system_ProcOps_name

Is the name of the target system. It must be a valid target system name of 8 characters or less.

Defaults

None.

Usage

Issue ISQXOPT *target_system_ProcOps_name* to display a full-screen panel that shows the values of the variables that define the operation of a specific target system, such as initial program load parameters and the responses to IPL messages. The following fields cannot be modified:

- Hardware mode
- Partition
- Target mode
- Operating system
- Hardware type
- Automatic response selection

Examples of this panel are shown in the following:

- Figure 158 in basic-mode using an OCF-based processor
- Figure 159 on page 403 in LPAR mode using an OCF-based processor

```

ISQHOPT      SA z/OS - Target System Options

      Modifiable options specified for target system      KEY6B
Hardware Mode:      Basic Mode Target Mode:  ESA      ...
                  ... Time Offset: +00
Operating System:  MVS      Hardware Type: eServer
Target description: KEY6 on Basic Mode HW

Image Profile Name  KEY6
Load Profile Name
Reset Profile Name  KEY6BSC

Auto resp sel      Y

Response to IEA101A:
Response to IEA347A:
Required addresses:

PF1= Help PF3= End PF6= Roll Enter= Process changes

```

Figure 158. Sample System Options Panel for an OCF-Based Processor in a Basic-Mode MVS Target System


```

ISQHOPT1      SA z/OS - Target System Options

Modifiable options specified for target system  KEY6

Hardware Mode:  LPAR Partition:  KEY6 Target Mode:  ESA
Operating System: MVS Hardware Type: 9672 Time Offset: +00

Target description:

Image Profile Name  KEY6
Load Profile Name
Reset Profile Name
Secondary OCF Name  KEY6

Auto resp sel      Y
                   ...
                   ... (Only valid for Operating System MVS)

Response to IEA101A:

Response to IEA347A:

Required addresses:

PF1= Help PF3= End PF6= Roll Enter= Process changes

```

Figure 159. Sample System Options Panel for an OCF-Based Processor in LPAR-Mode MVS Target System

Issuing this command for a non-existent target system results in a panel for a Basic-mode system with a message that the specified target system does not exist. You can recover from this condition by simply typing in the name of the desired target system in the first field of the panel and pressing the Enter key. You can also type over the name of a valid target system on a valid panel and press the Enter key to change the display to that for a different target system.

Some variables can be changed by typing a new value over the old value and pressing Enter. When the variable is updated, the ISQXOPT panel is displayed again and another variable can be updated.

The information contained in the panel is retrieved, and the NetView View command presents the panel. The information you enter is checked and error messages are generated if the information is not valid. These error messages, which identify the field with the problem, are displayed on a separate panel that shows all error messages for all fields.

Restrictions and Limitations

- You cannot issue the ISQXOPT command from within a program.
- You must issue the ISQXOPT command from an NCCF command line.

Return Codes

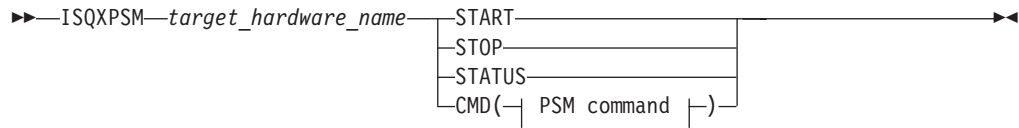
Return codes are not applicable because you cannot issue this command from within a program.

ISQXPSM

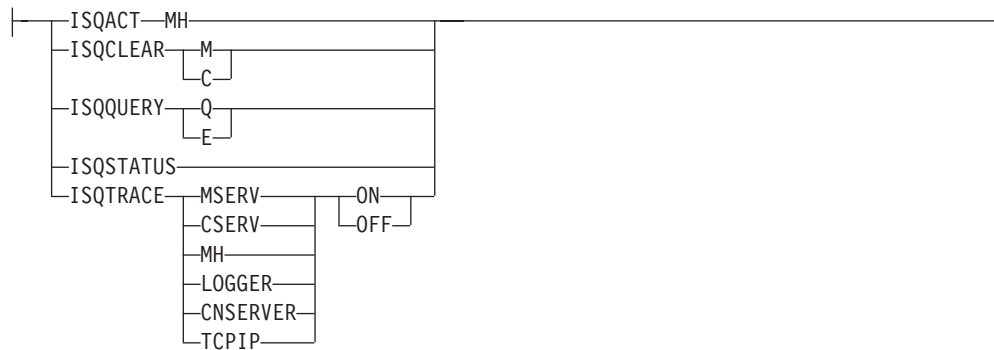
Purpose

The ISQXPSM command starts and stops the ProcOps Service Machine (PSM) or returns its VM CP status from the system where it is running. In addition, PSM commands can be forwarded to the PSM for execution with this command.

Syntax



PSM command:



Requirements

The requirements for this command to complete successfully are:

- Processor operations must be active.
- To issue a START, STOP, or STATUS command:
 1. The hosting VM system and the PSM name must be defined in ProcOps.
 2. The VM host system of the PSM, associated with the specified *target_hardware_name*, must have been initialized with the ProcOps ISQXIII command.
 3. A VM user, having the authority to issue XAUTOLOG, FORCE, and QUERY commands, must be logged on to the console via SE/HMC.
- To issue a CMD command, the PSM must be active.

Parameters

target_hardware_name

The name of a processor of type PSM.

START

Starts the PSM virtual machine that is specified in *target_hardware_name*.

STOP

Stops the PSM virtual machine that is specified in *target_hardware_name*.

STATUS

Returns the VM CP status for the PSM virtual machine that is specified in *target_hardware_name*.

CMD

Forwards a PSM command to the ProcOps Service Machine of the specified target hardware for execution and returns the result.

PSM command

One of the PSM diagnosis and service commands that is listed in the syntax fragment, see Chapter 8, “PSM Commands - Special Requests,” on page 503 for more details.

Defaults

None.

Usage

See Chapter 8, “PSM Commands - Special Requests,” on page 503 for information about the PSM commands that are available.

Restrictions and Limitations

Only a subset of the available PSM commands can be used with the CMD option of ISQXPSM. To use the full set of commands, a VM user must be logged on as PSM and enter the commands at the PSM console.

The following commands can only be entered from the PSM console directly:

- ISQMSG
- ISQPSM
- STOPALL

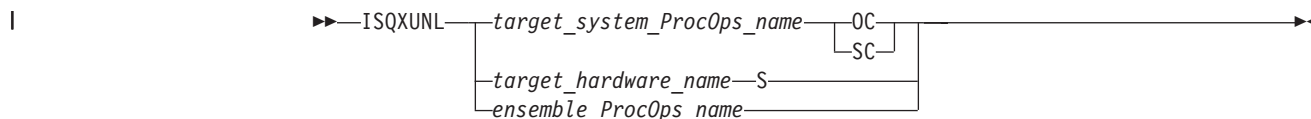
Return Codes

- 0** The ISQXPSM command completed successfully.
- 4** One of the following occurred:
 - No VM host system has been defined for this PSM.
 - The PSM's VM host target system has not initialized.
 - The PSM has not been defined for the specified target hardware.
 - The specified target hardware type is not PSM.
 - There is an error in the parameter list.
- 6** Authorization error. Either the user ID that was checked to access the specified target hardware has not been authorized, or the allowed access level is not sufficient.
- 8** One of the following occurred:
 - ISQSEND returned an error while processing a START, STOP, or STATUS request.
 - An error occurred while waiting for the response of a START, STOP, or STATUS request.
- 32** The ProcOps environment does not exist; the ISQXPSM command was not processed.

ISQXUNL**Purpose**

The ISQXUNL command cancels a ProcOps entity lock instituted by the ISQXLOC command. Entities can be either target system names together with a console designator or ensemble names.

Syntax



Requirements

The requirements for this command to complete successfully are:

- Processor operations must be active.
- The addressed entity must not be locked by another task.
- The *target_system_ProcOps_name* entity requires that the addressed target system be initialized.

Parameters

target_system_ProcOps_name

Is the name of the target system for the specified console.

OC Specifies the active operator console (not valid for the coupling facility).

SC Specifies the active system console (not valid for OCF-based processors).

target_hardware_name

Is the name of the target hardware.

S Specifies the active system console.

ensemble_ProcOps_name

Is the name of the ProcOps name of a zBX Ensemble.

Defaults

None.

Usage

The ISQXUNL command removes an entity lock established by the ISQXLOC command (see “ISQXLOC” on page 397). Any change in lock status is reflected in the status facility.

Restrictions and Limitations

The ISQXUNL command is effective only when issued from the same task that issued ISQXLOC to establish the entity lock.

Return Codes

- 0** The ISQXUNL command completed successfully.
- 4** The specified entity was not locked.
- 8** One of the following was specified:
 - Invalid syntax
 - Invalid entity name
 - Target system entity that is not initialized
- 12** The console is locked by another task.
- 32** The processor operations environment does not exist; the ISQXUNL command was not processed.

For return codes greater than 12 that are not listed, a NetView CNMLOCK service problem occurred.

Chapter 6. Common Commands

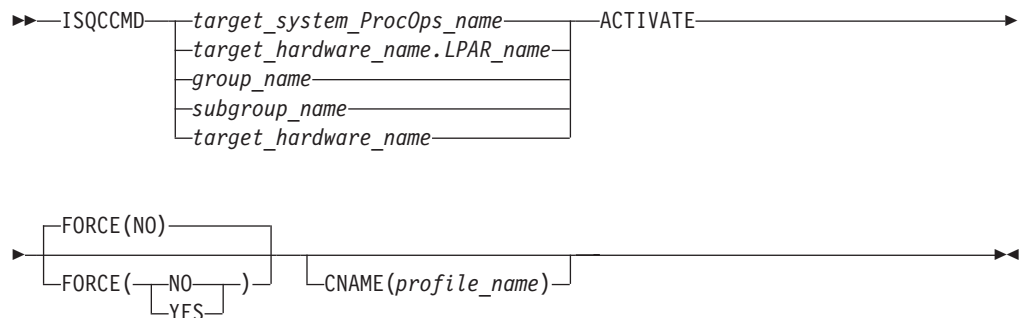
This chapter describes the common commands provided by SA z/OS processor operations. Common commands provide a single-product image across various hardware and software implementations, potentially minimizing future modifications.

ACTIVATE

Purpose

The ACTIVATE command causes the target system to perform a complete initialization. This initialization extends from a power-on reset to performing the initial program load process.

Syntax



Requirements

The requirements for the ACTIVATE command to complete successfully are:

- Processor operations must be active.
- The addressed target system must have a status of UNKNOWN, CLOSED, or INITIALIZED for the default setting of FORCE(NO) to work. See “Examples” on page 377 for a list of status settings.

Parameters

For a definition of *target_system_ProcOps_name*, *target_hardware_name.LPAR_name*, *group_name*, *subgroup_name*, and *target_hardware_name* see “ISQCCMD” on page 337.

FORCE

Requests conditional processing of commands that are disruptive to the operating system control program and application work that is in progress. Use of this operand is based on the operating state of the target processor.

NO Specifies that processing of the command is to continue *only* if the target CPU control program is not in the operating state. Specify FORCE(NO) in a situation where you would *not* want to disrupt the control program work-in-progress.

YES

Specifies that processing of the command is to continue *even* if the target

ACTIVATE

CPU control program is in the operating state. Specify FORCE(YES) in a situation where disruption of the control program work-in-progress is not important, such as in recovery situations.

FORCE(NO) requires that the associated command *fails* when useful work is taking place. For ACTIVATE, *fail* states occur if an operating mode is detected and FORCE(NO) is specified, or when FORCE defaults to NO. The command fails whenever the processor is in those states.

CNAME

Specifies the name of an image or reset profile to be sent to the processor's support element.

For image activation, it is recommended to let processor operations select the profile name automatically rather than overriding processor operations's selection with the *profile_name* parameter. If specified, the operand must match the *target_hardware_name.LPAR_name*.

For CPC activation, as indicated by *target_hardware_name*, SA z/OS uses the reset profile in the ACTIVATE operations management command that is sent to the support element. If this keyword is not used, SA z/OS selects the activation reset profile that is specified in the configuration dialog for *target_hardware_name*. If an activation reset profile was not specified in the configuration dialog, SA z/OS selects the default activation reset profile that is specified with the CCNTL common command or on the support element directly.

profile_name

Indicates the name of the image or reset profile. It is recommended that you let processor operations select the profile name automatically rather than overriding processor operations' selection with the *profile_name* parameter.

Usage

Caution: The ACTIVATE command can be very disruptive when you specify FORCE(YES), so use this command carefully. The SA z/OS processor operations status facility only knows about status changes that are performed from within SA z/OS. If you load and start a target system's operating system outside of SA z/OS (such as from the SA z/OS processor operations passthru facility or from the console at the remote target system) rather than by using the SA z/OS commands, SA z/OS does not know that the status of the target system has changed.

The effect of the ACTIVATE FORCE keyword applies only to target systems that are defined to SA z/OS. Because SA z/OS does not know that the target system was activated from outside of SA z/OS, it considers the target system status to be UNKNOWN. The functions performed by the ACTIVATE common command will disrupt the operating system even if you specify the FORCE(NO) option, because the SA z/OS status facility does not indicate that the target system is already initialized and running.

If you do not specify FORCE(YES):

- The ACTIVATE command checks whether the same logical partition name is in use by another target system. If so, the ACTIVATE command is rejected; if not, processing continues.

- The ACTIVATE command also checks target hardware that is not logically partitioned to see if the target hardware is in use by another target system. If so, the ACTIVATE command is rejected; if not, processing continues.

ACTIVATE processing can also produce the result that more target systems are affected than the one explicitly specified in the command or those included in a target group or subgroup specified in the command. The additional target systems are CPC images on a processor in LPAR mode. These additional target systems are activated when a Reset or Image profile specifies additional profile names in the AUTOACT operand. To avoid unintended activations, operators should be kept aware of the linkages between profiles.

Using either scheduled requests or auto-activated logical partitions causes SA z/OS to receive "unsolicited" responses from one or more target systems. SA z/OS uses these responses to update its status information and to attempt to initialize the corresponding target systems.

When you specify FORCE(YES):

- The ACTIVATE command overrides the requirement that a target system must have a status of UNKNOWN, CLOSED, or INITIALIZED.
- Processing of the ACTIVATE command is performed even if the target system has a status condition of IPL COMPLETE, IPL FAILED, LOAD FAILED, or one of the WAITING FOR...MESSAGE conditions.

The ACTIVATE command performs only the processing that is required. For example, it performs a power-on reset only when required, and it does not initialize a target system that is already initialized correctly.

ACTIVATE of VM Guest Systems

Purpose: If a target system running on a guest machine is part of an ACTIVATE request, this results in an XAUTOLOG command being issued to the VM system. This starts the guest machine using the profile defined for it in VM. This profile usually causes a guest operating system (MVS, LINUX, VSE, VM) to be loaded, but it is possible that no IPL command is executed. This corresponds to the use of a hardware profile where no automatic IPL is done. For an MVS target system the RUN state of the VM guest machine is set to ON.

Parameters:

FORCE(YES)

A CP FORCE command is issued to the VM system to stop the guest, if the guest is currently active. Then CP XAUTOLOG is issued to start the guest again.

FORCE(NO)

Guest status is checked. If the guest is known to be NOT OPERATING then a CP FORCE command is issued to stop the guest.

CP XAUTOLOG is issued. This means if the guest is already started (logged on) and known to be processing normally, the ACTIVATE command is rejected.

Restrictions and Limitations: The CNAME parameter is not supported.

Remark:

ACTIVATE

A real THW can only do one ACTIVATE at any time. On a VM system, no such restriction applies and no serialization is done.

Restrictions and Limitations

The ACTIVATE command does not perform resource requirement checks.

The default form of the ACTIVATE command is rejected if the addressed target system has a status other than UNKNOWN, CLOSED, or INITIALIZED.

Return Codes

The ISQCCMD command (see “ISQCCMD” on page 337) generates the return codes for common command processing.

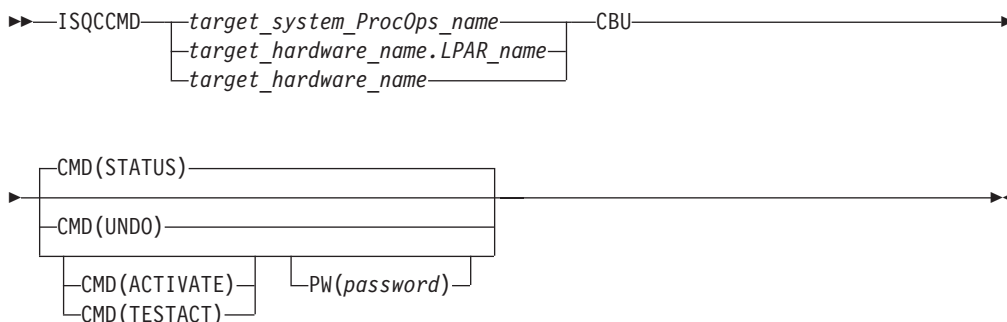
CBU

Purpose

The CBU command causes the target hardware processor to perform the specified capacity backup (CBU) function if available.

With the CBU command you can temporarily increase the central processor (CP) capacity of your central processor complex (CPC). In case of an outage, which may have reduced your overall processor capacity, additional workload can be processed on that CPC.

Syntax



Requirements

The requirements for the CBU command to complete successfully are:

- Processor operations must be active.
- The addressed target system must be initialized, or, if the target hardware is addressed, at least one target system on that hardware must be initialized.
- For UNDO, ACTIVATE and TESTACT, the SE of the target hardware must have Capacity backup set to 'Enabled' in either the Customize Console Services window (Console Workplace 2.9 and later versions) or the Enable Support Element Console Services window (Console Workplace 2.8 and previous versions). This applies to ACTIVATE and TESTACT regardless of whether the CBU activation password is provided or not.

With Console Workplace 2.10 and later versions, for ACTIVATE and TESTACT, the CBU records must be loaded on the SE of the target hardware. Multiple CBU records are supported.

- With Console Workplace 2.10 and later versions, for ACTIVATE, TESTACT and UNDO, the flag 'Allow capacity change API requests' must be set in 'Customize API Settings' on the SE.

Parameters

For a definition of *target_system_ProcOps_name*, *target_hardware_name.LPAR_name*, and *target_hardware_name*, see “ISQCCMD” on page 337.

CBU

Indicates the CBU command function to be executed.

CMD

The command to be executed

STATUS

Returns the current status of the CBU facility of the addressed CPC. The possible status values returned are:

AVAILABLE

CBU is installed on the CPC.

ACTIVATED

CBU is started through ACTIVATE command.

NOT_ACTIVATED

CBU is installed but not activated.

NOT_ENABLED

CBU is installed but not enabled.

NOT_INSTALLED

CBU is not installed on the CPC.

UNAVAILABLE

CBU is installed but no longer available.

In addition, if the CBU Status is ACTIVATED, the activation and expiration dates are returned. Note that for System z9[®] and older hardware, the expiration date corresponds to the activation period expiration date. For System z10[™] hardware and later, the expiration date corresponds to the capacity record expiration date.

The ISQCCMD response message ISQ464I contains the status report.

ACTIVATE

Activates the previously installed and enabled CBU.

For Console Workplace 2.10 and later versions: Multiple CBU records can exist on the SE. In this case, the decision logic is as follows:

- If one of the CBU records is marked as Default, CBU Activate works with this record.
- If none of the CBU records is marked as Default, CBU Activate works with the 'oldest' CBU record.

This Logic applies for TESTACT as well. Note that with the CBU common command, it is NOT possible to select a specific CBU record.

TESTACT

Activates the previously installed and enabled CBU in test mode.

UNDO

Deactivates a previously activated CBU to the regular configuration. Note that

CBU

this function is not available on all CPCs supporting CBU. If the UNDO command fails, the regular CPC configuration must be restored by performing a POWERON-RESET of the CPC.

For Console Workplace 2.10 and later versions: Multiple CBU records can exist on the SE. In this case, the decision logic for the UNDO command is as follows:

- If one of the CBU records is marked as Default, CBU Undo works with this record.
- If none of the CBU records is marked as Default, CBU Undo works with the 'oldest' CBU record.

PW The CBU activation password for ACTIVATE or TESTACT. If provided, this password is used for CBU activation instead of calling the Remote Service Facility (RSF).

For Console Workplace 2.10 and later versions: The CBU activation password is no longer supported. If provided, it is ignored.

Defaults

The default of the CBU command is CMD(STATUS).

Usage

Issue the CBU command to temporarily increase the central processor (CP) capacity of your central processor complex (CPC). The increased capacity may require to update your CPC's activation profiles, so that the additional processor resources can be used in your processor configuration.

Note that the term *Console Workplace* refers to the title line, that is displayed in the Main Application Window of each CPC Support Element. The following lists the SE Workplace Version numbers and their related IBM System names:

- 2.11: IBM System z196
- 2.10: IBM System z10
- 2.9: IBM System z9
- 2.8: IBM eServer™ zSeries® 990

For more information about CBU, see *System z Capacity on Demand User's Guide* or *Capacity Backup User's Guide*, available for the particular System z on IBM Resource Link®.

Restrictions and Limitations

The CBU common command is only supported for SNMP connections. When issuing a CBU request for another ProcOps connection type, it will be rejected.

Return Codes

The ISQCCMD command (see "ISQCCMD" on page 337) generates the return codes for common command processing.

CCNTL

Purpose

The CCNTL common command allows you to:

- Assign a RESET activation profile to be used as the default for the addressed CPC
- List the current default assignment of the CPC.

Syntax

```

▶▶—ISQCCMD— [target_system_ProcOps_name | target_hardware_name.LPAR_name | target_hardware_name] —CCNTL— [APNAME(aprof_name)] —▶▶

```

Requirements

The requirements for the CCNTL command to complete successfully are:

- Processor operations must be active.
- The addressed target system must be initialized, or, if the target hardware is addressed, at least one target system on that hardware must have the ProcOps status INITIALIZED.

Parameters

For a definition of *target_system_ProcOps_name*, *target_hardware_name.LPAR_name*, and *target_hardware_name*, see “ISQCCMD” on page 337.

APNAME

If specified, requests a change of the current default activation profile name.

aprof_name

Activation profile name with a length of 1-16 characters. Specifying a null value is tolerated, but the current default activation profile name is not changed.

Defaults

Lists the currently assigned default activation profile name of the CPC.

Usage

Use this command to control the default activation profile assignments of a CPC. You can prepare CPC configuration changes, such as changes in the IOCDS, in a separate RESET activation profile, then use this profile for the next CPC activation, and if successful use CCNTL to set it as the new default activation profile.

Note that in the SA z/OS processor configuration dialog, you can set the name of a RESET activation profile as the default for a target hardware activation. This is a ProcOps-specific default that is used with the ISQCCMD common command interface.

The RESET activation profile name that can be changed using CCNTL is the default name that is provided by the processor hardware. This default applies for activation from the Support Element or the HMC operator interfaces.

The CCNTL response is returned in an AOFA0006 multi-line report. For more information about this report format see the appendix “Response Messages, Error Strings, Condition Codes” in *IBM Tivoli System Automation for z/OS Messages and Codes*.

The command response reports from the processor hardware are available as ProcOps ISQ900I messages with a console indicator of SC. Note that the message originator following the message identifier is either a ProcOps target system name, or a target hardware name together with an LPAR name. In order to get a copy of such hardware messages on your screen as ISQ901I messages, use the ISQXMON command.

This common command can also be used for processors or systems that you have configured with a BCP Internal Interface connection in your SA z/OS policy. If ProcOps is active, and your common command targets a processor or system that has the same name in your ProcOps and BCP Internal Interface configuration, ProcOps is always preferred. To avoid this, you must either stop ProcOps or use names that are uniquely assigned to either ProcOps or the BCP Internal Interface.

Additional Programming Information

On command completion, the immediate HW response report messages are also available in a PIPE KEEP with the name 'ISQ.SNMP'. You can directly access this HW data when using this KEEP as your first Pipe stage. See "Using Immediate ISQCCMD Common Command Responses" on page 339.

Restrictions and Limitations

The CCNTL common command is only supported for SNMP connections and BCP internal interface connections configured for LPAR management. When issuing a CCNTL request for another ProcOps connection type, it will be rejected.

Only the length of the specified profile name is verified. No other activation profile validations are performed.

Return Codes

The ISQCCMD command (see "ISQCCMD" on page 337) generates the return codes for common command processing.

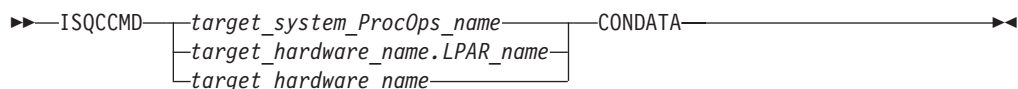
CONDATA

Purpose

The CONDATA command collects basic information about the console of the addressed target hardware and presents this information in a multi-line report.

The term console designates either a Support Element (SE) or Hardware Management Console (HMC), whatever console type is in use for the connection.

Syntax



Requirements

The requirements for the CONDATA command to complete successfully are:

Processor Operations environment

- Processor operations must be active.

- The addressed target system must be initialized, or, if the target hardware is addressed, at least one target system on that hardware must be initialized.

LPAR Management environment

- SA z/OS must be fully initialized.
- The processor hardware of the addressed target system or target hardware LPAR must be configured for connection type INTERNAL in the SA z/OS customization dialogs.

Parameters

For a definition of *target_system_ProcOps_name*, *target_hardware_name.LPAR_name*, and *target_hardware_name*, see “ISQCCMD” on page 337.

Defaults

None.

Usage

Use this command to get basic information about a console, such as console name and type, console application version number, or the configured IP addresses of this console. In addition, the HW EC Level of the console is shown and if an alternate console will take over automatically in case the primary fails.

The data is returned in an AOFA0022 multi-line report. For more information about this report format see the appendix "Response Messages, Error Strings, Condition Codes" in *IBM Tivoli System Automation for z/OS Messages and Codes*.

The command response reports from the processor hardware are available as ProcOps ISQ900I messages with a console indicator of SC. Note that the message originator following the message identifier is either a ProcOps target system name, or a target hardware name together with an LPAR name. In order to get a copy of such hardware messages on your screen as ISQ901I messages, use the ISQXMON command.

This common command can also be used for processors or systems that you have configured with a BCP Internal Interface connection in your SA z/OS policy. If ProcOps is active, and your common command targets a processor or system that has the same name in your ProcOps and BCP Internal Interface configuration, ProcOps is always preferred. To avoid this, you must either stop ProcOps or use names that are uniquely assigned to either ProcOps or the BCP Internal Interface.

Additional Programming Information

On command completion, the immediate HW response report messages are also available in a PIPE KEEP with the name 'ISQ.SNMP'. You can directly access this HW data when using this KEEP as your first Pipe stage. See “Using Immediate ISQCCMD Common Command Responses” on page 339.

Restrictions and Limitations

The CONDATA common command is only supported for SNMP connections and BCP Internal Interface connections configured for LPAR Management. When issuing a CONDATA request for another ProcOps connection type, it will be rejected.

CONDATA

Depending on the console version, not all basic console information is available such as EC Level, console IP address or autoswitch setting. The autoswitch setting applies only to Support Element consoles.

Return Codes

The ISQCCMD command (see “ISQCCMD” on page 337) generates the return codes for common command processing.

CPCDATA

Purpose

The CPCDATA command collects configuration and status information about the addressed target hardware and presents this information in a multi-line report.

The report includes CPC and IMAGE (logical partition) information if the processor is running in LPAR mode.

Syntax

```
▶▶—ISQCCMD—target_system_ProcOps_name  
target_hardware_name.LPAR_name  
target_hardware_name—CPCDATA—▶▶
```

Requirements

The requirements for the CPCDATA command to complete successfully are:

Processor Operations environment

- Processor operations must be active.
- The addressed target system or target hardware.lpar must have been initialized using the ISQXIII command.

LPAR Management environment

- SA z/OS must be fully initialized.
- The processor hardware of the addressed target system or target hardware LPAR must be configured for connection type INTERNAL in the SA z/OS customization dialogs.

Parameters

For a definition of *target_system_ProcOps_name*, *target_hardware_name.LPAR_name*, and *target_hardware_name*, see “ISQCCMD” on page 337.

Defaults

None.

Usage

Use this command to get a snapshot of the current CPC and LPAR configuration. The data is returned in a AOFA0016 multiline report. For more information about this report format see the appendix “Response Messages, Error Strings, Condition Codes” in *IBM Tivoli System Automation for z/OS Messages and Codes*.

The command response reports from the processor hardware are available as ProcOps ISQ900I messages with a console indicator of SC. Note that the message originator following the message identifier is either a ProcOps target system name, or a target hardware name together with an LPAR name. In order to get a copy of such hardware messages on your screen as ISQ901I messages, use the ISQXMON command.

This common command can also be used for processors or systems that you have configured with a BCP Internal Interface connection in your SA z/OS policy. If ProcOps is active, and your common command targets a processor or system that has the same name in your ProcOps and BCP Internal Interface configuration, ProcOps is always preferred. To avoid this, you must either stop ProcOps or use names that are uniquely assigned to either ProcOps or the BCP Internal Interface.

Additional Programming Information

On command completion, the immediate HW response report messages are also available in a PIPE KEEP with the name 'ISQ.SNMP'. You can directly access this HW data when using this KEEP as your first Pipe stage. See "Using Immediate ISQCCMD Common Command Responses" on page 339.

Restrictions and Limitations

The CPCDATA common command is only supported for SNMP connections and BCP Internal Interface connections configured for LPAR Management. When issuing a CPCDATA request for another ProcOps connection type, it will be rejected.

Return Codes

The ISQCCMD command (see "ISQCCMD" on page 337) generates the return codes for common command processing.

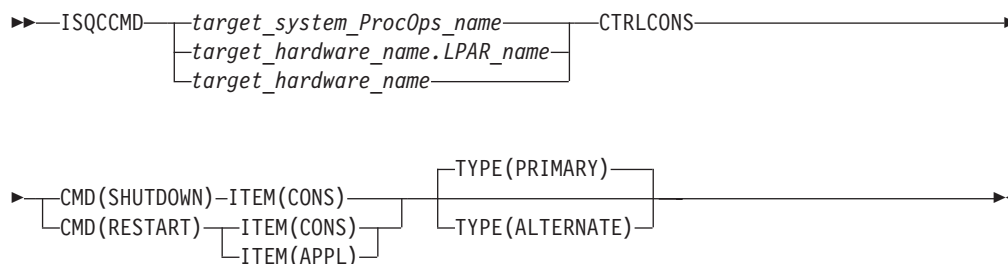
CTRLCONS

Purpose

The CTRLCONS common command allows you to:

- RESTART the console application of the addressed HMC or SE (for an SE, either the primary or the alternate application can be restarted)
- RESTART or SHUTDOWN the addressed HMC or SE console (for an SE, either the primary or the alternate console can be restarted or shut down)

Syntax



Requirements

The requirement for the CTRLCONS command to complete successfully is:

- Processor operations must be active.

Parameters

For a definition of *target_system_ProcOps_name*, *target_hardware_name.LPAR_name*, and *target_hardware_name*, see "ISQCCMD" on page 337.

CMD

The command to be executed. Can be either RESTART or SHUTDOWN.

Note: SHUTDOWN is only allowed with ITEM(CONS). If it used with ITEM(APPL), the CTRLCONS command will be rejected.

ITEM

The target of the command. Specify either:

- CONS for the SE or HMC console
- APPL for the SE or HMC console application

TYPE

The type of console or console application.

PRIMARY

Refers to the primary SE or HMC console or console application.

ALTERNATE

Refers to the secondary SE console or console application.

Note: ALTERNATE can only be used for SE connections; if it is used for an HMC connection, the CTRLCONS command will fail.

Defaults

The CTRLCONS command defaults to TYPE(PRIMARY).

Usage

Use this command to shut down or restart the HMC or SE Console or to restart the HMC or SE console application. On command execution, all ProcOps connections to that console or console application that are still active will be closed before executing the Shutdown or Restart itself in order to avoid uncontrolled connection loss as a consequence of the Shutdown or Restart command.

Note: If a console SHUTDOWN is performed, the console must be restarted manually.

Restrictions and Limitations

The CTRLCONS common command is only supported for SNMP connections. When issuing a CTRLCONS request for another ProcOps connection type, it will be rejected.

All required command parameters are checked if provided with the CTRLCONS command. All command parameters are checked for valid content.

Due to technical limitations on the SE console side, an SE Application Restart will actually be executed as a SE Console Restart.

Condition Codes

The following condition code is returned in the form 00B000xx, where xx is the condition code:

82 Invalid Session Type of ASYNC encountered. It must be SYNC.

Return Codes

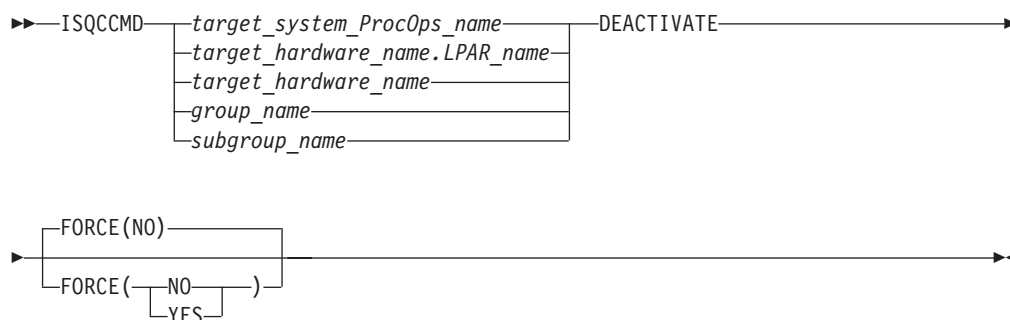
The ISQCCMD command (see “ISQCCMD” on page 337) generates the return codes for common command processing.

DEACTIVATE

Purpose

The DEACTIVATE command causes the target system to end normal operation. It also closes the system console and operator console ports.

Syntax



Requirements

Processor operations must be active for this command to complete successfully.

The addressed target system must be initialized.

Parameters

For a definition of *target_system_ProcOps_name*, *target_hardware_name*, *target_hardware_name.LPAR_name*, *group_name*, and *subgroup_name*, see “ISQCCMD” on page 337.

FORCE

Requests conditional processing of commands that are disruptive to the operating system control program and application work that is in progress. Use of this operand is based on the operating state of the target processor.

NO Specifies that processing of the command is to continue *only* if the target CPU control program is not in the operating state. Specify FORCE(NO) in a situation where you would *not* want to upset the control program work-in-progress.

YES

Specifies that processing of the command is to continue *even* if the target CPU control program is in the operating state. Specify FORCE(YES) in a situation where disruption of the control program work-in-progress is not important, such as in recovery situations.

DEACTIVATE

The default, if FORCE is not explicitly stated, is FORCE(NO).

FORCE(NO) requires that the associated command *fail* when useful work is taking place. The DEACTIVATE command's formal fail criteria when FORCE(NO) is specified or when FORCE defaults to NO is *operating*.

Defaults

The DEACTIVATE command defaults to FORCE(NO).

Usage

Use this common command to close a target system. Closing a target system does the following:

- Ends any active sessions with the target system
- Disables the target system
- Performs any required end-of-day activities
- Quiesces the target system

If this command is directed to a target hardware name rather than to a target system ProcOps name, the entire processor complex is brought to a power-off state.

If you do not specify FORCE(YES), the DEACTIVATE command checks to make sure it will not be disruptive by performing the following processing:

- If the target system runs in a logical partition and the same logical partition name is initialized to another target system in the same target hardware, the DEACTIVATE command is rejected and processing of the command halts.
- On a non-partitioned target system, if the target hardware has another target system initialized to it, the DEACTIVATE command is rejected and processing of the command halts.

DEACTIVATE of VM Guest Systems

Purpose: If a target system running in a guest machine is part of a DEACTIVATE request, a CP FORCE command is issued by the PSM for that guest machine. The VM host system is not affected.

Parameters:

FORCE(NO)

If FORCE(NO) is specified for a guest machine, the guest status is checked. If it is NOT OPERATING then a CP FORCE command is issued to stop the guest. If the status is any other value, the CP FORCE command is not issued and the DEACTIVATE request is rejected.

FORCE(YES)

If FORCE(YES) is specified for a guest machine, a CP FORCE command is issued for the guest. If there is an active operating system running in the guest machine, it is first stopped using the appropriate QUIESCE processing for the operating system.

For LINUX systems, the use of CP FORCE command means that a shutdown signal is sent to the operating system. This, in turn, allows the LINUX system to initiate its own controlled shutdown process.

Restrictions and Limitations: DEACTIVATE is not supported for *target_hardware_names*. (The PSM cannot be powered off.)

Restrictions and Limitations

- When closing a target system, the DEACTIVATE common command issues an MVS QUIESCE (or equivalent) command and hardware system reset at the system console port if appropriate. This processor command may be processed in the NNT-driven part of shutdown procedures, if necessary.
- The DEACTIVATE common command also performs a system reset of the target system, and disables and releases the focal-point ports.
- To reinitialize a target system that was shut down with the DEACTIVATE common command, you must issue the ACTIVATE common command (see “ACTIVATE” on page 407).

Return Codes

The ISQCCMD command (see “ISQCCMD” on page 337) generates the return codes for common command processing.

EXTINT

Purpose

The EXTINT command causes the target system to perform the external interrupt function on a central processor that exists on a target hardware processor.

Syntax

```

▶▶—ISQCCMD—target_system_ProcOps_name—EXTINT—▶▶
      |-----|
      |target_hardware_name.LPAR_name|
      |group_name                    |
      |subgroup_name                  |
      |-----|
  
```

Requirements

Processor operations must be active for this command to complete successfully.

The addressed target system must be initialized for this command to complete successfully.

Parameters

For a definition of *target_system_ProcOps_name*, *target_hardware_name.LPAR_name*, *group_name*, and *subgroup_name*, see “ISQCCMD” on page 337.

Defaults

None.

Usage

Issue the EXTINT command to generate an interrupt request to the processor which will be processed at the end of the current unit of work (unless other interrupt requests are pending), causing the program status word (PSW) to be swapped with a new PSW, and initiating processing from an address in the new PSW.

EXTINT for a VM Guest System

Purpose: This causes a CP EXTERNAL KEY command to be issued for the guest machine.

Restrictions and Limitations

- This command is not supported for coupling facility target systems.

Return Codes

The ISQCCMD command (see “Return Codes” on page 339) generates the return codes for common command processing.

GETCLUSTER

Purpose

The command returns a list of the CPC addresses that are in the scope of control in the current CPC environment. If the ProcOps SNMP connection is to a Support Element, the list represents the defined CPCs of the so called Master HMC, which has the LIC Change function enabled. If the ProcOps SNMP is to a HMC, the GETCLUSTER command returns the CPC addresses of the Defined CPCs Group of this HMC.

Use the GETCLUSTER command to get basic information about all CPCs in the neighborhood of your CPC, regardless if the processors are defined to System Automation, or not.

Syntax

```

▶▶ ISQCCMD { target_system_ProcOps_name |
             target_hardware_name.LPAR_name |
             target_hardware_name } GETCLUSTER ▶▶

```

Requirements

The requirements for the GETCLUSTER command to complete successfully are:

Processor Operations environment

- Processor operations must be active.
- The addressed target system or target hardware.lpar must have been initialized using the ISQXIII command.

LPAR Management environment

- SA z/OS must be fully initialized.
- The processor hardware of the addressed target system or target hardware LPAR must be configured for connection type INTERNAL in the SA z/OS customization dialogs.

Parameters

For a definition of *target_system_ProcOps_name*, *target_hardware_name.LPAR_name*, and *target_hardware_name*, see “ISQCCMD” on page 337.

Defaults

None.

Usage

This common command can also be used for processors or systems that you have configured with a BCP Internal Interface connection in your SA z/OS policy. If ProcOps is active, and your common command targets a processor or system that has the same name in your ProcOps and BCP Internal Interface configuration, ProcOps is always preferred. To avoid this, you must either stop ProcOps or use names that are uniquely assigned to either ProcOps or the BCP Internal Interface.

Additional Programming Information

On command completion, the immediate HW response report messages are also available in a Pipe KEEP with the name 'ISQ.SNMP'. When using this KEEP as your first Pipe stage, you can directly access this HW data.

Restrictions and Limitations

The GETCLUSTER common command is only supported for SNMP connections and BCP Internal Interface connections configured for LPAR Management. When issuing this request for another ProcOps connection type, it will be rejected.

Return Codes

The ISQCCMD command (see “Return Codes” on page 339) generates the return codes for common command processing.

GETIINFO

Purpose

The GETIINFO command returns a subset of the CPCDATA command response. It allows you to retrieve the status and mode of the specified target system LPAR together with the defined LPAR number. If available, OS-related information such as operating system name or version data is returned.

Use the GETIINFO command if you know the LPAR name or system name and you are interested only in HW information for this LPAR or system. For performance reasons you are not recommended to use CPCDATA in such cases.

Syntax

```
▶▶—ISQCCMD—[target_system_ProcOps_name]—GETIINFO—▶▶
               [target_hardware_name.LPAR_name]
```

Requirements

The requirements for the GETIINFO command to complete successfully are:

Processor Operations environment

- Processor operations must be active.
- The addressed target system or target hardware.lpar must have been initialized using the ISQXIII command.

LPAR Management environment

GETIINFO

- SA z/OS must be fully initialized.
- The processor hardware of the addressed target system or target hardware LPAR must be configured for connection type INTERNAL in the SA z/OS customization dialogs.

Parameters

None.

Defaults

None.

Usage

This common command can also be used for processors or systems that you have configured with a BCP Internal Interface connection in your SA z/OS policy. If ProcOps is active, and your common command targets a processor or system that has the same name in your ProcOps and BCP Internal Interface configuration, ProcOps is always preferred. To avoid this, you must either stop ProcOps or use names that are uniquely assigned to either ProcOps or the BCP Internal Interface.

Additional Programming Information

On command completion, the immediate HW response report messages are also available in a Pipe KEEP with the name 'ISQ.SNMP'. When using this KEEP as your first Pipe stage, you can directly access this HW data.

Restrictions and Limitations

The GETIINFO common command is only supported for SNMP connections and BCP Internal Interface connections configured for LPAR Management. When issuing this request for another ProcOps connection type, it will be rejected.

Return Codes

The ISQCCMD command (see “Return Codes” on page 339) generates the return codes for common command processing.

GETISTAT

Purpose

The GETISTAT command returns a subset of the CPCDATA command response. It allows you to retrieve the current HW status of a target system LPAR.

Use the GETISTAT command if you know the LPAR name or system name and you are interested only in HW information for this LPAR or system. For performance reasons you are not recommended to use CPCDATA in such cases.

Syntax

```
▶▶ ISQCCMD { target_system_ProcOps_name | target_hardware_name.LPAR_name } GETISTAT ▶▶
```

Requirements

The requirements for the GETISTAT command to complete successfully are:

Processor Operations environment

- Processor operations must be active.
- The addressed target system or target hardware.lpar must have been initialized using the ISQXIII command.

LPAR Management environment

- SA z/OS must be fully initialized.
- The processor hardware of the addressed target system or target hardware LPAR must be configured for connection type INTERNAL in the SA z/OS customization dialogs.

Parameters

None.

Defaults

None.

Usage

This common command can also be used for processors or systems that you have configured with a BCP Internal Interface connection in your SA z/OS policy. If ProcOps is active, and your common command targets a processor or system that has the same name in your ProcOps and BCP Internal Interface configuration, ProcOps is always preferred. To avoid this, you must either stop ProcOps or use names that are uniquely assigned to either ProcOps or the BCP Internal Interface.

Additional Programming Information

On command completion, the immediate HW response report messages are also available in a Pipe KEEP with the name 'ISQ.SNMP'. When using this KEEP as your first Pipe stage, you can directly access this HW data.

Restrictions and Limitations

The GETISTAT common command is only supported for SNMP connections and BCP Internal Interface connections configured for LPAR Management. When issuing this request for another ProcOps connection type, it will be rejected.

Return Codes

The ISQCCMD command (see “Return Codes” on page 339) generates the return codes for common command processing.

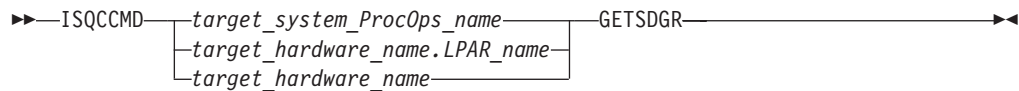
GETSDGR

Purpose

The command returns the reason details available from target hardware processors that operate in DEGRADED state.

Use the GETSDGR command if you need information about the reason of the DEGRADED status.

Syntax



Requirements

The requirements for the GETSDGR command to complete successfully are:

Processor Operations environment

- Processor operations must be active.
- The addressed target system or target hardware.lpar must have been initialized using the ISQXIII command.

LPAR Management environment

- SA z/OS must be fully initialized.
- The processor hardware of the addressed target system or target hardware LPAR must be configured for connection type INTERNAL in the SA z/OS customization dialogs.

Parameters

For a definition of *target_system_ProcOps_name*, *target_hardware_name.LPAR_name*, and *target_hardware_name*, see “ISQCCMD” on page 337.

Defaults

None.

ISQVARS Keywords

NOT_DEGRADED

System is not in DEGRADED mode

MEM_REDUCED

Loss of memory

MEM_BUS_FAILURE

Loss of channels due to CPC hardware failure

NODE_NOT_RUNNING

One or more books are no longer functioning

RING_OPEN

The ring connecting the books is open

CBU_EXPIRATION

Capacity backup resources have expired

MRU_FAILURE

Modular Refrigeration Unit (cooling) problem

TEMPERATURE_PROBLEM

Processor frequency reduced due to temperature problem

IML_WAS_IN_DEGRADED_MODE

CPC was IMLed during temperature problem

Usage

This common command can also be used for processors or systems that you have configured with a BCP Internal Interface connection in your SA z/OS policy. If ProcOps is active, and your common command targets a processor or system that has the same name in your ProcOps and BCP Internal Interface configuration, ProcOps is always preferred. To avoid this, you must either stop ProcOps or use names that are uniquely assigned to either ProcOps or the BCP Internal Interface.

Additional Programming Information

On command completion, the immediate HW response report messages are also available in a Pipe KEEP with the name 'ISQ.SNMP'. When using this KEEP as your first Pipe stage, you can directly access this HW data.

Restrictions and Limitations

The GETSDGR common command is only supported for SNMP connections and BCP internal interface connections configured for LPAR management. When issuing this request for another ProcOps connection type, it will be rejected.

Not all processor types provide DEGRADED support. If you issue GETSDGR for such target hardware, the GETSDGR command will fail with a condition code of 0B100001, object not defined, which means that the HW does not provide this function.

Return Codes

The ISQCCMD command (see “Return Codes” on page 339) generates the return codes for common command processing.

GETSINFO

Purpose

The GETSINFO command returns a subset of the CPCDATA command response. It allows you to retrieve the status and mode of the specified target hardware together with information about the machine type model or serial number.

Use the GETSINFO command if you know the target hardware or a target system name running on that hardware. For performance reasons you are not recommended to use CPCDATA in such cases.

Syntax

```

▶▶ ISQCCMD { target_system_ProcOps_name | target_hardware_name.LPAR_name | target_hardware_name } GETSINFO ▶▶

```

Requirements

The requirements for the GETSINFO command to complete successfully are:

Processor Operations environment

- Processor operations must be active.
- The addressed target system or target hardware.lpar must have been initialized using the ISQXIII command.

GETSINFO

LPAR Management environment

- SA z/OS must be fully initialized.
- The processor hardware of the addressed target system or target hardware LPAR must be configured for connection type INTERNAL in the SA z/OS customization dialogs.

Parameters

For a definition of *target_system_ProcOps_name*, *target_hardware_name.LPAR_name*, and *target_hardware_name*, see “ISQCCMD” on page 337.

Defaults

None.

Usage

This common command can also be used for processors or systems that you have configured with a BCP Internal Interface connection in your SA z/OS policy. If ProcOps is active, and your common command targets a processor or system that has the same name in your ProcOps and BCP Internal Interface configuration, ProcOps is always preferred. To avoid this, you must either stop ProcOps or use names that are uniquely assigned to either ProcOps or the BCP Internal Interface.

Additional Programming Information

On command completion, the immediate HW response report messages are also available in a Pipe KEEP with the name 'ISQ.SNMP'. When using this KEEP as your first Pipe stage, you can directly access this HW data.

Restrictions and Limitations

The GETSINFO common command is only supported for SNMP connections and BCP Internal Interface connections configured for LPAR Management. When issuing this request for another ProcOps connection type, it will be rejected.

Return Codes

The ISQCCMD command (see “Return Codes” on page 339) generates the return codes for common command processing.

GETSSTAT

Purpose

The GETSSTAT command returns a subset of the CPCDATA command response. It allows you to retrieve the current HW status of target hardware

Use the GETSSTAT command if you know the target hardware or a target system name running on that hardware. For performance reasons you are not recommended to use CPCDATA in such cases.

Syntax

```
▶▶ ISQCCMD target_system_ProcOps_name GETSSTAT ▶▶  
└─ target_hardware_name.LPAR_name ─┘  
└─ target_hardware_name ─┘
```

Requirements

The requirements for the GETSSTAT command to complete successfully are:

Processor Operations environment

- Processor operations must be active.
- The addressed target system or target hardware.lpar must have been initialized using the ISQXIII command.

LPAR Management environment

- SA z/OS must be fully initialized.
- The processor hardware of the addressed target system or target hardware LPAR must be configured for connection type INTERNAL in the SA z/OS customization dialogs.

Parameters

For a definition of *target_system_ProcOps_name*, *target_hardware_name.LPAR_name*, and *target_hardware_name*, see “ISQCCMD” on page 337.

Defaults

None.

Additional Programming Information

On command completion, the immediate HW response report messages are also available in a Pipe KEEP with the name 'ISQ.SNMP'. When using this KEEP as your first Pipe stage, you can directly access this HW data.

Restrictions and Limitations

The GETSSTAT common command is only supported for SNMP connections and BCP Internal Interface connections configured for LPAR Management. When issuing this request for another ProcOps connection type, it will be rejected.

Return Codes

The ISQCCMD command (see “Return Codes” on page 339) generates the return codes for common command processing.

ICNTL

Purpose

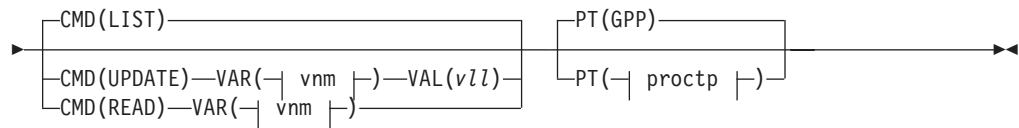
The ICNTL common command allows you to query and change LPAR-specific values and settings. The PR/SM™ hardware component or WLM use this information to manage partition performance and to distribute shared processor resources among the images of a CPC. Changing the image control values and settings with ICNTL allows you to influence LPAR performance and LPAR resource capacities at run time.

Syntax

```

▶▶—ISQCCMD—[target_system_ProcOps_name—]—ICNTL—▶▶
               [target_hardware_name.LPAR_name—]
  
```

ICNTL



vnm:



proctp:



Requirements

The requirements for the ICNTL command to complete successfully are:

Processor Operations environment

- Processor operations must be active.
- The addressed target system or target hardware.lpar must have been initialized using the ISQXIII command.

LPAR Management environment

- SA z/OS must be fully initialized.
- The processor hardware of the addressed target system or target hardware LPAR must be configured for connection type INTERNAL in the SA z/OS customization dialogs.

Parameters

For a definition of *target_system_ProcOps_name* and *target_hardware_name.LPAR_name*, see "ISQCCMD" on page 337.

CMD

The image control command that is to be executed.

LIST

Returns a list of the current image control variable settings in a AOFA0007 response report from the target hardware image.

Only variables supported by the target processor type are shown in the response report. Other read errors are marked as 'ReadErr:xxx' in the variable value field.

Refer to the appendix section "Data Exchange Services "0B100xxx" in *IBM Tivoli System Automation for z/OS Messages and Codes*, if you receive 'ReadErr:xxx' responses for additional information.

UPDATE

Changes the value of the specified image control variable and returns an AOFA0007 response report.

READ

Returns the current setting of the specified image control variable in an AOFA0007 response report.

VAR

Image control variable name *vnm*.

CLUSTR

Name of the CPC LPAR cluster that the LPAR belongs to.

This is a READONLY variable.

Value information: Cluster of one or more LPARs, running on one zSeries 900 or later CPC, that are in the same sysplex and are running z/OS 1.1 or later in z/Architecture® mode. The scope of an LPAR Cluster is currently the same as the scope of an I/O Cluster, however the term LPAR Cluster is also used in relation to WLM LPAR CPU Management and Channel Subsystem I/O Priority Queuing. LPAR clusters are used for z/OS Intelligent Resource Director (IRD) capabilities. Cluster names can be defined using HCD.

DEFCAP

Defined capacity.

Value information:

0 No defined capacity for the LPAR.

1-2147483647

Amount of defined LPAR capacity.

Note that the maximum value represents the highest value accepted by the SE/HMC, which may not represent the correct capacity limit in your environment.

The defined capacity expressed in terms of Millions of Service Units (MSUs) per hour. MSUs is a measure of processor resource consumption. The amount of MSUs that a logical partition consumes is dependent on the model, the number of logical processors that are available to the partition, and the amount of time that the logical partition is dispatched. The defined capacity value specifies how much of the logical partition capacity is to be managed by Workload Manager (WLM) for the purpose of software pricing.

GRPCAP

Defined group capacity.

Value information:

0 No defined group capacity for the LPAR.

1-2147483647

Amount of defined group capacity the LPAR belongs to.

Note that the maximum value represents the highest value accepted by the SE/HMC, which may not represent the correct capacity limit in your environment.

ICNTL

The defined capacity expressed in terms of Millions of Service Units (MSUs) per hour. MSUs is a measure of processor resource consumption.

GRPPRF

Capacity Group Profile name where the addressed target system or logical partition is a member. Members of capacity groups share a common MSU value. This is an alternative to the DEFCAP specification, where the MSU value is partition-specific. You can change the MSU CAPACITY value of a group profile using the PROFILE common command.

Value information:

nnnnnnnn

The name of the group profile. The name must be alphanumeric and a maximum of 8 characters. If you specify a name that does not exist as an activation profile of type GROUP, the ICNTL command fails with a condition code of 0B100005.

Note that GRPPRF is available on System z processors or later. Reading GRPPRF on older processors will return GRPPRF without a value. Updating GRPPRF on older processors fails with a condition code of 0B100001.

PWC

Current processing weight.

This is a READONLY variable.

Value information:

- 0** The CPC image does not represent a logical partition, or the LPAR has only dedicated processors assigned to it.
- 1–999** Represents the relative amount of shared processor resources that is currently allocated to the LPAR.

PWCC

Current processing weight capped indicator.

This is a READONLY variable.

Value information:

- YES** The current processing weight for the LPAR is capped. It represents the maximum share of processor resources regardless of the availability of excess processor resources.
- NO** The current processing weight for the LPAR is not capped. It represents the share of resources that is guaranteed to the LPAR when all CP resources are in use. When excess processor resources are available, the LPAR can use them if necessary.

PWI

Initial processing weight.

Value information:

- 0** The CPC image does not represent a logical partition, or the LPAR has only dedicated processors assigned to it. This value is not valid for UPDATE.
- 1–999** Represents the relative amount of shared processor resources that is initially allocated to the LPAR.

Note: If the WLME flag has a value of YES, the PWI value must be in the range from PWMN to PWMX.

PWIC

Initial processing weight capped indicator.

Value information:

- YES** The initial processing weight for the LPAR is capped. It represents the maximum share of processor resources regardless of the availability of excess processor resources.
- NO** The initial processing weight for the LPAR is not capped. It represents the share of resources that is guaranteed to the LPAR when all CP resources are in use. When excess processor resources are available, the LPAR can use them if necessary.

PWMN

Minimum processing weight.

The guaranteed minimum share of non-dedicated processor weight, when all processing resources are in use.

Value information:

- 0** The CPC image does not represent a logical partition, or the LPAR has only dedicated processors assigned to it. This value is not valid for UPDATE.
- 1–999** A value that is less than or equal to the initial processing weight that is used to define the minimum relative amount of shared processor resources that is allocated to the LPAR.

Note: This value is only applied if the WLME flag has a value of YES.

PWMX

Maximum processing weight.

Maximum relative amount of shared processor resources for this LPAR.

Value information:

- 0** The CPC image does not represent a logical partition, or the LPAR has only dedicated processors assigned to it. This value is not valid for UPDATE.
- 1–999** A value that is greater than or equal to the initial processing weight that is used to define the maximum relative amount of shared processor resources that is allocated to the LPAR.

Note: This value is only applied if the WLME flag has a value of YES.

WLME

Workload Manager Enabled flag.

Value information:

- YES** z/OS Workload Manager is used to manage shared processor resources for a logical partition, according to the settings of the minimum and maximum weight specifications.
- NO** PR/SM is managing the processing weight. The PWMN and PWMX values do not apply.

VAL

Value specification for variable UPDATE operation.

vll

See the value information for the “VAR parameter” on page 431.

- PT** The Processor Type parameter allows you to specify which processor type the corresponding Image Control information should be read or updated for.

proctp The processor type:
GPP General Purpose Processor
AAP Application Assist Processor
IFL Integrated Facility for LINUX processor
ICF Internal Coupling Facility processor
IIP z9 Integrated Information Processor

Notes:

1. The IFA processor type (Integrated Facility for Application processor) has been replaced by AAP.
2. You cannot specify special purpose processors (AAP, IFL, ICF, IIP) for the CLUSTR, DEFCAP, GRPCAP, GRPPRF or WLME command parameters.

Defaults

If no ICNTL parameters are specified, a CMD(LIST) is executed.

If no processor type is specified with the PT parameter, the default value of GPP (general purpose processor) is used.

Usage

The ICNTL common command can be used to set LPAR performance related parameters, such as an LPAR's initial processing weight, PWI, or the Defined Capacity, DEFCAP.

For example, DEFCAP can be used to automate the lowering and raising of the MSU value (defined capacity, soft-cap). This LPAR value is important when Sub-Capacity License charging for software is in place. An optimized setting of the DEFCAP value can help to control software cost.

The equivalent to the ICNTL common command can be performed on the HMC using the CPC Operational Customization tasks: Change LPAR Controls and Change LPAR Group Controls.

The command response reports from the processor hardware are available as ProcOps ISQ900I messages with a console indicator of SC. Note that the message originator following the message identifier is either a ProcOps target system name, or a target hardware name together with an LPAR name. In order to get a copy of such hardware messages on your screen as ISQ901I messages, use the ISQXMON command.

This common command can also be used for processors or systems that you have configured with a BCP Internal Interface connection in your SA z/OS policy. If ProcOps is active, and your common command targets a processor or system that has the same name in your ProcOps and BCP Internal Interface configuration, ProcOps is always preferred. To avoid this, you must either stop ProcOps or use names that are uniquely assigned to either ProcOps or the BCP Internal Interface.

Additional Programming Information

On command completion, the immediate HW response report messages are also available in a PIPE KEEP with the name 'ISQ.SNMP'. You can directly access this HW data when using this KEEP as your first Pipe stage. See "Using Immediate ISQCCMD Common Command Responses" on page 339.

Restrictions and Limitations

The ICNTL common command is only supported for SNMP connections and BCP Internal Interface connections configured for LPAR Management. If you issue an ICNTL request for another ProcOps connection type, it will be rejected.

The ICNTL common command works only for processors running in LPAR mode. Depending on the processor machine type, the number of ICNTL variables may vary. Use ICNTL CMD(LIST) to determine the set of the available ICNTL variables for a processor.

You cannot specify special purpose processors (AAP, IFL, ICF, IIP) for the CLUSTR, DEFCAP, or WLME command parameters.

For Special Purpose Processor types (AAP, IFL, ICF, IIP), variables 'CLUSTR', 'DEFCAP' and 'WLME' are not supported.

For an ICF-type (Internal Coupling Facility processor) special purpose processor, ensure that LPAR that you specify corresponds to a Coupling Facility LPAR in order to read or update meaningful values.

Condition Codes

The following are condition codes that ICNTL might encounter. They are returned in the form 00B000xx, where xx is the condition code.

- 62 No (valid) ICNTL command (LIST, UPDATE, READ) is specified in the request or the command is incomplete. The request is rejected.
- 63 The variable name that is specified in the request is not supported. The request is rejected.
- 65 The value operand of the request was not recognized by ICNTL. The request is rejected. Contact IBM Support.
- 66 The processor type value of the request is invalid. The request is rejected.

Return Codes

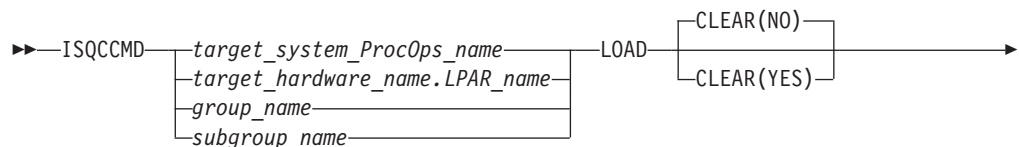
The ISQCCMD command (see "ISQCCMD" on page 337) generates the return codes for common command processing.

LOAD

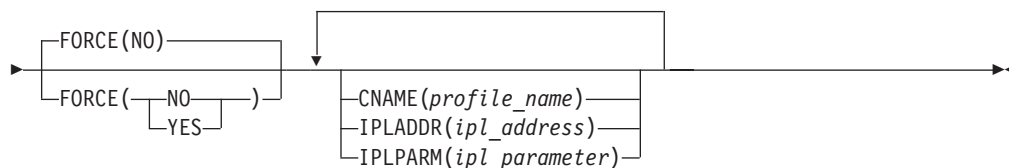
Purpose

The LOAD command performs the initial program load process for a target system processor. This command is not supported for coupling facility target systems.

Syntax



LOAD



Requirements

The requirements for this command to complete successfully are:

- Processor operations must be active.
- The addressed target system must be initialized.
- The addressed target system must have a status of at least INITIALIZED.
- The addressed target system cannot have a status of UNKNOWN, CLOSED, or IPL COMPLETE for the default setting of FORCE(NO) to work.

Parameters

For a definition of *target_system_ProcOps_name*, *target_hardware_name.LPAR_name*, *group_name*, and *subgroup_name*, see “ISQCCMD” on page 337.

CLEAR(NO)

Indicates the function of clearing storage is not to be performed; the LOAD common command issues a normal LOAD command. No space is allowed between the keyword CLEAR and the left parenthesis. This is the default.

CLEAR(YES)

Indicates the function of clearing storage is to be performed; the LOAD common command issues a LOAD CLEAR command. No space is allowed between the keyword CLEAR and the left parenthesis.

FORCE

Requests conditional processing of commands that are disruptive to the operating system control program and application work that is in progress. Use of this operand is based on the operating state of the target processor.

NO Specifies that processing of the command is to continue *only* if the target CPU control program is not in the operating state. Specify FORCE(NO) in a situation where you would *not* want to upset the control program work-in-progress.

YES

Specifies that processing of the command is to continue *even* if the target CPU control program is in the operating state. Specify FORCE(YES) in a situation where disruption of the control program work-in-progress is not important, such as in recovery situations.

The default, if FORCE is not explicitly stated, is FORCE(NO).

FORCE(NO) requires that the associated command *fails* when useful work is taking place. For this command the formal fail criteria when FORCE(NO) is specified or when FORCE defaults to NO is the *operating* state.

IPLADDR

Indicates that the variable following it in parenthesis is the IPL address parameter.

(ipl_address)

Specifies the IPL address as four hexadecimal digits. No space is allowed between the keyword IPLADDR and the left parenthesis.

IPLPARM

Indicates that the variable following it in parenthesis is an IPL parameter.

(ipl_parameter)

Specifies an IPL parameter to be issued with the Load command. This parameter can be 1 through 8 characters long. Lowercase letters are translated to uppercase letters. No space is allowed between the keyword IPLPARM and the left parenthesis.

CNAME

Specifies the name of a Load profile to be sent to the processor's support element. If this keyword is not used, the LOAD operations management command that SA z/OS sends to the support element has a CNAME operand with the Load profile name that was specified in the configuration dialogs.

If this keyword is not used and no Load profile name was specified in the configuration dialogs, SA z/OS omits the CNAME operand from the LOAD command sent to the support element. In this latter case, the support element uses the load parameters that were saved from the last LOAD command for the corresponding target image.

profile_name

Indicates the name of the Load profile. IBM recommends that you let SA z/OS select the profile name automatically rather than overriding SA z/OS's selection with the *profile_name* parameter.

Defaults

The LOAD command defaults to CLEAR(NO) and to FORCE(NO).

The *ipl_address* and *ipl_parameter* parameter default to the values defined in the configuration dialogs, unless they have been changed with the ISQVARS or ISQXOPT command, see "ISQXOPT" on page 401, in which case the values defined by the ISQVARS or ISQXOPT command are used.

For OCF-based processors, the *ipl_address* and *ipl_parameter* parameters default to the values specified in the Load profile.

Usage

This common command assumes that the processor operations environment has been established and that the system console function has been assigned. For a target system operating on an LPAR-mode processor, it also assumes that the logical partition is active and that any required channels are online to the partition. If these assumptions are not correct, other initialization commands should be run first. These functions of the LOAD common command are all performed by the ACTIVATE common command.

If you do not specify FORCE(YES), the LOAD common command checks to make sure it will not be disruptive by performing the following processing:

- If the target system runs in a logical partition and the same logical partition name is initialized to another target system in the same target hardware, the LOAD command is rejected and processing of the command halts.
- On a non-partitioned target system, if the target hardware has another target system initialized to it, the LOAD command is rejected and processing of the command halts.

LOAD

LOAD for a VM Guest System

Purpose: The CP IPL command is issued for the guest machine. (This assumes that the guest machine is already active.)

Parameters:

IPLADDR

This parameter must be present.

IPLPARM

This parameter is translated into a LOADPARM operand.

Restrictions and Limitations: The CNAME parameter is not supported.

Restrictions and Limitations

This command is not supported for coupling facility target systems.

If you do not specify FORCE(YES), the LOAD common command is rejected if the addressed target system has a status of UNKNOWN, CLOSED, or IPL COMPLETE. To perform the load process for a target system that is in a status condition of UNKNOWN or CLOSED, issue the ACTIVATE common command (see "ACTIVATE" on page 407). If the addressed target system has a status of IPL COMPLETE, you can specify FORCE(YES) to perform the IPL process without deactivating the target system first.

For SNMP connections, if a CNAME keyword is specified with the LOAD command, any other load keyword operands are ignored. Note that this does not apply to the FORCE(YES) or FORCE(NO) parameter.

Return Codes

The ISQCCMD command (see "ISQCCMD" on page 337) generates the return codes for common command processing.

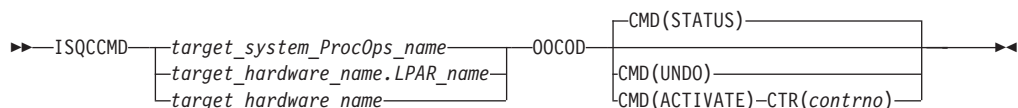
OOCOD

Purpose

The OOCOD common command allows you to:

- Query the status of the On/Off Capacity on Demand feature for a specific CPC
- Activate the On/Off Capacity on Demand feature
- Undo a previously performed Activate

Syntax



Requirements

The requirements for the OOCOD command to complete successfully are:

- Processor operations must be active.

- The addressed target system must be initialized, or, if the target hardware is addressed, at least one target system on that hardware must be initialized.
- For the STATUS command: No further requirements.
- For the ACTIVATE command: The On/Off Capacity on Demand feature must be enabled and installed and be in a status of not activated.
- For UNDO: This is only applicable after a successful ACTIVATE.
- With Console Workplace 2.10 and later versions, for ACTIVATE and UNDO, the flag 'Allow capacity change API requests' must be set in 'Customize API Settings' on the SE.

Parameters

For a definition of *target_system_ProcOps_name*, *target_hardware_name.LPAR_name*, and *target_hardware_name*, see “ISQCCMD” on page 337.

CMD

The OOCOD command that is to be executed. This can be:

STATUS

Query the status of the On/Off Capacity on Demand feature and issue a report. If activated, the activation date is also provided.

Note: The INSTALLED status is set when an On/Off Capacity on Demand contract is activated. If no contract is active, the status is NOT INSTALLED.

ACTIVATE

Put the On/Off Capacity on Demand feature in an active state. This command requires a valid contract number for successful execution.

UNDO

Put the On/Off Capacity on Demand feature in an inactive state.

CTR

Only required for the ACTIVATE command. The order number (*contrno*) must correspond to a valid contract number for the hardware that has the On/Off Capacity on Demand feature implemented.

Note: For SE Console Workplace 2.10 and later versions, *contrno* corresponds to the record ID of one of the On/Off Capacity on Demand records that have already been loaded on the processor hardware.

Defaults

The OOCOD command defaults to STATUS.

Usage

Use the OOCOD command to activate and deactivate the On/Off Capacity on Demand feature. You can retrieve the current On/Off Capacity on Demand feature settings with the STATUS command.

Note that the term *Console Workplace* refers to the title line that is displayed in the Main Application Window of each CPC Support Element. The following lists the SE Workplace Version numbers and their related IBM System names:

- 2.11: IBM System z196
- 2.10: IBM System z10
- 2.9: IBM System z9
- 2.8: IBM eServer zSeries 990

OOCOD

For more information about OOCOD, see *System z Capacity on Demand User's Guide*, available for the particular System z on IBM Resource Link.

Restrictions and Limitations

The OOCOD command is only supported for SNMP connections. If you issue an OOCOD request for another ProcOps connection type, it will be rejected.

The OOCOD command applies only to hardware that supports the On/Off Capacity on Demand feature. For other hardware, the OOCOD command will fail.

Condition Codes

The following lists the condition codes that are returned in the form 00B000xx, where xx is the condition code:

- 83 Invalid OOCOD command provided (it must be STATUS, ACTIVATE or UNDO).
- 84 No Order Number (CTR) provided for the OOCOD ACTIVATE command.
- 85 The current ooCoD status of the target does not allow the action (for example, an UNDO without a previous ACTIVATE).

Return Codes

The ISQCCMD command (see "ISQCCMD" on page 337) generates the return codes for common command processing.

POWERMOD

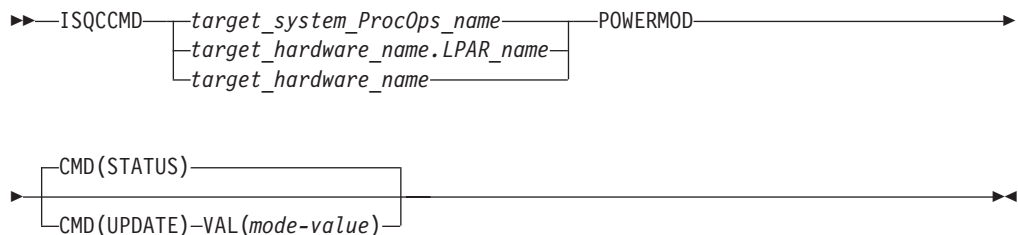
Purpose

The POWERMOD common command allows you to:

- Query the power mode status of a specific CPC
- Change the power mode of a specific CPC (Static power save mode)

Static power save mode is designed to reduce power consumption on z196 when full performance is not required. It can be switched on and off during runtime with no disruption to currently running workloads, aside from the change in performance.

Syntax



Requirements

The requirements for the POWERMOD command to complete successfully are:

- Processor operations must be active.
- The addressed target system must be initialized or, if the target hardware is addressed, at least one target system on that hardware must be initialized.

- Hardware Console Workplace must be version 2.11 or higher.
- For the STATUS command: No further requirements.
- For the UPDATE command: The CPC must be allowed or entitled to perform a power mode change.

Parameters

For a definition of *target_system_ProcOps_name*, *target_hardware_name.LPAR_name*, and *target_hardware_name*, see "ISQCCMD" on page 337.

CMD

The POWERMOD command that is to be executed. This can be:

STATUS

Query the power mode status of the CPC. The report issued by the command contains the following information:

- Current power mode setting
- Supported power mode values
- Power mode change allowed (Y/N)

UPDATE

Change the CPC's power mode, for example, from 100 (High Performance) to one of the supported Power Save values.

VAL

Only required for the UPDATE command. Contains the power mode the CPC should be changed to.

Defaults

The POWERMOD command defaults to STATUS.

Usage

Use the POWERMOD command to query and the change the CPC's power mode.

Note that the term 'Console Workplace' refers to the title line, displayed on the Main Application Window of each CPC Support Element (SE) or on the Hardware Management Console (HMC).

The following lists the SE/HMC Workplace Versions numbers and their related IBM System names:

- 2.11 - IBM System z196
- 2.10 - IBM System z10
- 2.9 - IBM System z9
- 2.8 - IBM eServer zSeries 990

Restrictions and Limitations

The POWERMOD command applies only to hardware that supports the Power Management feature. For other hardware, the POWERMOD command will fail.

The POWERMOD command is only supported for SNMP connections. If you issue a POWERMOD request for another Processor operations connection type, it will be rejected.

On air-cooled models, Static power save mode can be entered only once in a calendar day.

POWERMOD

Condition Codes

The following lists the condition codes that are returned in the form 00B00xxx, where xx is the condition code:

097

Unable to retrieve CPC's current power mode status.

098

Unable to retrieve CPC's supported power modes list.

099

Unable to retrieve power mode change allowed information.

100

Unsupported POWERMOD command.

101

Invalid POWERMOD 'UPDATE' parameter.

Return Codes

The ISQCCMD command (see "ISQCCMD" on page 337) generates the return codes for common command processing.

PROFILE

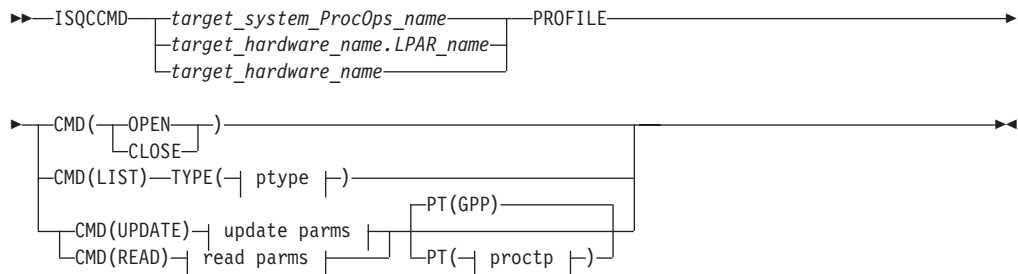
Purpose

The PROFILE common command allows you to access the activation profiles of a CPC. Activation profiles contain configuration information about the CPC itself and its images (LPARs), as well as load information for the operating systems to be initialized on the CPC or its LPARs.

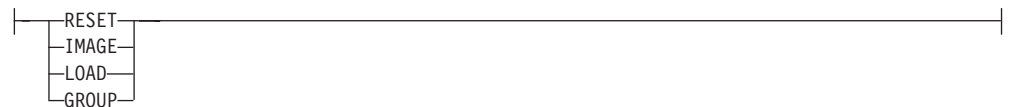
With PROFILE, the names of the activation profiles can be listed and the content of a profile can be queried. The profile content can be changed.

The activation profiles are stored in the Support Element of a CPC. They are used for CPC or image activation and for processor load operations that are executed using load profile information.

Syntax



ptype:



- SA z/OS must be fully initialized.
- The processor hardware of the addressed target system or target hardware LPAR must be configured for connection type INTERNAL in the SA z/OS customization dialogs.

Parameters

For a definition of *target_system_ProcOps_name*, *target_hardware_name.LPAR_name*, and *target_hardware_name*, see "ISQCCMD" on page 337.

CMD

The profile command that is to be executed. This can be:

OPEN

This command must be executed as the first profile access command. It builds an internal list of the available profiles names for faster profile access. On successful completion an AOFA0020 report is returned, with the number of the available activation profiles for each of the profile types.

CLOSE

This command should be executed when your profile access is complete. It clears the internal profile name list. If the CLOSE is omitted, you can re-access the profiles without performing an OPEN command, however the internal profile list may no longer be current. On completion, an AOFA0020 report is returned.

LIST

Returns a list of the profile names for the specified profile TYPE in an AOFA0020 response report.

UPDATE

The content of the specified profile variable is changed to the value defined with the VAL parameter. The update response is returned in an AOFA0020 report. The update fails or is rejected if the hardware detects an invalid value.

READ

Returns the contents of the specified profile NAME and TYPE in an AOFA0020 response report. If a VAR parameter is added, only the content of the specified profile variable is returned.

Note that if the profile content is retrieved, variable names without a value may be listed. If this is the case, either the CPC does not support this profile variable, or a supported variable is not initialized.

You can use the HMC's CPC Operational Customization Task: Customize/Delete Activation Profiles to determine which profile variables are supported by a CPC's machine type.

TYPE

The activation profile type, *ptype*, which can be one of the following:

RESET

This profile type is used to activate a CPC. The following profile variables are supported: IOCDS, ENDTSL, PRT, PRTT.

IMAGE

This profile type is used to activate images (LPARs). The following profile variables are supported: AUTOIPL, BRLBA, BPS, CS, CSRES, CPD, CPDRES, DEFCAP, ES, ESRES, GRPPRF, IPLADR, IPLPRM, IPLTYP, LUN, OSSLP, PWI, PWIC, PWMN, PWMX, WLME, WWPN.

LOAD

This profile type is used to load a CPC or an image. The following profile variables are supported: BRLBA, BPS, IPLADR, IPLPRM, IPLTYP, LUN, OSSLP, WWPN.

GROUP

This profile type is used to define capacity limits for a group of logical partitions. The CAPACITY profile variable is supported.

NAME

The activation profile name.

pname

Name, 1-16 alphanumeric characters, without blanks. The named profile must be available on the Support Element.

VAR

The activation profile variable name *pvar*. The following is a list of variable names and their associated values.

AUTOIPL

This flag indicates if a automatic LOAD should be performed as part of the LPAR activation. The variable is valid for IMAGE profile only.

Value information:

- YES** Perform an automatic LOAD after LPAR activation is complete, using the IPLTYP, IPLADR, and IPLPRM information that is stored in the IMAGE profile.
- NO** Do not perform a LOAD after LPAR activation.

BRLBA

The boot record logical block address that is used for IPLs from a SCSI device. Valid for profile types IMAGE and LOAD.

Value information:

- pval* The eight-byte (16 hexadecimal digit) boot record logical block address specifies the logical block address (LBA) of the boot record. (A boot record is used to locate an OS loader on an IPL disk. Normally, this boot record is located at LBA 0. The SCSI IPL function allows the boot record to be located at a different LBA.)
- *
- When an asterisk (*) is specified as the UPDATE value, the actual data value is copied from the NetView Task Global variable BRLBA.

BPS

The boot partition specification that is used for IPLs from a SCSI device. Valid for profile types IMAGE and LOAD.

Value information:

- pval* The boot program selector, a decimal value between 0 and 30, is used to select the section of the IPL disk on which the desired OS resides. (The SCSI IPL function allows up to 31 different operating systems to reside on one IPL disk.)
- *
- When an asterisk (*) is specified as the UPDATE value, the actual data value is copied from the NetView Task Global variable BPS.

CAPACITY

The defined capacity limit not only for a single LPAR (see "The DEFCAP parameter" on page 447), but for a group of LPARs running on the same CPC, known as a capacity group. It represents the number of workload units (WLUs) a capacity group has assigned as its limit. Valid for profile type GROUP only.

Value information:

- 0** No group capacity limit defined.

PROFILE

1-2147483647

Note that the maximum value represents the highest value accepted by the SE/HMC, which may not represent the correct capacity limit in your environment.

For more information about Group Capacity settings and how workload management and workload license charges are related, see *z/OS MVS Planning: Workload Management, SA22-7602*.

CPD

The number of logical central processors assigned to the partition for its dedicated use. The assignment occurs at partition activation time.

Value information:

n The number of logical processors. For processor type GPP, 1 is the allowed minimum. For other processor types 0 is allowed. The maximum number of logical processors possible depends on your physical processor configuration.

CPDRES

The number of logical central processors assigned to the partition for its dedicated use. The logical processors are reserved to be used after partition activation, when needed.

Value information:

n The number of logical processors. For processor type GPP, 1 is the allowed minimum. For other processor types 0 is allowed. The maximum number of logical processors possible depends on your physical processor configuration.

CPS

The number of logical central processors assigned to the partition, but shared with other partitions. The assignment occurs at partition activation time.

Value information:

n The number of logical processors. For processor type GPP, 1 is the allowed minimum. For other processor types 0 is allowed. The maximum number of logical processors possible depends on your physical processor configuration.

CPSRES

The number of logical central processors assigned to the partition, but shared with other partitions. The logical processors are reserved to be used after partition activation, if needed.

Value information:

n The number of logical processors. For processor type GPP, 1 is the allowed minimum. For other processor types 0 is allowed. The maximum number of logical processors possible depends on your physical processor configuration.

CS The amount of Central Storage, in megabytes, allocated at partition activation time for its exclusive use.

Value information:

n Enter a value that is compatible with the storage granularity supported by your CPC.

For storage granularity information, see the *Processor Resource/Systems Manager Planning Guide*, available for your CPC on IBM Resource Link.

CSRES

The amount of Central Storage, in megabytes, that can be allocated dynamically to the partition after activation.

Reserved storage provides the logical partition with an additional amount of storage that can be used only if it is not already being used by another active logical partition.

There is no minimum for reserved storage. Zero megabytes (0 MB) is a valid amount of reserved storage.

Value information:

0–n Enter a value that is compatible with the storage granularity supported by your CPC.

For storage granularity information, see the *Processor Resource/Systems Manager Planning Guide*, available for your CPC on IBM Resource Link.

DEFCAP

The logical partition's defined capacity. Valid for profile type IMAGE.

Value information:

0 No defined capacity for the LPAR.

1–2147483647

Amount of defined LPAR capacity.

Note that the maximum value represents the highest value accepted by the SE/HMC, which may not represent the correct capacity limit in your environment.

The defined capacity expressed in terms of Millions of Service Units (MSUs) per hour. MSUs is a measure of processor resource consumption. The amount of MSUs that a logical partition consumes is dependent on the model, the number of logical processors that are available to the partition, and the amount of time that the logical partition is allocated. The defined capacity value specifies how much of the logical partition capacity is to be managed by Workload Manager (WLM) for the purpose of software pricing.

ENDTSL

The end time slice if the CPC image enters a wait state. Valid for the RESET profile type.

Value information:

YES Indicates that a CPC Image should lose its share of running time when it enters a wait state.

NO Indicates that a CPC Image should not lose its share of running time when it enters a wait state.

Note: This value can only be set if the processor running time type is set to 1, that is, set to a constant value (see “The PRTT Parameter” on page 450).

ES The amount of Central Storage, in megabytes, allocated at partition activation time for use as expanded storage.

PROFILE

There is no minimum for expanded storage. Zero megabytes (0 MB) is a valid amount of expanded storage.

Value information:

0–n Enter a value that is compatible with the storage granularity supported by your CPC.

For storage granularity information, see the *Processor Resource/Systems Manager Planning Guide*, available for your CPC on IBM Resource Link.

ESRES

The amount of Expanded Storage, in megabytes, that can be allocated dynamically to the partition after activation. This variable applies only if the partition mode is ESA/390 or ESA/390 TPF.

Reserved storage provides the logical partition with an additional amount of storage that can be used only if it is not already being used by another active logical partition.

There is no minimum for reserved storage. Zero megabytes (0 MB) is a valid amount of reserved storage.

Value information:

0–n Enter a value that is compatible with the storage granularity supported by your CPC.

For storage granularity information, see the *Processor Resource/Systems Manager Planning Guide*, available for your CPC on IBM Resource Link.

GRPPRF

The name of the LPAR capacity group that the LPAR is a member of. This variable is valid for IMAGE profiles only.

Value information:

pval An alphanumeric name with a maximum length of 8 characters.

* If you specify an asterisk as the UPDATE value, the actual data value is copied from the NetView task global variable GRPPRF.

IPLADR

The IPL address (load address) for IPLs from a channel attached device. (IPLTYP NORMAL) Valid for profile types IMAGE and LOAD.

Value information:

pval Hexadecimal device number of a channel attached load device.

NEXT Indicates that the IPLPRM value that is supplied by HCD through its hardware interface is to be used.

* When an asterisk (*) is specified as the UPDATE value, the actual data value is copied from the NetView Task Global variable IPLADR.

Note: Depending on the CPC hardware type, a device number of '0000' is accepted as IPLADR by the hardware. Do *not* use this value, either with SA z/OS ProcOps, or when using the HMC to specify a LOAD address. Unpredictable results may occur.

IPLPRM

The IPL parameter (load parm) for IPLs from a channel attached device. (IPLTYP NORMAL) Valid for profile types IMAGE and LOAD.

Value information:

- pval* OS-supported, 8-character load parameter field of CMOS S/390® and zSeries hardware. See the OS documentation for information about the IPL parameters that it supports.
- NEXT** Indicates that the IPLPRM value that is supplied by HCD through its hardware interface is to be used.
- *** When an asterisk (*) is specified as the UPDATE value, the actual data value is copied from the NetView Task Global variable IPLPRM.

IPLTYP

The type of IPL.

Value information:**NORMAL**

Use a channel attached device address to load a basic control program (OS). When this IPL type is used, IPLADR must be specified. IPLPRM is optional.

SCSILOAD

Uses the address of a SAN-attached SCSI device to load a BCP (OS).

When this IPL type is used, the following profile variables must be specified: BRLBA, BPS, LUN, WWPN. OSSLP is optional.

SCSIDUMP

Uses the address of a SAN-attached SCSI device to load a Standalone Dump Utility. The utility uses a dump area on the same SCSI device to store the main storage content.

When this IPL type is used, the following profile variables must be specified: BRLBA, BPS, LUN, WWPN. OSSLP is optional.

- *** When an asterisk (*) is specified as the UPDATE value, the actual data value is copied from the NetView Task Global variable IPLTYP.

IOCDs

The input/output configuration data set identifier. Valid for profile type RESET.

Value information:

- pval* Two-character identifier of the IOCDs that is to be used for CPC activation with this profile.
- *** When an asterisk (*) is specified as the UPDATE value, the actual data value is copied from the NetView Task Global variable IOCDs.

LUN

The logical unit number of the SCSI IPL boot device. Valid for profile types: IMAGE, LOAD.

Value information:

- pval* Eight-byte identifier (16 hexadecimal digits) of the logical unit representing the SCSI IPL device.
- *** When an asterisk (*) is specified as the UPDATE value, the actual data value is copied from the NetView Task Global variable LUN.

OSSLP

The operating-system-specific load parameter for IPL from SCSI device. Valid for profile types: IMAGE, LOAD.

For a READ operation, the data that is returned in the AOFA0020 response report is split into 8 lines. If OSSLP is not set, a string of 256 blanks is

PROFILE

returned from the hardware. If not all OSSLP bytes are used, the string returned is always padded with blanks.

Value information:

pval The operating system specific load parameters to be used for the SCSILOAD or SCSIDUMP. The character string can be up to 256 bytes long.

The OS-specific load parameter is optionally used to pass a string of characters to the program that is being loaded. Neither the system nor the machine loader interprets or uses these parameters. For example, the OS-specific load parameter can be used to identify additional I/O devices and related storage addresses that are required by the OS being loaded.

- * When an asterisk (*) is specified as the UPDATE value, the actual data value is copied from the NetView Task Global variable OSSLP. Use this method if you want to copy a mixed case character string, or if the string contains multiple blank separated words.

PRT

Processor Running Time. Valid for the RESET profile type.

Value information:

1-100 User-defined processor running time.

Defines the amount of continuous time allowed for logical processors to perform jobs on shared processors for the Defined CPC object.

Notes:

1. This value can only be set if the processor running time type is set to 1, that is, set to a constant value (see "The PRTT Parameter").
2. If the processor running time type is set to 0, the value for processor running time displayed with the READ command will always be 0.

PRTT

Processor Running Time Type. Valid for the RESET profile type.

Value information:

- 0** The processor running time is dynamically determined by the system.
- 1** The processor running time is set to a constant value.

Defines whether the processor running time is dynamically determined by the system or set to a constant value for the Defined CPC object.

PWI

The initial processing weight. Valid for profile type IMAGE.

Value information:

- 0** The CPC image does not represent a logical partition, or the LPAR has only dedicated processors assigned to it. This value is not valid for UPDATE.
- 1-999** Represents the relative amount of shared processor resources that is initially allocated to the LPAR.
- * When an asterisk (*) is specified as the UPDATE value, the actual data value is copied from the NetView Task Global variable PWI.

Note: If the WLME flag has a value of YES, the PWI value must be in the range from PWMN to PWMX.

PWIC

The initial processing weight capped indicator. Valid for profile type IMAGE.

Value information:

- YES** The initial processing weight for the LPAR is capped. It represents the maximum share of processor resources regardless of the availability of excess processor resources.
- NO** The initial processing weight for the LPAR is not capped. It represents the share of resources that is guaranteed to the LPAR when all CP resources are in use. When excess processor resources are available, the LPAR can use them if necessary.
- *** When an asterisk (*) is specified as the UPDATE value, the actual data value is copied from the NetView Task Global variable PWIC.

PWMN

The minimum processing weight. Valid for profile type IMAGE.

The guaranteed minimum share of non-dedicated processor weight, when all processing resources are in use.

Value information:

- 0** The CPC image does not represent a logical partition, or the LPAR has only dedicated processors assigned to it. This value is not valid for UPDATE.
- 1-999** A value that is less than or equal to the initial processing weight that is used to define the minimum relative amount of shared processor resources that is allocated to the LPAR.
- *** When an asterisk (*) is specified as the UPDATE value, the actual data value is copied from the NetView Task Global variable PWMN.

Note: This value is only applied if the WLME flag has a value of YES.

PWMX

The maximum processing weight. Valid for profile type IMAGE.

Maximum relative amount of shared processor resources for this LPAR.

Value information:

- 0** The CPC image does not represent a logical partition, or the LPAR has only dedicated processors assigned to it. This value is not valid for UPDATE.
- 1-999** A value that is greater than or equal to the initial processing weight that is used to define the maximum relative amount of shared processor resources that is allocated to the LPAR.
- *** When an asterisk (*) is specified as the UPDATE value, the actual data value is copied from the NetView Task Global variable PWMX.

Note: This value is only applied if the WLME flag has a value of YES.

WLME

The Workload Manager enabled flag. Valid for profile type IMAGE.

Value information:

- YES** z/OS Workload Manager is used to manage shared processor

PROFILE

resources for a logical partition, according to the settings of the minimum and maximum weight specifications.

- NO** PR/SM is managing the processing weight. The PWMN and PWMX values do not apply.
- *** When an asterisk (*) is specified as the UPDATE value, the actual data value is copied from the NetView Task Global variable WLME.

WWPN

The worldwide port name of the disk controller for the SCSI IPL. Valid for profile type IMAGE.

Value information:

- pvcl* The worldwide port name is the eight-byte permanent name (16 hexadecimal digits) that is assigned to the FC (fibre channel) adapter port of the SCSI target device containing the logical unit serving as the IPL device. The FC fabric must be configured in such a way that the FCP channel that is used for the IPL operation has access to this port.
- *** When an asterisk (*) is specified as the UPDATE value, the actual data value is copied from the NetView Task Global variable WWPN.

VAL

The value specification for an UPDATE operation.

pvcl See the value information for the VAR parameter.

PT The Processor Type parameter allows you to specify which processor type the corresponding activation profile information should be read or updated for.

proctp The processor type:

- GPP** General Purpose Processor
- AAP** Application Assist Processor
- IFL** Integrated Facility for LINUX processor
- ICF** Internal Coupling Facility processor
- IIP** z9 Integrated Information Processor

Notes:

1. The IFA processor type (Integrated Facility for Application processor) has been replaced by AAP.
2. Processor types other than GPP are only applicable for the IMAGE profile type and the activation profile variables PWI, PWIC, PWMN or PWMX.

Defaults

For UPDATE and READ actions, if a processor type is not specified with the PT parameter, the default value of GPP (general purpose processor) is used.

Usage

The PROFILE common command for SNMP connected processors can be used to manage important CPC and LPAR activation and operating system load information.

The supported set of profile variables can be queried and modified using the ISQCCMD PROFILE common command with automation procedures.

Automation of IPLs from SCSI devices can be performed using LOAD or IMAGE activation profiles.

The command response reports from the processor hardware are available as ProcOps ISQ900I messages with a console indicator of SC. Note that the message originator following the message identifier is either a ProcOps target system name, or a target hardware name together with an LPAR name. In order to get a copy of such hardware messages on your screen as ISQ901I messages, use the ISQXMON command.

This common command can also be used for processors or systems that you have configured with a BCP Internal Interface connection in your SA z/OS policy. If ProcOps is active, and your common command targets a processor or system that has the same name in your ProcOps and BCP Internal Interface configuration, ProcOps is always preferred. To avoid this, you must either stop ProcOps or use names that are uniquely assigned to either ProcOps or the BCP Internal Interface.

Additional Programming Information

On command completion, the immediate HW response report messages are also available in a PIPE KEEP with the name 'ISQ.SNMP'. You can directly access this HW data when using this KEEP as your first Pipe stage. See "Using Immediate ISQCCMD Common Command Responses" on page 339.

Restrictions and Limitations

The PROFILE common command is only supported for SNMP connections and BCP Internal Interface connections configured for LPAR Management. If you issue a PROFILE request for another ProcOps connection type, it will be rejected.

The PROFILE common command cannot be used to create or delete activation profiles; use the HMC to perform these tasks. The PROFILE command supports a subset of the available activation profile variables.

Processor types other than GPP are only applicable for the IMAGE profile type and the activation profile variables PWI, PWIC, PWMN or PWMX.

Condition Codes

The PROFILE common command uses the internal APROF service to process the requests. The following lists the condition codes that are returned in the form 00B000xx, where xx is the condition code:

- 62** The variable name that is specified in the request is not supported. The request is rejected.
- 63** The variable name that is specified in the request is not supported. The request is rejected.
- 64** The request was not recognized by the APROF service. The request is rejected. Contact IBM Support.
- 65** The value operand of the request was not recognized by APROF. The request is rejected. Contact IBM Support.
- 66** OPEN error. APROF could not allocate the profile list storage. The request is rejected. Contact IBM Support.
- 67** OPEN error. Profile was already opened. The request is rejected. Issue a CLOSE request first.
- 68** Profile TYPE error. Allowed types are RESET, IMAGE, and LOAD. The request is rejected.
- 69** Profile is not open. Issue an OPEN request first. The request is rejected.
- 6A** Profile not found error. If the named profile was created since the last OPEN, issue a CLOSE and reopen the profiles to access the new list of profiles. The request is rejected.

PROFILE

- 6B Profile UPDATE error. Error in APROF parameter list. The request is rejected. Contact IBM Support.
- 6C Profile UPDATE error. Internal variable name list error. The request is rejected. Contact IBM Support.
- 6D Profile UPDATE error. The specified variable name is not valid. Re-specify the variable name and repeat the request. The request is rejected.
- 6E Profile UPDATE error. The specified update value was not accepted. Re-specify the value and repeat the request. The request is rejected.
- 6F Profile UPDATE error for OSSLP. A NetView Cglobal could not be accessed. The request is rejected. Contact IBM Support.

Return Codes

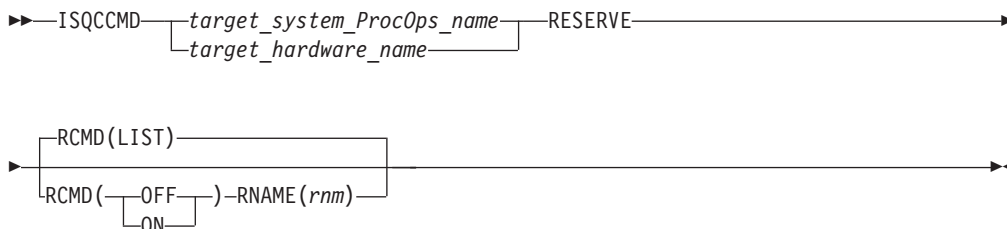
The ISQCCMD command (see “ISQCCMD” on page 337) generates the return codes for common command processing.

RESERVE

Purpose

The RESERVE common command allows you to gain exclusive control over a CPC and lock the execution of disruptive commands. While a CPC is reserved, no application, including the one holding the reserve, can issue hardware commands to the CPC itself or one of its logical partitions until the lock is released again. The lock also applies for manual CPC and LPAR operation using the CPC's Support Element or an HMC.

Syntax



Requirements

The requirements for the RESERVE command to complete successfully are:

- Processor operations must be active.
- The addressed target system must be initialized for this command to complete successfully. If the target hardware is addressed, at least one target system on that hardware must have the ProcOps status INITIALIZED.

Parameters

For a definition of *target_system_ProcOps_name* and *target_hardware_name*, see “ISQCCMD” on page 337.

RCMD

Reserve command to be executed.

LIST

Returns the current reserve ID, if one is set in the field APPLNAME of the AOFA0001 response report from the target hardware. If the APPLNAME

field that is returned is empty, no reserve condition exists for the CPC. The format 'majorname.minorname' is used if the APPLNAME field indicates a reserve condition. The majorname '0AUTOOPS' is used if a reserve is set by ProcOps or other applications using the z900 API. The minorname returned is the reserve ID that is specified by an application.

ON Sets a CPC reserve using the name that is specified with the RNAME parameter keyword.

OFF Releases a previously set CPC reserve condition using the name that is specified with the RNAME parameter keyword.

RNAME

Reserve identification minor name.

rnm

Reserve ID minor name. The maximum length that is allowed is eight characters.

Defaults

If no RESERVE parameters are specified, an RCMD(LIST) is executed.

Usage

Locking a CPC with the RESERVE command for disruptive command execution should only be performed in recovery situations, where access to the CPC or its LPARs has to be controlled. The operator or recovery application can issue the ISQCCMD RESERVE to isolate and release a CPC.

Note that the hardware commands issue a reserve internally to indicate a busy condition to the HMC operator or to other applications for the duration of a command. This internal reserve is object specific (CPC, image) and is different from the ISQCCMD RESERVE in ProcOps.

The RESERVE command can be used to determine whether a Support Element has exclusive control enabled. Usually hardware service sets this control to make sure no hardware command can disrupt SE service activity. After service, exclusive control is usually reset to disable.

Issue a RESERVE RCMD(LIST) common command to determine whether exclusive control has been set from the CPC's Support Element. The AOFA0001 report that is returned shows an application name in the format APPLNAME(*netid.nau*), where *netid* is the CPC's netid, and *nau* is the CPC's nau.

The command response reports from the processor hardware are available as ProcOps ISQ900I messages with a console indicator of SC. Note that the message originator following the message identifier is either a ProcOps target system name, or a target hardware name together with an LPAR name. In order to get a copy of such hardware messages on your screen as ISQ901I messages, use the ISQXMON command.

Restrictions and Limitations

The RESERVE common command is only supported for SNMP connections. When issuing a RESERVE for other ProcOps connection types, it will be rejected.

RESERVE

The RESERVE hardware command works only for ProcOps sessions to the Support Element of the addressed CPC. ProcOps sessions to an HMC are not supported and the RESERVE command will fail.

The RESERVE hardware command is available for machine types from 2064 onwards.

The RESERVE hardware command is not available for machine types 967x or older S/390 CMOS processor types. For these machine types the RESERVE command will fail.

Return Codes

The ISQCCMD command (see “ISQCCMD” on page 337) generates the return codes for common command processing.

RESTART

Purpose

The RESTART command causes the target system processor to perform the restart function. This function consists of loading the restart program status word (PSW).

Syntax

```
▶▶—ISQCCMD—

|                                       |
|---------------------------------------|
| <i>target_system_ProcOps_name</i>     |
| <i>target_hardware_name.LPAR_name</i> |
| <i>group_name</i>                     |
| <i>subgroup_name</i>                  |

—RESTART—▶▶
```

Requirements

Processor operations must be active for this command to complete successfully.

The addressed target system must be initialized for this command to complete successfully.

Parameters

For a definition of *target_system_ProcOps_name*, *target_hardware_name.LPAR_name*, *group_name*, and *subgroup_name*, see “ISQCCMD” on page 337.

Defaults

None.

Usage

The RESTART command is normally used to return the processor to an active processing state from a QUIESCE or SHUTDOWN condition.

The RESTART command can also be used to recover from various system problems.

RESTART of a VM Guest System

Purpose: For a guest machine a CP SYSTEM RESTART command is sent.

Restrictions and Limitations

None.

Return Codes

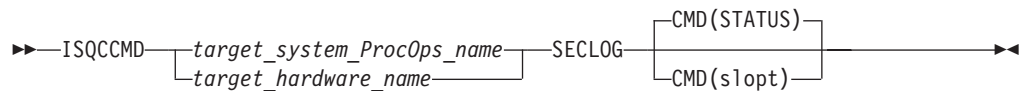
The ISQCCMD command (see “ISQCCMD” on page 337) generates the return codes for common command processing.

SECLOG

Purpose

The SECLOG command provides routing for security records as they are written in the Support Element (SE) or Hardware Management Console (HMC) logs of Processor operations for automation. The routing can be turned ON or OFF and the current routing STATUS can be determined. Depending on the session endpoint, the Security Log of an SE or HMC can be monitored.

Syntax



Requirements

The requirements for the SECLOG command to complete successfully are:

- Processor operations must be active
- The addressed target system must be initialized, or, if the target hardware is addressed, at least one target system on that hardware must be initialized.

Parameters

For a definition of *target_system_ProcOps_name* and *target_hardware_name*, see “ISQCCMD” on page 337.

CMD

Prefix for sub-command/Options.

slopt

The following sub-commands/Options are supported:

Status

Returns the current SECLOG setting.

ON Turns ON the routing of SECLOG messages to Processor operations.

OFF

Turns OFF the routing of SECLOG messages to Processor operations.

Defaults

The default of SECLOG is Sub-command CMD(STATUS).

Usage

The monitoring of Security Log messages in Processor operations exists for console events, such as User Access, Software Updates, Data Mirroring, Configuration Changes and additional information about operational commands. Use the task

SECLOG

'View Security Logs' available on the console Graphical User Interface (GUI) to view additional information. A typical scenario for SECLOG is to start it, before issuing an Operations Management or Configuration command, such as TCM or CBU. For further issues, the SECLOG messages in the Netlog of the Processor operations focal point, may be useful. It is recommended to turn SECLOG OFF again, once the management or configuration command is complete.

Restrictions and Limitations

The SECLOG command is only supported with SNMP connections.

Return Codes

The ISQCCMD command generates the return codes for common command processing.

START

Purpose

The START command causes the target system processor to perform the start function. This function consists of returning the operating system to the operating state from the stopped state initiated by the STOP command.

Syntax

```
▶▶ ISQCCMD 

|                                       |
|---------------------------------------|
| <i>target_system_ProcOps_name</i>     |
| <i>target_hardware_name.LPAR_name</i> |
| <i>group_name</i>                     |
| <i>subgroup_name</i>                  |

 START ▶▶
```

Requirements

Processor operations must be active for this command to complete successfully.

The addressed target system must be initialized for this command to complete successfully.

Parameters

For a definition of *target_system_ProcOps_name*, *target_hardware_name.LPAR_name*, *group_name*, and *subgroup_name*, see "ISQCCMD" on page 337.

Defaults

None.

Usage

The START command is equivalent to pressing the START key at a target system.

Use the START command to cancel the effects of the STOP command and allow the operating system to run again.

START of a VM Guest System

Purpose: For a guest machine the CP BEGIN command is entered.

Restrictions and Limitations

- This command is not supported for coupling facility target systems.

Return Codes

The ISQCCMD command (see “ISQCCMD” on page 337) generates the return codes for common command processing.

STOP

Purpose

The STOP command causes the target system processor to perform the stop function. This function consists of placing the processor in the stopped state at the end of the current unit of operation.

Syntax

```

▶▶—ISQCCMD—target_system_ProcOps_name—STOP—▶▶
               |
               |—target_hardware_name.LPAR_name—
               |
               |—group_name—
               |
               |—subgroup_name—
  
```

Requirements

Processor operations must be active for this command to complete successfully.

The addressed target system must be initialized for this command to complete successfully.

Parameters

For a definition of *target_system_ProcOps_name*, *target_hardware_name.LPAR_name*, *group_name*, and *subgroup_name*, see “ISQCCMD” on page 337.

Defaults

None.

Usage

Use the STOP command to temporarily halt normal operations. You can use this command to interrupt processing to perform various hardware maintenance functions (such as cleaning the heads of a tape drive) and then continue processing from the point at which it stopped.

STOP of a VM Guest System

Purpose: For a guest machine the CP STOP command is entered. (This will place the guest machine in a CP READ state, and a message is issued to this effect.)

Restrictions and Limitations

- This command is not supported for coupling facility target systems.

Return Codes

The ISQCCMD command (see “ISQCCMD” on page 337) generates the return codes for common command processing.

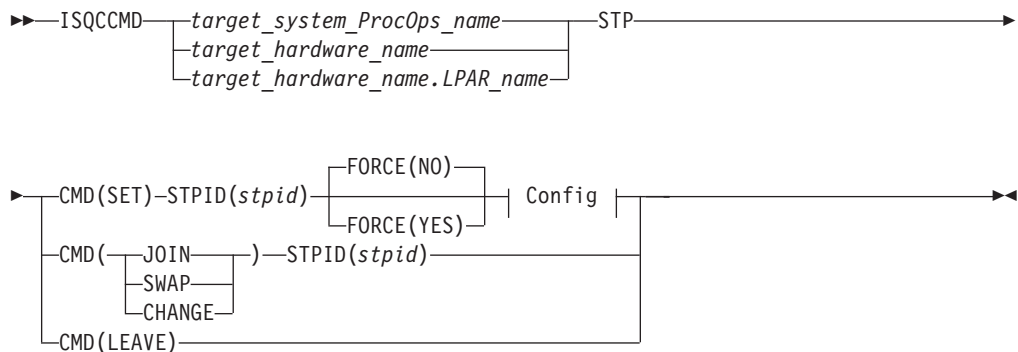
STP

Purpose

The STP command allows you to manipulate server time protocol (STP) settings in an STP network. You can:

- Join, leave, or change an STP-only Coordinated Timing Network (CTN)
- Swap a Current Time Server (CTS) from Preferred to Backup, or vice versa
- Set Preferred, Backup, Arbiter and CTS server roles

Syntax



Config:



Requirements

The requirements for the STP command to complete successfully are:

- Processor operations must be active.
- The addressed target system must be initialized, or, if the target hardware is addressed, at least one target system on that hardware must be initialized.
- The target hardware must be an STP-capable server. IBM System z196, IBM System z10 ECT, z10 BC, System z9 EC, z9 BC, and zSeries 990 and 890 with the required LIC installed are STP-capable.
- The target hardware must be an STP-enabled and STP-configured server.

Parameters

For a definition of *target_system_ProcOps_name*, *target_hardware_name.LPAR_name*, and *target_hardware_name*, see “ISQCCMD” on page 337.

CMD

Indicates the type of STP command to be performed. It can be one of the following:

JOIN This command allows a CPC to join an STP-only CTN.

If the CPC is already participating in an STP-only CTN, it is removed from that CTN and joins the specified one.

If the CPC has an external time reference (ETR) ID, it is removed.

The target system cannot be the CTS.

LEAVE

This command removes a central processor complex (CPC) from an STP-only CTN. The target system cannot be the CTS.

CHANGE

This command is sent to the Defined CPC with the role of CTS in an STP-only CTN and changes the STP ID portion of the CTN ID for the entire STP-only CTN. The target system must be the CTS.

SET This command sets the configuration for an STP-only Coordinated Timing Network (CTN). The target system must be the system that will become the Current Time Server (CTS).

SWAP In a configured STP-only CTN, one CPC has the role of CTS. If the CTN has both a Preferred Time Server and a Backup Time Server configured, either one can be the CTS. This command swaps the role of CTS from Preferred Time Server to Backup Time Server or vice versa.

The target system must be the system that will become the CTS.

STPID

An alphanumeric string that represents the current STP identifier for the Defined CPC object. The string must not exceed 8 characters. It is applicable for the CMD options JOIN, CHANGE, SWAP, and SET.

FORCE

This parameter is only applicable for CMD (SET). It bypasses a number of validity checks on server connectivity, and it allows the configuration of servers that may not be in POR-complete state or do not yet have coupling link connectivity to the selected CTS.

NO Specifies that various verifications will be made before allowing the configuration to be set. For example, connections between the Preferred Time Server (CPC), Backup Time Server (CPC), and Arbiter will be verified. If the connections are not there, the configuration will fail.

YES

Specifies that the configuration will be applied without verifications.

Config

Specifies the type of server that a configuration is being set for. It is only applicable for CMD(SET). It can be one of the following:

PREF Assigns the Preferred Time Server role (the server that is assigned to be the Preferred Stratum 1 server) in an STP-only CTN. The PREF parameter is mandatory for the CMD(SET) command.

This is usually also the Current Time Server (CTS).

BACKUP

Assigns the Backup Time Server role in an STP-only CTN. This is the server that is assigned to take over as the CTS, either because of a planned or unplanned reconfiguration. This is usually a Stratum 2 server that should be attached to the Preferred Time Server as well as all the servers that are attached to the Preferred Time Server.

If you do not specify BACKUP for the SET command, the BTS role will be unset (that is, not configured).

ARBITER

Assigns the Arbiter role in an STP-only CTN. This is the server that is assigned to provide additional means for the Backup Time Server to determine whether it should take over as the Current Time Server.

If you do not specify ARBITER for the SET command, the Arbiter role will be unset (that is, not configured). You must configure the Backup Time Server (that is, specify the BACKUP parameter) if you configure an Arbiter.

CTS

Assigns the Current Time Server role in an STP-only CTN. This is the server that is currently the Stratum 1 server for an STP-only CTN. The only values that are allowed are Preferred or Backup. The CTS parameter is mandatory for the CMD(SET) command.

nodename

An alphanumeric string that represents the name of the CPC and must not exceed 8 characters.

Defaults

The STP command defaults to FORCE(NO).

Usage

Use this command to modify the STP configuration in an STP-only CTN.

Restrictions and Limitations

The STP common command is only supported for SNMP connections. If an STP request is issued for another processor operations connection type, it will be rejected.

Note: To perform an STP CMD(SET) command, all nodes that are referenced in the command should be defined in main HMC console.

Return Codes

The ISQCCMD command (see "ISQCCMD" on page 337) generates the return codes for common command processing.

STPDATA**Purpose**

The STPDATA command allows you to query the Server Time Protocol (STP) configuration for the defined CPC object.

Syntax

```

▶▶ ISQCCMD { target_system_ProcOps_name |
             target_hardware_name |
             target_hardware_name.LPAR_name } STPDATA ▶▶

```

Requirements

The requirements for the STPDATA command to complete successfully are:

- The target hardware must be an STP-capable server. IBM System z196, IBM System z10 ECT, z10 BC, System z9 EC, z9 BC, and zSeries 990 and 890 with the required LIC installed are STP-capable.
- The target hardware must be an STP-enabled server.

Processor Operations environment

- Processor operations must be active.
- The addressed target system must be initialized, or, if the target hardware is addressed, at least one target system on that hardware must be initialized.

LPAR Management environment

- SA z/OS must be fully initialized.
- The processor hardware of the addressed target system or target hardware LPAR must be configured for connection type INTERNAL in the SA z/OS customization dialogs.

Parameters

For a definition of *target_system_ProcOps_name*, *target_hardware_name.LPAR_name*, and *target_hardware_name*, see “ISQCCMD” on page 337.

Defaults

None.

Usage

Use this command to query the Server Time Protocol (STP) configuration for a specific CPC object. The data is returned in an AOFA0024 multiline report. For more information about this report format see the appendix “Response Messages, Error Strings, Condition Codes” in *IBM Tivoli System Automation for z/OS Messages and Codes*.

The command response reports from the processor hardware are available as processor operations ISQ900I messages with a console indicator of SC. Note that the message originator following the message identifier is either a processor operations target system name or a target hardware name together with an LPAR name. To have a copy of these hardware messages on your screen as ISQ901I messages, use the ISQXMON command.

This common command can also be used for processors or systems that you have configured with a BCP Internal Interface connection in your SA z/OS policy. If processor operations is active, and your common command targets a processor or system that has the same name in both your processor operations and BCP Internal Interface configuration, processor operations is always preferred. To avoid this, you must either stop processor operations or use names that are uniquely assigned to either processor operations or the BCP Internal Interface.

Additional Programming Information

On command completion, the immediate HW response report messages are also available in a PIPE KEEP with the name ISQ.SNMP. You can access this HW data directly when using this KEEP as your first Pipe stage. See “Using Immediate ISQCCMD Common Command Responses” on page 339.

Restrictions and Limitations

The STPDATA common command is only supported for SNMP connections and BCP Internal Interface connections that are configured for LPAR Management. When issuing a STPDATA request for another processor operations connection type, it will be rejected.

Condition Codes

The following condition codes are returned in the form 00B000xx, where xx is the condition code:

96 No STP configuration was found.

Return Codes

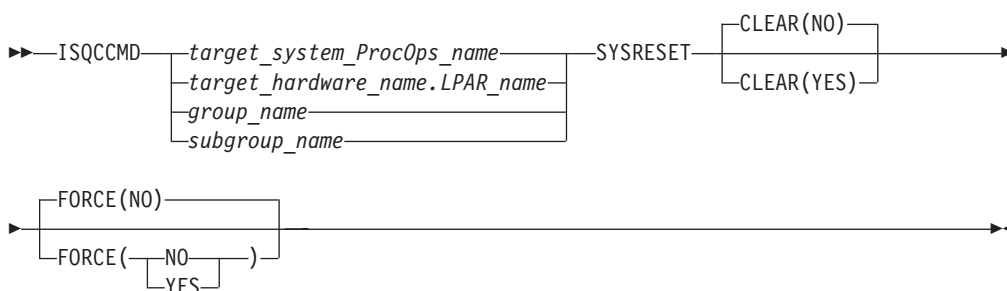
The ISQCCMD command (see “ISQCCMD” on page 337) generates the return codes for common command processing.

SYSRESET

Purpose

The SYSRESET command causes the target system processor to perform the system reset function. This function consists of resetting and initializing the processor.

Syntax



Requirements

Processor operations must be active for this command to complete successfully.

The addressed target system must be initialized for this command to complete successfully.

Parameters

For a definition of *target_system_ProcOps_name*, *target_hardware_name.LPAR_name*, *group_name*, and *subgroup_name*, see “ISQCCMD” on page 337.

CLEAR(NO)

Indicates that the option of clearing storage is not being specified. This is the default value. No space is allowed between the keyword CLEAR and the left parenthesis.

CLEAR(YES)

Indicates that the option of clearing storage is being specified. No space is allowed between the keyword CLEAR and the left parenthesis.

FORCE

Requests conditional processing of commands that are disruptive to the operating system control program and application work that is in progress. Use of this operand is based on the operating state of the target processor.

NO Specifies that processing of the command is to continue *only* if the target CPU control program is not in the operating state. Specify FORCE(NO) in a situation where you would *not* want to upset the control program work-in-progress.

YES

Specifies that processing of the command is to continue *even* if the target CPU control program is in the operating state. Specify FORCE(YES) in a situation where disruption of the control program work-in-progress is not important, such as in recovery situations.

The default, if FORCE is not explicitly stated, is FORCE(NO).

FORCE(NO) requires that the associated command *fail* when useful work is taking place. For SYSRESET the formal fail criteria is *operating* when FORCE(NO) is specified or when FORCE defaults to NO. The command will fail whenever the processor is in this state.

Defaults

The SYSRESET command defaults to FORCE(NO) and to CLEAR(NO).

Usage

Issue SYSRESET to recover a processor from a machine stop condition. This command places the processor into the operating state from the check-stop state.

If you do not specify FORCE(YES), the SYSRESET command checks to make sure it will not be disruptive by performing the following processing:

- If the target system runs in a logical partition and the same logical partition name is initialized to another target system in the same target hardware, the SYSRESET command is rejected and processing of the command halts.
- On a non-partitioned target system, if the target hardware has another target system initialized to it, the SYSRESET command is rejected and processing of the command halts.

SYSRESET of a VM Guest System

Purpose: For a guest machine the CP SYSTEM RESET command is entered.

Parameters:**CLEAR**

If CLEAR(YES) is specified for a guest machine, a CP SYSTEM CLEAR is issued.

FORCE(NO)

Guest status is checked. If NOT OPERATING then a CP SYSTEM RESET command is issued.

Restrictions and Limitations

This command is not supported for coupling facility target systems.

For SNMP-connected target hardware, the CLEAR parameter is supported by the zSeries processor family.

Return Codes

The ISQCCMD command (see “ISQCCMD” on page 337) generates the return codes for common command processing.

TCDATA

Purpose

The TCDATA common command allows you to query the status and settings for a specific temporary capacity record.

Syntax

```

▶▶—ISQCCMD—
  target_system_ProcOps_name
  target_hardware_name.LPAR_name
  target_hardware_name
—TCDATA—RECID(recid)—▶▶
  
```

Requirements

The requirements for the TCDATA command to complete successfully are:

- On/Off Capacity on Demand (ooCoD) or Capacity Backup Unit (CBU) records, or both, must be installed on the addressed target hardware.
- The required temporary capacity record must be available on the addressed target hardware.

Processor Operations environment

- Processor operations must be active.
- The addressed target system must be initialized, or, if the target hardware is addressed, at least one target system on that hardware must be initialized.

LPAR Management environment

- SA z/OS must be fully initialized.
- The processor hardware of the addressed target system or target hardware LPAR must be configured for connection type INTERNAL in the SA z/OS customization dialogs.

Parameters

For a definition of *target_system_ProcOps_name*, *target_hardware_name.LPAR_name*, and *target_hardware_name*, see “ISQCCMD” on page 337.

RECID

Defines the ooCoD or CBU record that TCDATA query should be executed for. If you specify a record ID of 'LIST', the TCDATA command will display a list of the installed capacity record IDs.

Defaults

None.

Usage

Use this command to query the status and settings for a specific temporary capacity record.

The data is returned in an AOFA0023 multiline report. For more information about this report format, see the appendix, “Response Messages, Error Strings, Condition Codes” in *IBM Tivoli System Automation for z/OS Messages and Codes*.

The command response reports from the processor hardware are available as ProcOps ISQ900I messages with a console indicator of SC. Note that the message originator following the message identifier is either a ProcOps target system name, or a target hardware name together with an LPAR name. To get a copy of such hardware messages on your screen as ISQ901I messages, use the ISQXMON command.

This common command can also be used for processors or systems that you have configured with a BCP Internal Interface connection in your SA z/OS policy. If ProcOps is active, and your common command targets a processor or system that has the same name in your ProcOps and BCP Internal Interface configuration, ProcOps is always preferred. To avoid this, you must either stop ProcOps or use names that are uniquely assigned to either ProcOps or the BCP Internal Interface.

Additional Programming Information

On command completion, the immediate HW response report messages are also available in a PIPE KEEP with the name 'ISQ.SNMP'. You can directly access this HW data when using this KEEP as your first Pipe stage. See “Using Immediate ISQCCMD Common Command Responses” on page 339.

Restrictions and Limitations

The TCDATA common command applies only to Series z10 hardware and later. The command fails for older hardware.

The TCDATA common command is only supported for SNMP connections and BCP Internal Interface connections configured for LPAR Management. When issuing a TCDATA request for another ProcOps connection type, it is rejected.

Condition Codes

The following condition codes are returned in the form 00B000xx, where xx is the condition code:

- 90 No temporary capacity record list was found.
- 91 Object not found. In this case, the temporary capacity record object was not found.
- 92 No matching record found for provided record ID.
- 93 Error found while parsing temporary capacity record XML data.

Return Codes

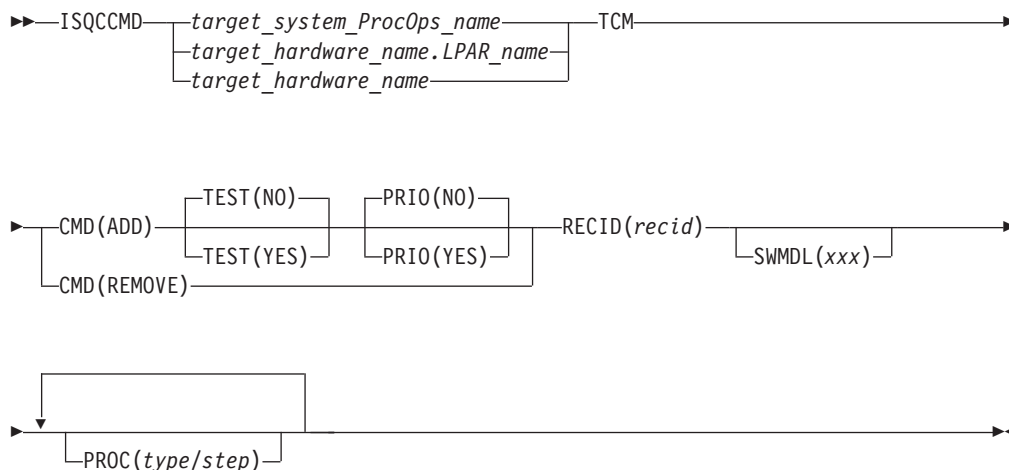
The ISQCCMD command (see “ISQCCMD” on page 337) generates the return codes for common command processing.

TCM

Purpose

The TCM common command allows you to add or remove temporary capacity resources (processors) for specific target hardware.

Syntax



Requirements

The requirements for the TCM command to complete successfully are:

- Processor operations must be active.
- The addressed target system must be initialized, or, if the target hardware is addressed, at least one target system on that hardware must be initialized.
- On/Off Capacity on Demand (ooCoD) or Capacity Backup Unit (CBU) records, or both, must be installed on the addressed target hardware.
- The required resources (processors) must be available on the addressed target hardware.
- With Console Workplace 2.10 and later versions, for ADD and REMOVE, the flag 'Allow capacity change API requests' must be set in 'Customize API Settings' on the SE.

Parameters

For a definition of *target_system_ProcOps_name*, *target_hardware_name.LPAR_name*, and *target_hardware_name*, see "ISQCCMD" on page 337.

CMD

Possible commands are:

ADD Add processor resources to the addressed target hardware.

REMOVE

Remove processor resources from the addressed target hardware.

TEST

Only applicable for CMD(ADD). It is used to indicate whether the activation of additional processors should be done on a test basis. The default is NO, that is, real activation.

Note: TEST(YES) is only supported for CBU records.

PRIO

Only applicable for CMD(ADD). It is used to indicate whether the activation of additional processors should be handled with priority. The default is NO, that is, no priority activation.

RECID

Defines the ooCoD or CBU record that the add or remove command should be executed for. The value consists of 8 alphanumeric characters.

SWMDL

Defines the Software Model that the add or remove command should result in. It is used to add or remove General Purpose Processors. The value consists of three alphanumeric characters.

PROC

Used to define up to five Special Purpose Processors, using the following variables:

type

Defines the processor type. The following values are allowed:

AAP	Application Assist Processor
IFL	Integrated Facility for Linux processor
ICF	Internal Coupling Facility processor
IIP	Integrated Information Processor
SAP	System Assist Processor

step

Defines the number of processors that should be added or removed. The valid value range for *step* is 0–9999.

Note: The two values must be separated with the / character.

Defaults

The PRIO and TEST parameters for CMD(ADD) default to NO.

Restrictions and Limitations

The TCM common command applies only to Series z10 hardware and later. The command fails for older hardware. The number of PROC parameters must not exceed five.

The TCM common command is only supported for SNMP connections. If a TCM request is issued for another processor operations connection type, it is rejected.

Condition Codes

The following condition code is returned in the form 00B000xx, where xx is the condition code:

94 Error found while composing temporary capacity add or remove XML data.

Return Codes

The ISQCCMD command (see “ISQCCMD” on page 337) generates the return codes for common command processing.

Chapter 7. Ensemble Commands

This chapter describes the ensemble commands provided by SA z/OS processor operations. Ensemble commands provide a single operator interface and API to monitor and control the resources of a zEnterprise Blade Extension HW.

ACTIVATE

Purpose

The ACTIVATE command accepts a request to perform asynchronously a complete initialization of the identified resource (virtual server or blade).

Syntax

```
▶▶ ISQECMD {target_hardware_ProcOps_name | ensemble_ProcOps_name | real_ensemble_name} ACTIVATE {BL | VS} [bl_filter | vs_filter]
```

bl_filter:

```
[NAME(blname)] [CPC(cpcname)] [TYPE(bltype)]
```

vs_filter:

```
[NAME(vname)] [CPC(cpcname)] [BL(blname) | VH(vhname)] [TYPE(vstype)]
```

Requirements

The requirements for the ACTIVATE command to complete successfully are:

- Processor operations must be active.
- Processor operations must be in session with the ensemble that has the targeted resource in its scope.
- ACTIVATE VS command, virtual servers must be discovered to the Processor operations data model for the session using DISCOVERY VS ensemble command.

Parameters

For a definition of *target_hardwareProcOps_name*, *ensemble_ProcOps_name* and *real_ensemble_name* refer to “ISQECMD” on page 342.

*_filter

Is a set of parameters allowing unambiguous identification of a target resource. Only full specification of all *_filter parameters ensures selection of a single object. Depending on the complexity of your ensemble, you may not need all the parameters; in most cases it is enough to specify NAME and CPC parameters to identify a target resource. If more than one resource corresponds

ACTIVATE

to the selected filter, the command is rejected with condition code "00B6001B". For more information about the condition codes refer to the appendix "Response Messages, Error Strings, Condition Codes" in *IBM Tivoli System Automation for z/OS Messages and Codes*.

NAME

The name of the resource to ACTIVATE. The name is case-sensitive.

CPC

Defines the name (NAU) of a single zEnterprise Central Processor Complex (CPC) controlling appropriate IBM zEnterprise BladeCenter Extension (zBX).

BL Defines the Unified Resource Manager-assigned name of the blade.

VH Defines the Unified Resource Manager-assigned name of the virtualization host. The name is equal to the blade name.

TYPE

Defines the type of the objects to be activated. Values are:

For ACTIVATE BL command:

power

the System z Power blade

system-x

the System x[®] blade

isaopt

the IBM Smart Analytics Optimizer blade

dpxi50z

the DataPower[®] XI50 blade

For ACTIVATE VS command:

power-vm

a virtual server running on a Power blade

x-hyp

a virtual server running on a System x blade

Defaults

None.

Restrictions and Limitations

Virtualization hosts and virtual servers of the types "zvm" and "prsm" supported by the IBM zEnterprise Unified Resource Manager are not supported by the ISQECMD command.

The ACTIVATE command can be very disruptive and FORCE(NO) is not yet supported for the command so use this command carefully.

Usage

Use ACTIVATE BL command to activate a blade. This command also activates a virtualization host, hosted on the blade as a consequence of activating the hosting environment. If "auto-start-virtual-servers" is true, the virtualization host activation will also activate all virtual servers on the virtualization host whose auto-start property is true.

Use ACTIVATE VS command to activate a virtual server.

Once the activation request is accepted, the command returns with an AOFB0001 report showing activation job initiation status and adds the "activate vs" request to internal list of submitted asynchronous commands. You may use LIST JOB command to see all successfully submitted asynchronous commands.

Once the activation job has completed on the target ensemble HMC, a job-completion notification is sent with the activation completion report as an AOFB0300 report and removes the activation request from the list of submitted asynchronous commands. The session should have a subscription for type JOB for appropriated resource classes (BL or VS) in order to receive job completion notifications and correctly manage the list of submitted asynchronous commands. For more information about AOFB* reports refer to the appendix "Response Messages, Error Strings, Condition Codes" in *IBM Tivoli System Automation for z/OS Messages and Codes*.

The command response reports and notifications from the ensemble HMC are available as ProcOps ISQ800I messages with a console indicator of SC. In order to get a copy of such hardware messages on your screen as ISQ801I messages, use the ISQXMON command.

Return Codes

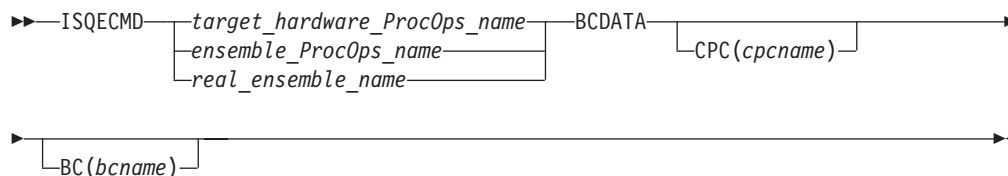
The ISQECMD command generates the return codes for common command processing.

BCDATA

Purpose

The BCDATA ensemble command collects configuration and status information about addressed blade center and presents this information in a multi-line report.

Syntax



Requirements

The requirements for the BCDATA command to complete successfully are:

- Processor operations must be active.
- Processor operations must be in session with the ensemble that has the targeted resource in its scope.

Parameters

For a definition of *target_hardwareProcOps_name*, *ensemble_ProcOps_name* and *real_ensemble_name* refer to "ISQECMD" on page 342.

CPC

Defines the name (NAU) of a single zEnterprise Central Processor Complex (CPC) controlling appropriate IBM zEnterprise BladeCenter Extension (zBX).

BCDATA

BC Defines the Unified Resource Manager-assigned name of the single zBX blade center.

Defaults

None.

Restrictions and Limitations

None.

Usage

Use this command to get a snapshot of a single BC object properties. The data is returned as an AOFB0012 multiline report. For more information about this report format refer to the appendix "Response Messages, Error Strings, Condition Codes" in *IBM Tivoli System Automation for z/OS Messages and Codes*.

If you have more than one blade center in your ensemble, use BC and CPC parameters to limit the query to the single BC object. You may use the LIST BC ensemble command to see names and managing CPCs of all blade centers objects discovered for the target ensemble. Only a full specification of command parameters ensures selection of a single object. If more than one resource corresponds to the selected parameters, the command is rejected with condition code "00B6001B". For more information about the condition codes refer to the appendix "Response Messages, Error Strings, Condition Codes" in *IBM Tivoli System Automation for z/OS Messages and Codes*.

The command response reports from the ensemble HMC are available as ProcOps ISQ800I messages with a console indicator of SC. In order to get a copy of such hardware messages on your screen as ISQ801I messages, use the ISQXMON command.

Return Codes

The ISQECMD command generates the return codes for common command processing.

BLDATA

Purpose

The BLDATA ensemble command collects configuration and status information about addressed zBX blade and presents this information in a multi-line report.

Syntax

```
▶▶ ISQECMD [target_hardware_ProcOps_name] BLDATA [CPC(cpcname)]
           [ensemble_ProcOps_name]
           [real_ensemble_name]
▶▶ [BL(blname)] [TYPE(bltype)]
```


Requirements

The requirements for the BLDATA command to complete successfully are:

- Processor operations must be active.
- Processor operations must be in session with the ensemble that has the targeted resource in its scope.

Parameters

For a definition of *target_hardwareProcOps_name*, *ensemble_ProcOps_name* and *real_ensemble_name* refer to "ISQECMD" on page 342.

CPC

Defines the name (NAU) of a single zEnterprise Central Processor Complex (CPC) controlling appropriate IBM zEnterprise BladeCenter Extension (zBX).

BL Defines the Unified Resource Manager-assigned name of the blade.

TYPE

Defines the type of a blade. Values are:

power

the System z Power blade

system-x

the System x blade

isaopt

the IBM Smart Analytics Optimizer blade

dpxi50z

the DataPower XI50 blade

Defaults

None.

Restrictions and Limitations

None.

Usage

Use this command to get a snapshot of the blade properties. The data is returned as an AOFB0016 multiline report. For more information about this report format refer to the appendix "Response Messages, Error Strings, Condition Codes" in *IBM Tivoli System Automation for z/OS Messages and Codes*.

If you have more than one blade in your ensemble, use BL, TYPE and CPC parameters to limit the query to the single blade object. You may use the LIST BL ensemble command to see names, types and managing CPCs of all blade objects discovered for the target ensemble. Only a full specification of command parameters ensures selection of a single object. If more than one resource corresponds to the selected parameters, the command is rejected with condition code "00B6001B". For more information about the condition codes refer to the appendix "Response Messages, Error Strings, Condition Codes" in *IBM Tivoli System Automation for z/OS Messages and Codes*.

BLDATA

The command response reports from the ensemble HMC are available as ProcOps ISQ800I messages with a console indicator of SC. In order to get a copy of such hardware messages on your screen as ISQ801I messages, use the ISQXMON command.

Return Codes

The ISQECMD command generates the return codes for common command processing.

CONDATA

Purpose

The CONDATA ensemble command collects basic information about the zEnterprise Hardware Management Console (HMC) managing the target ensemble and presents this information in a multi-line report.

Syntax

```
▶▶—ISQECMD—

|                                     |
|-------------------------------------|
| <i>target_hardware_ProcOps_name</i> |
| <i>ensemble_ProcOps_name</i>        |
| <i>real_ensemble_name</i>           |

—CONDATA—▶▶
```

Requirements

The requirements for the CONDATA command to complete successfully are:

- Processor operations must be active.
- Processor operations must be in session with the ensemble that has the targeted resource in its scope.

Parameters

For a definition of *target_hardwareProcOps_name*, *ensemble_ProcOps_name* and *real_ensemble_name* refer to "ISQECMD" on page 342.

Defaults

None.

Restrictions and Limitations

None.

Usage

Use this command to get basic information about a console. The data is returned in an AOFB0022 multiline report. For more information about this report format refer to the appendix "Response Messages, Error Strings, Condition Codes" in *IBM Tivoli System Automation for z/OS Messages and Codes*.

The command response reports from the ensemble HMC are available as ProcOps ISQ800I messages with a console indicator of SC. In order to get a copy of such hardware messages on your screen as ISQ801I messages, use the ISQXMON command.

Return Codes

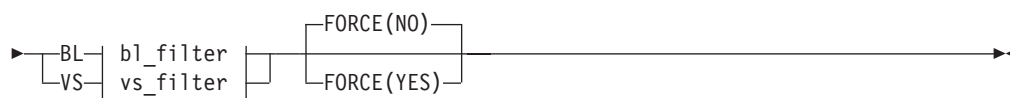
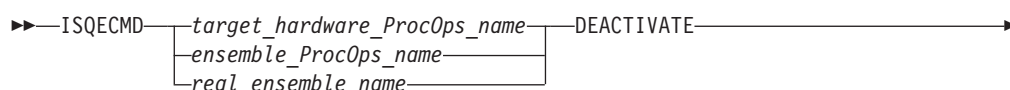
The ISQECMD command generates the return codes for common command processing.

DEACTIVATE

Purpose

The DEACTIVATE command accepts a request to deactivate asynchronously the identified resource (virtual server or blade).

Syntax



bl_filter:



vs_filter:



Requirements

The requirements for the DEACTIVATE to complete successfully are:

- Processor operations must be active.
- Processor operations must be in session with the ensemble that has the targeted resource in its scope.
- For DEACTIVATE VS command, virtual servers must be discovered to the Processor operations data model for the session using DISCOVERY VS ensemble command.

Parameters

For a definition of *target_hardwareProcOps_name*, *ensemble_ProcOps_name* and *real_ensemble_name* refer to “ISQECMD” on page 342.

*_filter

Is a set of parameters allowing unambiguous identification of a target resource. Only full specification of all *_filter parameters ensures selection of a single object. Depending on the complexity of your ensemble, you may not need all the parameters; in most cases it is enough to specify NAME and CPC parameters to identify a target resource. If more than one resource corresponds

DEACTIVATE

to the selected filter, the command is rejected with condition code "00B6001B". For more information about the condition codes refer to the appendix "Response Messages, Error Strings, Condition Codes" in *IBM Tivoli System Automation for z/OS Messages and Codes*.

NAME

The name of the resource to DEACTIVATE. The name is case-sensitive.

CPC

Defines the name (NAU) of a single zEnterprise Central Processor Complex (CPC) controlling appropriate IBM zEnterprise BladeCenter Extension (zBX).

BL

Defines the Unified Resource Manager-assigned name of the blade.

VH

Defines the Unified Resource Manager-assigned name of the virtualization host. The name is equal to the blade name.

TYPE

Defines the type of the objects to be activated. Values are:

For DEACTIVATE BL command:

power

the System z Power blade

system-x

the System x blade

isaopt

the IBM Smart Analytics Optimizer blade

dpxi50z

the DataPower XI50 blade

For DEACTIVATE VS command:

power-vm

a virtual server running on a Power blade

x-hyp

a virtual server running on a System x blade

FORCE

Requests conditional processing of commands that are disruptive to the operating system and application work that is in progress. Use of this operand is based on the operating state of the target resource.

NO

Specifies that processing of the command is to continue only if the target resource (blade or virtual server) is not in the operating state. Specify FORCE(NO) in a situation where you would not want to disrupt the operating environment.

YES

Specifies that processing of the command is to continue even if the target resource (blade or virtual server) is in the operating state. Specify FORCE(YES) in a situation where disruption of the operating environment is not important, such as in recovery situations.

Defaults

The DEACTIVATE command defaults to FORCE(NO).

Restrictions and Limitations

Virtualization hosts and virtual servers of the types "zvm" and "prsm" supported by the IBM zEnterprise Unified Resource Manager are not supported by the ISQECMD command.

Usage

Use DEACTIVATE BL command to deactivate a blade. This command also deactivates a virtualization host, hosted on the blade as a side effect of deactivating the hosting environment. The virtualization host deactivation will also deactivate all virtual servers on the virtualization host.

Use DEACTIVATE VS command to deactivate a virtual server.

If you do not specify FORCE(YES), the DEACTIVATE command checks to make sure it will not be disruptive by querying and validating the resource status.

Once the deactivation request is accepted, the command returns with an AOFB0001 report showing deactivation job initiation status and adds the "de-activate bl/vs" request to internal list of submitted asynchronous commands. You may use LIST JOB command to see all successfully submitted asynchronous commands.

Once the activation job has completed on the target ensemble HMC, a job-completion notification is sent with the deactivation completion report as an AOFB0300 report and removes the deactivation request from the list of submitted asynchronous commands.

The session should have a subscription for type JOB for appropriated resource classes (BL or VS) in order to receive job completion notifications and correctly manage the list of submitted asynchronous commands. For more information about AOFB* reports refer to the appendix "Response Messages, Error Strings, Condition Codes" in *IBM Tivoli System Automation for z/OS Messages and Codes*.

The command response reports and notifications from the ensemble HMC are available as ProcOps ISQ800I messages with a console indicator of SC. In order to get a copy of such hardware messages on your screen as ISQ801I messages, use the ISQXMON command.

Return Codes

The ISQECMD command generates the return codes for common command processing.

DISCOVERY

Purpose

Use this command to get a snapshot of basic properties of the virtual servers managed by the ensemble or the workload resource groups within the target ensemble and add the discovered data to the ProcOps data model.

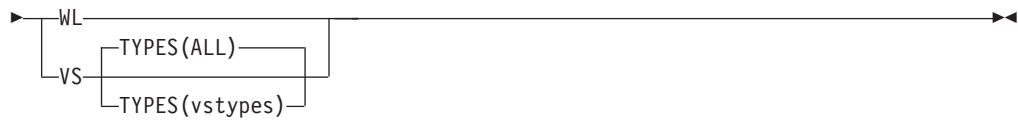
Syntax

```

▶▶ ISQECMD target_hardware_ProcOps_name DISCOVERY →
           ┌───────────────────────────────────────────────────────────────────────────────────┐
           │ ensemble_ProcOps_name ───────────────────────────────────────────────────────────┘
           └───────────────────────────────────────────────────────────────────────────────────┘
           real_ensemble_name

```

DISCOVERY



Requirements

The requirements for the DISCOVERY command to complete successfully are:

- Processor operations must be active.
- Processor operations must be in session with the ensemble that has the targeted resource in its scope.

Parameters

For a definition of *target_hardwareProcOps_name*, *ensemble_ProcOps_name* and *real_ensemble_name* refer to “ISQECMD” on page 342.

TYPES

A comma-separated list of the VS types to be discovered. Supported values are:

POWER-VM

Virtual servers of type "power-vm"

X-HYP

Virtual servers of type "x-hyp"

ALL

All Virtual Servers of the types "power-vm" and "x-hyp" should be discovered.

Defaults

TYPES(ALL)

Restrictions and Limitations

Virtual servers of the types "zvm" and "prsm" supported by the IBM zEnterprise Unified Resource Manager are not supported by the ISQECMD command.

Usage

ProcOps session to an ensemble manages internal data model allowing identification of ensemble objects based on their names, types, logical parents and managing CPCs. The data model can be extended for dynamic resources using DISCOVERY VS and DISCOVERY WL ensemble commands.

Only objects discovered and available in the data model can be managed using ensemble commands and monitored for notifications.

- Use DISCOVERY VS command to add the virtual servers managed by the target ensemble to the data model. Only virtual servers physically residing on the zBX blade centers managed by the CPCs selected for the ensemble in the customization dialogs of SA z/OS are added to the data model.
- Use DISCOVERY WL command to add the workloads defined within the target ensemble to the data model.

The objects discovered using the command can be removed later from the data model using DROP ensemble command. You may use LIST command to show objects available in the data model and identify criteria for DISCOVERY/DROP commands.

DISCOVERY command just adds new objects and replaces existing objects with new data. The command does not delete any objects from the data model. It is recommended to use DROP and DISCOVERY commands in a sequence in case of inventory changes related to the VS and WL.

The number of discovered objects is returned in an AOFB0030 report. For more information about this report format refer to the appendix "Response Messages, Error Strings, Condition Codes" in *IBM Tivoli System Automation for z/OS Messages and Codes*.

The command response reports from the ensemble HMC are available as ProcOps ISQ800I messages with a console indicator of SC. In order to get a copy of such hardware messages on your screen as ISQ801I messages, use the ISQXMON command.

Return Codes

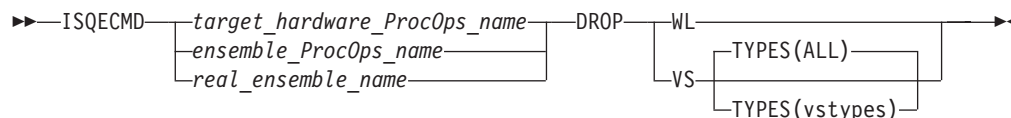
The ISQECMD command generates the return codes for common command processing.

DROP

Purpose

Use this command to delete specified objects from the ProcOps data model.

Syntax



Requirements

The requirements for the DROP command to complete successfully are:

- Processor operations must be active.
- Processor operations must be in session with the ensemble that has the targeted resource in its scope.

Parameters

For a definition of *target_hardwareProcOps_name*, *ensemble_ProcOps_name* and *real_ensemble_name* refer to "ISQECMD" on page 342.

TYPES

A comma-separated list of the VS types to be deleted from data model. Supported values are:

POWER-VM

Virtual servers of type "power-vm".

X-HYP

Virtual servers of type "x-hyp".

ALL

All Virtual Servers of the types "power-vm" and "x-hyp" should be deleted.

DROP

Defaults

TYPES(ALL)

Restrictions and Limitations

Virtual servers of the types "zvm" and "prsm" supported by the IBM zEnterprise Unified Resource Manager are not supported by the ISQECMD command.

Usage

ProcOps session to an ensemble manages internal data model allowing identification of ensemble objects based on their names, types, logical parents and managing CPCs.

Only objects discovered and available in the data model can be managed using ensemble commands and monitored for notifications.

- Use the DROP VS command to delete the virtual servers from the data model. The servers deleted from the data model are not available for further ensemble commands and the session will not receive any further notification related to the deleted objects.
- Use the DROP WL command to delete the workload resource groups from the data model. The workloads deleted from the data model are not available for further ensemble commands and the session will not receive any further notification related to the deleted objects.

The objects deleted with the command can be discovered later again using the DISCOVERY command. You may use the LIST command to show objects available in the data model and identify criteria for DISCOVERY/DROP commands.

It is recommended to use the DROP and DISCOVERY commands in a sequence in case of inventory changes related to the VS and WL to rediscover the data and keep the data model in sync with the ensemble definitions on the HMC.

The number of deleted objects is returned in an AOFB0030 report. For more information about this report format refer to the appendix "Response Messages, Error Strings, Condition Codes" in *IBM Tivoli System Automation for z/OS Messages and Codes*.

The command response reports from the ensemble HMC are available as ProcOps ISQ800I messages with a console indicator of SC. In order to get a copy of such hardware messages on your screen as ISQ801I messages, use the ISQXMON command.

Return Codes

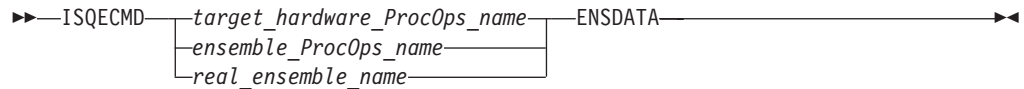
The ISQECMD command generates the return codes for common command processing.

ENSDATA

Purpose

The ENSDATA ensemble command collects basic information about the target ensemble and presents this information in a multi-line report.

Syntax



Requirements

The requirements for the ENSDATA command to complete successfully are:

- Processor operations must be active.
- Processor operations must be in session with the ensemble that has the targeted resource in its scope.

Parameters

For a definition of *target hardware ProcOps_name*, *ensemble_ProcOps_name* and *real_ensemble_name* refer to "ISQECMD" on page 342.

Defaults

None.

Restrictions and Limitations

None.

Usage

Use this command to get basic information about the ensemble. The data is returned in an AOFB0017 multiline report. For more information about this report format refer to the appendix "Response Messages, Error Strings, Condition Codes" in *IBM Tivoli System Automation for z/OS Messages and Codes*.

The command response reports from the ensemble HMC are available as ProcOps ISQ800I messages with a console indicator of SC. In order to get a copy of such hardware messages on your screen as ISQ801I messages, use the ISQXMON command.

Return Codes

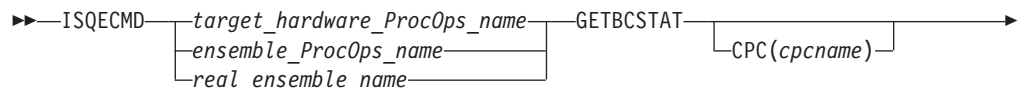
The ISQECMD command generates the return codes for common command processing.

GETBCSTAT

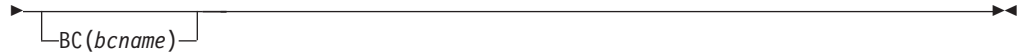
Purpose

The GETBCSTAT ensemble command retrieves the current status of target blade centers and presents this information in a multi-line report.

Syntax



GETBCSTAT



Requirements

The requirements for the GETBCSTAT command to complete successfully are:

- Processor operations must be active.
- Processor operations must be in session with the ensemble that has the targeted resource in its scope.

Parameters

For a definition of *target_hardwareProcOps_name*, *ensemble_ProcOps_name* and *real_ensemble_name* refer to "ISQECMD" on page 342.

CPC

Defines the name (NAU) of a single zEnterprise Central Processor Complex (CPC) controlling appropriate IBM zEnterprise BladeCenter Extension (zBX).

BC Defines the Unified Resource Manager-assigned name of the single zBX blade center.

Defaults

None.

Restrictions and Limitations

None.

Usage

Use this command to retrieve status of one or more blade centers. The data is returned in an AOFB0020 report. For more information about this report format refer to the appendix "Response Messages, Error Strings, Condition Codes" in *IBM Tivoli System Automation for z/OS Messages and Codes*.

If you have multiple blade centers in your ensemble, use BC and CPC parameters to limit the query to specific blade centers. You may use the LIST BC ensemble command to see names and managing CPCs of all blade center objects discovered for the target ensemble.

The command response reports from the ensemble HMC are available as ProcOps ISQ800I messages with a console indicator of SC. In order to get a copy of such hardware messages on your screen as ISQ801I messages, use the ISQXMON command.

Return Codes

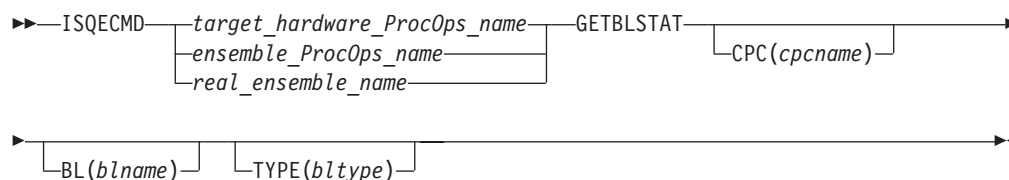
The ISQECMD command generates the return codes for common command processing.

GETBLSTAT

Purpose

The GETBLSTAT ensemble command retrieves the current status of target blades and presents this information in a multi-line report.

Syntax



Requirements

The requirements for the GETBLSTAT command to complete successfully are:

- Processor operations must be active.
- Processor operations must be in session with the ensemble that has the targeted resource in its scope.

Parameters

For a definition of *target_hardwareProcOps_name*, *ensemble_ProcOps_name* and *real_ensemble_name* refer to “ISQECMD” on page 342.

CPC

Defines the name (NAU) of a single zEnterprise Central Processor Complex (CPC) controlling appropriate IBM zEnterprise BladeCenter Extension (zBX).

BL Defines the Unified Resource Manager-assigned name of the blade.

TYPE

Defines the type of a blade. Values are:

power

the System z Power blade

system-x

the System x blade

isaopt

the IBM Smart Analytics Optimizer blade

dpxi50z

the DataPower XI50 blade

Defaults

None

Restrictions and Limitations

None

Usage

Use this command to retrieve the status of one or more blades. The data is returned in an AOFB0020 report. For more information about this report format refer to the appendix "Response Messages, Error Strings, Condition Codes" in *IBM Tivoli System Automation for z/OS Messages and Codes*.

GETBLSTAT

If you have multiple blades in your ensemble, use BL, TYPE and CPC parameters to limit the query to specific blades. You may use the LIST BL ensemble command to see names, types and managing CPCs of all blades discovered for the target ensemble.

The command response reports from the ensemble HMC are available as ProcOps ISQ800I messages with a console indicator of SC. In order to get a copy of such hardware messages on your screen as ISQ801I messages, use the ISQXMON command.

Return Codes

The ISQECMD command generates the return codes for common command processing.

GETESTAT

Purpose

The GETESTAT ensemble command retrieves the current ensemble communication status and presents this information in a single-line report.

Syntax

```
▶▶—ISQECMD—

|                                     |
|-------------------------------------|
| <i>target_hardware_ProcOps_name</i> |
| <i>ensemble_ProcOps_name</i>        |
| <i>real_ensemble_name</i>           |

—GETESTAT—▶▶
```

Requirements

The requirements for the GETESTAT command to complete successfully are:

- Processor operations must be active.
- Processor operations must be in session with the ensemble that has the targeted resource in its scope.

Parameters

For a definition of *target_hardwareProcOps_name*, *ensemble_ProcOps_name* and *real_ensemble_name* refer to "ISQECMD" on page 342.

Defaults

None.

Restrictions and Limitations

None.

Usage

Use this command to retrieve an ensemble communication status representing the current communication status between the primary and alternate HMC. The data is returned in an AOFB0020 report. For more information about this report format refer to the appendix "Response Messages, Error Strings, Condition Codes" in *IBM Tivoli System Automation for z/OS Messages and Codes*.

The command response reports from the ensemble HMC are available as ProcOps ISQ800I messages with a console indicator of SC. In order to get a copy of such hardware messages on your screen as ISQ801I messages, use the ISQXMON command.

Return Codes

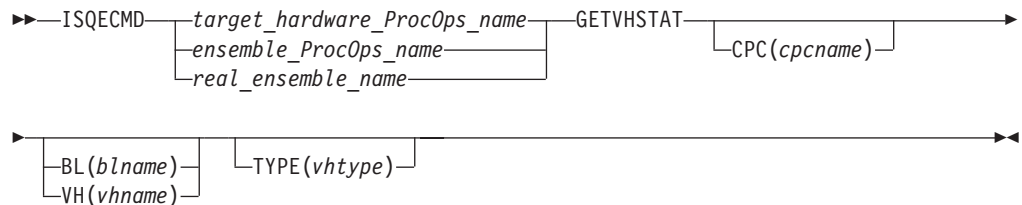
The ISQECMD command generates the return codes for common command processing.

GETVHSTAT

Purpose

The GETVHSTAT ensemble command retrieves the current status of target virtualization hosts (hypervisors) and presents this information in a multi-line report.

Syntax



Requirements

The requirements for the GETVHSTAT command to complete successfully are:

- Processor operations must be active.
- Processor operations must be in session with the ensemble that has the targeted resource in its scope.

Parameters

For a definition of *target_hardwareProcOps_name*, *ensemble_ProcOps_name* and *real_ensemble_name* refer to "ISQECMD" on page 342.

Parameters

CPC

Defines the name (NAU) of a single zEnterprise Central Processor Complex (CPC) controlling appropriate IBM zEnterprise BladeCenter Extension (zBX).

BL Defines the Unified Resource Manager-assigned name of the blade.

VH Defines the Unified Resource Manager-assigned name of the virtualization host. The name is equal to the blade name.

TYPE

Defines the type of a hypervisor. Values are:

power-vm

a virtualization host running on a Power blade

x-hyp

a virtualization host running on a System x blade

GETVHSTAT

Defaults

None.

Restrictions and Limitations

Virtualization Hosts of types "zvm" and "prsm" supported by the IBM zEnterprise Unified Resource Manager are not supported by the ISQECMD command.

Usage

Use this command to retrieve status of one or more virtualization hosts. The data is returned in an AOFB0020 report. For more information about this report format refer to the appendix "Response Messages, Error Strings, Condition Codes" in *IBM Tivoli System Automation for z/OS Messages and Codes*.

If you have multiple hypervisors in your ensemble, use VH, BL, TYPE and CPC parameters to limit the query to specific virtualization hosts. You may use the LIST VH ensemble command to see names, types and managing CPCs of all virtualization hosts discovered for the target ensemble.

The command response reports from the ensemble HMC are available as ProcOps ISQ800I messages with a console indicator of SC. In order to get a copy of such hardware messages on your screen as ISQ801I messages, use the ISQXMON command.

Return Codes

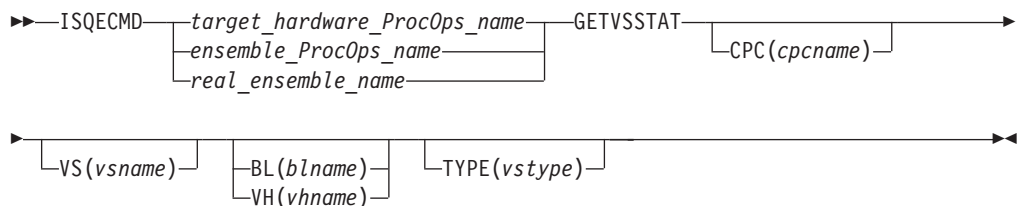
The ISQECMD command generates the return codes for common command processing.

GETVSSTAT

Purpose

The GETVSSTAT ensemble command retrieves the current status of target virtual servers and presents this information in a multi-line report.

Syntax



Requirements

The requirements for the GETVSSTAT command to complete successfully are:

- Processor operations must be active.
- Processor operations must be in session with the ensemble that has the targeted resource in its scope.
- Virtual Servers must be discovered to the Processor operations data model for the ensemble session using DISCOVERY VS ensemble command.

Parameters

For a definition of *target_hardwareProcOps_name*, *ensemble_ProcOps_name* and *real_ensemble_name* refer to "ISQECMD" on page 342.

CPC

Defines the name (NAU) of a single zEnterprise Central Processor Complex (CPC) controlling appropriate IBM zEnterprise BladeCenter Extension (zBX).

VS Defines the name of the virtual server. The name is unique to other existing virtual servers on the virtualization host/blade. The name is case-sensitive.

BL Defines the Unified Resource Manager-assigned name of the blade.

VH Defines the Unified Resource Manager-assigned name of the virtualization host. The name is equal to the blade name.

TYPE

Defines the type of the server. Values are:

power-vm

a virtual server running on a Power blade

x-hyp

a virtual server running on a System x blade

Defaults

None.

Restrictions and Limitations

Virtual servers of types "zvm" and "prsm" supported by the IBM zEnterprise Unified Resource Manager are not supported by the ISQECMD command.

Usage

Use this command to retrieve the status of one or more discovered virtual servers. The data is returned in an AOFB0020 report. For more information about this report format refer to the appendix "Response Messages, Error Strings, Condition Codes" in *IBM Tivoli System Automation for z/OS Messages and Codes*.

If you have multiple hypervisors in your ensemble, use VS, VH/BL, TYPE and CPC parameters to limit the query to specific virtual server objects. You may use the LIST VS ensemble command to see names, types and managing CPCs of all virtual servers discovered for the target ensemble. Only servers discovered using the DISCOVERY VS ensemble command and available in the ProcOps data model can be queried.

The command response reports from the ensemble HMC are available as ProcOps ISQ800I messages with a console indicator of SC. In order to get a copy of such hardware messages on your screen as ISQ801I messages, use the ISQXMON command.

Return Codes

The ISQECMD command generates the return codes for common command processing.

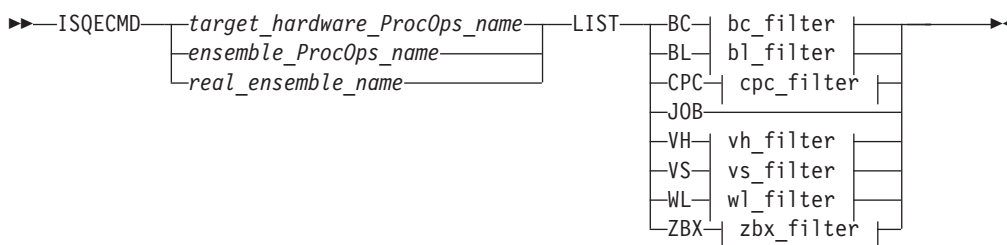
LIST

LIST

Purpose

The LIST ensemble command allows you to query the ProcOps internal data discovered for target ensemble session. The list of discovered objects is presented as a multi-line report. The command does not interact with the HMC.

Syntax



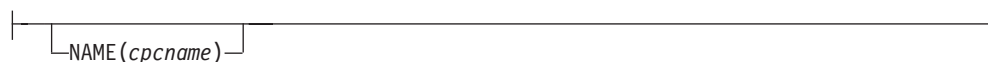
bc_filter:



bl_filter:



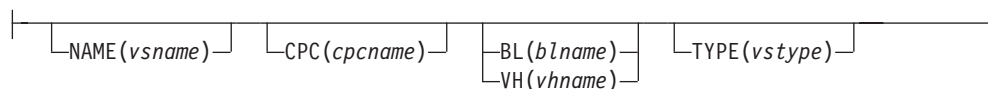
cpc_filter:



vh_filter:



vs_filter:



wl_filter:



zbx_filter:

NAME(zbxname)

Requirements

The requirements for the LIST command to complete successfully are:

- Processor operations must be active.
- Processor operations must be in session with the ensemble that has the targeted resource in its scope.
- For LIST VS and LIST WL commands, Virtual Servers and Workloads must be discovered to the Processor operations data model for the ensemble session using DISCOVERY VS and DISCOVERY WL ensemble commands.

Parameters

For a definition of *target_hardwareProcOps_name*, *ensemble_ProcOps_name* and *real_ensemble_name* refer to “ISQECMD” on page 342.

*_filter

Is a set of parameters limiting the command to a subset of objects of the required object type. Only full specification of all *_filter parameters ensures selection of a single object.

NAME

The name of the object(s) to be selected for LIST report. The name is case-sensitive.

CPC

Defines the name (NAU) of a single zEnterprise Central Processor Complex (CPC) controlling appropriate IBM zEnterprise BladeCenter Extension (zBX).

BL Defines the Unified Resource Manager-assigned name of the blade.

VH Defines the Unified Resource Manager-assigned name of the virtualization host. The name is equal to the blade name.

TYPE

Defines the type of the object(s) to be selected for LIST report. Values are:

For LIST BL command:

power

the System z Power blade

system-x

the System x blade

isaopt

the IBM Smart Analytics Optimizer blade

dpxi50z

the DataPower XI50 blade

For LIST VH and LIST VS commands:

power-vm

a virtual server running on a Power blade

x-hyp

a virtual server running on a System x blade

Defaults

None.

Restrictions and Limitations

Virtualization hosts and virtual servers of the types "zvm" and "prsm" supported by the IBM zEnterprise Unified Resource Manager are not supported by the ISQECMD command.

Usage

ProcOps session to an ensemble manages internal data model allowing identification of ensemble objects based on their names, types, logical parents and managing CPCs. The data model is filled in during initialization of the session using ISQXIII command and extended using DISCOVERY VS and DISCOVERY WL ensemble commands.

The following objects are discovered during initialization of the session:

- Ensemble
- Ensemble nodes (CPCs). Only CPCs selected for the ensemble in the customization dialogs of SA z/OS are added to the data model.
- IBM zEnterprise BladeCenter Extension (zBX) managed by the selected CPCs.
- zBX blade centers (BC), blades (BL) and virtualization hosts (VH)

Only objects discovered and available in the data model can be managed using ensemble commands and monitored for notifications. The LIST commands allow you to query the data model and identify objects for any other ensemble commands. LIST does not require communication to the ensemble HMC and generates no external IP traffic.

- Use LIST BC command to see one or more discovered blade centers.
- Use LIST BL command to see one or more discovered blades.
- Use LIST CPC command to see one or more discovered CPCs.
- Use LIST JOB command to see all the active asynchronous commands executed for the ensemble session using ACTIVATE and DEACTIVATE ensemble commands which are not yet completed.
- Use LIST VH command to see one or more discovered virtualization hosts (hypervisors).
- Use LIST VS command to see one or more discovered virtual servers discovered using DISCOVERY VS commands.
- Use LIST WL command to see one or more discovered workload resource groups discovered using DISCOVERY WL commands.
- Use LIST ZBX command to see one or more discovered zBXs.

The data is returned in an AOFB0020 multiline report. If no objects are available in the data model for specified *_filter, the commands return empty report. For more information about this report format refer to the appendix "Response Messages, Error Strings, Condition Codes" in *IBM Tivoli System Automation for z/OS Messages and Codes*.

The command response reports from the ensemble HMC are available as ProcOps ISQ800I messages with a console indicator of SC. In order to get a copy of such hardware messages on your screen as ISQ801I messages, use the ISQXMON command.

Return Codes

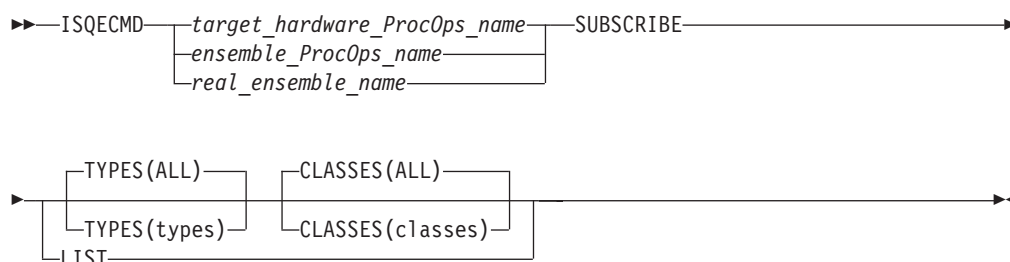
The ISQECMD command generates the return codes for common command processing.

SUBSCRIBE

Purpose

The SUBSCRIBE/UNSUBSCRIBE ensemble commands provide a filtering mechanism for event notifications received from the ensemble HMC for a session. The SUBSCRIBE command permits registration of a session to an ensemble for specific notification types and object classes.

Syntax



Requirements

The requirements for the SUBSCRIBE command to complete successfully are:

- Processor operations must be active.
- Processor operations must be in session with the ensemble that has the targeted resource in its scope.

Parameters

For a definition of *target hardware ProcOps name*, *ensemble ProcOps name* and *real ensemble name* refer to “ISQECMD” on page 342.

TYPES

A comma-separated list of the notification types. Supported values are:

STATUS

the status change notifications

PROPERTY

the property change notifications

INVENTORY

the inventory change notifications

JOB

the asynchronous commands completion notifications

ALL

all of the above

NONE

leaves the list of notification lists unchanged

SUBSCRIBE

CLASSES

A comma-separated list of the object classes requiring notifications. Supported values are:

ENS

the notifications for the ensemble

CPC

the notifications for the CPCs

ZBX

the notifications for the zBXs

RACK

the notifications for the racks

BC

the notifications for the blade centers

BL

the notifications for the blades

VH

the notifications for the virtualization hosts (hypervisors)

VS

the notifications for the virtual servers

WL

the notifications for the workload resource groups

ALL

all of the above

NONE

leaves the list of object classes unchanged

LIST

When specified, report AOFB0019, containing the current subscription information for the selected ensemble session is returned. The parameter cannot be combined with TYPES and CLASSES.

Defaults

TYPES(ALL)

CLASSES(ALL)

Restrictions and Limitations

The TYPES and CLASSES are treated independently, just adding/removing subscriptions to internal types and classes lists. For example:

```
SUBSCRIBE TYPES(PROPERTY) CLASSES(BC)
SUBSCRIBE TYPES(STATUS) CLASSES(BL)
```

results in a subscription for PROPERTY and STATUS for both BC and BL managed objects.

Usage

The IBM zEnterprise Unified Resource Manager includes an asynchronous notification facility by which client applications may subscribe to and receive notification messages regarding a set of predefined management events. These events include:

- Addition and removal of managed objects to/from the inventory of resources that are managed by the HMC (INVENTORY change notification).

- Changes to specified properties of managed object instances (PROPERTY change notification).
- Changes to the operational status of managed objects (STATUS change notification).
- Completion of asynchronously processed jobs (JOB completion notification).

The SUBSCRIBE command allows the ProcOps ensemble session to subscribe to these notifications for specific managed objects. The command is session-wide and affects all interested operators registered using ISQXMON command for a target ensemble, so use this command carefully. A session initialization using ISQXIII command performs initial subscription for the STATUS and JOB notifications for ALL classes. You may use SUBSCRIBE command to subscribe to additional notifications required for your automation procedures.

You may use SUBSCRIBE LIST command to query your current subscription for an ensemble session.

The notifications are delivered in a set of AOFB* reports:

- AOFB0100 for STATUS change
- AOFB0200 for PROPERTY change
- AOFB0300 for COMPLETION
- AOFB0400 for INVENTORY

For more information about these reports refer to the appendix "Response Messages, Error Strings, Condition Codes" in *IBM Tivoli System Automation for z/OS Messages and Codes*.

The notification reports from the ensemble HMC are available as ProcOps ISQ800I messages with a console indicator of SC. In order to get a copy of such notifications on your screen as ISQ801I messages, use the ISQXMON command.

Return Codes

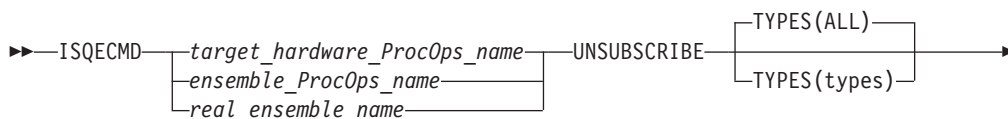
The ISQECMD command generates the return codes for common command processing.

UNSUBSCRIBE

Purpose

The SUBSCRIBE/UNSUBSCRIBE ensemble commands provide a filtering mechanism for event notifications received from the ensemble HMC for a session. The UNSUBSCRIBE command permits the de-registering of the session to an ensemble for specific notification types and object classes.

Syntax



UNSUBSCRIBE



Requirements

The requirements for the UNSUBSCRIBE command to complete successfully are:

- Processor operations must be active.
- Processor operations must be in session with the ensemble that has the targeted resource in its scope.

Parameters

For a definition of *target_hardwareProcOps_name*, *ensemble_ProcOps_name* and *real_ensemble_name* refer to “ISQECMD” on page 342.

TYPES

A comma-separated list of the notification types. Supported values are:

STATUS

the status change notifications

PROPERTY

the property change notifications

INVENTORY

the inventory change notifications

JOB

the asynchronous commands completion notifications

ALL

all of the above

NONE

leaves the list of notification lists unchanged

CLASSES

A comma-separated list of the object classes requiring notifications. Supported values are:

ENS

the notifications for the ensemble

CPC

the notifications for the CPCs

ZBX

the notifications for the zBXs

RACK

the notifications for the racks

BC the notifications for the blade centers

BL the notifications for the blades

VH the notifications for the virtualization hosts (hypervisors)

VS

the notifications for the virtual servers

WL the notifications for the workload resource groups

ALL

all of the above

NONE

leaves the list of object classes unchanged

Defaults

TYPES(ALL)

CLASSES(ALL)

Restrictions and Limitations

The TYPES and CLASSES are treated independently, just adding/removing subscriptions to internal types and classes lists. For example:

```
UNSUBSCRIBE TYPES(PROPERTY) CLASSES(BC)
```

removes subscription to PROPERTY change notifications for ALL managed objects and removes subscription to ALL notification types for the blade centers.

Usage

The IBM zEnterprise Unified Resource Manager includes an asynchronous notification facility by which client applications may subscribe to and receive notification messages regarding a set of predefined management events. These events include:

- Addition and removal of managed objects to/from the inventory of resources that are managed by the HMC (INVENTORY change notification).
- Changes to specified properties of managed object instances (PROPERTY change notification).
- Changes to the operational status of managed objects (STATUS change notification).
- Completion of asynchronously processed jobs (JOB completion notification).

The UNSUBSCRIBE command allows the ProcOps ensemble session to remove a subscription for particular notification types and managed objects. The command is session wide and affects all interested operators for a target ensemble, so use this command carefully.

Return Codes

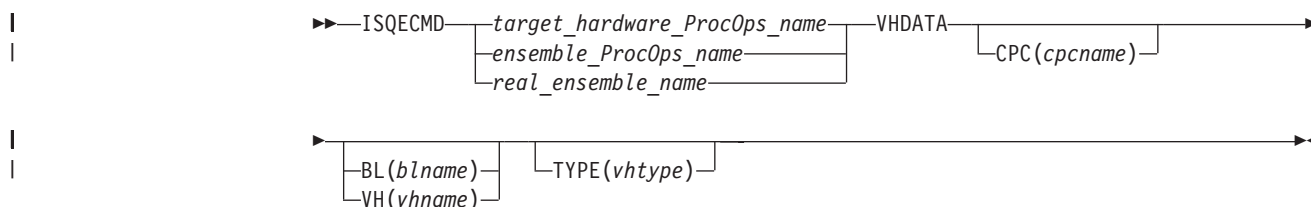
The ISQECMD command generates the return codes for common command processing.

VHDATA**Purpose**

The VHDATA ensemble command collects configuration and status information about addressed zBX virtualization host (hypervisor) and presents this information in a multi-line report.

Syntax

VHDATA



Requirements

The requirements for the VHDATA command to complete successfully are:

- Processor operations must be active.
- Processor operations must be in session with the ensemble that has the targeted resource in its scope.

Parameters

For a definition of *target_hardwareProcOps_name*, *ensemble_ProcOps_name* and *real_ensemble_name* refer to “ISQECMD” on page 342.

CPC

Defines the name (NAU) of a single zEnterprise Central Processor Complex (CPC) controlling appropriate IBM zEnterprise BladeCenter Extension (zBX).

BL Defines the Unified Resource Manager-assigned name of the blade.

VH Defines the Unified Resource Manager-assigned name of the virtualization host. The name is equal to the blade name.

TYPE

Defines the type of a hypervisor. Values are:

power-vm

a virtualization host running on a Power blade

x-hyp

a virtualization host running on a System x blade

Defaults

None.

Restrictions and Limitations

Virtualization Hosts of types "zvm" and "prsm" supported by the IBM zEnterprise Unified Resource Manager are not supported by the ISQECMD command.

Usage

Use this command to get a snapshot of the virtualization host properties. The data is returned as an AOFB0013 multiline report. For more information about this report format refer to the appendix "Response Messages, Error Strings, Condition Codes" in *IBM Tivoli System Automation for z/OS Messages and Codes*. If you have more than one blade/virtualization host in your ensemble, use BL, VH, TYPE and CPC parameters to limit the query to the single hypervisor object. You may use the LIST VH ensemble command to see names, types and managing CPCs of all virtualization hosts discovered for the target ensemble. Only full specification of command parameters ensures selection of a single object. If more than one resource corresponds to the selected parameters, the command is rejected with condition code "00B6001B". For more information about the condition codes refer to the

appendix "Response Messages, Error Strings, Condition Codes" in *IBM Tivoli System Automation for z/OS Messages and Codes*.

The command response reports from the ensemble HMC are available as ProcOps ISQ800I messages with a console indicator of SC. In order to get a copy of such hardware messages on your screen as ISQ801I messages, use the ISQXMON command.

Return Codes

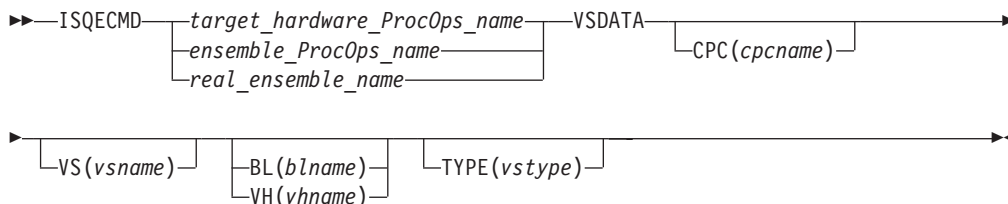
The ISQECMD command generates the return codes for common command processing.

VSDATA

Purpose

The VSDATA ensemble command collects configuration and status information about addressed zBX virtual server and presents this information in a multi-line report.

Syntax



Requirements

The requirements for the VSDATA command to complete successfully are:

- Processor operations must be active.
- Processor operations must be in session with the ensemble that has the targeted resource in its scope.
- Virtual Servers must be discovered to the Processor operations data model for the ensemble session using the DISCOVERY VS ensemble command.

Parameters

For a definition of *target_hardwareProcOps_name*, *ensemble_ProcOps_name* and *real_ensemble_name* refer to "ISQECMD" on page 342.

CPC

Defines the name (NAU) of a single zEnterprise Central Processor Complex (CPC) controlling appropriate IBM zEnterprise BladeCenter Extension (zBX).

VS Defines the name of the virtual server. The name is unique to other existing virtual servers on the virtualization host/blade. The name is case-sensitive.

BL Defines the Unified Resource Manager-assigned name of the blade.

VH Defines the Unified Resource Manager-assigned name of the virtualization host. The name is equal to the blade name.

VSDATA

TYPE

Defines the type of the server. Values are:

power-vm

a virtual server running on a Power blade

x-hyp

a virtual server running on a System x blade

Defaults

None.

Restrictions and Limitations

Virtual servers of types "zvm" and "prsm" supported by the IBM zEnterprise Unified Resource Manager are not supported by the ISQECMD command.

Usage

Use this command to get a snapshot of the virtual server properties. The data is returned as an AOFB0014 multiline report. For more information about this report format refer to the appendix "Response Messages, Error Strings, Condition Codes" in *IBM Tivoli System Automation for z/OS Messages and Codes*.

If you have more than one virtual server in your ensemble, use VS, BL, VH, TYPE and CPC parameters to limit the query to the single server object. You may use the LIST VS ensemble command to see names, types, hosting blades and managing CPCs of all virtual servers discovered for the target ensemble. Only a full specification of command parameters ensures selection of a single object. If more than one resource corresponds to the selected parameters, the command is rejected with condition code "00B6001B". For more information about the condition codes refer to the appendix "Response Messages, Error Strings, Condition Codes" in *IBM Tivoli System Automation for z/OS Messages and Codes*.

Only servers discovered using DISCOVERY VS ensemble command and available in the ProcOps data model can be queried.

The command response reports from the ensemble HMC are available as ProcOps ISQ800I messages with a console indicator of SC. In order to get a copy of such hardware messages on your screen as ISQ801I messages, use the ISQXMON command.

Return Codes

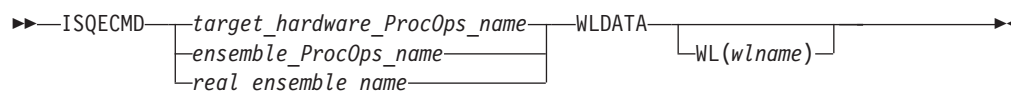
The ISQECMD command generates the return codes for common command processing.

WLDAPATA

Purpose

The WLDAPATA ensemble command collects basic configuration about a workload resource group object and presents this information in a multi-line report.

Syntax



Requirements

The requirements for the WLDAPATA command to complete successfully are:

- Processor operations must be active.
- Processor operations must be in session with the ensemble that has the targeted resource in its scope.
- Workloads must be discovered to the Processor operations data model for the ensemble session using DISCOVERY WL ensemble command.

Parameters

For a definition of *target_hardwareProcOps_name*, *ensemble_ProcOps_name* and *real_ensemble_name* refer to “ISQECMD” on page 342.

WL Defines the display name specified for the workload resource group. The name is case-sensitive.

Defaults

None.

Restrictions and Limitations

None.

Usage

Use this command to get basic information about workload resource group and list of virtual servers assigned to the workload. The data is returned as an AOFB0015 multiline report. For more information about this report format refer to the appendix “Response Messages, Error Strings, Condition Codes” in *IBM Tivoli System Automation for z/OS Messages and Codes*.

If you have more than one workload defined in your ensemble, use WL parameter to limit the query to the single workload object. You may use the LIST WL ensemble command to see names of all workloads discovered for the target ensemble.

Only workloads discovered using the DISCOVERY WL ensemble command and available in the ProcOps data model can be queried.

The command response reports from the ensemble HMC are available as ProcOps ISQ800I messages with a console indicator of SC. In order to get a copy of such hardware messages on your screen as ISQ801I messages, use the ISQXMON command.

Return Codes

The ISQECMD command generates the return codes for common command processing.

ZBXDATA
Purpose

The ZBXDATA ensemble command collects configuration information about addressed IBM zEnterprise BladeCenter Extension (zBX) and presents this information in a multi-line report.

Syntax

```

▶—ISQECMD—target_hardware_ProcOps_name—ZBXDATA—▶
               └─ensemble_ProcOps_name─┘
               └─real_ensemble_name─┘
               └─CPC(cpcname)─┘

```

Requirements

The requirements for the ZBXDATA command to complete successfully are:

- Processor operations must be active.
- Processor operations must be in session with the ensemble that has the targeted resource in its scope.

Parameters

For a definition of *target_hardwareProcOps_name*, *ensemble_ProcOps_name* and *real_ensemble_name* refer to “ISQECMD” on page 342.

CPC

Defines the name (NAU) of a single zEnterprise Central Processor Complex (CPC) controlling appropriate IBM zEnterprise BladeCenter Extension (zBX).

Defaults

None.

Restrictions and Limitations

None.

Usage

Use this command to get a snapshot of a single zBX object. The data is returned as an AOFB0011 multiline report. For more information about this report format refer to the appendix "Response Messages, Error Strings, Condition Codes" in *IBM Tivoli System Automation for z/OS Messages and Codes*.

If you have more than one zBX in your ensemble, use CPC parameter to limit the query to a single ZBX object. You may use the LIST zBX ensemble command to see all zBX objects with their managing CPCs for the target ensemble.

The command response reports from the ensemble HMC are available as ProcOps ISQ800I messages with a console indicator of SC. In order to get a copy of such hardware messages on your screen as ISQ801I messages, use the ISQXMON command.

Return Codes

The ISQECMD command generates the return codes for common command processing.

Chapter 8. PSM Commands - Special Requests

The following special requests can be executed by the ProcOps Service Machine (PSM) Command Server. To issue these requests you must be logged on to the PSM. Requests can either only be entered directly from the PSM console or be used with the ISQXPSM command as well as being entered from the PSM console:

- PSM commands that operate with ISQXPSM are:
 - “ISQACT”
 - “ISQCLEAR”
 - “ISQQUERY” on page 504
 - “ISQSTATUS” on page 504
 - “ISQTRACE” on page 505
- PSM console commands that can only be entered from the console are:
 - “ISQMSG”
 - “ISQPSM” on page 504
 - “STOPALL” on page 505

ISQACT

▶▶ ISQACT—MH ▶▶

ISQACT is used to activate a thread after it has stopped.

MH indicates that the Message Handler thread is to be reactivated. This is useful in cases where the MH thread fails or terminates itself.

ISQCLEAR

▶▶ ISQCLEAR

M
C

 ▶▶

ISQCLEAR empties the Messages Queue or Commands Queue. All entries are emptied. The queue itself is not deleted.

ISQMSG

▶▶ ISQMSG

INDENT
MSGID

ON
OFF

 ▶▶

ISQMSG is used to change the way that messages are displayed to the console user that is logged on the PSM. If these messages are also routed to NetView it also alters the form of the messages.

If INDENT ON is specified this alters the indentation of each message. Messages that are issued by different threads are indented by different amounts. This makes it easier to see the flow of a thread because all its messages are indented by the

same amount. Trace messages (activated by an ISQTRACE request) are also indented. Messages from the Main Thread are not indented. Messages that are issued as responses to PSM requests are not indented. If an indented message continues on further lines, the continuation lines are not indented.

INDENT OFF causes all non-trace messages to be displayed without indentation. The initial setting for the PSM is INDENT OFF. This initial setting is set each time the PSM Control Program is started.

If MSGID OFF is specified, this causes each non-trace message to be displayed without its message ID. This may be useful when INDENT ON is in effect, because it reduces the length of each message and reduces the continuation of message text on subsequent lines.

MSGID ON causes all non-trace messages to be displayed with their message IDs. The initial setting for the PSM is ON. Trace messages do not have message IDs.

Restrictions and Limitations

The ISQMSG command can only be entered directly from the console of the PSM.

ISQPSM

▶▶—ISQPSM—▶▶

The ISQPSM command starts the PSM server. This command should only be entered after the PSM server has been stopped successfully with a STOPALL command and the PSM virtual machine is in CMS mode.

Restrictions and Limitations

The ISQPSM command can only be entered directly from the console of the PSM.

ISQQUERY

▶▶—ISQQUERY—▶▶


ISQQUERY displays:

- Q** How many entries are in the Message Queue.
- E** A list of current events and event monitors.

Listing the current events and event monitors is useful in problem determination.

ISQSTATUS

▶▶—ISQSTATUS—▶▶

ISQSTATUS gives the status of important components of the PSM operation.

ISQTRACE

▶▶—ISQTRACE—*component*— ON
 OFF—▶▶

ISQTRACE is used to start or stop PSM tracing of a component of the PSM. Trace messages are always written to the VM console.

The value of *component* can be one of:

MSERV

Message server thread.

CSERV

Command server thread.

MH Message handler thread.

LOGGER

Logger thread.

CNSERVER

Console server thread.

TCPIP Selected TCPIP requests within the Message Server and Command Server threads.

If any trace is set on, regular messages issued to the VM console as part of the VMCONIO stream are sent to the VM console and are no longer routed back to ProcOps NetView.

Trace settings are maintained when a PSM is stopped. If the PSM is then restarted (without a re-logon of the CMS machine) the previous trace settings are retained.

When a PSM virtual machine is started all traces are set off.

STOPALL

▶▶—STOPALL—▶▶

STOPALL stops all threads and terminates the PSM control program. The PSM virtual machine remains active.

Restrictions and Limitations

The STOPALL command can only be entered directly from the console of the PSM.

-

Appendix A. Definitions for I/O Operations Commands

This appendix provides additional information for using I/O operations (I/O-Ops) commands.

ESCON/FICON Director

Figure 160 is an example of a diagram that is used in this document to illustrate an ESCON director (or switch, as it is usually called).

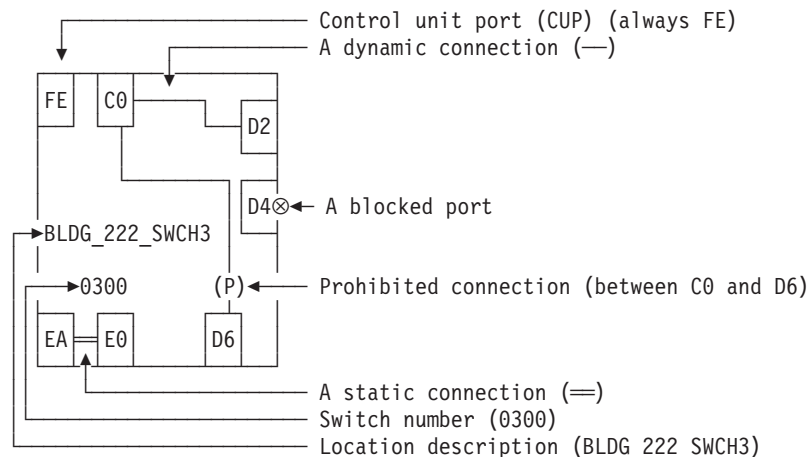


Figure 160. Sample of an ESCON Director Diagram

Switch Identifiers

A switch device number is a hexadecimal number containing up to four digits with any leading 0's (zeros) padded by I/O-Ops. The ADDRESS parameter of the IODEVICE macro in the I/O Definition File (IODF) specifies the switch device number.

In many I/O-Ops commands, a switch device number is required in the input to identify a switch that is allocated to the issuing I/O-Ops (primary host). The program also displays the switch device number on output.

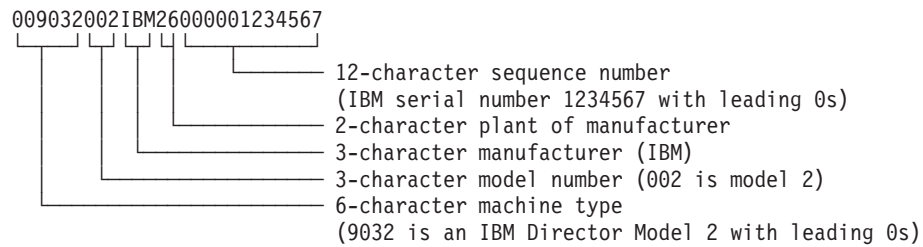
Two related terms apply in this context:

- A *logical switch number* (LSN) is a 2-digit hexadecimal number that is assigned with the SWITCH parameter on the CHPID macro of the IOCP. I/O-Ops does not use an LSN as input, but it does display an LSN in the output of many of its Display and Query commands.
- Hardware Configuration Definition (HCD) uses the term switch identifier (Switch ID), which is identical with the switch's LSN.

Note: In a cascaded switch environment, it is recommended that all switches are defined to the HCD including their device numbers. This allows I/O-Ops to show the LSN also for cascaded switches.

Switch Unique Identifier

You can use the DISPLAY SWITCH command to display the 26-character switch unique identifier. The format is:



Logical Switch Number (LSN)

An LSN is a 2-digit hexadecimal number that is assigned with the SWITCH parameter on the CHPID macro of the IOCP. I/O-Ops does not use an LSN as input, but it does display an LSN in the output of many of its display and query commands. Note that the LSN will show "-" when this value is not valid. This can happen only to cascaded switches that have no channel attachment -- which is normally the case -- to the channel subsystem that I/O-Ops is running on. For this reason, it is recommended that all switches are defined to the Hardware Configuration Definition (HCD) including their device numbers. This allows I/O-Ops to resolve the LSN also for the above-mentioned switches.

In many I/O-Ops commands, a switch device number is required in the input to identify a switch that is allocated to the issuing I/O-Ops (primary host). The program also displays the switch device number on output.

Port Addresses

A port address is a two-digit hexadecimal number that identifies an addressable port on a switch.

Switch Ports

CH	A CNC or CVC CHPID is defined for this port.
CU	A control unit is assigned to this port.
CHCH	More than one CNC or CVC CHPID is assigned to this port.
CHCU	Both a CHPID and a control unit are assigned to this port. CHCU is valid if the CHPID is a CTC channel. I/O-Ops does not report such a dual assignment as a configuration mismatch. However, CHCU is not a valid combination for any other type of CHPID. I/O-Ops does report such a dual assignment as a configuration mismatch.
CV	An ESCON Converter Model 2 (CV converter) is attached to this port. A CV converter (9035) converts ESCON protocol to a parallel CHPID operating in block or byte mode.
CVCH	A CV converter and an ESCON channel (CNC or CVC) are both assigned to this port. I/O-Ops reports such a dual assignment as a configuration mismatch.
CVCU	A CV converter and a control unit are assigned to this port. I/O-Ops reports such a dual assignment as a configuration mismatch.
ISL	An Inter-Switch-Link is connected to this port.

Allow/Prohibit Mask of a Port

Each port is either allowed to have, or prohibited from having, a dynamic connection with another port on the same switch.

Collectively, these pairs of connectivity attributes form an *allow/prohibit mask*.

- A** Designates the ports for which a dynamic connection is allowed
- P** Designates the ports for which a dynamic connection is prohibited

An allow/prohibit mask is displayed by I/O-Ops as part of a matrix of a switch configuration. The program displays switch matrixes in its sample I/O-Ops ISPF dialog. See examples in *IBM Tivoli System Automation for z/OS User's Guide*.

Switch Port Hardware Status on a Display Command

On the output of DISPLAY commands, I/O-Ops displays the hardware status for a port, as shown in Figure 161.

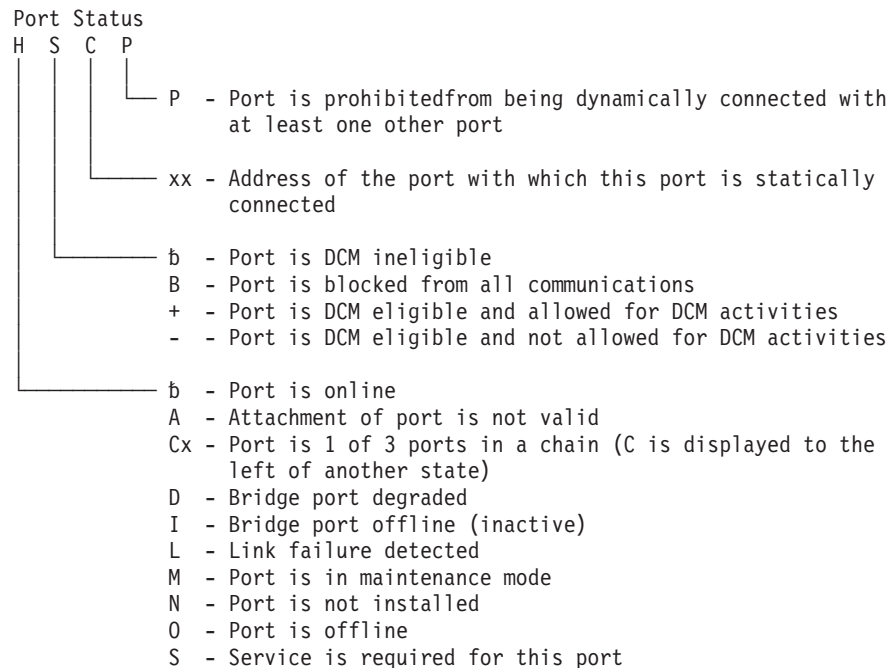


Figure 161. Switch Port Hardware Status Format

For further information, see the program information block (PIB), which is described in the output block listed in “QUERY SWITCH” in *IBM Tivoli System Automation for z/OS Programmer's Reference*.

Logical Tokens

A *logical token* is an identifier created by hardware configuration description (HCD) for each I/O resource that is defined in an input output definition file (IODF). If two or more systems share an IODF, they will have the same logical token for the same I/O resource.

Physical Tokens

A *physical token* is a 32-byte field that describes an I/O resource. Information in the physical token comes from either a node element descriptor (NED) or a node descriptor (ND). A NED is a 32-byte field that describes a node element of an I/O resource. A NED is associated with a physical control unit or device. An ND is a 32-byte field that describes a node interface of an I/O resource. An ND identifies a physical CHPID. When a physical token is input, the first 4 bytes are not used for comparison.

Channel Types

Types of channels:

BLOCK	A parallel channel operating in block mode
BYTE	A parallel channel operating in byte mode
CFR	Coupling facility receiver
CFS	Coupling facility sender
CFP	Coupling facility peer channel
CBR	Integrated Cluster Bus receiver
CBS	Integrated Cluster Bus sender
CBP	Integrated Cluster Bus peer
CBY_P	An ESCON to byte converter channel
CIB	Coupling over Infiniband
CNC_P	A point-to-point ESCON channel
CNC_S	A switched ESCON channel
CNC_?	A switched or point-to-point ESCON channel
CTC_P	A point-to-point channel-to-channel channel
CTC_S	A switched channel-to-channel channel
CTC_?	A switched or point-to-point channel-to-channel channel
CVC_P	An ESCON to block converter channel
DSD	Direct system device
EIO	An emulated I/O channel
FC	A FICON point-to-point channel
FC_S	A FICON switched channel
FC_?	A FICON incomplete channel
FCP	A FCP channel
FCV	A FICON-to-ESCON bridge
ICR	Internal coupling receiver
ICS	Internal coupling sender
ICP	Internal coupling peer
IQD	Internal queued direct communication
ISD	Internal system device
NATVE	Native interface
OSA	An open systems adapter channel
OSC	OSA console
OSD	An OSA direct express channel
OSE	An OSA express channel
OSN	An OSA NCP channel
UNDEF	A channel that is not defined

Note: The last character of the DCM managed channels' acronyms is 'M', for example, FCM or CNCSM.

I/O-Ops can display, or return data on, all the channels known to it. For ESCON channels, FICON channels, and for parallel channels operating in block mode, the program can be used to change the connectivity between these resources and others in their paths.

A Parallel Channel

I/O-Ops can display information about parallel channels that operate in either byte (BY) or block (BL) mode. I/O-Ops can also change connectivity to a parallel channel operating in block mode.

An ESCON (CNC) Channel

A CNC channel path is used to transfer data between a host system image and an ESCON control unit. I/O-Ops can display data about a CNC channel path and change its connectivity.

An ESCON Channel Operating in Converted (CVC) Mode

A CVC channel path transfers data in blocks and a CBY channel path transfers data by bytes. A CVC or CBY channel path is an ESCON channel that has been converted so that it can interface with an ESCON Converter Model 1 (9034), or equivalent, for communication with a parallel control unit.

A CVC or CBY path always resembles a point-to-point parallel path, regardless whether it passes through a switch or not. Thus, a switchable CVC or CBY path must pass through a switch as a static connection.

A FICON (FC) Channel

An FC channel path is used to transfer data between a host system image and an FICON control unit. I/O-Ops can display data about an FC channel path and change its connectivity.

Coupling Facility Channels

I/O-Ops can display and return data about a Coupling Facility Receiver (CFR) channel and a Coupling Facility Sender (CFS) channel. However, I/O-Ops does not provide connectivity control for these types of channels.

OSA Channels

The OSA channel provides an S/390 internal channel attachment to local area networks (LANs) that support Internet protocols such as fiber distributed data interface (FDDI), token ring, Ethernet, and high speed serial interface (HSSI).

Making Connectivity Changes

You can use I/O-Ops as the single point of control for I/O connectivity changes in the active I/O configurations under its management.

In addition to an I/O-Ops base program running on a host, the host must be able to play a role with a group of hosts.

To develop safe procedures to protect your system's connectivity, you need to understand the functional characteristics of the dynamic switches that you control with I/O-Ops. For example, the local console of Switch Directors has a setting that allows you to choose how the switch is restarted. If your operating procedures are to restart:

- From the same configuration that was most recently active on the Switch Director, use the Switch Director's ACTIVE=SAVED setting
- From a fixed IPL file, regardless of what was most recently active on the Switch Director, you can set the Switch Director to use that file

But note that your use of I/O-Ops varies accordingly. Changes that you make through I/O-Ops are only automatically restored after events like power failures, if the Switch Directors are set to ACTIVE=SAVED. If they are not, consider using I/O-Ops functions to update each Switch Director's IPL file in accordance with your updates directly to the active configuration.

Switch resources are self-defining. The relevant data is contained in a node descriptor (ND) of a port or an ESCON/FICON channel and in a node element descriptor (NED) of a switch device. I/O-Ops uses this data to ensure system integrity in its commands. It can also use the serial number of an ESCON/FICON resource to identify it.

When only the channel or the control unit is an ESCON unit, the non-ESCON unit can impose some limitations on I/O-Ops's ability to ensure coordination between the logical definition of the unit and its physical presence. (Unlike ESCON units, a non-ESCON unit is not self-defining.)

NOForce|NOCheck|Force Option Set

With your choice among NOForce, NOCheck, and Force, you determine the stringency with which I/O-Ops forces the completion of a switching connectivity command under two conditions:

- If any of I/O-Ops's relevant vary path requests fail.
- If I/O-Ops checked and detected the presence of a protocol converter (CV) between the I/O interface of a parallel channel operating in block mode and the port on a dynamic switch. (NOForce is required for the REMOVE CHP and RESTORE CHP commands. NOCheck has an identical effect on these 2 commands.)

NOForce: (IBM-supplied default) instructs I/O-Ops to send a connectivity command to the specified switch(es) only if all of the following conditions have been met:

1. The results of consensus vary-path processing results are unanimously affirmative.
2. If a CV converter has been detected in the parallel channel path, completion of the command will not potentially interrupt dynamic data transfer through the specified switch(es).
3. If the command is disrupting a CVC channel, that CHPID has been configured offline.

If you specify NOForce, you must also specify Vary. NOForce requires the UPDATE level of authorization if I/O-Ops is secured by RACF® or an equivalent program.

NOCheck: instructs I/O-Ops to send a connectivity command to the specified switch(es) only if all of the following conditions listed below have been met:

1. The results of consensus vary-path processing results are unanimously affirmative.
2. If the command is disrupting a CVC channel, that CHPID has been configured offline.

If you specify NOCheck, you must also specify Vary. NOCheck requires the UPDATE level of authorization if I/O-Ops is secured by RACF or an equivalent program. Commands entered at the system console automatically receive the highest, or control, authorization level.

Force: instructs I/O-Ops to send a connectivity command to the specified switch(es).

- If you specify Force, you must specify NOBackout.
- You cannot specify Force on a Remove Chp or Restore Chp command.
- Force requires the control level of authorization if I/O-Ops is secured by RACF or equivalent.

Backout|Nobackout Option Set

By choosing between BACkout and NOBackout, you can determine whether I/O-Ops will attempt to reverse, or to back out, its successful vary path offline requests if at least one relevant path could not be varied offline successfully.

- If the changes could be backed out, pathing status is returned to the state before the command was processed.
- If the changes are not backed out, pathing status may be mixed. (You can enter a DISPLAY RESULTS or DISPLAY VARY command to study the resulting status.)

BACkout (IBM-supplied default): instructs I/O-Ops to attempt to back out the vary path offline requests that were successful under a number of error conditions, such as: requests if at least one path affected by the command could not be varied offline successfully. Some of the conditions that would require I/O-Ops to attempt to back out vary path requests are:

- At least one relevant vary path offline request was not successful. For example, a voting I/O-Ops has returned a negative vote or the time limit for consensus processing was reached before all votes were returned.
- A switch affected by the connectivity command responded negatively.
- A channel could not be configured offline successfully with a Remove Chp command.

If you select BACkout, you cannot select Force.

NOBackout: instructs I/O-Ops to not reverse any vary path requests that have been completed successfully during command processing or that are still in progress. You must specify NOBackout if you specify either NOVary or Force.

When a Command Fails

If you receive a message that a command failed, you first make sure I/O-Ops is running. Then, you should try to determine why the command failed, so you can correct it or report the problem to IBM.

- **Make sure I/O-Ops is started.** In MVS/ESA, to check if I/O-Ops has been started on the primary host, enter “display jobs, I/O_operations_procedure_name”. If the I/O-Ops procedure name appears in the list, I/O-Ops has been started.
- **Determine why the command failed.** If a command does not complete successfully, I/O-Ops issues an error message indicating a host did not perform the command or a switch failed to perform the command, or both. Return codes and reason codes are issued when commands fail when using the API.

- **Use the DISPLAY RESULTS command.** This command displays information to help you quickly determine if the problem is host-related, switch-related, or both. A command can fail for one or more reasons, including switch-related or I/O-Ops-related problems.

The error message you receive might not provide you with sufficient information to determine the reasons why your command failed. If you need more information to understand the problem, you can display information about your configuration status to determine the specific reasons.

- **Correct the command failure.** Once you have determined the cause of a command failure and the present configuration status, you can begin to correct the problem using backout, reset, force, or other options.

Switching Commands

The members of a group (domain) must be either:

- The issuing I/O-Ops, which is the base program (primary host) at which you enter, or to which you send, the command.
- An I/O-Ops base program that shares access to at least one dynamic switch in common with the issuing I/O-Ops.

If the switching command contains Vary (path) as an implicit or explicit option, the issuing I/O-Ops broadcasts the request to the other base programs. Each base program issues the appropriate vary path requests to its own system (host) image. The results must be known by the issuing I/O-Ops within a preset time interval. After the results are in or when the time interval expires, the issuing I/O-Ops determines whether it and the voters have reached the consensus that all the vary path requests completed successfully. If so, the issuing I/O-Ops proceeds with command processing.

Notes:

1. Because an issuing I/O-Ops is also called the primary host, or the primary I/O-Ops host, a voter is also called a secondary host, or a secondary I/O-Ops host.
2. A voter is *active* if it has not been excluded, or reset, from voting, by the Reset Host command.
3. A voter is *inactive* if it has been excluded by a Reset Host Off command.
4. A voter is *purged* if it has been excluded by a Reset Host Purge command. To I/O-Ops, a purged voter simply does not exist.
5. The preset time interval is either the IBM-supplied default of 60 seconds or a time interval set with the Reset Timeout command.

You can change connections of ports on a switch with these commands:

- ALLOW
- BLOCK
- CONNECT
- DISCONNECT
- PROHIBIT
- UNBLOCK

The following examples help to illustrate the hierarchy of port attributes.

PROHIBIT

Example P (C0) (EA) 0100

Explanation Prohibits data from being transferred dynamically between C0 and EA. Dynamic data transfer between C0 and D4 is not affected.

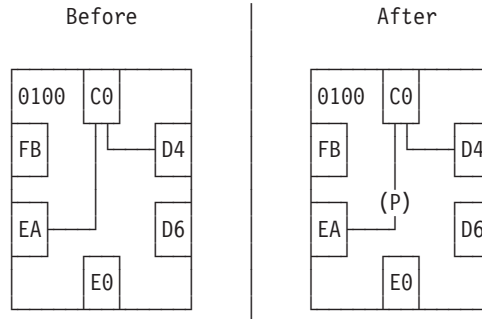


Figure 162. PROHIBIT Command Example

CONNECT

Example C (C0) (EA) 0100

Explanation Statically connects C0 and EA for exclusive data transfer, despite the prohibition of a dynamic connection between these two ports. However, data cannot be transferred between C0 and D4.

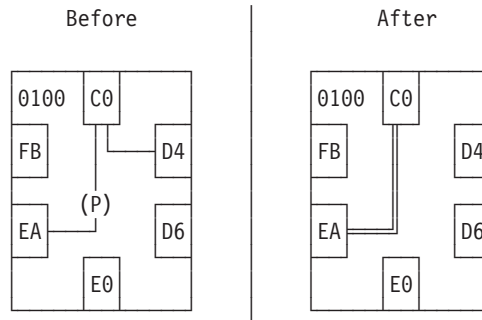


Figure 163. CONNECT Command Example

BLOCK

Example B (C0) 0100

Explanation Blocks all data transfer through C0, regardless of its other connectivity. Data cannot be transferred between C0 and EA.

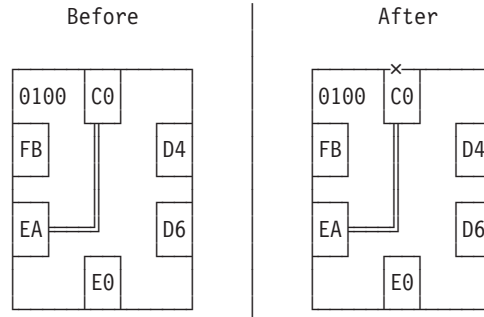


Figure 164. BLOCK Command Example

UNBLOCK

Example U (C0) 0100

Explanation Unblocks C0, so that the static connection is again in effect.

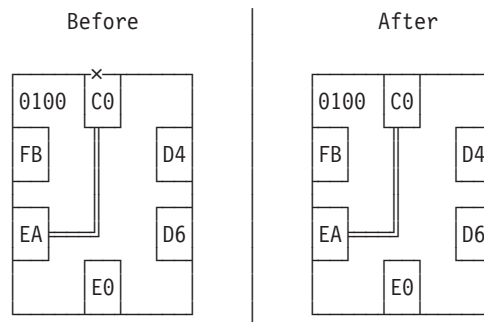


Figure 165. UNBLOCK Command Example

DISCONNECT

Example N (C0) (EA) 0100

Explanation Removes the static connection between C0 and EA, but data cannot be transferred between these two ports because they are still prohibited from having a dynamic connection. However, data can now be transferred between C0 and D4.

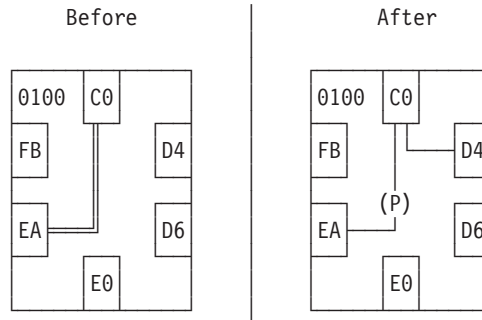


Figure 166. DISCONNECT Command Example

ALLOW

Example A (C0) (EA) 0100

Explanation Allows data to be transferred dynamically between C0 and EA.

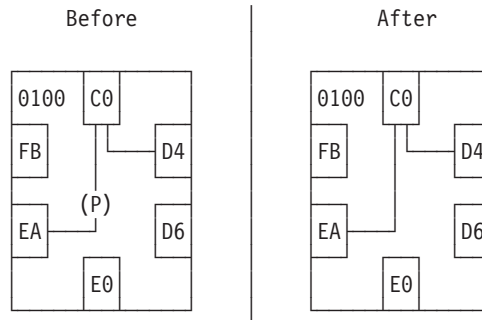


Figure 167. ALLOW Command Example

Types Of Channels

I/O-Ops supports the following channel operational modes:

- ESCON Multiple Image Facility (EMIF) mode
- Logical Partition (LPAR) reconfigurable mode
- LPAR non-reconfigurable mode
- Basic mode

I/O-Ops can display, or return data on, all the channels known to it. For ESCON channels and for parallel channels operating in block mode, the program can be used to change the connectivity between these resources and others in their paths.

Remove (Quiesce) a Switch

When a service representative needs to have a switch quiesced and disabled in order to remove the unit, you can enter the I/O-Ops REMOVE SWITCH command to vary all the paths to and through the switch offline, including any paths to the switch (device) from the other hosts in its group and any chained paths leading to another switch. Optionally, you can specify the Disable option, so the service representative only has to turn power off to the unit. (You should *not* use the VARY DEV or the REMOVE DEV commands.)

I/O-Ops issues the appropriate vary path offline requests to the hosts. (It will not vary the path to the control unit port of the switch because it needs to communicate with the switch.)

The issuing I/O-Ops then sends the command “SET OFFLINE” to the switch and informs you that the command completed successfully. If the command completed unsuccessfully (for example, if a vary path request failed) you can analyze the data with the appropriate display command. If you cannot resolve the situation and the switch must be removed, you can rerun the REMOVE SWITCH command with the Force option. However, no paths will be varied offline.

For a discussion of why it sometimes isn't obvious that the status of a path or a device has changed after an operator has issued a connectivity command, see “Device and Path Status After Connectivity Commands” on page 530.

Restore (Enable) a Switch

When the system operator completes a maintenance procedure and turns power to the unit on, you enter the RESTORE SWITCH command and specify the switch device number.

The I/O-Ops at which you issued the command (the issuing I/O-Ops) first allocates, or attaches the switch. Then it activates the configuration for the switch that the unit is programmed to select whenever power is turned on to it. Finally, it ensures all the paths in the selected configuration are varied online.

I/O-Ops informs you the command completed successfully. (If it completed unsuccessfully, you can enter the DISPLAY RESULTS command to obtain more data.)

For a discussion of why it sometimes isn't obvious that the status of a path or a device has changed after an operator has issued a connectivity command, see “Device and Path Status After Connectivity Commands” on page 530.

Using Port Names as a Tool in Switching Commands

When you enter a switching command, you change the port attributes that control data transfer on the ports of the switch through which the path passes. The single switch or the pair of chained switches in a switchable path must be allocated to the issuing I/O-Ops (primary host) in the command. To facilitate the connectivity management of these switchable paths, I/O-Ops lets you assign, or write, a name of up to 24 characters to each addressable port on a switch.

A *port name* can consist of character strings, each of which identifies one of the resources in the path leading to or from the port. If you use the same character string in more than one port name, that character string effectively serves as a *generic name*.

To use a generic name instead of a full port name, you only need to mask off the irrelevant characters in the port name that precede or succeed or intervene between the generic character string you want to use. As a mask, you can place one asterisk (*) in each port name.

Chain and Unchain a Switchable Path (ESCON only)

A *chained path* is a path that passes statically (without dynamic connections) through one switch, which is called the *passthru switch* in the chain, and ends in a second, or *destination switch*. The two switches must be physically linked to each other. The ports in a chained path can be designated as the:

- A** Port that the I/O interface of the channel is physically attached to in a CH chain and the I/O interface of the control unit is attached to in a CU chain.
- M** Port that the A port is statically connected to in the passthru switch.
- E** Port that ends the chain in the destination switch.
- D** Is the destination link address of the chain as defined in the I/O definition file (IODF) or I/O control data set (IOCDS). As you can see, port D is simultaneously port E in a CU chain, but not in a CH chain.

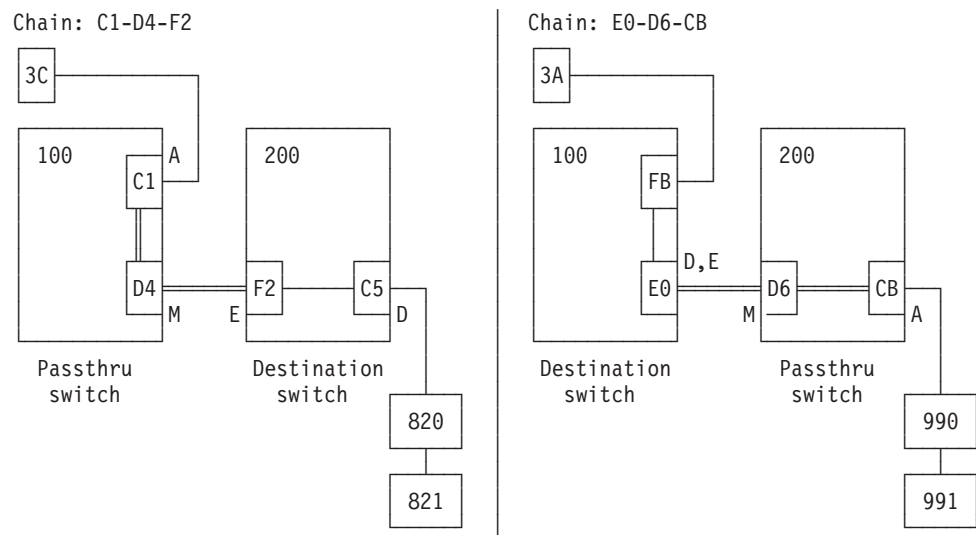


Figure 168. Examples of Chained Paths

Chaining a Path (ESCON only)

1. You must define a chained path to I/O-Ops, and remove this definition when it is no longer needed.
2. The I/O-Ops that is used to define a chain or remove its definition must have dynamic access via a CNC channel to the control unit port (CUP) on both switches in the chained path. (In Directors, the CUP address is X'FE'.)
3. I/O-Ops will *not* permit you to define, or remove the definition of, a chain if it can foresee that the chain command would fail these precursory checks:
 - Remove the last path to the specified switch(es) in a Block, Connect, or Chain command

- Affect an unimplemented port
- Affect the control unit port (CUP) except to assign it a port name
- Allow a port to connect dynamically to itself
- Connect a port statically to itself or to more than one other port
- Connect a port that is not installed.
- Disconnect 2 ports that are not statically connected
- Chain a port that is already part of a different chain
- Chain ports so that they would create a loop

Chaining can affect the vary path requests that I/O-Ops issues. See “Processing a Vary Path Request” on page 524 for more information.

4. If you intend to define a chain that includes a parallel channel operating in block mode with a CV converter, such as an ESCON Converter Model 2 (9035) attached, use these guidelines for selecting noforce, nocheck, or force. The guidelines should help you decide whether to select NOForce, NOCheck, or Force as an option in a connectivity command that affects a CV converter.

If the path is not chained and the foregoing requirements are met, you can enter a connectivity command with either the NOForce option or the NOCheck option.

- If you specify NOForce, I/O-Ops will check for an operational CV converter in the path and process the command under the set of rules that apply.
 - a. If the CV converter is operational, I/O-Ops will:
 - 1) Fail a Block, Connect, Remove Switch, or Chain command that affects the port.
 - 2) Fail a Prohibit command that affects the path to the CV converter.
 - b. If the CV converter is not operational, I/O-Ops will:
 - 1) Issue a warning if an Unblock, Disconnect, RESTORE SWITCH, or Unchain command is entered that affects the port.
 - 2) Issue a warning if an Allow command is entered that affects the path to the CV converter.
- If you specify NOCheck, I/O-Ops will not check for a CV, and will process the command under the set of rules that apply.

If the path is chained and the foregoing requirements are met, you must specify NOCheck or Force to unchain the path or to block any of the ports in the path.

5. Make sure the channel I/O interface, the control unit I/O interface, and the link between the two switches are all attached properly. Ports A, M, E, and D in Figure 168 on page 519 are determined by these attachments. Also make sure the destination link address (port D) is defined properly in the IODF or IOCDs.
6. Remember that defining a chain and removing a defined chain can affect all the participants in the issuing I/O-Ops’ consensus vary-path processing.

Two Scenarios for a CH Chain in a CNC Path

Configuration:

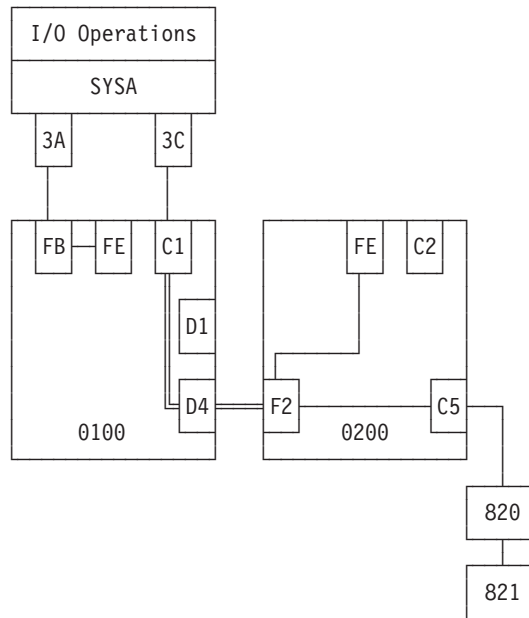


Figure 169. Chain: Scenario 1

Procedure:

```
VARY PATH(200,3C),OFFLINE,FORCE
CF CHP(3C),OFFLINE,FORCE
```

```
CONNECT (C1) (D4) 100
```

```
CF CHP(3C),ONLINE
VARY PATH(200,3C),ONLINE,FORCE
```

```
RESET S 200
CHAIN (F2) 200 (D4) (C1) 100
```

To remove the definition, enter:

```
UNCHAIN (F2) 200 (D4) (C1) 100 VARY FORCE NOB
```

The Force option is required because the Unchain command removes the last path to the CUP on the destination switch.

If you do not configure CHPID 3C offline, enter:

```
BLOCK (C1) 100
```

Configuration:

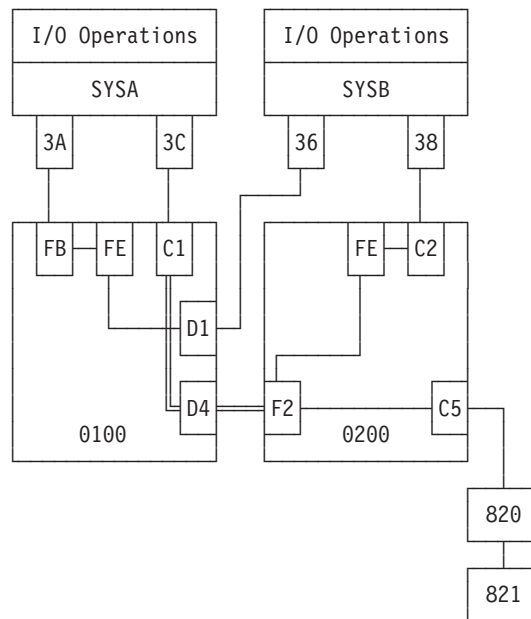


Figure 170. Chain: Scenario 2

Procedure:

Enter from SYSA:

```
VARY PATH(200,3C),OFFLINE,FORCE  
CF CHP(3C),OFFLINE,FORCE
```

Then, enter from SYSB:

```
CHAIN (F2) 200 (D4) (C1) 100
```

Finally, enter from SYSA:

```
CF CHP(3C),ONLINE  
VARY PATH(200,3C),ONLINE,FORCE  
RESET S 200
```

To remove the definition, enter from SYSB:

```
UNCHAIN (F2) 200 (D4) (C1) 100 VARY FORCE NOB
```

The Force option is required because the Unchain command removes the last path to the CUP on the destination switch. If you do not configure CHPID 3C offline, enter:

```
BLOCK (C1) 100
```

A "Partially-ESCON" Path

A partially-ESCON path is a path in which either the channel or the control unit in the I/O path is not an ESCON object.

To ensure system integrity when processing its switching commands, I/O-Ops relies on node descriptor (ND) or node element descriptor (NED) data from the

ESCON objects involved. In a switchable partially-ESCON path, therefore, I/O-Ops cannot always ensure the same degree of system integrity that it can for “fully” ESCON paths.

An ESCON-in-Converted-Mode (CVC) Path

An ESCON converted channel (CVC) is an ESCON channel that has been initialized to operate in converted mode to allow data to be transferred between its host and a parallel control unit.

A protocol converter such as the ESCON Converter Model 1, or equivalent, must be attached to the control unit. This type of converter is transparent to I/O-Ops.

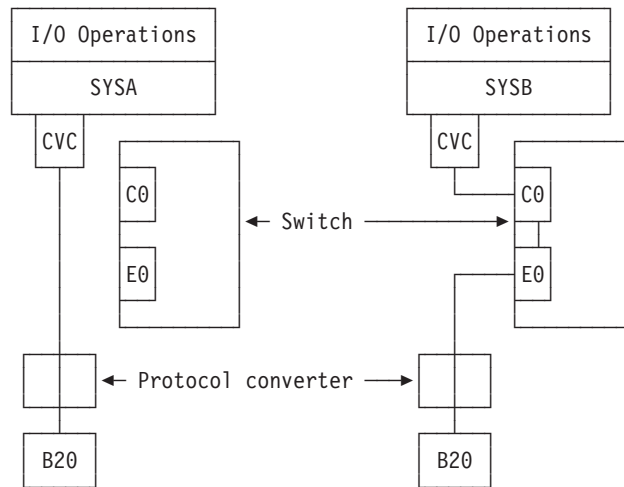


Figure 171. ESCON-in-Converted-Mode Sample

A Parallel Channel in Block (BL) Mode

Requirements for a Parallel Channel

- The parallel channel must be operating in block (BL) mode.
- The control unit in the path must be an ESCON-capable and “cooperating” control unit.
- The path can be switchable or nonswitchable.
- If the path is switchable:
 - A protocol converter, such as the ESCON Model 2 (9035), or equivalent, must be attached between the channel I/O interface and the switch.
 - The switch must be allocated to the issuing I/O-Ops.

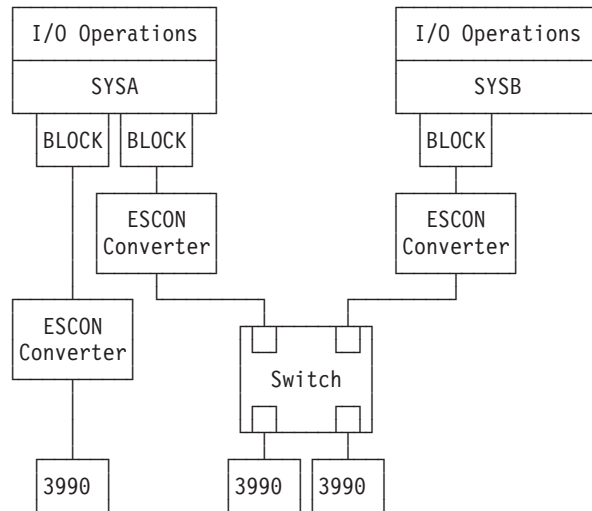


Figure 172. Parallel Channel in Block Mode Sample

Processing a Vary Path Request

When you have chosen Vary as a connectivity option, the issuing I/O-Ops and its active voting constituency issue the appropriate vary path requests to their host operating system images. The host images comply with the appropriate VARY PATH ON|OFF commands.

General Rules

I/O-Ops adheres to the following rules. When the vary path processing has been completed successfully, these rules are of only moderate interest to you. However, if one or more requests failed, you need to know these rules to help you analyze the cause of the failure.

- If I/O-Ops knows that the appropriate vary path requests have already been performed, it takes no action. For example, if a port is blocked, all paths are varied offline. If a Prohibit command is then entered for the blocked port, no further action is taken for that port.
- If two port attributes are to be changed with the same Writeport or Writeswch command, the hierarchy remains in effect. (See 514 for more information on port hierarchy.) For example, if you specify that a port be both blocked and disconnected with the same command, I/O-Ops will perform the vary path processing needed to block that port and disconnect it.
- To keep I/O path disruption to a minimum should a command fail, I/O-Ops varies:
 - Offline *before* it sends a command to a switch.
 - Online *after* it sends a command to a switch.

A chained path adds another level of complexity to these rules. Paths through all three ports involved in a chain might be affected by the same connectivity command. For example, the command might affect the middle port's connectivity. However, vary path processing might be required for the port on the destination switch that ends the chain.

If a CV converter is in the chained path, you must specify NOCheck or Force as a connectivity option if you want to block any of the 3 ports involved or you want to unchain the chain. (If you specify NOForce, the command will fail.)

VTAM Application Name

For communication among I/O-Ops base programs, I/O-Ops uses VTAM or TCP/IP, or both. To participate in this intersystem communication using VTAM, a base program must be defined as an application according to the rules for VTAM definitions. For information on these definitions, see the I/O-Ops program directory for the host operating system on which you intend to use the application.

VTAM returns the VTAM application name to a base program when it is started, thus identifying that base program. The base program uses its VTAM application name and TCP/IP host name as its *host names* to register itself to the members of its group when it allocates each dynamic switch.

To get a list of the VTAM (application), or host names known to an issuing I/O-Ops (primary host), enter the Display Host command as D H * or view the pages of that host's online notebook.

To remove or restore a base program (host) from participating in consensus vary-path processing, use the Reset Host command. (This command has three options: Off, Purge, and On.)

TCP/IP Host Name

For communication among I/O-Ops base programs, I/O-Ops uses VTAM and/or TCP/IP. To participate in this intersystem communication using TCP/IP, a base program must have defined the server port and optionally the client port. For information on these definitions, see "Step 18C: Perform TCP/IP Definitions" in "Chapter 9. Installing SA z/OS on Host Systems" of *IBM Tivoli System Automation for z/OS Planning and Installation*.

Note: If server port is not defined the base program suppresses the TCP/IP communication.

If TCP/IP is configured to run multiple stacks (CINET) you should specify the host name on the PARM parameter to tell I/O-Ops what stack it has to use. For details on how to specify the PARM parameter see "Step 33: Customizing I/O-Ops" in "Chapter 9. Installing SA z/OS on Host Systems" of *IBM Tivoli System Automation for z/OS Planning and Installation*. If you omit the parameter the base program connects to the next available stack.

TCP/IP returns its host name after the base program has connected to the stack. If the base program detects that the host name has more than 8 characters it looks for an alias of up to 8 characters. For details on how to specify an alias see *Step 17C: Perform TCP/IP Definitions* in "Chapter 9. Installing SA z/OS on Host Systems" of *IBM Tivoli System Automation for z/OS Planning and Installation*. The base program uses its TCP/IP host name and VTAM application name as its host names to register itself to the members of its group when it allocates each dynamic switch.

Note: If the host name has more than 8 characters and an appropriate alias cannot be found the base program suppresses the TCP/IP communication.

To get a list of the TCP/IP (application), or host names known to an issuing I/O-Ops (primary host), enter the Display Host command as "D H *".

To remove or restore a base program (host) from participating in consensus vary-path processing, use the Reset Host command. (This command has three options: Off, Purge, and On.)

Appendix B. General Considerations for I/O Operations Commands

I/O operations commands do not require access authorization, although it is highly advisable. For a cross-reference of the access authorization levels that they require see "Defining an RACF Profile for I/O operations" in "Appendix A. Security and Authorization" of *IBM Tivoli System Automation for z/OS Planning and Installation*.

General Information and Tips for Using Multisystem Commands

1. If you are entering an array or table, it must be fully contained in a single variable, by itself, and with no leading blanks (trailing blanks are acceptable because they will be ignored). Without this restriction, you could enter an array or table that has bytes that look like blanks, will be parsed as blanks, and will make the results unpredictable.
2. Array elements are checked for validity because they are all character data. Tables are not checked for validity because numeric data is assumed to be hexadecimal (and so can never be invalid). Tables are not subject to translation and only the RNUMs are taken from the table.
3. Host application names will be checked for validity. Valid names follow MVS member name rules.

Query commands only: "HOST()" and "XSYS()" are interpreted as an error (no name is included between the beginning and ending parenthesis).

4. For table input, the responder must be the same as the host targeted to return the response.
5. A summary ROW for each host will be returned as the FIRST row for each responder host that is returning data (that is, that does not have a command start failure). This ROW is marked by RCODE=X'5100FFFF' and contains (currently) status bits.
6. For Query Interface commands (only), when the interface is not found on the entity1 switch/cu, row is marked by RCODE=X'5100 0016'.
7. Query Interface Switch/CntlUnit commands change their output structures to move the switch/control unit description into every row instead of having it reside in the header. With multi-host responses, there is no way to resolve which switch description would have stayed in the command header (each host could have a different description of the switch/control unit).
8. Query Interface Switch returns no rows when the switch being queried is closed. Also, Query Interface CntlUnit returns no rows when the PID for the control unit is not valid.
9. The lock owner field in the QEH command is only valid when the responder host is the same as the object/entity host. For example, if you issue a Query Entity Host Value HOST(*) SCOPE Value HOST(*) command, the QEH that is returned will contain #hosts x #hosts ROWs (because each host will return all the hosts it knows about) but the only valid lockowner fields will be where:
QEH.ROW(i).RESPONDER.APPLNAME = QEH.ROW(i).APPL_NAME.

General Considerations for Using the Query Entity|Interface|Relations Commands

1. **Input for Query Entity and Query Interface commands:** A Query Relation table can be input for all Query Entity and Query Interface Switch commands.
2. **Data returned:** For the Query Entity, Query Interface, and Query Relation commands, use the self-description data (header size, row size, format ID) that is returned with each output structure to parse the data.
3. **Duplicate rows:** No duplicate rows will be returned unless an array or table is used as the second entity asking for duplicate information to be returned. This implies that unless complete pathing (host-to-device or CHPID-to-device) is specified in your command, you could be getting summary data back.

For example, assume your configuration contains CHPIDs 10, 11, and 12, each with a path to control unit 100. Additionally, control unit 100 has devices 100–107 on it.

A **Query Relation CU 100 Chp Value *** (tell me all CHPIDs that access device 100) would return 3 data QRO.ROWS to describe the 3 paths (CHPID 10 to device 100, CHPID 11 to device 100 and CHPID 12 to device 100). These are examples of complete path definitions.

If you issue **Query Relation CU 100 Dev Value 100** (tell me whether device 100 is defined to be on CU 100), only 1 data QRO.ROW is returned (not 3) indicating that there is a logical relationship between the two entities but not complete details (paths) about the relation because the command did not ask for complete pathing.

4. **Multiple rows:** A single array entry could generate more than one row returned. For example, the relation between a device and a host will return as many rows as there are CHPIDs that access the given device.
5. **Rules for columns of data:** Although the same structure is returned for every Query Relation command, different columns of data are returned for the different variations of the commands. The following rules apply:
 - a. STATBITS are set for every command.
 - b. The columns between HOST and DEVICE are command-dependent; that is, Query Relation Host-Host commands return only the HOST column, Query Relation Host-Chp commands return both the HOST and CHPID columns, Query Relation Host-Switch commands return HOST, CHPID, PORTIN, SWDEVN, and LSN columns (note that STATBITS are required to validate PORTIN and SWDEVN as these might or might not be known), and so on.
 - c. Like entities are not allowed except host-to-host relations, which indicate VTAM relations, and switch-to-switch relations, which indicate chaining relations.
 - d. Data for a secondary host (voting I/O-Ops) will be marked INCOMPLETE because data bases are not shared among participating I/O-Ops.
 - e. When no host is named in a command, the primary host (issuing I/O-Ops) is assumed.
6. **Sorting of output:** Sorting is done only if you specify Value or Range as options for the format of the output. If you specify Array or Table, I/O-Ops returns data in the same order as the input array or table.
7. **Chpid filtering of pathing information is handled as follows:**
 - a. If a channel is reserved to a partition that is not the one you are running on, the channel will appear as not defined.

b. I/O-Ops only returns paths where the Chpid is not reserved to another partition.

8. **Reason codes that are related to Return codes:**

In addition to the return codes (RCs) and reason codes that are also returned for the Display and the Query Switch commands, such as CHSC data refreshed, lock indicators, switch configurations, and so on, the following combinations are unique to the Query commands:

- With RC = 4, a reason code of X'51001004' indicates that some host has at least one summary row bit set.
- For RC = 8, a Getmain failure occurred.
- With RC = 20, a reason code of X'51xyyyy' indicates that I/O-Ops has detected an internal error. You should report this problem to IBM.

9. **Overflow conditions:** In the Query Entity, Query Interface, and Query Relation commands the header and summary rows of the output contains a bit to indicate that an overflow condition was detected in the response buffer.

• **If you entered a Query Entity or Query Interface command:**

Enter another (similar) command to retrieve the subset of data that has not been returned.

For example, if the command that overflowed was **Query Entity Dev Value *** and the last device entry returned to you is (device number) 743, the next command you should issue is **Query Entity Dev Range 744-***.

If you are using an array (or table) as input for a command, you should continue to use the array/table form of command but adjust your array/table input to begin at the (*output_num_rows+1*) element in your next array command.

• **If you entered a Query Relation command:**

When translating your original command to a new format due to an overflow return/reason code, you might need to begin your new command with the last value returned for the second entity (not the one after the last value returned) or some pathing information could be lost.

For example, assume you have the following partial configuration:

Host = *IHVAPPL1* CHPIDs = 1,2,3,4,5 CntlUnits = 100 (accessed by CHPIDs 1,2,3), 200 (accessed by CHPIDs 3,4,5) Devices = 100-10F (off CU 100), 200-20F (off CU 200)

Assume (for the purposes of this example only) that 7 is the maximum number of rows that can be returned with any Query Relation command (in reality this number is more on the order of 2700).

You issue **Query Relation Host IHVAPPL1 Dev Value *** to request all the IOCDS paths defined for this host.

I/O-Ops returns 7 rows describing paths (1,100), (2,100), (3,100), (1,101), (2,101), (3,101) and (1,102) with RC and RSN indicating overflow and the MORE_DATA bit in the output table set.

Because you only received 1 of 3 rows (paths) back for device 102, you must now use the command **Query Relation Host IHVAPPL1 Dev Range 102-*** to retrieve the pathing information for this host.

10. **Chaining:** Chaining is indicated in an AEAM for a port by virtue of the log_class=switch (port) and the LOGICAL bit being set.

If the path is chained, the switch that appears in the row for a path is either:

- a. The dynamic switch in the chain, or (if there is no dynamic switch)

- b. The switch that the CHPID for the path is defined (in IOCDS) to be on (by the SWITCH= parameter).
11. **“Physical” rules with respect to the EAM/AEAM are:**
- a. EAM.LOGICAL or AEAM.LOGICAL = 1 (binary) means the entity is defined in the IOCDS. Additionally, Chain commands are considered logical definition data so they are also included in “logical” data.
 - b. PHYSICAL (current, history and not valid) means “according to link level data” (node element descriptors [NEDs] or node descriptors [NDs]).
 - c. Physical OTHERS bits (and NDs) are set when the interface for an entity being queried does not have the same validity as the entity itself (as represented in the physical ID). OTHER_NDs are validated by AEAM bits (OTHERS bits are never set in EAMs). The OTHER_ND that is returned contains a ND for the attached entity that is causing the PID to be “more valid” than the interface being queried.
 - d. Logical OTHER bit (and value) is set when the interface for an entity being queried does not have an IOCDS path defined to it on the interface being queried (that is, a physical-only path to the entity) but the entity is defined in the IOCDS and is accessible by other paths. The OTHER_LOG field will be set to the smallest logical value for the entity (for example, if control units 100 and 200 are hung off a port in a physical-only relationship but are defined to have other (IOCDS) paths elsewhere, the LOG_OTHER bit would be set for the (QIS) port’s AEAM and the OTHER_LOG would contain 100).
12. **P_AMB, when on, means at least one of the following:**
- a. All the (IOCP/IODF) defined interfaces to the control unit do not have the same WWID (only valid NDs are checked).
 - b. For switches only: Even if all the WWIDs in the interfaces for the CNTL match, if the CNTLPID.WWID is different from the SWITPID.WWID (which is obtained from the NED), the CNTLPID is marked P_AMB and remains REFLECTED.
 - c. For CHPIDs only: When the attached ND’s WWID is not the same as the PID.WWID of the switch that it is supposed to be attached to.

Device and Path Status After Connectivity Commands

This section describes the results of I/O-Ops connectivity commands such as PROHIBIT/ALLOW, BLOCK/UNBLOCK, and REMOVE/RESTORE CHP/SWITCH. Sometimes it isn't obvious why the status of a path or a device has not changed after an operator has issued one of these connectivity commands.

Generally, if the status of a path or device is OFFLINE before a PROHIBIT, BLOCK, or REMOVE command is issued, the status will not be changed when the opposite command is issued afterwards.

This is also true for the ALLOW, UNBLOCK, and RESTORE commands if the OFFLINE status of a path or device was not the result of a PROHIBIT, BLOCK, or REMOVE command.

The status of a path is also OFFLINE even if the path was ONLINE before issuing the connectivity commands when all of the following conditions are true:

- The path's device is attached to a cascaded switch.
- The device of the path's *entry* switch is OFFLINE, which makes the switch unknown to I/O-Ops.

- The *destination* switch has been manipulated by two connectivity commands resulting in varying the path to the device first OFFLINE and then ONLINE.

Note: MVS handles the device status after varying ONLINE the very first path to a device differently, depending on the status that the device had before the last path to the device was varied OFFLINE:

- If the device status is ONLINE when the last path is forced to OFFLINE, the first path to the device that becomes ONLINE will also vary the device ONLINE.
- If the device status is OFFLINE when the last path is varied OFFLINE, the device is kept OFFLINE regardless of how many paths become ONLINE.

Table 5 shows a sample that uses the REMOVE SWITCH and RESTORE SWITCH commands to demonstrate how the status of a device and its paths are affected by an I/O-Ops connectivity command.

Table 5. Device and Path Status Before and After the REMOVE SWITCH and RESTORE SWITCH Commands

System KEY3	System KEY4
<pre>D M=DEV(297F) IEE174I 13.13.37 DISPLAY M 033 DEVICE 297F STATUS=ONLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE N Y CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N :</pre>	
<pre>V PATH(297F,AB),OFFLINE,FORCE IOS444I DYNAMIC PATHING NOT OPERATIONAL ON DEVICE 297F IEE303I PATH(297F,AB) OFFLINE IEE303I 297F OFFLINE</pre>	
<pre>D M=DEV(297C-297F) IEE174I 13.14.08 DISPLAY M 052 DEVICE 297C STATUS=ONLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE Y Y CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N :</pre> <pre>DEVICE 297D STATUS=ONLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE Y N CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N :</pre> <pre>DEVICE 297E STATUS=ONLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE N Y CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N :</pre> <pre>DEVICE 297F STATUS=OFFLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE N N CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N :</pre>	<pre>D M=DEV(297C-297F) IEE174I 13.04.24 DISPLAY M 798 DEVICE 297C STATUS=OFFLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE Y Y CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N :</pre> <pre>DEVICE 297D STATUS=OFFLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE Y N CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N :</pre> <pre>DEVICE 297E STATUS=OFFLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE N Y CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N :</pre> <pre>:U NUMBER 297C 297C DEVICE 297F STATUS=OFFLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE N N CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N :</pre>

Table 5. Device and Path Status Before and After the REMOVE SWITCH and RESTORE SWITCH Commands (continued)

System KEY3	System KEY4
<pre> F E,REMOVE S 1013 IHVR001I I/O-OPS command 261 IHVR010I Command entered by SYS OPER on IPSAOIHV: IHVR011I REMOVE SWITCH 1013 NODISABLE NOFORCE VARY BACKOUT IEE303I PATH(297F,AB) OFFLINE BY ESCM IEE303I PATH(297E,AB) OFFLINE BY ESCM IEE303I 297E OFFLINE BY ESCM IEE303I PATH(297D,AB) OFFLINE BY ESCM IEE303I PATH(297C,AB) OFFLINE BY ESCM IHVR021I REMOVE command successful, RC=0 RSN=40000004. IHVC998I I/O-OPS command response 268 IHVC000I REMOVE command successful. IHV0000I I/O-OPS is ready to process operator commands. IEE633I SWITCH 1013, PORT 20, DCM STATUS=OFFLINE 270 ATTACHED NODE = 002107.9A2.IBM.75.000000074011 </pre>	<pre> IEE303I PATH(297F,AB) OFFLINE BY ESCM IEE303I PATH(297E,AB) OFFLINE BY ESCM IEE303I PATH(297D,AB) OFFLINE BY ESCM IEE303I PATH(297C,AB) OFFLINE BY ESCM IEE633I SWITCH 1013, PORT 20, DCM STATUS=OFFLINE 992 ATTACHED NODE = 002107.9A2.IBM.75.000000074011 </pre>
<pre> D M=DEV(297C-297F) IEE174I 13.27.01 DISPLAY M 272 DEVICE 297C STATUS=ONLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE Y N CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N : DEVICE 297D STATUS=ONLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE Y N CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N : DEVICE 297E STATUS=OFFLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE N N CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N : DEVICE 297F STATUS=OFFLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE N N CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N : </pre>	<pre> D M=DEV(297C-297F) IEE174I 13.31.05 DISPLAY M 006 DEVICE 297C STATUS=OFFLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE Y N CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N : DEVICE 297D STATUS=OFFLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE Y N CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N : DEVICE 297E STATUS=OFFLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE N N CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N : DEVICE 297F STATUS=OFFLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE N N CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N : </pre>
<pre> IEF236I ALLOC. FOR IOZPS33H E IEF237I 1013 ALLOCATED TO SWIT1013 IHVA201I Switch 1013 Port 04 state changed. : IHVA201I Switch 1013 Port 20 state changed. IHVD344I Control unit 297C status update. IHVA201I Switch 1013 Port 21 state changed. IHVA201I Switch 1013 Port FE state changed. IHVD344I Control unit 1013 status update. IEE302I PATH(297E,AB) ONLINE BY ESCM IEE302I 297E ONLINE BY ESCM IEE302I PATH(297C,AB) ONLINE BY ESCM IEE302I PATH(1013,AB) ONLINE BY ESCM IEE302I PATH(1013,AA) ONLINE BY ESCM IEE633I SWITCH 1013, PORT 20, DCM STATUS=OFFLINE 351 ATTACHED NODE = 002107.9A2.IBM.75.000000074011 THE FOLLOWING DEVICE PATHS ARE ONLINE THROUGH THIS PORT: (297C,AB),(297E,AB) </pre>	<pre> F E,RESTORE S 1013 IHVR001I I/O-OPS command 024 IHVR010I Command entered by SYS OPER on IPSAPIHV: IHVR011I RESTORE SWITCH 1013 NOFORCE VARY BACKOUT IEF236I ALLOC. FOR IOZPS33H E IEF237I 1013 ALLOCATED TO SWIT1013 IHVA201I Switch 1013 Port 04 state changed. IHVA201I Switch 1013 Port 05 state changed. : IHVA201I Switch 1013 Port FE state changed. IHVD344I Control unit 1013 status update. IEE302I PATH(297E,AB) ONLINE BY ESCM IEE302I PATH(297C,AB) ONLINE BY ESCM IEE302I PATH(1013,AB) ONLINE BY ESCM IEE302I PATH(1013,AA) ONLINE BY ESCM IEE302I PATH(1013,AA) ONLINE BY ESCM IHVR021I RESTORE command successful, RC=0 RSN=40000004. IHVC998I I/O-OPS command response 099 IHVC000I RESTORE command successful. IHV0000I I/O-OPS is ready to process operator commands. IEE633I SWITCH 1013, PORT 20, DCM STATUS=OFFLINE 101 ATTACHED NODE = 002107.9A2.IBM.75.000000074011 THE FOLLOWING DEVICE PATHS ARE ONLINE THROUGH THIS PORT: (297C,AB),(297E,AB) </pre>

Table 5. Device and Path Status Before and After the REMOVE SWITCH and RESTORE SWITCH Commands (continued)

System KEY3	System KEY4
<pre> D M=DEV(297C-297F) IEE174I 13.36.11 DISPLAY M 373 DEVICE 297C STATUS=ONLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE Y Y CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N : DEVICE 297D STATUS=ONLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE Y N CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N : DEVICE 297E STATUS=ONLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE N Y CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N : DEVICE 297F STATUS=OFFLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE N N CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N : </pre>	<pre> D M=DEV(297C-297F) IEE174I 13.39.04 DISPLAY M 103 DEVICE 297C STATUS=OFFLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE Y Y CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N : DEVICE 297D STATUS=OFFLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE Y N CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N : DEVICE 297E STATUS=OFFLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE N Y CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N : DEVICE 297F STATUS=OFFLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE N N CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N : </pre>
<pre> V PATH(297F,AE),ONLINE IEE302I PATH(297F,AE) ONLINE IEE302I 297F ONLINE </pre>	
<pre> D M=DEV(297F) IEE174I 13.41.22 DISPLAY M 391 DEVICE 297F STATUS=ONLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE Y N CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N : </pre>	
<pre> V PATH(297F,AE),OFFLINE,FORCE IOS444I DYNAMIC PATHING NOT OPERATIONAL ON DEVICE 297F IEE303I PATH(297F,AE) OFFLINE IEE303I 297F OFFLINE </pre>	

Table 5. Device and Path Status Before and After the REMOVE SWITCH and RESTORE SWITCH Commands (continued)

System KEY3	System KEY4
<pre> IEE303I PATH(297F,AE) OFFLINE BY ESCM IEE303I PATH(297E,AE) OFFLINE BY ESCM IEE303I PATH(297D,AE) OFFLINE BY ESCM IEE303I 297D OFFLINE BY ESCM IEE303I PATH(297C,AE) OFFLINE BY ESCM IEE633I SWITCH 1010, PORT 05, DCM STATUS=OFFLINE 394 ATTACHED NODE = 002107.9A2.IBM.75.000000074012 IEE633I SWITCH 1010, PORT 0A, DCM STATUS=OFFLINE 395 ATTACHED NODE = 002105.800.IBM.75.000000029410 IEE633I SWITCH 1010, PORT 0D, DCM STATUS=OFFLINE 396 ATTACHED NODE = 002107.9A2.IBM.75.000000074012 IEE633I SWITCH 1010, PORT 12, DCM STATUS=OFFLINE 397 ATTACHED NODE = 002107.922.IBM.75.0000000CVBM1 IEE633I SWITCH 1010, PORT 17, DCM STATUS=OFFLINE 398 ATTACHED NODE = 002107.932.IBM.75.0000000CF811 IEE633I SWITCH 1010, PORT 1A, DCM STATUS=OFFLINE 399 ATTACHED NODE = 002107.932.IBM.75.0000000CD111 IEE633I SWITCH 1010, PORT 1B, DCM STATUS=OFFLINE 400 ATTACHED NODE = 002107.932.IBM.75.0000000CC481 IEE633I SWITCH 1010, PORT 23, DCM STATUS=OFFLINE 401 ATTACHED NODE = 002107.932.IBM.75.0000000CF811 IEE633I SWITCH 1010, PORT 25, DCM STATUS=OFFLINE 402 ATTACHED NODE = 002107.9A2.IBM.75.000000074011 IEE633I SWITCH 1010, PORT 2D, DCM STATUS=OFFLINE 403 ATTACHED NODE = 002107.932.IBM.75.0000000CW931 IEE633I SWITCH 1010, PORT 2F, DCM STATUS=OFFLINE 404 ATTACHED NODE = 002107.932.IBM.75.0000000CC481 IEE633I SWITCH 1010, PORT 31, DCM STATUS=OFFLINE 405 ATTACHED NODE = 002107.932.IBM.75.0000000CW931 IEE633I SWITCH 1010, PORT 3C, DCM STATUS=OFFLINE 406 ATTACHED NODE = 002107.9A2.IBM.75.000000074011 IEE633I SWITCH 1010, PORT 40, DCM STATUS=OFFLINE 407 ATTACHED NODE = 002107.9A2.IBM.75.000000074011 IEE633I SWITCH 1010, PORT 42, DCM STATUS=OFFLINE 408 ATTACHED NODE = 002105.800.IBM.75.000000026079 </pre>	<pre> F E,REMOVE S 1010 IHVR001I I/O-OPS command 129 IHVR010I Command entered by SYS OPER on IPSAPIHV: IHVR011I REMOVE SWITCH 1010 NODISABLE NOFORCE VARY BACK IEE303I PATH(297F,AE) OFFLINE BY ESCM IEE303I PATH(297E,AE) OFFLINE BY ESCM IEE303I PATH(297D,AE) OFFLINE BY ESCM IEE303I PATH(297C,AE) OFFLINE BY ESCM IEE633I SWITCH 1010, PORT 05, DCM STATUS=OFFLINE 118 ATTACHED NODE = 002107.9A2.IBM.75.000000074012 IEE633I SWITCH 1010, PORT 0A, DCM STATUS=OFFLINE 119 ATTACHED NODE = 002105.800.IBM.75.000000029410 IEE633I SWITCH 1010, PORT 0D, DCM STATUS=OFFLINE 120 ATTACHED NODE = 002107.9A2.IBM.75.000000074012 IHVR021I REMOVE command successful, RC=0 RSN=40000004. IHVC998I I/O-OPS command response 122 IHVC000I REMOVE command successful. IHV0000I I/O-OPS is ready to process operator commands. IEE633I SWITCH 1010, PORT 12, DCM STATUS=OFFLINE 124 ATTACHED NODE = 002107.922.IBM.75.0000000CVBM1 IEE633I SWITCH 1010, PORT 17, DCM STATUS=OFFLINE 125 ATTACHED NODE = 002107.932.IBM.75.0000000CF811 IEF196I IEF237I 5015 ALLOCATED TO SYS00261 IEE633I SWITCH 1010, PORT 1A, DCM STATUS=OFFLINE 127 ATTACHED NODE = 002107.932.IBM.75.0000000CD111 IEF196I IEF285I SYS1.LINKLIB IEF196I IEF285I VOL SER NOS= 190923. IEE633I SWITCH 1010, PORT 1B, DCM STATUS=OFFLINE 130 ATTACHED NODE = 002107.932.IBM.75.0000000CC481 IEE633I SWITCH 1010, PORT 23, DCM STATUS=OFFLINE 131 ATTACHED NODE = 002107.932.IBM.75.0000000CF811 IEE633I SWITCH 1010, PORT 25, DCM STATUS=OFFLINE 132 ATTACHED NODE = 002107.9A2.IBM.75.000000074011 IEE633I SWITCH 1010, PORT 2D, DCM STATUS=OFFLINE 133 ATTACHED NODE = 002107.932.IBM.75.0000000CW931 IEE633I SWITCH 1010, PORT 2F, DCM STATUS=OFFLINE 134 ATTACHED NODE = 002107.932.IBM.75.0000000CC481 IEE633I SWITCH 1010, PORT 31, DCM STATUS=OFFLINE 135 ATTACHED NODE = 002107.932.IBM.75.0000000CW931 IEE633I SWITCH 1010, PORT 3C, DCM STATUS=OFFLINE 136 ATTACHED NODE = 002107.9A2.IBM.75.000000074011 IEE633I SWITCH 1010, PORT 40, DCM STATUS=OFFLINE 137 ATTACHED NODE = 002107.9A2.IBM.75.000000074011 IEE633I SWITCH 1010, PORT 42, DCM STATUS=OFFLINE 138 ATTACHED NODE = 002105.800.IBM.75.000000026079 </pre>
<pre> D M=DEV(297C-297F) IEE174I 13.51.52 DISPLAY M 431 DEVICE 297C STATUS=ONLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE N Y CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N : DEVICE 297D STATUS=OFFLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE N N CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N : DEVICE 297E STATUS=ONLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE N Y CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N : DEVICE 297F STATUS=OFFLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE N N CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N : </pre>	<pre> D M=DEV(297C-297F) IEE174I 13.53.34 DISPLAY M 146 DEVICE 297C STATUS=OFFLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE N Y CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N : DEVICE 297D STATUS=OFFLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE N N CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N : DEVICE 297E STATUS=OFFLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE N Y CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N : DEVICE 297F STATUS=OFFLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE N N CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N : </pre>

Table 5. Device and Path Status Before and After the REMOVE SWITCH and RESTORE SWITCH Commands (continued)

System KEY3	System KEY4
<pre> F E,RESTORE S 1010 IHVR001I I/O-OPS command 478 IHVR010I Command entered by SYS OPER on IPSAOIHV: IHVR011I RESTORE SWITCH 1010 NOFORCE VARY BACKOUT IEF236I ALLOC. FOR IOZPS33H E IEF237I 1010 ALLOCATED TO SWIT1010 IHVA201I Switch 1010 Port 04 state changed. : IHVD344I Control unit 297C status update. : IHVA201I Switch 1010 Port FE state changed. IHVD344I Control unit 1010 status update. IEE302I PATH(297D,AE) ONLINE BY ESCM IEE302I 297D ONLINE BY ESCM IEE302I PATH(297C,AE) ONLINE BY ESCM IEE302I PATH(1010,AA) ONLINE BY ESCM IEE302I PATH(1010,AE) ONLINE BY ESCM IEE633I SWITCH 1010, PORT 05, DCM STATUS=OFFLINE 217 ATTACHED NODE = 002107.9A2.IBM.75.000000074012 IHVR021I RESTORE command successful, RC=4 RSN=50000030. IHVC998I I/O-OPS command response 219 IHVC001I RESTORE command successful, RC=4 RSN=50000030. IHVC615I Host(s) issued WARNING(s) for the RESTORE command. IHV0000I I/O-OPS is ready to process operator commands. IEE633I SWITCH 1010, PORT 0A, DCM STATUS=OFFLINE 221 ATTACHED NODE = 002105.800.IBM.75.000000029410 IEE633I SWITCH 1010, PORT 0D, DCM STATUS=OFFLINE 222 ATTACHED NODE = 002107.9A2.IBM.75.000000074012 IEE633I SWITCH 1010, PORT 12, DCM STATUS=OFFLINE 223 ATTACHED NODE = 002107.922.IBM.75.0000000CVBM1 IEE633I SWITCH 1010, PORT 17, DCM STATUS=OFFLINE 224 ATTACHED NODE = 002107.932.IBM.75.0000000CF811 IEE633I SWITCH 1010, PORT 1A, DCM STATUS=OFFLINE 225 ATTACHED NODE = 002107.932.IBM.75.0000000CD111 IEE633I SWITCH 1010, PORT 1B, DCM STATUS=OFFLINE 226 ATTACHED NODE = 002107.932.IBM.75.0000000CC481 IEE633I SWITCH 1010, PORT 23, DCM STATUS=OFFLINE 227 ATTACHED NODE = 002107.932.IBM.75.0000000CF811 IEE633I SWITCH 1010, PORT 25, DCM STATUS=OFFLINE 228 ATTACHED NODE = 002107.9A2.IBM.75.000000074011 IEE633I SWITCH 1010, PORT 2D, DCM STATUS=OFFLINE 229 ATTACHED NODE = 002107.932.IBM.75.0000000CW931 IEE633I SWITCH 1010, PORT 2F, DCM STATUS=OFFLINE 230 ATTACHED NODE = 002107.932.IBM.75.0000000CC481 IEE633I SWITCH 1010, PORT 31, DCM STATUS=OFFLINE 231 ATTACHED NODE = 002107.932.IBM.75.0000000CW931 IEE633I SWITCH 1010, PORT 3C, DCM STATUS=OFFLINE 232 ATTACHED NODE = 002107.9A2.IBM.75.000000074011 THE FOLLOWING DEVICE PATHS ARE ONLINE THROUGH THIS PORT: (297C-297D,AE) IEE633I SWITCH 1010, PORT 40, DCM STATUS=OFFLINE 233 ATTACHED NODE = 002107.9A2.IBM.75.000000074011 IEE633I SWITCH 1010, PORT 42, DCM STATUS=OFFLINE 234 ATTACHED NODE = 002105.800.IBM.75.000000026079 </pre>	<pre> IEF236I ALLOC. FOR IOZPS33H E IEF237I 1010 ALLOCATED TO SWIT1010 IHVA201I Switch 1010 Port 04 state changed. : IHVD344I Control unit 297C status update. : IHVA201I Switch 1010 Port FE state changed. IHVD344I Control unit 1010 status update. IEE302I PATH(297D,AE) ONLINE BY ESCM IEE302I PATH(297C,AE) ONLINE BY ESCM IEE302I PATH(1010,AA) ONLINE BY ESCM IEE302I PATH(1010,AE) ONLINE BY ESCM IEE633I SWITCH 1010, PORT 05, DCM STATUS=OFFLINE 912 ATTACHED NODE = 002107.9A2.IBM.75.000000074012 IEE633I SWITCH 1010, PORT 0A, DCM STATUS=OFFLINE 913 ATTACHED NODE = 002105.800.IBM.75.000000029410 IEE633I SWITCH 1010, PORT 0D, DCM STATUS=OFFLINE 914 ATTACHED NODE = 002107.9A2.IBM.75.000000074012 IEE633I SWITCH 1010, PORT 12, DCM STATUS=OFFLINE 915 ATTACHED NODE = 002107.922.IBM.75.0000000CVBM1 IEE633I SWITCH 1010, PORT 17, DCM STATUS=OFFLINE 916 ATTACHED NODE = 002107.932.IBM.75.0000000CF811 IEE633I SWITCH 1010, PORT 1A, DCM STATUS=OFFLINE 917 ATTACHED NODE = 002107.932.IBM.75.0000000CD111 IEE633I SWITCH 1010, PORT 1B, DCM STATUS=OFFLINE 918 ATTACHED NODE = 002107.932.IBM.75.0000000CC481 IEE633I SWITCH 1010, PORT 23, DCM STATUS=OFFLINE 919 ATTACHED NODE = 002107.932.IBM.75.0000000CF811 IEE633I SWITCH 1010, PORT 25, DCM STATUS=OFFLINE 920 ATTACHED NODE = 002107.9A2.IBM.75.000000074011 IEE633I SWITCH 1010, PORT 2D, DCM STATUS=OFFLINE 921 ATTACHED NODE = 002107.932.IBM.75.0000000CW931 IEE633I SWITCH 1010, PORT 2F, DCM STATUS=OFFLINE 922 ATTACHED NODE = 002107.932.IBM.75.0000000CC481 IEE633I SWITCH 1010, PORT 31, DCM STATUS=OFFLINE 923 ATTACHED NODE = 002107.932.IBM.75.0000000CW931 IEE633I SWITCH 1010, PORT 3C, DCM STATUS=OFFLINE 924 ATTACHED NODE = 002107.9A2.IBM.75.000000074011 THE FOLLOWING DEVICE PATHS ARE ONLINE THROUGH THIS PORT: (297C-297D,AE) IEE633I SWITCH 1010, PORT 40, DCM STATUS=OFFLINE 925 ATTACHED NODE = 002107.9A2.IBM.75.000000074011 IEE633I SWITCH 1010, PORT 42, DCM STATUS=OFFLINE 926 ATTACHED NODE = 002105.800.IBM.75.000000026079 </pre>

Table 5. Device and Path Status Before and After the REMOVE SWITCH and RESTORE SWITCH Commands (continued)

System KEY3	System KEY4
D M=DEV(297C-297F) IEE174I 14.06.30 DISPLAY M 256 DEVICE 297C STATUS=ONLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE Y Y CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N : DEVICE 297D STATUS=ONLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE Y N CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N : DEVICE 297E STATUS=ONLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE N Y CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N : DEVICE 297F STATUS=OFFLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE N N CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N :	D M=DEV(297C-297F) IEE174I 14.05.01 DISPLAY M 928 DEVICE 297C STATUS=OFFLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE Y Y CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N : DEVICE 297D STATUS=OFFLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE Y N CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N : DEVICE 297E STATUS=OFFLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE N Y CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N : DEVICE 297F STATUS=OFFLINE CHP AE AB ENTRY LINK ADDRESS 6257 6280 DEST LINK ADDRESS 613C 6420 PATH ONLINE N N CHP PHYSICALLY ONLINE Y Y PATH OPERATIONAL Y Y MANAGED N N :

Table 6 on page 537 summarizes the states.

Table 6. Path and Device Status Summary

Device	297C		297D		297E		297F	
System	KEY3	KEY4	KEY3	KEY4	KEY3	KEY4	KEY3	KEY4
Status before command REMOVE SWITCH 1013								
Device	ON	OFF	ON	OFF	ON	OFF	OFF¹	OFF
Path AE (1013,3C)	ON	ON	ON	ON	OFF	OFF	OFF	OFF
Path AB (1010,20)	ON	ON	OFF	OFF	ON	ON	OFF	OFF
Status after command REMOVE SWITCH 1013								
Device	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
Path AE (1013,3C)	ON	ON	ON	ON	OFF	OFF	OFF	OFF
Path AB (1010,20)	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
Status after command RESTORE SWITCH 1013								
Device	ON	OFF	ON	OFF	ON	OFF	OFF	OFF
Path AE (1013,3C)	ON	ON	ON	ON	OFF	OFF	OFF	OFF
Path AB (1010,20)	ON	ON	OFF	OFF	ON	ON	OFF	OFF
Status before command REMOVE SWITCH 1010								
Device	ON	OFF	ON	OFF	ON	OFF	OFF¹	OFF
Path AE (1013,3C)	ON	ON	ON	ON	OFF	OFF	OFF	OFF
Path AB (1010,20)	ON	ON	OFF	OFF	ON	ON	OFF	OFF
Status after command REMOVE SWITCH 1010								
Device	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
Path AE (1013,3C)	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
Path AB (1010,20)	ON	ON	OFF	OFF	ON	ON	OFF	OFF
Status after command RESTORE SWITCH 1010								
Device	ON	OFF	ON	OFF	ON	OFF	OFF	OFF
Path AE (1013,3C)	ON	ON	ON	ON	OFF	OFF	OFF	OFF
Path AB (1010,20)	ON	ON	OFF	OFF	ON	ON	OFF	OFF
¹ The device status changed from ONLINE to OFFLINE after forcing the last path to OFFLINE, yielding the same status as on KEY4.								

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The following cross-references are used in this glossary:

Contrast with. This refers to a term that has an opposed or substantively different meaning.

Deprecated term for. This indicates that the term should not be used. It refers to a preferred term, which is defined in its proper place in the glossary.

See. This refers the reader to multiple-word terms in which this term appears.

See also. This refers the reader to terms that have a related, but not synonymous, meaning.

Synonym for. This indicates that the term has the same meaning as a preferred term, which is defined in the glossary.

Synonymous with. This is a backward reference from a defined term to all other terms that have the same meaning.

A

ACF. See automation configuration file.

ACF/NCP. Advanced Communications Function for the Network Control Program. See Advanced Communications Function and Network Control Program.

ACF/VTAM. Advanced Communications Function for the Virtual Telecommunications Access Method. Synonym for VTAM. See Advanced Communications Function and Virtual Telecommunications Access Method.

active monitoring. In SA z/OS automation control file, the acquiring of resource status information by soliciting such information at regular, user-defined intervals. See also passive monitoring.

adapter. Hardware card that enables a device, such as a workstation, to communicate with another device, such as a monitor, a printer, or some other I/O device.

adjacent hosts. Systems connected in a peer relationship using adjacent NetView sessions for purposes of monitoring and control.

adjacent NetView. In SA z/OS, the system defined as the communication path between two SA z/OS systems that do not have a direct link. An adjacent NetView is used for message forwarding and as a communication link between two SA z/OS systems. For example, the adjacent NetView is used when sending responses from a focal point to a remote system.

Advanced Communications Function (ACF). A group of IBM licensed programs (principally VTAM, TCAM, NCP, and SSP) that use the concepts of Systems Network Architecture (SNA), including distribution of function and resource sharing.

advanced program-to-program communication (APPC). A set of inter-program communication services that support cooperative transaction processing in a Systems Network Architecture (SNA) network. APPC is the implementation, on a given system, of SNA's logical unit type 6.2.

alert. (1) In SNA, a record sent to a system problem management focal point or to a collection point to communicate the existence of an alert condition. (2) In NetView, a high-priority event that warrants immediate attention. A database record is generated for certain event types that are defined by user-constructed filters.

alert condition. A problem or impending problem for which some or all of the process of problem determination, diagnosis, and resolution is expected to require action at a control point.

alert focal-point system. See NPDA focal point system.

alert threshold. An application or volume service value that determines the level at which SA z/OS changes the associated icon in the graphical interface to the alert color. SA z/OS may also issue an alert. See warning threshold.

AMC. (1) See Automation Manager Configuration. (2) The Auto Msg Classes entry type.

American Standard Code for Information Interchange (ASCII). A standard code used for information exchange among data processing systems, data communication systems, and associated equipment. ASCII uses a coded character set consisting of 7-bit coded characters (8-bit including parity check). The ASCII set consists of control characters and graphic characters. See also Extended Binary Coded Decimal Interchange Code.

APF. See authorized program facility.

API. See application programming interface.

APPC. See advanced program-to-program communication.

application. In SA z/OS, applications refer to z/OS subsystems, started tasks, or jobs that are automated and monitored by SA z/OS. On SNMP-capable processors, application can be used to refer to a subsystem or process.

Application entry. A construct, created with the customization dialogs, used to represent and contain policy for an application.

application group. A named set of applications. An application group is part of an SA z/OS enterprise definition and is used for monitoring purposes.

application program. (1) A program written for or by a user that applies to the user's work, such as a program that does inventory or payroll. (2) A program used to connect and communicate with stations in a network, enabling users to perform application-oriented activities.

application programming interface (API). An interface that allows an application program that is written in a high-level language to use specific data or functions of the operating system or another program.

ApplicationGroup entry. A construct, created with the customization dialogs, used to represent and contain policy for an application group.

ARM. See automatic restart management.

ASCB. Address space control block.

ASCB status. An application status derived by SA z/OS running a routine (the ASCB checker) that searches the z/OS address space control blocks (ASCBs) for address spaces with a particular job name. The job name used by the ASCB checker is the job name defined in the customization dialog for the application.

ASCII. See American Standard Code for Information Interchange.

ASF. See automation status file.

authorized program facility (APF). A facility that permits identification of programs that are authorized to use restricted functions.

automated console operations (ACO). The use of an automated procedure to replace or simplify the action that an operator takes from a console in response to system or network events.

automated function. SA z/OS automated functions are automation operators, NetView autotasks that are assigned to perform specific automation functions. However, SA z/OS defines its own synonyms, or *automated function names*, for the NetView autotasks, and these function names are referred to in the sample policy databases provided by SA z/OS. For example, the automation operator AUTBASE corresponds to the SA z/OS automated function BASEOPER.

automatic restart management (ARM). A z/OS recovery function that improves the availability of specified subsystems and applications by automatically restarting them under certain circumstances. Automatic restart management is a function of the Cross-System Coupling Facility (XCF) component of z/OS.

automatic restart management element name. In MVS 5.2 or later, z/OS automatic restart management requires the specification of a unique sixteen character name for each address space that registers with it. All automatic restart management policy is defined in terms of the element name, including SA z/OS's interface with it.

automation. The automatic initiation of actions in response to detected conditions or events. SA z/OS provides automation for z/OS applications, z/OS components, and remote systems that run z/OS. SA z/OS also provides tools that can be used to develop additional automation.

automation agent. In SA z/OS, the automation function is split up between the automation manager and the automation agents. The observing, reacting and doing parts are located within the NetView address space, and are known as the *automation agents*. The automation agents are responsible for:

- Recovery processing
- Message processing

- Active monitoring: they propagate status changes to the automation manager

automation configuration file. The SA z/OS customization dialogs must be used to build the automation configuration file. It consists of:

- The automation manager configuration file (AMC)
- The NetView automation table (AT)
- The NetView message revision table (MRT)
- The MPFLSTSA member

automation control file (ACF). In SA z/OS, a file that contains system-level automation policy information. There is one master automation control file for each NetView system that SA z/OS is installed on. Additional policy information and all resource status information is contained in the policy database (PDB). The SA z/OS customization dialogs must be used to build the automation control files. They must not be edited manually.

automation flags. In SA z/OS, the automation policy settings that determine the operator functions that are automated for a resource and the times during which automation is active. When SA z/OS is running, automation is controlled by automation flag policy settings and override settings (if any) entered by the operator. Automation flags are set using the customization dialogs.

automation manager. In SA z/OS, the automation function is split up between the automation manager and the automation agents. The coordination, decision making and controlling functions are processed by each sysplex's *automation manager*.

The automation manager contains a model of all of the automated resources within the sysplex. The automation agents feed the automation manager with status information and perform the actions that the automation manager tells them to.

The automation manager provides *sysplex-wide* automation.

Automation Manager Configuration. The Automation Manager Configuration file (AMC) contains an image of the automated systems in a sysplex or of a standalone system. See also "automation configuration file."

Automation NetView. In SA z/OS the NetView that performs routine operator tasks with command procedures or uses other ways of automating system and network management, issuing automatic responses to messages and management services units.

automation operator. NetView automation operators are NetView autotasks that are assigned to perform specific automation functions. See also automated function. NetView automation operators may receive messages and process automation procedures. There are no logged-on users associated with automation

operators. Each automation operator is an operating system task and runs concurrently with other NetView tasks. An automation operator could be set up to handle JES2 messages that schedule automation procedures, and an automation statement could route such messages to the automation operator. Similar to *operator station task*. SA z/OS message monitor tasks and target control tasks are automation operators.

automation policy. The policy information governing automation for individual systems. This includes automation for applications, z/OS subsystems, z/OS data sets, and z/OS components.

automation policy settings. The automation policy information contained in the automation control file. This information is entered using the customization dialogs. You can display or modify these settings using the customization dialogs.

automation procedure. A sequence of commands, packaged as a NetView command list or a command processor written in a high-level language. An automation procedure performs automation functions and runs under NetView.

| **automation routines.** In SA z/OS, a set of
| self-contained automation routines that can be called
| from the NetView automation table, or from
| user-written automation procedures.

automation status file (ASF). In SA z/OS, a file containing status information for each automated subsystem, component or data set. This information is used by SA z/OS automation when taking action or when determining what action to take. In Release 2 and above of AOC/MVS, status information is also maintained in the operational information base.

automation table (AT). See NetView automation table.

autotask. A NetView automation task that receives messages and processes automation procedures. There are no logged-on users associated with autotasks. Each autotask is an operating system task and runs concurrently with other NetView tasks. An autotask could be set up to handle JES2 messages that schedule automation procedures, and an automation statement could route such messages to the autotasks. Similar to *operator station task*. SA z/OS message monitor tasks and target control tasks are autotasks. Also called *automation operator*.

available. In VTAM programs, pertaining to a logical unit that is active, connected, enabled, and not at its session limit.

B

Base Control Program (BCP). A program that provides essential services for the MVS and z/OS operating systems. The program includes functions that

manage system resources. These functions include input/output, dispatch units of work, and the z/OS UNIX System Services kernel. See also Multiple Virtual Storage and z/OS.

basic mode. A central processor mode that does not use logical partitioning. Contrast with logically partitioned mode.

BCP. See Base Control Program.

BCP Internal Interface. Processor function of CMOS-390 and System z processor families. It allows for communication between basic control programs such as z/OS and the processor support element in order to exchange information or to perform processor control functions. Programs using this function can perform hardware operations such as ACTIVATE or SYSTEM RESET.

beaconing. The repeated transmission of a frame or messages (beacon) by a console or workstation upon detection of a line break or outage.

| **blade.** A hardware unit that provides
| application-specific services and components. The
| consistent size and shape (or form factor) of each blade
| allows it to fit in a BladeCenter chassis.

| **BladeCenter chassis.** A modular chassis that can
| contain multiple blades, allowing the individual blades
| to share resources such as management, switch, power,
| and blower modules.

BookManager®. An IBM product that lets users view softcopy documents on their workstations.

C

central processor (CP). The part of the computer that contains the sequencing and processing facilities for instruction execution, initial program load (IPL), and other machine operations.

central processor complex (CPC). A physical collection of hardware that consists of central storage, one or more central processors, timers, and channels.

central site. In a distributed data processing network, the central site is usually defined as the focal point for alerts, application design, and remote system management tasks such as problem management.

CFR/CFS and ISC/ISR. I/O operations can display and return data about integrated system channels (ISC) connected to a coupling facility and coupling facility receiver (CFR) channels and coupling facility sender (CFS) channels.

channel. A path along which signals can be sent; for example, data channel, output channel. See also link.

channel path identifier. A system-unique value assigned to each channel path.

channel-attached. (1) Attached directly by I/O channels to a host processor (for example, a channel-attached device). (2) Attached to a controlling unit by cables, rather than by telecommunication lines. Contrast with link-attached. Synonymous with local.

CHPID. In SA z/OS, channel path ID; the address of a channel.

CHPID port. A label that describes the system name, logical partitions, and channel paths.

CI. See console integration.

CICS/VS. Customer Information Control System for Virtual Storage. See Customer Information Control System.

CLIST. See command list.

clone. A set of definitions for application instances that are derived from a basic application definition by substituting a number of different system-specific values into the basic definition.

clone ID. A generic means of handling system-specific values such as the MVS SYSCLONE or the VTAM subarea number. Clone IDs can be substituted into application definitions and commands to customize a basic application definition for the system that it is to be instantiated on.

CNC. A channel path that transfers data between a host system image and an ESCON control unit. It can be point-to-point or switchable.

command. A request for the performance of an operation or the execution of a particular program.

command facility. The component of NetView that is a base for command processors that can monitor, control, automate, and improve the operation of a network. The successor to NCCF.

command list (CLIST). (1) A list of commands and statements, written in the NetView command list language or the REXX language, designed to perform a specific function for the user. In its simplest form, a command list is a list of commands. More complex command lists incorporate variable substitution and conditional logic, making the command list more like a conventional program. Command lists are typically interpreted rather than being compiled. (2) In SA z/OS, REXX command lists that can be used for automation procedures.

command procedure. In NetView, either a command list or a command processor.

command processor. A module designed to perform a specific function. Command processors, which can be written in assembler or a high-level language (HLL), are issued as commands.

command processor control block. An I/O operations internal control block that contains information about the command being processed.

Command Tree/2. An OS/2-based program that helps you build commands on an OS/2 window, then routes the commands to the destination you specify (such as a 3270 session, a file, a command line, or an application program). It provides the capability for operators to build commands and route them to a specified destination.

common commands. The SA z/OS subset of the CPC operations management commands.

Common User Access (CUA) architecture. Guidelines for the dialog between a human and a workstation or terminal.

communication controller. A type of communication control unit whose operations are controlled by one or more programs stored and executed in the unit or by a program executed in a processor to which the controller is connected. It manages the details of line control and the routing of data through a network.

communication line. Deprecated term for telecommunication line.

connectivity view. In SA z/OS, a display that uses graphic images for I/O devices and lines to show how they are connected.

console automation. The process of having NetView facilities provide the console input usually handled by the operator.

console connection. In SA z/OS, the 3270 or ASCII (serial) connection between a PS/2 computer and a target system. Through this connection, the workstation appears (to the target system) to be a console.

console integration (CI). A hardware facility that if supported by an operating system, allows operating system messages to be transferred through an internal hardware interface for display on a system console. Conversely, it allows operating system commands entered at a system console to be transferred through an internal hardware interface to the operating system for processing.

consoles. Workstations and 3270-type devices that manage your enterprise.

Control units. Hardware units that control I/O operations for one or more devices. You can view information about control units through I/O

operations, and can start or stop data going to them by blocking and unblocking ports.

controller. A unit that controls I/O operations for one or more devices.

converted mode (CVC). A channel operating in converted (CVC) mode transfers data in blocks and a CBY channel path transfers data in bytes. Converted CVC or CBY channel paths can communicate with a parallel control unit. This resembles a point-to-point parallel path and dedicated connection, regardless whether it passes through a switch.

couple data set. A data set that is created through the XCF couple data set format utility and, depending on its designated type, is shared by some or all of the z/OS systems in a sysplex. See also sysplex couple data set and XCF couple data set.

coupling facility. The hardware element that provides high-speed caching, list processing, and locking functions in a sysplex.

CP. See central processor.

CPC. See central processor complex.

CPC operations management commands. A set of commands and responses for controlling the operation of System/390 CPCs.

CPC subset. All or part of a CPC. It contains the minimum *resource* to support a single control program.

CPCB. See command processor control block.

CPU. Central processing unit. Deprecated term for processor.

cross-system coupling facility (XCF). A component of z/OS that provides functions to support cooperation between authorized programs running within a sysplex.

CTC. The channel-to-channel (CTC) channel can communicate with a CTC on another host for intersystem communication.

Customer Information Control System (CICS). A general-purpose transactional program that controls online communication between terminal users and a database for a large number of end users on a real-time basis.

customization dialogs. The customization dialogs are an ISPF application. They are used to customize the enterprise policy, like, for example, the enterprise resources and the relationships between resources, or the automation policy for systems in the enterprise. How to use these dialogs is described in *IBM Tivoli System Automation for z/OS Customizing and Programming*.

CVC. See converted mode.

D

DataPower X150z. See IBM Websphere DataPower Integration Appliance X150 for zEnterprise (DataPower X150z).

DASD. See direct access storage device.

data services task (DST). The NetView subtask that gathers, records, and manages data in a VSAM file or a network device that contains network management information.

data set. The major unit of data storage and retrieval, consisting of a collection of data in one of several prescribed arrangements and described by control information to which the system has access.

data set members. Members of partitioned data sets that are individually named elements of a larger file that can be retrieved by name.

DBCS. See double-byte character set.

DCCF. See disabled console communication facility.

DCF. See Document Composition Facility.

DELAY Report. An RMF report that shows the activity of each job in the system and the hardware and software resources that are delaying each job.

device. A piece of equipment. Devices can be workstations, printers, disk drives, tape units, remote systems or communications controllers. You can see information about all devices attached to a particular switch, and control paths and jobs to devices.

DEVR Report. An RMF report that presents information about the activity of I/O devices that are delaying jobs.

dialog. Interactive 3270 panels.

direct access storage device (DASD). A device that allows storage to be directly accessed, such as a disk drive.

disabled console communication facility (DCCF). A z/OS component that provides limited-function console communication during system recovery situations.

disk operating system (DOS). (1) An operating system for computer systems that use disks and diskettes for auxiliary storage of programs and data. (2) Software for a personal computer that controls the processing of programs. For the IBM Personal Computer, the full name is Personal Computer Disk Operating System (PCDOS).

display. (1) To present information for viewing, usually on the screen of a workstation or on a hardcopy device. (2) Deprecated term for panel.

distribution manager. The component of the NetView program that enables the host system to use, send, and delete files and programs in a network of computers.

Document Composition Facility (DCF). An IBM licensed program used to format input to a printer.

domain. (1) An access method and its application programs, communication controllers, connecting lines, modems, and attached workstations. (2) In SNA, a system services control point (SSCP) and the physical units (PUs), logical units (LUs), links, link stations, and associated resources that the SSCP can control with activation requests and deactivation requests.

double-byte character set (DBCS). A character set, such as Kanji, in which each character is represented by a 2-byte code.

DP enterprise. Data processing enterprise.

DSIPARM. This file is a collection of members of NetView's customization.

DST. Data Services Task.

E

EBCDIC. See Extended Binary Coded Decimal Interchange Code.

ECB. See event control block.

EMCS. Extended multiple console support. See also multiple console support.

ensemble. A collection of one or more zEnterprise nodes (including any attached zBX) that are managed as a single logical virtualized system by the Unified Resource Manager, through the Hardware Management Console.

ensemble member. A zEnterprise node that has been added to an ensemble.

enterprise. The composite of all operational entities, functions, and resources that form the total business concern and that require an information system.

enterprise monitoring. Enterprise monitoring is used by SA z/OS to update the *NetView Management Console (NMC)* resource status information that is stored in the *Resource Object Data Manager (RODM)*. Resource status information is acquired by enterprise monitoring of the *Resource Measurement Facility (RMF) Monitor III* service information at user-defined intervals. SA z/OS stores this information in its operational information base, where it is used to update the information presented to the operator in graphic displays.

Enterprise Systems Architecture (ESA). A hardware architecture that reduces the effort required for managing data sets and extends addressability for system, subsystem, and application functions.

entries. Resources, such as processors, entered on panels.

entry type. Resources, such as processors or applications, used for automation and monitoring.

environment. Data processing enterprise.

error threshold. An automation policy setting that specifies when SA z/OS should stop trying to restart or recover an application, subsystem or component, or offload a data set.

ESA. See Enterprise Systems Architecture.

eServer. Processor family group designator used by the SA z/OS customization dialogs to define a target hardware as member of the System z or 390-CMOS processor families.

event. (1) In NetView, a record indicating irregularities of operation in physical elements of a network. (2) An occurrence of significance to a task; for example, the completion of an asynchronous operation, such as an input/output operation. (3) Events are part of a trigger condition, such that if all events of a trigger condition have occurred, a startup or shutdown of an application is performed.

event control block (ECB). A control block used to represent the status of an event.

exception condition. An occurrence on a system that is a deviation from normal operation. SA z/OS monitoring highlights exception conditions and allows an SA z/OS enterprise to be managed by exception.

Extended Binary Coded Decimal Interchange Code (EBCDIC). A coded character set of 256 8-bit characters developed for the representation of textual data. See also American Standard Code for Information Interchange.

extended recovery facility (XRF). A facility that minimizes the effect of failures in z/OS, VTAM, the host processor, or high availability applications during sessions between high availability applications and designated terminals. This facility provides an alternate subsystem to take over sessions from the failing subsystem.

F

fallback system. See secondary system.

field. A collection of bytes within a record that are logically related and are processed as a unit.

file manager commands. A set of SA z/OS commands that read data from or write data to the automation control file or the operational information base. These commands are useful in the development of automation that uses SA z/OS facilities.

focal point. In NetView, the focal-point domain is the central host domain. It is the central control point for any management services element containing control of the network management data.

focal point system. (1) A system that can administer, manage, or control one or more target systems. There are a number of different focal point system associated with IBM automation products. (2) **NMC focal point system.** The NMC focal point system is a NetView system with an attached workstation server and LAN that gathers information about the state of the network. This focal point system uses RODM to store the data it collects in the data model. The information stored in RODM can be accessed from any LAN-connected workstation with NetView Management Console installed. (3) **NPDA focal point system.** This is a NetView system that collects all the NPDA alerts that are generated within your enterprise. It is supported by NetView. If you have SA z/OS installed the NPDA focal point system must be the same as your NMC focal point system. The NPDA focal point system is also known as the *alert focal point system*. (4) **SA z/OS Processor Operations focal point system.** This is a NetView system that has SA z/OS host code installed. The SA z/OS Processor Operations focal point system receives messages from the systems and operator consoles of the machines that it controls. It provides full systems and operations console function for its target systems. It can be used to IPL these systems. Note that some restrictions apply to the Hardware Management Console for an S/390 microprocessor cluster. (5) **SA z/OS SDF focal point system.** The SA z/OS SDF focal point system is an SA z/OS NetView system that collects status information from other SA z/OS NetViews within your enterprise. (6) **Status focal point system.** In NetView, the system to which STATMON, VTAM and NLDM send status information on network resources. If you have a NMC focal point, it must be on the same system as the Status focal point. (7) **Hardware Management Console.** Although not listed as a focal point, the Hardware Management Console acts as a focal point for the console functions of an S/390 microprocessor cluster. Unlike all the other focal points in this definition, the Hardware Management Console runs on a LAN-connected workstation,

frame. For a System/390 microprocessor cluster, a frame contains one or two central processor complexes (CPCs), support elements, and AC power distribution.

full-screen mode. In NetView, a form of panel presentation that makes it possible to display the contents of an entire workstation screen at once.

Full-screen mode can be used for fill-in-the-blanks prompting. Contrast with line mode.

G

gateway session. An NetView-NetView Task session with another system in which the SA z/OS outbound gateway operator logs onto the other NetView session without human operator intervention. Each end of a gateway session has both an inbound and outbound gateway operator.

generic alert. Encoded alert information that uses code points (defined by IBM and possibly customized by users or application programs) stored at an alert receiver, such as NetView.

group. A collection of target systems defined through configuration dialogs. An installation might set up a group to refer to a physical site or an organizational or application entity.

group entry. A construct, created with the customization dialogs, used to represent and contain policy for a group.

group entry type. A collection of target systems defined through the customization dialog. An installation might set up a group to refer to a physical site or an organizational entity. Groups can, for example, be of type STANDARD or SYSPLEX.

H

| **Hardware Management Console (HMC).** A user
| interface through which data center personnel
| configure, control, monitor, and manage System z
| hardware and software resources. The HMC
| communicates with each central processor complex
| (CPC) through the Support Element. On an IBM
| zEnterprise 196 (z196), using the Unified Resource
| Manager on the HMCs or Support Elements, personnel
| can also create and manage an ensemble.

Hardware Management Console Application (HWMCA). A direct-manipulation object-oriented graphical user interface that provides a single point of control and single system image for hardware elements. The HWMCA provides grouping support, aggregated and real-time system status using colors, consolidated hardware messages support, consolidated operating system messages support, consolidated service support, and hardware commands targeted at a single system, multiple systems, or a group of systems.

heartbeat. In SA z/OS, a function that monitors the validity of the status forwarding path between remote systems and the NMC focal point, and monitors the availability of remote z/OS systems, to ensure that status information displayed on the SA z/OS workstation is current.

help panel. An online panel that tells you how to use a command or another aspect of a product.

hierarchy. In the NetView program, the resource types, display types, and data types that make up the organization, or levels, in a network.

high-level language (HLL). A programming language that provides some level of abstraction from assembler language and independence from a particular type of machine. For the NetView program, the high-level languages are PL/I and C.

HLL. See high-level language.

host (primary processor). The processor that you enter a command at (also known as the *issuing processor*).

host system. In a coupled system or distributed system environment, the system on which the facilities for centralized automation run. SA z/OS publications refer to target systems or focal-point systems instead of hosts.

HWMCA. See Hardware Management Console Application.

| **Hypervisor.** A program that allows multiple instances
| of operating systems or virtual servers to run
| simultaneously on the same hardware device. A
| hypervisor can run directly on the hardware, can run
| within an operating system, or can be imbedded in
| platform firmware. Examples of hypervisors include
| PR/SM, z/VM, and PowerVM Enterprise Edition.

I

| **IBM blade.** A customer-acquired, customer-installed
| select blade to be managed by IBM zEnterprise Unified
| Resource Manager. One example of an IBM blade is a
| POWER7 blade.

| **IBM Smart Analyzer for DB2 for z/OS.** An optimizer
| that processes certain types of data warehouse queries
| for DB2 for z/OS.

| **IBM System z Application Assist Processor (zAAP).**
| A specialized processor that provides a Java execution
| environment, which enables Java-based web
| applications to be integrated with core z/OS business
| applications and backend database systems.

| **IBM System z Integrated Information Processor (zIIP).** A specialized processor that provides
| computing capacity for selected data and transaction
| processing workloads and for selected network
| encryption workloads.

| **IBM Websphere DataPower Integration Appliance
| X150 for zEnterprise (DataPower X150z).** A
| purpose-built appliance that simplifies, helps secure,
| and optimizes XML and Web services processing.

| **IBM Enterprise 196 (z196).** The newest generation of System z family of servers built on a new processor chip, with enhanced memory function and capacity, security, and on demand enhancements to support existing mainframe workloads and large scale consolidation.

| **IBM zEnterprise BladeCenter Extension (zBX).** A heterogeneous hardware infrastructure that consists of a BladeCenter chassis attached to an IBM zEnterprise 196 (z196). A BladeCenter chassis can contain IBM blades or optimizers.

| **IBM zEnterprise BladeCenter Extension (zBX) blade.** Generic name for all blade types supported in an IBM zEnterprise BladeCenter Extension (zBX). This term includes IBM blades and optimizers.

| **IBM zEnterprise System (zEnterprise).** A heterogeneous hardware infrastructure that can consist of an IBM zEnterprise 196 (z196) and an attached IBM zEnterprise BladeCenter Extension (zBX) Model 002, managed as a single logical virtualized system by the Unified Resource Manager.

| **IBM zEnterprise Unified Resource Manager.** Licensed Internal Code (LIC), also known as firmware, that is part of the Hardware Management Console. The Unified Resource Manager provides energy monitoring and management, goal-oriented policy management, increased security, virtual networking, and data management for the physical and logical resources of a given ensemble.

I/O operations. The part of SA z/OS that provides you with a single point of logical control for managing connectivity in your active I/O configurations. I/O operations takes an active role in detecting unusual conditions and lets you view and change paths between a processor and an I/O device, using dynamic switching (the ESCON director). Also known as I/O Ops.

I/O Ops. See I/O operations.

I/O resource number. Combination of channel path identifier (CHPID), device number, etc. See internal token.

images. A grouping of processors and I/O devices that you define. You can define a single-image mode that allows a multiprocessor system to function as one central processor image.

IMS. See Information Management System.

IMS/VS. See Information Management System/Virtual Storage.

inbound. In SA z/OS, messages sent to the focal-point system from the PC or target system.

inbound gateway operator. The automation operator that receives incoming messages, commands, and responses from the outbound gateway operator at the sending system. The inbound gateway operator handles communications with other systems using a gateway session.

Information Management System (IMS). Any of several system environments available with a database manager and transaction processing that are capable of managing complex databases and terminal networks.

Information Management System/Virtual Storage (IMS/VS). A database/data communication (DB/DC) system that can manage complex databases and networks. Synonymous with Information Management System.

INGEIO PROC. The I/O operations default procedure name. It is part of the SYS1.PROCLIB.

initial microprogram load. The action of loading microprograms into computer storage.

initial program load (IPL). (1) The initialization procedure that causes an operating system to commence operation. (2) The process by which a configuration image is loaded into storage at the beginning of a workday or after a system malfunction. (3) The process of loading system programs and preparing a system to run jobs.

initialize automation. SA z/OS-provided automation that issues the correct z/OS start command for each subsystem when SA z/OS is initialized. The automation ensures that subsystems are started in the order specified in the automation control files and that prerequisite applications are functional.

input/output configuration data set (IOCDs). A configuration definition built by the I/O configuration program (IOCP) and stored on disk files associated with the processor controller.

input/output support processor (IOSP). The hardware unit that provides I/O support functions for the primary support processor and maintenance support functions for the processor controller.

Interactive System Productivity Facility (ISPF). An IBM licensed program that serves as a full-screen editor and dialog manager. Used for writing application programs, it provides a means of generating standard screen panels and interactive dialogs between the application programmer and the terminal user. See also Time Sharing Option.

interested operator list. The list of operators who are to receive messages from a specific target system.

internal token. A *logical token* (LTOK); name by which the I/O resource or object is known; stored in IODF.

IOCDs. See input/output configuration data set.

IOSP. See input/output support processor.

IPL. See initial program load.

ISPF. See Interactive System Productivity Facility.

ISPF console. You log on to ISPF from this 3270-type console to use the runtime panels for I/O operations and SA z/OS customization panels.

issuing host. The base program that you enter a command for processing with. See primary host.

J

JCL. See job control language.

JES. See job entry subsystem.

JES2. An MVS subsystem that receives jobs into the system, converts them to internal format, selects them for execution, processes their output, and purges them from the system. In an installation with more than one processor, each JES2 processor independently controls its job input, scheduling, and output processing. See also job entry subsystem and JES3

JES3. An MVS subsystem that receives jobs into the system, converts them to internal format, selects them for execution, processes their output, and purges them from the system. In complexes that have several loosely coupled processing units, the JES3 program manages processors so that the global processor exercises centralized control over the local processors and distributes jobs to them using a common job queue. See also job entry subsystem and JES2.

job. (1) A set of data that completely defines a unit of work for a computer. A job usually includes all necessary computer programs, linkages, files, and instructions to the operating system. (2) An address space.

job control language (JCL). A problem-oriented language designed to express statements in a job that are used to identify the job or describe its requirements to an operating system.

job entry subsystem (JES). An IBM licensed program that receives jobs into the system and processes all output data that is produced by jobs. In SA z/OS publications, JES refers to JES2 or JES3, unless otherwise stated. See also JES2 and JES3.

K

Kanji. An ideographic character set used in Japanese. See also double-byte character set.

L

LAN. See local area network.

line mode. A form of screen presentation in which the information is presented a line at a time in the message area of the terminal screen. Contrast with full-screen mode.

link. (1) In SNA, the combination of the link connection and the link stations joining network nodes; for example, a System/370 channel and its associated protocols, a serial-by-bit connection under the control of synchronous data link control (SDLC). See synchronous data link control. (2) In SA z/OS, link connection is the physical medium of transmission.

link-attached. Describes devices that are physically connected by a telecommunication line. Contrast with channel-attached.

Linux on System z. UNIX-like open source operating system conceived by Linus Torvalds and developed across the internet.

local. Pertaining to a device accessed directly without use of a telecommunication line. Synonymous with channel-attached.

local area network (LAN). (1) A network in which a set of devices is connected for communication. They can be connected to a larger network. See also token ring. (2) A network that connects several devices in a limited area (such as a single building or campus) and that can be connected to a larger network.

logical partition (LP). A subset of the processor hardware that is defined to support an operating system. See also logically partitioned mode.

logical switch number (LSN). Assigned with the switch parameter of the CHPID macro of the IOCP.

logical token (LTOK). Resource number of an object in the IODF.

logical unit (LU). In SNA, a port through which an end user accesses the SNA network and the functions provided by system services control points (SSCPs). An LU can support at least two sessions, one with an SSCP and one with another LU, and may be capable of supporting many sessions with other LUs. See also physical unit and system services control point.

logical unit 6.2 (LU 6.2). A type of logical unit that supports general communications between programs in a distributed processing environment. LU 6.2 is characterized by:

- A peer relationship between session partners
- Efficient use of a session for multiple transactions
- A comprehensive end-to-end error processing

- A generic application program interface (API) consisting of structured verbs that are mapped to a product implementation

Synonym for advanced program-to-program communication.

logically partitioned (LPAR) mode. A central processor mode that enables an operator to allocate system processor hardware resources among several logical partitions. Contrast with basic mode.

LOGR. The sysplex logger.

LP. See logical partition.

LPAR. See logically partitioned mode.

LSN. See logical switch number.

LU. See logical unit.

LU 6.2. See logical unit 6.2.

LU 6.2 session. A session initiated by VTAM on behalf of an LU 6.2 application program, or a session initiated by a remote LU in which the application program specifies that VTAM is to control the session by using the APPCCMD macro. See logical unit 6.2.

LU-LU session. In SNA, a session between two logical units (LUs) in an SNA network. It provides communication between two end users, or between an end user and an LU services component.

M

MAT. Deprecated term for NetView automation table.

MCA. See Micro Channel architecture.

MCS. See multiple console support.

member. A specific function (one or more modules or routines) of a multisystem application that is defined to XCF and assigned to a group by the multisystem application. A member resides on one system in the sysplex and can use XCF services to communicate (send and receive data) with other members of the same group.

message automation table (MAT). Deprecated term for NetView automation table.

message class. A number that SA z/OS associates with a message to control routing of the message. During automated operations, the classes associated with each message issued by SA z/OS are compared to the classes assigned to each notification operator. Any operator with a class matching one of the message's classes receives the message.

message forwarding. The SA z/OS process of sending messages generated at an SA z/OS target system to the SA z/OS focal-point system.

message group. Several messages that are displayed together as a unit.

message monitor task. A task that starts and is associated with a number of communications tasks. Message monitor tasks receive inbound messages from a communications task, determine the originating target system, and route the messages to the appropriate target control tasks.

message processing facility (MPF). A z/OS table that screens all messages sent to the z/OS console. The MPF compares these messages with a customer-defined list of messages on which to automate, suppress from the z/OS console display, or both, and marks messages to automate or suppress. Messages are then broadcast on the subsystem interface (SSI).

message suppression. The ability to restrict the amount of message traffic displayed on the z/OS console.

Micro Channel architecture. The rules that define how subsystems and adapters use the Micro Channel bus in a computer. The architecture defines the services that each subsystem can or must provide.

microprocessor. A processor implemented on one or a small number of chips.

migration. Installation of a new version or release of a program to replace an earlier version or release.

MP. Multiprocessor.

MPF. See message processing facility.

MPFLSTSA. The MPFLST member that is built by SA z/OS.

multi-MVS environment. physical processing system that is capable of operating more than one MVS image. See also MVS image.

multiple console support (MCS). A feature of MVS that permits selective message routing to multiple consoles.

Multiple Virtual Storage (MVS). An IBM operating system that accesses multiple address spaces in virtual storage. The predecessor of z/OS.

multiprocessor (MP). A CPC that can be physically partitioned to form two operating processor complexes.

multisystem application. An application program that has various functions distributed across z/OS images in a multisystem environment.

multisystem environment. An environment in which two or more systems reside on one or more processors. Or one or more processors can communicate with programs on the other systems.

MVS. See Multiple Virtual Storage.

MVS image. A single occurrence of the MVS operating system that has the ability to process work. See also multi-MVS environment and single-MVS environment.

MVS/ESA. Multiple Virtual Storage/Enterprise Systems Architecture. See z/OS.

MVS/JES2. Multiple Virtual Storage/Job Entry System 2. A z/OS subsystem that receives jobs into the system, converts them to an internal format, selects them for execution, processes their output, and purges them from the system. In an installation with more than one processor, each JES2 processor independently controls its job input, scheduling, and output processing.

N

NAU. (1) See network addressable unit. (2) See network accessible unit.

NCCF. See Network Communications Control Facility.

NCP. (1) See network control program (general term). (2) See Network Control Program (an IBM licensed program). Its full name is Advanced Communications Function for the Network Control Program. Synonymous with ACF/NCP.

NCP/token ring interconnection. A function used by ACF/NCP to support token ring-attached SNA devices. NTRI also provides translation from token ring-attached SNA devices (PUs) to switched (dial-up) devices.

NetView. An IBM licensed program used to monitor a network, manage it, and diagnose network problems. NetView consists of a command facility that includes a presentation service, command processors, automation based on command lists, and a transaction processing structure on which the session monitor, hardware monitor, and terminal access facility (TAF) network management applications are built.

NetView (NCCF) console. A 3270-type console for NetView commands and runtime panels for system operations and processor operations.

NetView automation procedures. A sequence of commands, packaged as a NetView command list or a command processor written in a high-level language. An automation procedure performs automation functions and runs under the NetView program.

NetView automation table (AT). A table against which the NetView program compares incoming

messages. A match with an entry triggers the specified response. SA z/OS entries in the NetView automation table trigger an SA z/OS response to target system conditions. Formerly known as the message automation table (MAT).

NetView command list language. An interpretive language unique to NetView that is used to write command lists.

NetView Graphic Monitor Facility (NGMF). Deprecated term for NetView Management Console.

NetView hardware monitor. The component of NetView that helps identify network problems, such as hardware, software, and microcode, from a central control point using interactive display techniques. Formerly called *network problem determination application*.

NetView log. The log that NetView records events relating to NetView and SA z/OS activities in.

NetView Management Console (NMC). A function of the NetView program that provides a graphic, topological presentation of a network that is controlled by the NetView program. It provides the operator different views of a network, multiple levels of graphical detail, and dynamic resource status of the network. This function consists of a series of graphic windows that allows you to manage the network interactively. Formerly known as the NetView Graphic Monitor Facility (NGMF).

NetView message table. See NetView automation table.

NetView paths via logical unit (LU 6.2). A type of network-accessible port (VTAM connection) that enables end users to gain access to SNA network resources and communicate with each other. LU 6.2 permits communication between processor operations and the workstation. See logical unit 6.2.

NetView-NetView task (NNT). The task that a cross-domain NetView operator session runs under. Each NetView program must have a NetView-NetView task to establish one NNT session. See also operator station task.

NetView-NetView task session. A session between two NetView programs that runs under a NetView-NetView task. In SA z/OS, NetView-NetView task sessions are used for communication between focal point and remote systems.

network. (1) An interconnected group of nodes. (2) In data processing, a user application network. See SNA network.

network accessible unit (NAU). In SNA networking, any device on the network that has a network address, including a logical unit (LU), physical unit (PU), control point (CP), or system services control point (SSCP). It is

the origin or the destination of information transmitted by the path control network. Synonymous with network addressable unit.

network addressable unit (NAU). Synonym for network accessible unit.

Network Communications Control Facility (NCCF). The operations control facility for the network. NCCF consists of a presentation service, command processors, automation based on command lists, and a transaction processing structure on which the network management applications NLDM and NPDA are built. NCCF is a precursor to the NetView command facility.

Network Control Program (NCP). An IBM licensed program that provides communication controller support for single-domain, multiple-domain, and interconnected network capability. Its full name is Advanced Communications Function for the Network Control Program.

network control program (NCP). (1) A program that controls the operation of a communication controller. (2) A program used for requests and responses exchanged between physical units in a network for data flow control.

Network Problem Determination Application (NPDA). An NCCF application that helps you identify network problems, such as hardware, software, and microcode, from a central control point using interactive display methods. The alert manager for the network. The precursor of the NetView hardware monitor.

Networking NetView. In SA z/OS the NetView that performs network management functions, such as managing the configuration of a network. In SA z/OS it is common to also route alerts to the Networking NetView.

NGMF. Deprecated term for NetView Management Console.

NGMF focal-point system. Deprecated term for NMC focal point system.

NIP. See nucleus initialization program.

NMC focal point system. See focal point system

NMC workstation. The NMC workstation is the primary way to dynamically monitor SA z/OS systems. From the windows, you see messages, monitor status, view trends, and react to changes before they cause problems for end users. You can use multiple windows to monitor multiple views of the system.

NNT. See NetView-NetView task.

notification message. An SA z/OS message sent to a human notification operator to provide information

about significant automation actions. Notification messages are defined using the customization dialogs.

notification operator. A NetView console operator who is authorized to receive SA z/OS notification messages. Authorization is made through the customization dialogs.

NPDA. See Network Problem Determination Application.

NPDA focal-point system. See focal point system.

NTRI. See NCP/token ring interconnection.

nucleus initialization program (NIP). The program that initializes the resident control program; it allows the operator to request last-minute changes to certain options specified during system generation.

O

objective value. An average Workflow or Using value that SA z/OS can calculate for applications from past service data. SA z/OS uses the objective value to calculate warning and alert thresholds when none are explicitly defined.

OCA. In SA z/OS, operator console A, the active operator console for a target system. Contrast with OCB.

OCB. In SA z/OS, operator console B, the backup operator console for a target system. Contrast with OCA.

OCF. See operations command facility.

OCF-based processor. A central processor complex that uses an operations command facility for interacting with human operators or external programs to perform operations management functions on the CPC.

OPC/A. See Operations Planning and Control/Advanced.

OPC/ESA. See Operations Planning and Control/Enterprise Systems Architecture.

Open Systems Adapter (OSA). I/O operations can display the Open System Adapter (OSA) channel logical definition, physical attachment, and status. You can configure an OSA channel on or off.

operating system (OS). Software that controls the execution of programs and that may provide services such as resource allocation, scheduling, input/output control, and data management. Although operating systems are predominantly software, partial hardware implementations are possible. (T)

operations. The real-time control of a hardware device or software function.

operations command facility (OCF). A facility of the central processor complex that accepts and processes operations management commands.

Operations Planning and Control/Advanced (OPC/A). A set of IBM licensed programs that automate, plan, and control batch workload. OPC/A analyzes system and workload status and submits jobs accordingly.

Operations Planning and Control/Enterprise Systems Architecture (OPC/ESA). A set of IBM licensed programs that automate, plan, and control batch workload. OPC/ESA analyzes system and workload status and submits jobs accordingly. The successor to OPC/A.

operator. (1) A person who keeps a system running. (2) A person or program responsible for managing activities controlled by a given piece of software such as z/OS, the NetView program, or IMS. (3) A person who operates a device. (4) In a language statement, the lexical entity that indicates the action to be performed on operands.

operator console. (1) A functional unit containing devices that are used for communications between a computer operator and a computer. (T) (2) A display console used for communication between the operator and the system, used primarily to specify information concerning application programs and I/O operations and to monitor system operation. (3) In SA z/OS, a console that displays output from and sends input to the operating system (z/OS, LINUX, VM, VSE). Also called *operating system console*. In the SA z/OS operator commands and configuration dialogs, OC is used to designate a target system operator console.

operator station task (OST). The NetView task that establishes and maintains the online session with the network operator. There is one operator station task for each network operator who logs on to the NetView program.

operator view. A set of group, system, and resource definitions that are associated together for monitoring purposes. An operator view appears as a graphic display in the graphical interface showing the status of the defined groups, systems, and resources.

OperatorView entry. A construct, created with the customization dialogs, used to represent and contain policy for an operator view.

| **optimizer.** A special-purpose hardware component or
| appliance that can perform a limited set of specific
| functions with optimized performance when compared
| to a general-purpose processor. Because of its limited
| set of functions, an optimizer is an integrated part of a
| processing environment, rather than a stand-alone unit.
| One example of an optimizer is the IBM Smart
| Analytics Optimizer for DB2 for z/OS.

OS. See operating system.

OSA. See Open Systems Adapter.

OST. See operator station task.

outbound. In SA z/OS, messages or commands from the focal-point system to the target system.

outbound gateway operator. The automation operator that establishes connections to other systems. The outbound gateway operator handles communications with other systems through a gateway session. The automation operator sends messages, commands, and responses to the inbound gateway operator at the receiving system.

P

page. (1) The portion of a panel that is shown on a display surface at one time. (2) To transfer instructions, data, or both between real storage and external page or auxiliary storage.

panel. (1) A formatted display of information that appears on a terminal screen. Panels are full-screen 3270-type displays with a monospaced font, limited color and graphics. (2) By using SA z/OS panels you can see status, type commands on a command line using a keyboard, configure your system, and passthru to other consoles. See also help panel. (3) In computer graphics, a display image that defines the locations and characteristics of display fields on a display surface. Contrast with screen.

parallel channels. Parallel channels operate in either byte (BY) or block (BL) mode. You can change connectivity to a parallel channel operating in block mode.

parameter. (1) A variable that is given a constant value for a specified application and that may denote the application. (2) An item in a menu for which the user specifies a value or for which the system provides a value when the menu is interpreted. (3) Data passed to a program or procedure by a user or another program, specifically as an operand in a language statement, as an item in a menu, or as a shared data structure.

partition. (1) A fixed-size division of storage. (2) In VSE, a division of the virtual address area that is available for program processing. (3) On an IBM Personal Computer fixed disk, one of four possible storage areas of variable size; one can be accessed by DOS, and each of the others may be assigned to another operating system.

partitionable CPC. A CPC that can be divided into 2 independent CPCs. See also physical partition, single-image mode, MP, and side.

partitioned data set (PDS). A data set in direct access storage that is divided into partitions, called *members*, each of which can contain a program, part of a program, or data.

passive monitoring. In SA z/OS, the receiving of unsolicited messages from z/OS systems and their resources. These messages can prompt updates to resource status displays. See also active monitoring

PCE. A processor controller. Also known as the support processor or service processor in some processor families.

PDB. See policy database.

PDS. See partitioned data set.

physical partition. Part of a CPC that operates as a CPC in its own right, with its own copy of the operating system.

physical unit (PU). In SNA, the component that manages and monitors the resources (such as attached links and adjacent link stations) of a node, as requested by a system services control point (SSCP) through an SSCP-PU session. An SSCP activates a session with the physical unit to indirectly manage, through the PU, resources of the node such as attached links.

physically partitioned (PP) configuration. A mode of operation that allows a multiprocessor (MP) system to function as two or more independent CPCs having separate power, water, and maintenance boundaries. Contrast with single-image mode.

POI. See program operator interface.

policy. The automation and monitoring specifications for an SA z/OS enterprise. See *IBM Tivoli System Automation for z/OS Defining Automation Policy*.

policy database. The automation definitions (automation policy) that the automation programmer specifies using the customization dialog is stored in the policy database. Also known as the PDB. See also automation policy.

POR. See power-on reset.

port. (1) System hardware that the I/O devices are attached to. (2) In an ESCON switch, a port is an addressable connection. The switch routes data through the ports to the channel or control unit. Each port has a name that can be entered into a switch matrix, and you can use commands to change the switch configuration. (3) An access point (for example, a logical unit) for data entry or exit. (4) A functional unit of a node that data can enter or leave a data network through. (5) In data communication, that part of a data processor that is dedicated to a single data channel for the purpose of receiving data from or transmitting data to one or more external, remote devices.

power-on reset (POR). A function that re-initializes all the hardware in a CPC and loads the internal code that enables the CPC to load and run an operating system. See initial microprogram load.

PP. See physical partition.

PPI. See program to program interface.

PPT. See primary POI task.

PR/SM. See Processor Resource/Systems Manager.

primary host. The base program that you enter a command for processing at.

primary POI task (PPT). The NetView subtask that processes all unsolicited messages received from the VTAM program operator interface (POI) and delivers them to the controlling operator or to the command processor. The PPT also processes the initial command specified to execute when NetView is initialized and timer request commands scheduled to execute under the PPT.

primary system. A system is a primary system for an application if the application is normally meant to be running there. SA z/OS starts the application on all the primary systems defined for it.

problem determination. The process of determining the source of a problem; for example, a program component, machine failure, telecommunication facilities, user or contractor-installed programs or equipment, environment failure such as a power loss, or user error.

processor. (1) A device for processing data from programmed instructions. It may be part of another unit. (2) In a computer, the part that interprets and executes instructions. Two typical components of a processor are a control unit and an arithmetic logic unit.

processor controller. Hardware that provides support and diagnostic functions for the central processors.

processor operations. The part of SA z/OS that monitors and controls processor (hardware) operations. Processor operations provides a connection from a focal-point system to a target system. Through NetView on the focal-point system, processor operations automates operator and system consoles for monitoring and recovering target systems. Also known as ProcOps.

Processor Resource/Systems Manager™ (PR/SM). The feature that allows the processor to use several operating system images simultaneously and provides logical partitioning capability. See also logically partitioned mode.

ProcOps. See processor operations.

ProcOps Service Machine (PSM). The PSM is a CMS user on a VM host system. It runs a CMS multitasking application that serves as "virtual hardware" for ProcOps. ProcOps communicates via the PSM with the VM guest systems that are defined as target systems within ProcOps.

product automation. Automation integrated into the base of SA z/OS for the products CICS, DB2, IMS, TWS (formerly called *features*).

program operator interface (POI). A NetView facility for receiving VTAM messages.

program to program interface (PPI). A NetView function that allows user programs to send or receive data buffers from other user programs and to send alerts to the NetView hardware monitor from system and application programs.

protocol. In SNA, the meanings of, and the sequencing rules for, requests and responses used for managing the network, transferring data, and synchronizing the states of network components.

proxy resource. A resource defined like an entry type APL representing a processor operations target system.

PSM. See ProcOps Service Machine.

PU. See physical unit.

R

RACF. See Resource Access Control Facility.

remote system. A system that receives resource status information from an SA z/OS focal-point system. An SA z/OS remote system is defined as part of the same SA z/OS enterprise as the SA z/OS focal-point system to which it is related.

requester. A workstation from that user can log on to a domain from, that is, to the servers belonging to the domain, and use network resources. Users can access the shared resources and use the processing capability of the servers, thus reducing hardware investment.

resource. (1) Any facility of the computing system or operating system required by a job or task, and including main storage, input/output devices, the processing unit, data sets, and control or processing programs. (2) In NetView, any hardware or software that provides function to the network. (3) In SA z/OS, any z/OS application, z/OS component, job, device, or target system capable of being monitored or automated through SA z/OS.

Resource Access Control Facility (RACF). A program that can provide data security for all your resources. RACF protects data from accidental or deliberate unauthorized disclosure, modification, or destruction.

resource group. A physically partitionable portion of a processor. Also known as a *side*.

Resource Measurement Facility (RMF). A feature of z/OS that measures selected areas of system activity and presents the data collected in the format of printed reports, System Management Facility (SMF) records, or display reports.

Resource Object Data Manager (RODM). In NetView for z/OS, a component that provides an in-memory cache for maintaining real-time data in an address space that is accessible by multiple applications. RODM also allows an application to query an object and receive a rapid response and act on it.

resource token. A unique internal identifier of an ESCON resource or resource number of the object in the IODF.

restart automation. Automation provided by SA z/OS that monitors subsystems to ensure that they are running. If a subsystem fails, SA z/OS attempts to restart it according to the policy in the automation configuration file.

Restructured Extended Executor (REXX). A general-purpose, high-level, programming language, particularly suitable for EXEC procedures or programs for personal computing, used to write command lists.

return code. A code returned from a program used to influence the issuing of subsequent instructions.

REXX. See Restructured Extended Executor.

REXX procedure. A command list written with the Restructured Extended Executor (REXX), which is an interpretive language.

RMF. See Resource Measurement Facility.

RODM. See Resource Object Data Manager.

S

SAF. See Security Authorization Facility.

SA IOM. See System Automation for Integrated Operations Management.

SAPlex. SAPlex or "SA z/OS Subplex" is a term used in conjunction with a sysplex. In fact, a SAPlex is a subset of a sysplex. However, it can also be a sysplex. For a detailed description, refer to "Using SA z/OS Subplexes" in *IBM Tivoli System Automation for z/OS Planning and Installation*.

SA z/OS. See System Automation for z/OS.

SA z/OS customization dialogs. An ISPF application through which the SA z/OS policy administrator

defines policy for individual z/OS systems and builds automation control data and RODM load function files.

SA z/OS customization focal point system. See focal point system.

SA z/OS data model. The set of objects, classes and entity relationships necessary to support the function of SA z/OS and the NetView automation platform.

SA z/OS enterprise. The group of systems and resources defined in the customization dialogs under one enterprise name. An SA z/OS enterprise consists of connected z/OS systems running SA z/OS.

SA z/OS focal point system. See focal point system.

SA z/OS policy. The description of the systems and resources that make up an SA z/OS enterprise, together with their monitoring and automation definitions.

SA z/OS policy administrator. The member of the operations staff who is responsible for defining SA z/OS policy.

SA z/OS satellite. If you are running two NetViews on an z/OS system to split the automation and networking functions of NetView, it is common to route alerts to the Networking NetView. For SA z/OS to process alerts properly on the Networking NetView, you must install a subset of SA z/OS code, called an *SA z/OS satellite* on the Networking NetView.

SA z/OS SDF focal point system. See focal point system.

SCA. In SA z/OS, system console A, the active system console for a target hardware. Contrast with SCB.

SCB. In SA z/OS, system console B, the backup system console for a target hardware. Contrast with SCA.

screen. Deprecated term for panel.

screen handler. In SA z/OS, software that interprets all data to and from a full-screen image of a target system. The interpretation depends on the format of the data on the full-screen image. Every processor and operating system has its own format for the full-screen image. A screen handler controls one PS/2 connection to a target system.

SDF. See status display facility.

SDLCL. See synchronous data link control.

SDFS. See System Display and Search Facility.

secondary system. A system is a secondary system for an application if it is defined to automation on that system, but the application is not normally meant to be

running there. Secondary systems are systems to which an application can be moved in the event that one or more of its primary systems are unavailable. SA z/OS does not start the application on its secondary systems.

Security Authorization Facility (SAF). An MVS interface with which programs can communicate with an external security manager, such as RACF.

server. A server is a workstation that shares resources, which include directories, printers, serial devices, and computing powers.

service language command (SLC). The line-oriented command language of processor controllers or service processors.

service period. Service periods allow the users to schedule the availability of applications. A service period is a set of time intervals (service windows), during which an application should be active.

service processor (SVP). The name given to a processor controller on smaller System/370 processors.

service threshold. An SA z/OS policy setting that determines when to notify the operator of deteriorating service for a resource. See also alert threshold and warning threshold.

session. In SNA, a logical connection between two network addressable units (NAUs) that can be activated, tailored to provide various protocols, and deactivated, as requested. Each session is uniquely identified in a transmission header by a pair of network addresses identifying the origin and destination NAUs of any transmissions exchanged during the session.

session monitor. The component of the NetView program that collects and correlates session-related data and provides online access to this information. The successor to NLDM.

shutdown automation. SA z/OS-provided automation that manages the shutdown process for subsystems by issuing shutdown commands and responding to prompts for additional information.

side. A part of a partitionable CPC that can run as a physical partition and is typically referred to as the A-side or the B-side.

Simple Network Management Protocol (SNMP). A set of protocols for monitoring systems and devices in complex networks. Information about managed devices is defined and stored in a Management Information Base (MIB).

single image. A processor system capable of being physically partitioned that has not been physically partitioned. Single-image systems can be target hardware processors.

single-MVS environment. An environment that supports one MVS image. See also MVS image.

single-image (SI) mode. A mode of operation for a multiprocessor (MP) system that allows it to function as one CPC. By definition, a uniprocessor (UP) operates in single-image mode. Contrast with physically partitioned (PP) configuration.

SLC. See service language command.

SMP/E. See System Modification Program/Extended.

SNA. See Systems Network Architecture.

SNA network. In SNA, the part of a user-application network that conforms to the formats and protocols of systems network architecture. It enables reliable transfer of data among end users and provides protocols for controlling the resources of various network configurations. The SNA network consists of network addressable units (NAUs), boundary function components, and the path control network.

SNMP. See Simple Network Management Protocol.

solicited message. An SA z/OS message that directly responds to a command. Contrast with unsolicited message.

SSCP. See system services control point.

SSI. See subsystem interface.

start automation. SA z/OS-provided automation that manages and completes the startup process for subsystems. During this process, SA z/OS replies to prompts for additional information, ensures that the startup process completes within specified time limits, notifies the operator of problems, if necessary, and brings subsystems to an UP (or ready) state.

startup. The point in time that a subsystem or application is started.

status. The measure of the condition or availability of the resource.

status display facility (SDF). The system operations part of SA z/OS that displays status of resources such as applications, gateways, and write-to-operator messages (WTORs) on dynamic color-coded panels. SDF shows spool usage problems and resource data from multiple systems.

status focal-point system. See focal point system.

steady state automation. The routine monitoring, both for presence and performance, of subsystems, applications, volumes and systems. Steady state automation may respond to messages, performance exceptions and discrepancies between its model of the system and reality.

structure. A construct used by z/OS to map and manage storage on a coupling facility.

subgroup. A named set of systems. A subgroup is part of an SA z/OS enterprise definition and is used for monitoring purposes.

SubGroup entry. A construct, created with the customization dialogs, used to represent and contain policy for a subgroup.

| **subplex.** See SAplex.

subsystem. (1) A secondary or subordinate system, usually capable of operating independent of, or asynchronously with, a controlling system. (2) In SA z/OS, an z/OS application or subsystem defined to SA z/OS.

subsystem interface (SSI). The z/OS interface over which all messages sent to the z/OS console are broadcast.

support element. A hardware unit that provides communications, monitoring, and diagnostic functions to a central processor complex (CPC).

support processor. Another name given to a processor controller on smaller System/370 processors. See service processor.

SVP. See service processor.

switch identifier. The switch device number (swchdevn), the logical switch number (LSN) and the switch name

switches. ESCON directors are electronic units with ports that dynamically switch to route data to I/O devices. The switches are controlled by I/O operations commands that you enter on a workstation.

symbolic destination name (SDN). Used locally at the workstation to relate to the VTAM application name.

synchronous data link control (SDLC). A discipline for managing synchronous, code-transparent, serial-by-bit information transfer over a link connection. Transmission exchanges may be duplex or half-duplex over switched or nonswitched links. The configuration of the link connection may be point-to-point, multipoint, or loop. SDLC conforms to subsets of the Advanced Data Communication Control Procedures (ADCCP) of the American National Standards Institute and High-Level Data Link Control (HDLC) of the International Standards Organization.

SYSINFO Report. An RMF report that presents an overview of the system, its workload, and the total number of jobs using resources or delayed for resources.

SysOps. See system operations.

sysplex. A set of z/OS systems communicating and cooperating with each other through certain multisystem hardware components (coupling devices and timers) and software services (couple data sets).

In a sysplex, z/OS provides the coupling services that handle the messages, data, and status for the parts of a multisystem application that has its workload spread across two or more of the connected processors, sysplex timers, coupling facilities, and couple data sets (which contains policy and states for automation).

A Parallel Sysplex[®] is a sysplex that includes a coupling facility.

sysplex application group. A sysplex application group is a grouping of applications that can run on any system in a sysplex.

sysplex couple data set. A couple data set that contains sysplex-wide data about systems, groups, and members that use XCF services. All z/OS systems in a sysplex must have connectivity to the sysplex couple data set. See also couple data set.

Sysplex Timer. An IBM unit that synchronizes the time-of-day (TOD) clocks in multiple processors or processor sides. External Time Reference (ETR) is the z/OS generic name for the IBM Sysplex Timer (9037).

system. In SA z/OS, system means a focal point system (z/OS) or a target system (MVS, VM, VSE, LINUX, or CF).

System Automation for Integrated Operations

Management. (1) An outboard automation solution for secure remote access to mainframe/distributed systems. Tivoli System Automation for Integrated Operations Management, previously Tivoli AF/REMOTE, allows users to manage mainframe and distributed systems from any location. (2) The full name for SA IOM.

System Automation for OS/390. The full name for SA OS/390, the predecessor to System Automation for z/OS.

System Automation for z/OS. The full name for SA z/OS.

system console. (1) A console, usually having a keyboard and a display screen, that is used by an operator to control and communicate with a system. (2) A logical device used for the operation and control of hardware functions (for example, IPL, alter/display, and reconfiguration). The system console can be assigned to any of the physical displays attached to a processor controller or support processor. (3) In SA z/OS, the hardware system console for processor controllers or service processors of processors connected using SA z/OS. In the SA z/OS operator commands and configuration dialogs, SC is used to designate the system console for a target hardware processor.

System Display and Search Facility (SDSF). An IBM licensed program that provides information about jobs, queues, and printers running under JES2 on a series of panels. Under SA z/OS you can select SDSF from a pull-down menu to see the resources' status, view the z/OS system log, see WTOR messages, and see active jobs on the system.

System entry. A construct, created with the customization dialogs, used to represent and contain policy for a system.

System Modification Program/Extended (SMP/E). An IBM licensed program that facilitates the process of installing and servicing an z/OS system.

system operations. The part of SA z/OS that monitors and controls system operations applications and subsystems such as NetView, SDSF, JES, RMF, TSO, RODM, ACF/VTAM, CICS, IMS, and OPC. Also known as SysOps.

system services control point (SSCP). In SNA, the focal point within an SNA network for managing the configuration, coordinating network operator and problem determination requests, and providing directory support and other session services for end users of the network. Multiple SSCPs, cooperating as peers, can divide the network into domains of control, with each SSCP having a hierarchical control relationship to the physical units and logical units within its domain.

System/390 microprocessor cluster. A configuration that consists of central processor complexes (CPCs) and may have one or more integrated coupling facilities.

Systems Network Architecture (SNA). The description of the logical structure, formats, protocols, and operational sequences for transmitting information units through, and controlling the configuration and operation of, networks.

T

TAF. See terminal access facility.

target. A processor or system monitored and controlled by a focal-point system.

target control task. In SA z/OS, target control tasks process commands and send data to target systems and workstations through communications tasks. A target control task (a NetView autotask) is assigned to a target system when the target system is initialized.

target hardware. In SA z/OS, the physical hardware on which a target system runs. It can be a single-image or physically partitioned processor. Contrast with target system.

target system. (1) In a distributed system environment, a system that is monitored and controlled by the focal-point system. Multiple target systems can be controlled by a single focal-point system. (2) In SA z/OS, a computer system attached to the focal-point system for monitoring and control. The definition of a target system includes how remote sessions are established, what hardware is used, and what operating system is used.

task. (1) A basic unit of work to be accomplished by a computer. (2) In the NetView environment, an operator station task (logged-on operator), automation operator (autotask), application task, or user task. A NetView task performs work in the NetView environment. All SA z/OS tasks are NetView tasks. See also message monitor task, and target control task.

telecommunication line. Any physical medium, such as a wire or microwave beam, that is used to transmit data.

terminal access facility (TAF). (1) A NetView function that allows you to log onto multiple applications either on your system or other systems. You can define TAF sessions in the SA z/OS customization panels so you don't have to set them up each time you want to use them. (2) In NetView, a facility that allows a network operator to control a number of subsystems. In a full-screen or operator control session, operators can control any combination of subsystems simultaneously.

terminal emulation. The capability of a microcomputer or personal computer to operate as if it were a particular type of terminal linked to a processing unit to access data.

threshold. A value that determines the point at which SA z/OS automation performs a predefined action. See alert threshold, warning threshold, and error threshold.

time of day (TOD). Typically refers to the time-of-day clock.

Time Sharing Option (TSO). An optional configuration of the operating system that provides conversational time sharing from remote stations. It is an interactive service on z/OS, MVS/ESA, and MVS/XA.

Time-Sharing Option/Extended (TSO/E). An option of z/OS that provides conversational timesharing from remote terminals. TSO/E allows a wide variety of users to perform many different kinds of tasks. It can handle short-running applications that use fewer sources as well as long-running applications that require large amounts of resources.

timers. A NetView command that issues a command or command processor (list of commands) at a specified time or time interval.

Tivoli Workload Scheduler (TWS). A family of IBM licensed products that plan, execute and track jobs on several platforms and environments. The successor to OPC/A.

TOD. Time of day.

token ring. A network with a ring topology that passes tokens from one attaching device to another; for example, the IBM Token-Ring Network product.

TP. See transaction program.

transaction program. In the VTAM program, a program that performs services related to the processing of a transaction. One or more transaction programs may operate within a VTAM application program that is using the VTAM application program interface (API). In that situation, the transaction program would request services from the applications program using protocols defined by that application program. The application program, in turn, could request services from the VTAM program by issuing the APPCCMD macro instruction.

transitional automation. The actions involved in starting and stopping subsystems and applications that have been defined to SA z/OS. This can include issuing commands and responding to messages.

translating host. Role played by a host that turns a resource number into a token during a unification process.

trigger. Triggers, in combination with events and service periods, are used to control the starting and stopping of applications in a single system or a parallel sysplex.

TSO. See Time Sharing Option.

TSO console. From this 3270-type console you are logged onto TSO or ISPF to use the runtime panels for I/O operations and SA z/OS customization panels.

TSO/E. See Time-Sharing Option/Extended.

TWS. See Tivoli Workload Scheduler.

U

UCB. See unit control block.

unit control block (UCB). A control block in common storage that describes the characteristics of a particular I/O device on the operating system and that is used for allocating devices and controlling I/O operations.

unsolicited message. An SA z/OS message that is not a direct response to a command.

user task. An application of the NetView program defined in a NetView TASK definition statement.

Using. An RMF Monitor III definition. Jobs getting service from hardware resources (processors or devices) are **using** these resources. The use of a resource by an address space can vary from 0% to 100% where 0% indicates no use during a Range period, and 100% indicates that the address space was found using the resource in every sample during that period.

V

view. In the NetView Graphic Monitor Facility, a graphical picture of a network or part of a network. A view consists of nodes connected by links and may also include text and background lines. A view can be displayed, edited, and monitored for status information about network resources.

| **Virtual Server.** A logical construct that appears to
| comprise processor, memory, and I/O resources
| conforming to a particular architecture. A virtual server
| can support an operating system, associated
| middleware, and applications. A hypervisor creates and
| manages virtual servers.

| **Virtual Server Collection.** A set of virtual servers that
| supports a workload. This set is not necessarily static.
| The constituents of the collection at any given point are
| determined by virtual servers involved in supporting
| the workload at that time.

| **virtual Server Image.** A package containing metadata
| that describes the system requirements, virtual storage
| drives, and any goals and constraints for the virtual
| machine (for example, isolation and availability). The
| Open Virtual Machine Format (OVF) is a Distributed
| Management Task Force (DMTF) standard that
| describes a packaging format for virtual server images.

| **Virtual Server Image Capture.** The ability to store
| metadata and disk images of an existing virtual server.
| The metadata describes the virtual server storage,
| network needs, goals and constraints. The captured
| information is stored as a virtual server image that can
| be referenced and used to create and deploy other
| similar images.

| **Virtual Server Image Clone.** The ability to create an
| identical copy (clone) of a virtual server image that can
| be used to create a new similar virtual server.

Virtual Storage Extended (VSE). A system that consists of a basic operating system (VSE/Advanced Functions), and any IBM supplied and user-written programs required to meet the data processing needs of a user. VSE and the hardware that it controls form a complete computing system. Its current version is called VSE/ESA.

Virtual Telecommunications Access Method (VTAM). An IBM licensed program that controls communication and the flow of data in an SNA network. It provides single-domain, multiple-domain, and interconnected

network capability. Its full name is Advanced Communications Function for the Virtual Telecommunications Access Method. Synonymous with ACF/VTAM.

VM Second Level Systems Support. With this function, Processor Operations is able to control VM second level systems (VM guest systems) in the same way that it controls systems running on real hardware.

VM/ESA®. Virtual Machine/Enterprise Systems Architecture. Its current version is called z/VM.

volume. A direct access storage device (DASD) volume or a tape volume that serves a system in an SA z/OS enterprise.

VSE. See Virtual Storage Extended.

VTAM. See Virtual Telecommunications Access Method.

W

warning threshold. An application or volume service value that determines the level at which SA z/OS changes the associated icon in the graphical interface to the warning color. See alert threshold.

workstation. In SA z/OS workstation means the *graphic workstation* that an operator uses for day-to-day operations.

write-to-operator (WTO). A request to send a message to an operator at the z/OS operator console. This request is made by an application and is handled by the WTO processor, which is part of the z/OS supervisor program.

write-to-operator-with-reply (WTOR). A request to send a message to an operator at the z/OS operator console that requires a response from the operator. This request is made by an application and is handled by the WTO processor, which is part of the z/OS supervisor program.

WTO. See write-to-operator.

WTOR. See write-to-operator-with-reply.

WWV. The US National Institute of Standards and Technology (NIST) radio station that provides standard time information. A second station, known as WWVB, provides standard time information at a different frequency.

X

XCF. See cross-system coupling facility.

XCF couple data set. The name for the sysplex couple data set prior to MVS/ESA System Product Version 5 Release 1. See also sysplex couple data set.

XCF group. A set of related members that a multisystem application defines to XCF. A member is a specific function, or instance, of the application. A member resides on one system and can communicate with other members of the same group across the sysplex.

XRF. See extended recovery facility.

Z

z/OS. An IBM mainframe operating system that uses 64-bit real storage. See also Base Control Program.

z/OS component. A part of z/OS that performs a specific z/OS function. In SA z/OS, component refers to entities that are managed by SA z/OS automation.

z/OS subsystem. Software products that augment the z/OS operating system. JES and TSO/E are examples of z/OS subsystems. SA z/OS includes automation for some z/OS subsystems.

z/OS system. A z/OS image together with its associated hardware, which collectively are often referred to simply as a system, or z/OS system.

- | **z196.** See IBM Enterprise 196 (z196).
- | **zAAP.** See IBM System z Application Assist Processor (zAAP).
- | **zBX.** See IBM zEnterprise BladeCenter Extension (zBX).
- | **zBX blade.** See IBM zEnterprise BladeCenter Extension (zBX) blade.
- | **zCPC.** The physical collection of main storage, central processors, timers, and channels within a zEnterprise mainframe. Although this collection of hardware resources is part of the larger zEnterprise central processor complex, you can apply energy management policies to zCPC that are different from those that you apply to any attached IBM zEnterprise BladeCenter Extension (zBX) or blades. See also central processor complex.
- | **zIIP.** See IBM System z Integrated Information Processor (zIIP).
- | **zEnterprise.** See IBM zEnterprise System (zEnterprise).

Numerics

390-CMOS. Processor family group designator used in the SA z/OS processor operations documentation and in the online help to identify any of the following

S/390 CMOS processor machine types: 9672, 9674, 2003, 3000, or 7060. SA z/OS processor operations uses the OCF facility of these processors to perform operations management functions. See OCF-based processor.

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