Tivoli® System Automation for z/OS

IBM

Version 3 Release 2

Operator's Commands

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IBM

Version 3 Release 2

SC33-8265-05

Operator's Commands

SC33-8265-05

┌─ **Note!** ───┐
  Before using this information and the product it supports, read the information in "Notices" on page xi.
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Notices

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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/Library Server versions of z/OS books in the Internet library at:

http://www.ibm.com/servers/eserver/zseries/zos/bkserv/

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

The following table shows the information units in the System Automation for z/OS library:

Table 1. System Automation for z/OS Library

Title	Order Number
IBM Tivoli System Automation for z/OS Planning and Installation	SC33-8261
IBM Tivoli System Automation for z/OS Customizing and Programming	SC33-8260
IBM Tivoli System Automation for z/OS Defining Automation Policy	SC33-8262
IBM Tivoli System Automation for z/OS User's Guide	SC33-8263
IBM Tivoli System Automation for z/OS Messages and Codes	SC33-8264
IBM Tivoli System Automation for z/OS Operator's Commands	SC33-8265
IBM Tivoli System Automation for z/OS Programmer's Reference	SC33-8266
IBM Tivoli System Automation for z/OS CICS Automation Programmer's Reference and Operator's Guide	SC33-8267
IBM Tivoli System Automation for z/OS IMS Automation Programmer's Reference and Operator's Guide	SC33-8268
IBM Tivoli System Automation for z/OS TWS Automation Programmer's Reference and Operator's Guide	SC23-8269
IBM Tivoli System Automation for z/OS End-to-End Automation Adapter	SC33-8271
IBM Tivoli System Automation for z/OS Monitoring Agent Configuration and User's Guide	SC33-8337

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/servers/eserver/zseries/software/sa

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/servers/eserver/zseries/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®, VSE/ESA™, and Clusters for AIX® and
Linux™:

- The Internet. You can access IBM message explanations directly from the LookAt
  Web site at http://www.ibm.com/servers/eserver/zseries/zos/bkserv/lookat/.
- 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*
  (SK3T4271) 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
  http://www.ibm.com/servers/eserver/zseries/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* (SK3T4271).
- The LookAt Web site (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 SC33-8265-05

This document contains information previously presented in System Automation
for z/OS V3R2.0 Operator's Commands, SC33-8265-04.

New Information

The following commands have been introduced:
- "INGDLA" on page 103
- "INGHWSRV" on page 119

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

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

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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, refer to *IBM Tivoli System Automation for z/OS User's Guide*.

Table 2. Overview of Commands

Type of command	Function	Where entered	Notes
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	Precede with ISQCCMD command
	Control hardware processors	NetView console or NMC	

Understanding Terms

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 resource or application group.

Type
The 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 all resources of a system. SYG is created automatically. This is the application group which contains all resources of a particular system.

> **SYS** Indicates that the resource is a system.

System The system name specifies the system where the resource is defined. The system parameter is not used for sysplex application groups.

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.

Using Fragments:

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

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 fragments of a fully qualified resource name. 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 fragment 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.

```
AOFKSEL4              SA z/OS - Command Dialogs    Line  1  of 4
Domain ID  = IPSNO    ---------- INGINFO ----------    Date = 02/24/00
Operator ID = NETOP1                                   Time = 11:12:00

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

Sel  Name        Type System   Description
---  ----------- ---- -------- -------------------------------------------
 _   TSO         APL  KEY1     Time Sharing Option
 _   TSO         APL  KEY2     Time Sharing Option
 _   TSO         APL  KEY3     Time Sharing Option
 _   TSO         APL  KEY4     Time Sharing Option




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

Figure 1. Resource Selection Panel

Subsystem

The automation agent administrates subsystems. A subsystem is also a resource, as for example in an application group. A subsystem always leads to a resource such as *name/APL/system*. For further information on subsystems in SA z/OS refer to *IBM Tivoli System Automation for z/OS User's Guide*.

Application

An application is an z/OS subsystem, started task, batch job or non-MVS resource that runs on a system in the SA z/OS enterprise. An application cannot be linked to a system directly. It must be defined as part of an application group, and it may belong to more than one application group. For further information on how to define an application to SA z/OS, refer to *IBM Tivoli System Automation for z/OS Defining Automation Policy*.

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.

```
                                (3)
       (1)          (2)     ┌─ALL──┐                       (5)    (6)
►►──────────ASample──────┬─┬─SOME─┬─┬──────────▼─job_number────────►◄
                         │ └─NONE─┘ │  (4)
                         │          ├─E─┤
                         │          └─Q─┘
```
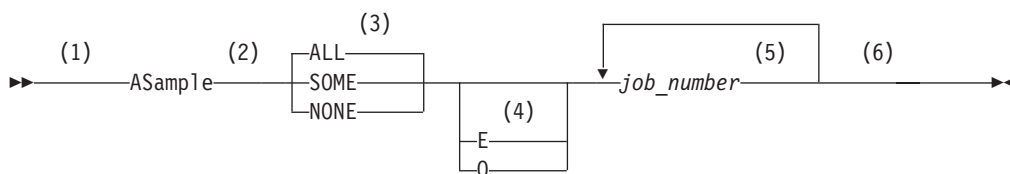
Format of Syntax Diagrams

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.

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

This part describes SA z/OS system operations commands — their format, and specifics of how to use them.

Refer to *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 which allows you to select a command dialog panel for a specific system operations command. For further information on how to issue system operations commands, refer to *IBM Tivoli System Automation for z/OS User's Guide*.

Overview of Commands that Operate Sysplexwide

The following system operations commands operate sysplexwide:

DISPEVTS
INGAMS
INGCF
INGCICS
INGEVENT
INGHIST
INGIMS
INGINFO
INGLIST
INGMOVE
INGOPC
INGPLEX
INGRELS
INGREQ
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, refer to *IBM Tivoli System Automation for z/OS User's Guide*.

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Additional Parameters for System Operations Commands

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

TARGET

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

The syntax is as follows:
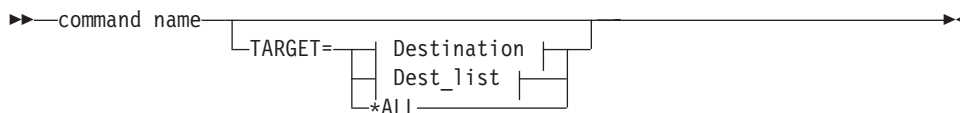
Destination:

Dest_list:

Where:

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 respective syntax diagrams for information about whether *ALL is supported.

The search sequence 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
- 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.

Note: The following only applies to commands that do **not** operate sysplexwide.

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 specific system.
- When processing the command in line mode, SA z/OS checks whether or not 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 the following selection panel where you can select the resource, or resources where 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
         _     AOCB      IPUFB
         _     AOCC      IPUFC
         _     AOCD      IPUFD
         _




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

Figure 2. Resource Selection Panel 1 -- 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 are processed locally.

Note: The following only applies to sysplexwide commands.

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

```
AOFKSEL4                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  AOCB      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  AOCD      Parent for all STD* appl 05/16/00 06:25
 _   STDT000AN1A  APL  AOCA      Child of AN10 (child tree ---  AN1B)
 _   STDT000AN1A  APL  AOCB      Child of AN10 (child tree ---  AN1B)
 _   STDT000AN1A  APL  AOCC      Child of AN10 (child tree ---  AN1B)
 _   STDT000AN1A  APL  AOCD      Child of AN10 (child tree ---  AN1B)
 _   STDT000AN1B  APL  AOCA
 _   STDT000AN1B  APL  AOCB
 _   STDT000AN1B  APL  AOCC
 _
Command ===>
     PF1=Help    PF2=End     PF3=Return
     PF6=Roll                PF8=Forward              PF12=Retrieve
```

Figure 3. Resource Selection Panel 2 -- Sysplexwide

OUTMODE

This parameter lets you specify the output mode of a command. The syntax is
as follows:

```
►►─Command name─┬──────────────────────────┬─────────────────────────────►◄
                └─OUTMODE=─┬─LINE───┐
                           ├─AUTO───┤
                           └─NETLOG─┘
```

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.
- Line mode output is not processed by the message automation table and
  is not written to the netlog. To obtain output from a command such as
  DISPSTAT in 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 can be issued within a NetView PIPE by
  using the OUTMODE=LINE parameter, unless noted otherwise in the
  command description.
- System operations commands supporting the OUTMODE=LINE option
  can be used in user-written clists. Note however, that the format of the
  output may change for follow-on Releases.
- If you work with OUTMODE=LINE no prompt panel is displayed.

- If no value is specified, the decision whether to display the command output by means of a fullscreen panel or in line mode is based on the NetView task type the command is running on.

AUTO
> Specifies that, when the task that the clist runs on is unattended, the output of the command is written to the NetView netlog. Otherwise the output is written to the console.

NETLOG
> Specifies that the output of the command is written to the NetView netlog

OUTDSN
> This parameter lets you specify the name of the data set that is to contain the output of the command. You can specify a sequential data set or a member of a partitioned data set.
>
> The minimum record length is 80 bytes, except for the DISPSTAT and INGLIST commands where the minimum record length is 256 bytes.
>
> The data set must already exist.
>
> The OUTDSN parameter forces OUTMODE=LINE.
>
> **Note:** If OUTDSN specifies a data set that is already allocated to NetView (for example DSILIST) then the exclusive ENQ that is issued when OUTDSN is used will not be removed until NetView is stopped. For this reason it is recommended that pre-allocated data sets not be used for OUTDSN.

Deciding the Format of the Command Output (Fullscreen only)

Most of the automation manager commands support the SORT and FIND subcommands.

Sorting a List

The SORT subcommand lets you display a list ordered according to certain criteria. You can specify the following:

sort_order
> Specifies the sort order. It can be one of the following:
>
> **A**   The list is displayed in ascending order. This is the default.
>
> **D**   The list is displayed in descending order.

coln   Specifies the column to be sorted. More than one column can be specified 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.

The syntax of the SORT subcommand is as follows:

Searching for Strings

The FIND subcommand searches the display data for the 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. With the FIND and RFIND commands you can specify the following parameters:

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

direction
Specifies the direction used for the search. The direction can be:

Next   Forward direction. This is the default. It can be abbreviated to N.

Previous
Backward direction. It can be abbreviated to P.

The syntax of the FIND subcommand is as follows:

```
                              ┌─N─┐
►►──FIND──searchstring────────┼───┼──────────────────────────────────►◄
                              └─P─┘
```

ACF

Purpose

The ACF command is used to load automation control file data. You can use ACF to refresh data of a particular system if it does not affect automation manager configuration data.

> **Recommendation**
> Use the INGAMS command rather than the ACF command to load or refresh an automation control file. Thus, you can make sure that the configuration matches the automation manager and the automation agents.

Syntax

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.

Use the following syntax to:
* Load an automation control file
* Load and save an automation control file using the NetView save/restore facility for subsequent warm starting

```
                ┌─COLD────┐   ┌───────┐
►►──ACF──────┬──┼─────────┼───┼─,SAVE─┼─────────────────►◄
             │  └─REFRESH─┘   └───────┘
             └──WARM──┬──────────────┐
                      └─,REFRESH──┬───────┐
                                  └─,SAVE─┘
```
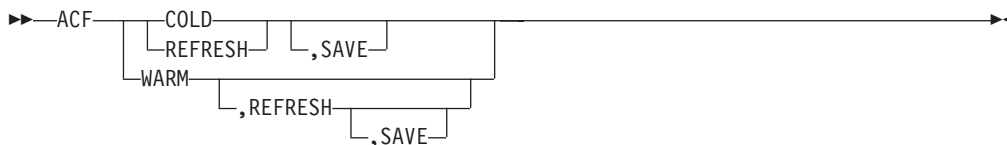
To display the status of the automation control file use the following syntax:

```
▶▶──ACF──STATUS─────────────────────────────────────────────────────▶◀
                 └─,CACHE─┘
```

To save the current automation environment using the NetView Save/Restore facility for subsequent warm starting, use the following syntax:

```
▶▶──ACF──SAVE──────────────────────────────────────────────────────▶◀
```

To check the consistency of ACF data with the automation manager configuration and to test the automation tables that are specified in the System Info policy, use the following syntax:

```
                 ┌─,TOKEN=current_token─┐   ┌─,DSN=current_dsn──┐
▶▶──ACF──CHECK──┼─,TOKEN=token─────────┼───┴─,DSN=dataset_name─┴────▶◀
                 └─,TOKEN=*─────────────┘
```

To reload the automation tables that are specified in the System Info policy, use the following syntax:

```
▶▶──ACF──ATLOAD────────────────────────────────────────────────────▶◀
```

Parameters

ATLOAD
> Reloads the automation tables that are specified in the System Info policy.

CACHE
> Displays information about the ACF that is currently stored in the NetView save/restore database.
>
> **Note:** The data displayed using this option will only be as up to date as when the last AOF623I message was issued.

CHECK
> Verifies the ACF for validity and tests the automation tables that are specified in the System Info policy.

COLD
> Reloads the currently loaded automation control file data from disk. Automation is disabled while the automation control file load is performed.

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.

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: INGAMS REFRESH will not delete globals that were associated with ENTRY TYPEs that were deleted from the policy database before the last build was done if those ENTRY TYPEs were not associated with a subsystem. However, if a keyword/value is removed from the ENTRY TYPE, this is a change to the ENTRY TYPE, and consequently an INGAMS REFRESH will rebuild the ENTRY TYPE with the result that the deleted keyword/value pair is removed from the globals. All deleted entry types and their associated globals will be reset during the next SA z/OS COLD start or during ACF COLD processing.

SAVE
The SAVE parameter will save the current automation environment using the NetView SAVE/RESTORE facility. The saved automation environment is used for future WARM starting.

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

TOKEN=
The configuration token that the ACF should be validated against.

current_token
The token that is currently in use (displayed via 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.

WARM
Restores automation control file data from cache. Automation is disabled while the automation control file load is performed.

Restrictions and Limitations

- If you use COLD/WARM, automation is disabled while the ACF LOAD is in progress. If you use REFRESH, 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 SAVE function is rejected if any actions that were defined for the startup or shutdown of subsystems have been modified during runtime with the INGMDFY command.

Usage

- ACF performs two flag checks when the automation control file is reloaded, restored or saved. The checks are of the Automation flags for

MVSESA.RELOAD.CONFIRM and MVSESA.RELOAD.ACTION. The action flag is checked only if the reload, restore or save 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 or restore.

If the flag is found to be off, the operator cannot reload or restore 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 or restore request. If AOFCONFIRM is null, SA z/OS will proceed with the reload or restore.

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 or restore from an exit on this flag. Refer to *IBM Tivoli System Automation for z/OS Defining Automation Policy* and to *IBM Tivoli System Automation for z/OS Customizing and Programming* for further information.

Messages

The following is a list of messages that are issued during the operation of ACF.

For the load function (COLD/REFRESH/WARM):

```
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 ACFZ999 CURRENTLY BEING USED FOR THE CONTROL FILE
AOF006I BUILT     BY opid     ON 02/22/00 AT 18:05:17
AOF006I REFRESHED BY opid     ON 03/09/00 AT 16:42:51
AOF006I CONFIGURATION TOKEN   = 200002221801085A0345229673
AOF006I CONFIGURATION DATASET = AOC.GDGS.ACF.G0007V00
AOF002I END OF MULTI-LINE MESSAGE GROUP
```

For the status function (STATUS,CACHE):

```
AOF005I MEMBER ACFZ999 CURRENTLY BEING SAVED IN THE CACHE
AOF006I BUILT     BY opid     ON  02/22/00 AT 18:05:17
AOF006I SAVED     BY opid     ON 03/09/00 AT 16:42:51
AOF006I CONFIGURATION TOKEN   =  200002221801085A0345229673
AOF006I CONFIGURATION DATASET = AOC.GDGS.ACF.G0007V00
AOF002I END OF MULTI-LINE MESSAGE GROUP
```

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 `aochelp` by itself, you see a list of commands to choose from, as shown in Figure 4 on page 19. 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     ---------- AOCHELP  ----------   Date = 09/01/06
Operator ID = NETOP1                                    Time = 11:57:56

         1  AOCHELP          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  DISPASF          Display status file information
         7  DISPAUTO         Display commands
         8  DISPERRS         Display error information
         9  DISPEVT          Display event information
        10  DISPEVTS         Display all events in a Sysplex
        11  DISPFLGS         Display automation flag information
        12  DISPGW           Display NNT gateway information
        13  DISPINFO         Display subsystem information
        14  DISPMSGS         Display message assignment information

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

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

Figure 4. AOCHELP 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™ EXECs
- REXXTRACE for a specific REXX EXEC
- Tracing for a particular message

Syntax
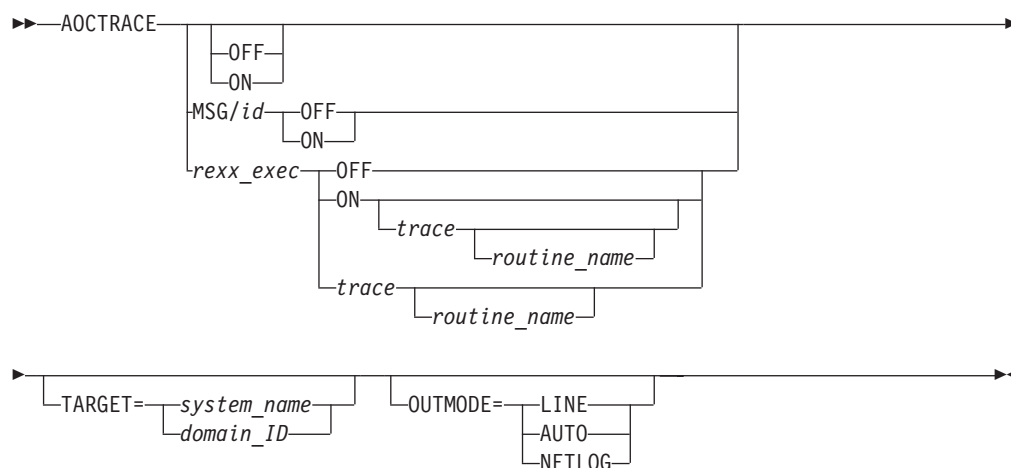
Parameters

MSG/*id*
> The message being traced.

rexx_exec
> The name of the REXX EXEC that you want to debug.

ON
> Turns the debugging feature on.
>
> If you *do not* specify a REXX EXEC or message, AOCTRACE activates a global debugging flag. This causes each SA z/OS system operations REXX EXEC 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 EXEC or message, only that REXX EXEC or message writes messages to the netlog. The netlog shows when and where the REXX EXEC was called, and what parameters were given.
>
> If you specify a REXX EXEC or message but not a trace, an intermediate level of debugging is activated for the specified REXX EXEC or message. This causes the REXX EXEC to issue a number of messages describing its actions. Note, however, that not all REXX EXECs support this facility.

OFF
> Turns the debugging feature off.
>
> If a REXX EXEC is specified, this option deactivates both the intermediate and REXX tracing for the specified REXX EXEC.
>
> If a message is specified, this option deactivates message tracing for the specified message.
>
> If a REXX EXEC or message is not specified, this option disables the global trace.

trace
> The type of REXX trace that you want for the specified REXX EXEC. 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 routine being traced.

TARGET
> For information on the TARGET parameter, refer to "The TARGET Parameter" on page 10.

OUTMODE
> For information on the OUTMODE parameter, refer to "The OUTMODE Parameter" on page 12.

Restrictions and Limitations

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

Using the trace on certain REXX EXECs can cause execution problems, particularly with REXX EXECs which 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 is displayed.

```
AOFKAANL                   SA z/OS  - Command Dialogs      Line  1    of 8
Domain ID   = IPSFP      ---------- AOCTRACE ----------    Date = 01/29/05
Operator ID = NETOP1                                       Time = 18:14:18

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   Debug Trace 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 clists (REXX routines) 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 by means of 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 Subroutine/Messages 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 routine.
- The **System** field shows the name of the system where debugging or tracing is active.
- The **Debug** field indicates whether or not debug mode is on. Y indicates that debug mode is turned on.
- The **Trace** field shows the Trace option specified for the REXX routine.
- The **Subroutines 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 clist. The panel shown in Figure 6 on page 23 is displayed where you can specify the clist name and optionally overtype the other settings.

C   Allows you to modify the debug or trace settings of the selected clist. The panel shown in Figure 6 on page 23 is displayed showing the current settings. Here you can overtype the appropriate values.

D   Turns off the debug option for the selected clist.

R   Turns off the debug and trace option for the selected clist.

T   Turns off the trace option for the selected clist.

Use the PF9 key to refresh the data displayed.

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

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

Figure 6 on page 23 is displayed when the command code A or C is specified on the panel in Figure 5 on page 21, or a clist 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 clist.

```
AOFKAAND                    SA z/OS  - Command Dialogs
Domain ID   = IPUN8      ---------- AOCTRACE ----------    Date = 12/20/02
Operator ID = NETOP1                                       Time = 13:51:05

  Specify or revise the following parameters:

      Clist name                    _____
            debug mode              ___         (ON or OFF)
            REXX trace option       _           (A, R, I, C, E, F, L, O N)

      Common routines to be traced: (* for all)
            _____
            _____
            _____
            _____




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

Figure 6. AOCTRACE Command Dialog Panel for a Specific Clist

The following fields can be entered:

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

debug mode
> Specify ON to turn on the clist's debug mode.

REXX TRace option
> Specify the trace setting for the clist.

> **Notes:**
> 1. The clist debug setting need not be ON to use clist trace.
> 2. Specifying REXX trace option A, I, or R makes the individual clist debugging ineffective.

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

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

```
►►──DISPACF──entry_name──┬─────*─────┬──┬──────────────────────────────────────┬──►
                         └───abc*────┘  └─TARGET=─┬──┤ Destination ├──┬─┘
                                                  ├──┤ Dest_list   ├──┤
                                                  └─*ALL────────────┘

►──┬──────────────────────────────────────┬──►◄
   └─OUTMODE=─┬──LINE───┬─┘
              ├──AUTO───┤
              └──NETLOG─┘
```

Destination:

```
├──┬──system_name──┬──────────────────────────────────────────┤
   ├──domain_ID────┤
   └──sysplex_name─┘
```

Dest_list:

```
                  ┌──────,──────┐
├──(──▼──┤ Destination ├──)──────────────────────────────────┤
```
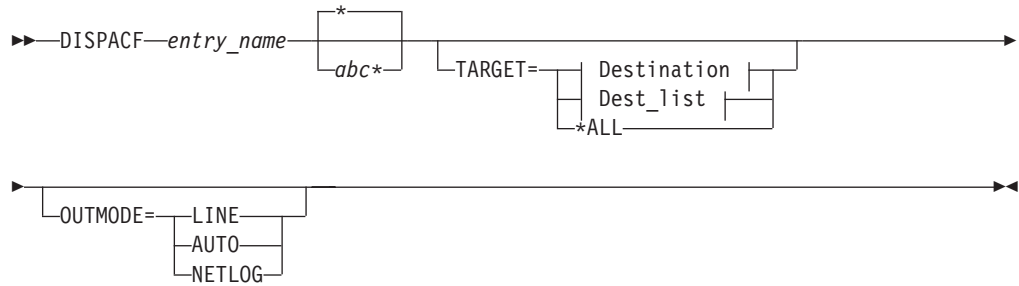
Parameters

entry_name
> Specifies the name of the entry in the automation control file.
>
> If you specify *, all entry names are displayed.

abc*
> 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, refer to "The TARGET Parameter" on page 10.

OUTMODE
> For information on the OUTMODE parameter, refer to "The OUTMODE Parameter" on page 12.

Restrictions and Limitations

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

The data that DISPACF displays is shown in uppercase only.

Examples

If you enter dispacf subsystem, you will see a fullscreen display similar to Figure 7 on page 25.

```
 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 ANTMAIN
  JOBTYPE         = MVS
  RESTARTOPT      = ALWAYS
  SHUTDLY         = 00:01:00
  STRTDLY         = 00:02:00
  TERMDLY         = 00:00:12
  EXTSTART        = ALWAYS
  EXTSTOP         = ALWAYS
  JOB             = ANTMAIN
  SCHEDSUB        = MSTR

 Command ===>
    PF1=Help      PF2=End       PF3=Return                PF6=Roll
                  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
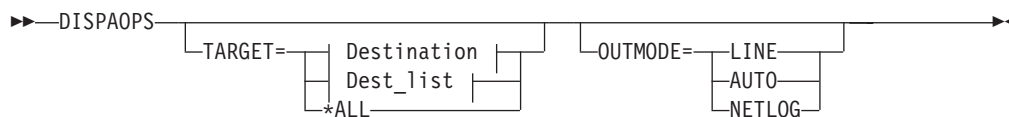
```
►►──DISPAOPS──┬──────────────────────────────┬──┬──────────────────────┬──►◄
              └─TARGET=─┬─ Destination ─┬─────┘  └─OUTMODE=─┬─LINE───┬──┘
                        ├─ Dest_list ───┤                   ├─AUTO───┤
                        └─*ALL──────────┘                   └─NETLOG─┘
```

Destination:

```
├──┬─system_name──┬──────────────────────────────────────────────────────┤
   ├─domain_ID────┤
   └─sysplex_name─┘
```

Dest_list:

```
            ┌──────,──────┐
            │             │
├──(────────▼── Destination ──┴──)──────────────────────────────────────┤
```

Parameters

TARGET
   For information on the TARGET parameter, refer to "The TARGET Parameter" on page 10.

OUTMODE
   For information on the OUTMODE parameter, refer to "The 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 27.

```
 AOFK2SO                    SA z/OS  - Command Dialogs    Line  1   of 20
 Domain ID   = IPUF9       ---------- DISPAOPS ----------   Date = 12/17/97
 Operator ID = NETOP1                                       Time = 15:19:59

             Automated
  System     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       RECOPER         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=Roll
                                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
- Automation policy information

Syntax

```
►►──DISPAPG──applgroup────────────────────────────────────────────────────►
                          └─TARGET=──┬─system_name─┬─┘
                                     ├─domain_ID───┤
                                     └─sysplex_name─┘

►──┬──────────────────────────────────────────────┬──►◄
   └─OUTDSN=dsname──OUTMODE──=──┬─LINE───┬─┘
                                ├─AUTO───┤
                                └─NETLOG─┘
```
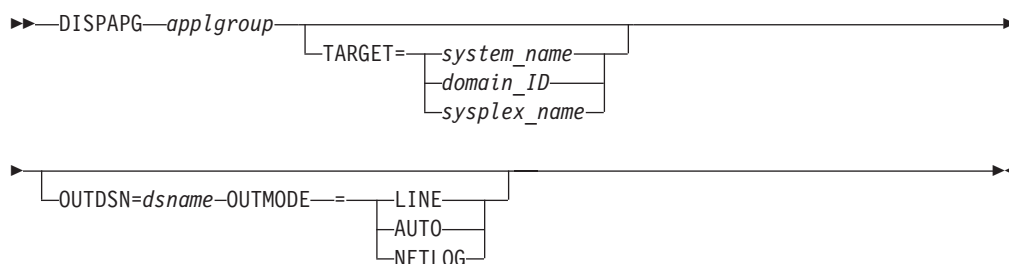
Parameters

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, refer to "The TARGET Parameter" on page 10.

OUTDSN
> For information on the OUTDSN parameter, refer to "The OUTMODE Parameter" on page 12.

OUTMODE
> For information on the OUTMODE parameter, refer to "The 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 on page 29.

```
 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   ==>  MOVSYSTM/APG/KEY1                  format: name/type/system
  System     ==>  _____        System name, domain ID or sysplex name

  Resource          : MOVSYSTM/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

You can use the **Resource** and **System** 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 includes:

*   The automation status
*   The operator ID that last changed the record
*   The last threshold that was exceeded
*   The date and time of last monitoring cycle

Syntax

```
►►─DISPASF──────────────────────────────────────────────────────────────►
           └─identifier─┘   └─TARGET=─┬─ Destination ─┬─┤
                                      ├─ Dest_list ───┤
                                      └─*ALL──────────┘

►──────────────────────────────────────────────────────────────────────►◄
     └─OUTMODE=─┬─LINE───┬─
                ├─AUTO───┤
                └─NETLOG─┘
```

Destination:

```
├──┬─system_name─┬──────────────────────────────────────────────────────────┤
   ├─domain_ID───┤
   └─sysplex_name┘
```

Dest_list:

```
         ┌─,─────────────┐
         │   ▼           │
├──(─────┴──┤ Destination ├──┴──)──────────────────────────────────────────┤
```
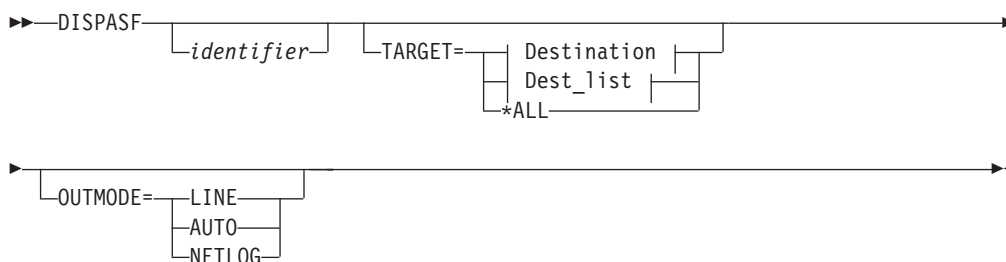
Parameters

identifier
> Specifies either a subsystem name, or the name of any resource in the
> automation status file. You can specify any subsystem identified in the
> automation control file. If you do not specify a parameter, a panel is displayed
> on which you can specify an identifier.

TARGET
> For information on the TARGET parameter, refer to "The TARGET Parameter"
> on page 10.

OUTMODE
> For information on the OUTMODE parameter, refer to "The 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 TARGET=*ALL`, you will see a panel similar to Figure 10 on
page 31.

```
AOFK3D0X                SA z/OS  - Command Response    Line  1   of 26
Domain ID  = IPUF9      ---------- DISPASF  ----------  Date = 09/02/06
Operator ID = NETOP1                                   Time = 12:32:46


Command = ASF ID=TSO,REQ=DISP
SYSTEM = KEY1      STATISTICS DISPLAY REQUESTED FOR TSO THRU TSO
--------------------------------------------------------------------------------
STATISTICS DISPLAY REQUESTED FOR TSO THRU TSO
ID= TSO , TYPE= SUBSYSTEM , STATUS= UP
 LAST UPDATED BY OPERATOR AUTWRK03
 LAST AVAIL EVENT: TS= 08/30/2006 18:08:04 , TYPE=
 LAST STOP  EVENT: TS= 08/30/2006 18:28:40 , TYPE=
 LAST DOWN  EVENT: TS= 08/30/2006 18:28:40 , TYPE=
 LAST THRESHOLD EXCEEDED -
 OPERATOR NOTIFIED: N
 LAST STATUS CHANGE DATE= 08/31/2006 , TIME= 05:10 , OPID= AUTWRK03
 LAST MONITORED DATE= 08/31/2006 , TIME= 05:10
 NO ERROR DATA AVAILABLE
END OF MULTI-LINE MESSAGE GROUP



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 from which you can initiate command dialogs that display information about your automation.

Syntax

```
►►──DISPAUTO───────────────────────────────────────────────────────►◄
           └─Additional parameters─┘
```

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 on page 32 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=Roll
                 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 for which errors
have been recorded in the status file.

Syntax

```
►►──DISPERRS─────────────────────────────────────────────────────────────────►
            └─filter─┘   └─TARGET=─┬─ Destination ─┬─┐
                                   └─ Dest_list ───┘ │
                                   └─*ALL──────────────┘

►─────────────────────────────────────────────────────────────────────────◄
   └─OUTMODE=─┬─LINE──┬─┘
             ├─AUTO──┤
             └─NETLOG┘
```

Destination:

```
├─┬─system_name──┬──────────────────────────────────────────────────┤
  ├─domain_ID────┤
  └─sysplex_name─┘
```

Dest_list:

```
          ,
   ┌──────────────┐
├──(──▼─┤ Destination ├──)──────────────────────────────────┤
```

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.

TARGET
For information on the TARGET parameter, refer to "The TARGET Parameter" on page 10.

OUTMODE
For information on the OUTMODE parameter, refer to "The 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 will see a panel similar to Figure 12.

```
AOFKAAD5                SA z/OS  - Command Dialogs    Line  1    of 25
Domain ID  = IPSFP      ---------- DISPERRS ----------    Date = 11/10/97
Operator ID = NETOP1                                      Time = 15:20:31

   System    Resource    Type        Thrs  No Date      Time
   --------  ----------- ----------- ----  -- --------  -----
   KEY6      AOFIPLDT    CONTROL            8 11/06/97  06:00
   KEY6                                     7 10/27/97  08:18
   KEY6                                     6 10/24/97  06:37
   KEY6                                     5 10/15/97  21:31
   KEY6                                     4 10/10/97  11:17
   KEY6                                     3 10/07/97  09:20
   KEY6                                     2 09/26/97  14:19
   KEY6                                     1 09/02/97  15:00
   KEY6      LLA         SUBSYSTEM          1 10/15/97  12:59
   KEY6      LOGREC      MVSESA             1 10/01/97  12:50
   KEY6      MVSDUMP     MVSESA      FREQ   4 10/15/97  14:59
   KEY6                                     3 10/15/97  14:59
   KEY6                                     2 10/15/97  14:59
   KEY6                                     1 10/15/97  14:59
   KEY6      SMFDUMP     MVSESA             1 10/15/97  18:34
   KEY6      SYSLOG      MVSESA      CRIT  10 11/07/97  10:05
   KEY6                                     9 11/05/97  18:03
   KEY6                                     8 11/05/97  05:59
   KEY6                                     7 11/03/97  07:07
   KEY6                                     6 10/31/97  15:45
   KEY6                                     5 10/25/97  13:20
   KEY6                                     4 10/24/97  08:16

 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 that has been violated. 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

```
►►──DISPEVT──event─┬──────────────────────────────┬─┬────────────────────┬──────►
                   │        ┌─system_name─┐        │ │           ┌─LINE──┐ │
                   └─TARGET=┼─domain_ID───┼────────┘ └─OUTMODE=──┼─AUTO──┼─┘
                           └─sysplex_name─┘                     └─NETLOG─┘

►─┬──────────────┬────────────────────────────────────────────────────────────►◄
  └─WAIT=nnn─────┘
```
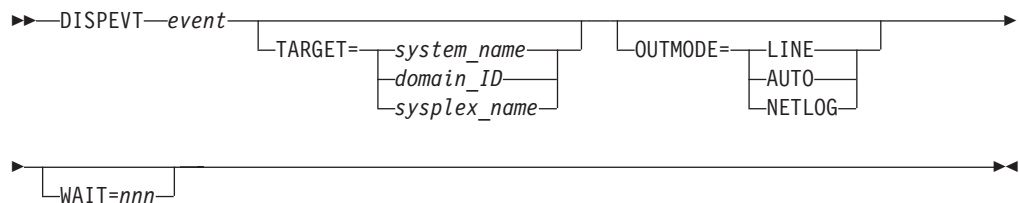
Parameters

event
    Specifies the name of the event.

TARGET
    For information on the TARGET parameter, refer to "The 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 DISPEVT command is processed there.

OUTMODE
    For information on the OUTMODE parameter, refer to "The 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 refer to "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
  System        ==> 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=Roll
                              PF9=Refresh                     PF12=Retrieve
```

Figure 13. DISPEVT Command Dialogs Panel - Result

- The **Event** field shows the name of the event. You can overwrite the event to initiate a new display.
- The **System** 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.
- 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
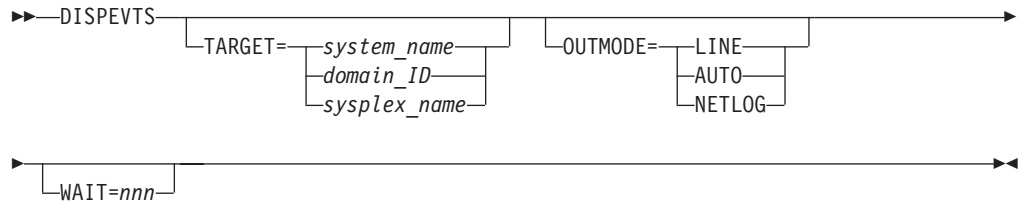
```
►►──DISPEVTS──────────────────────────────────────────────────────────────►
              └─TARGET=──┬─system_name──┬─┘  └─OUTMODE=──┬─LINE───┬─┘
                         ├─domain_ID────┤               ├─AUTO───┤
                         └─sysplex_name─┘               └─NETLOG─┘

►──────────────────────────────────────────────────────────────────────────►◄
   └─WAIT=nnn─┘
```

Parameters

TARGET
For information on the TARGET parameter, refer to "The 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, refer to "The 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 on page 37.

```
 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=Roll
                 PF8=Forward  PF9=Refresh                PF12=Retrieve
```

Figure 14. DISPEVTS Command Dialogs 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 38 is displayed.

```
 ┌────────────────────────────────────────────────────────────────────────┐
 │  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                │
 │                                                                          │
 │                                                                          │
 │    System    ==> _____      System name, domain ID or sysplex name    │
 │                                                                          │
 │                                                                          │
 │                                                                          │
 │                                                                          │
 │  Command ===>                                                            │
 │  F1=Help     F2=End      F3=Return                      F6=Roll          │
 │                                                         F12=Retrieve     │
 └────────────────────────────────────────────────────────────────────────┘
```

Figure 15. DISPEVTS Command Dialogs Panel - Action

- 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 **System** 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 for which explicit agent automation flags are defined, what those flags are, and what the effective automation flags resulting from them are.

Syntax
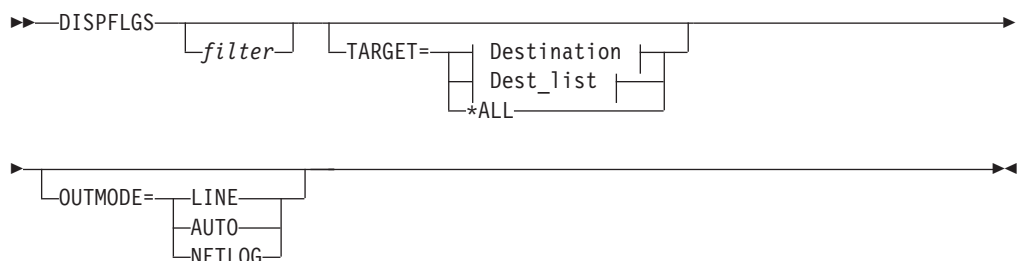
```
►►─DISPFLGS─────────────────────────────────────────────────────────────────►
              └─filter─┘   └─TARGET=─┬─Destination─┬─┐
                                     ├─Dest_list───┤ │
                                     └─*ALL────────┘

►─────────────────────────────────────────────────────────────────────────►◄
    └─OUTMODE=─┬─LINE───┐
               ├─AUTO───┤
               └─NETLOG─┘
```

Destination:

```
├──┬─system_name─┬──────────────────────────────────────────────┤
   ├─domain_ID────┤
   └─sysplex_name─┘
```

Dest_list:

```
                ┌─,──────────────┐
├──(──▼──┤ Destination ├──┴──)──────────────────────────────────┤
```

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, refer to "The TARGET Parameter" on page 10.

OUTMODE
> For information on the OUTMODE parameter, refer to "The 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 40.

DISPFLGS

```
AOFKAAAU                 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=Roll
                 PF8=Forward  PF9=Refresh               PF12=Retrieve
```
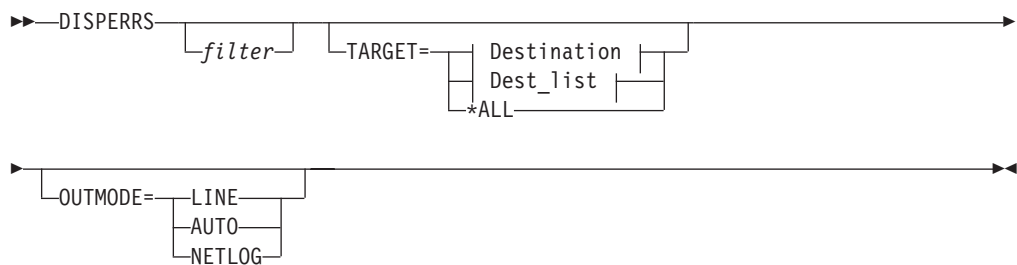
Figure 16. DISPFLGS Command Dialog Panel of SA z/OS

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.

Refer to *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 statistics.

Syntax
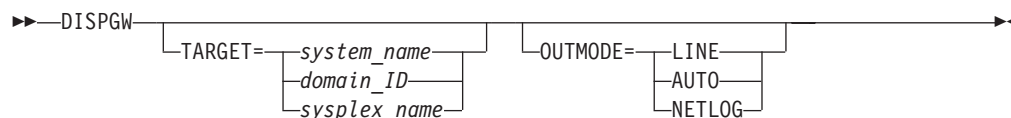
```
►►──DISPGW─────────────────────────────────────────────────────────►◄
             └─TARGET=──┬─system_name──┬─┘  └─OUTMODE=──┬─LINE───┬─┘
                        ├─domain_ID────┤              ├─AUTO───┤
                        └─sysplex_name─┘              └─NETLOG─┘
```

Parameters

TARGET
For information on the TARGET parameter, refer to "The TARGET Parameter" on page 10.

OUTMODE
For information on the OUTMODE parameter, refer to "The OUTMODE Parameter" on page 12.

Restrictions and Limitations

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

Usage

There are three 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 42.

DISPGW

```
 AOFK2GL              SA z/OS  - Command Dialogs    Line  1   of 11
 Domain ID   = IPUF9     ---------- DISPGW  ----------    Date = 12/17/97
 Operator ID = NETOP1                                     Time = 15:32:36
      System =  AOC9                            Focal Point =  IPSFM
 Domain  Sdfroot    Status    Description
 ------  --------   --------  -------------------------------------- --------
 IPSFM   KEY3       ACTIVE     CONNECTION TO IPSFM (KEY3)
 IPSFN              NOT STARTD CONNECTION TO IPSFN (KEY4)
 IPSFO              NOT STARTD CONNECTION TO IPSFO (KEY5)
 IPSFP              NOT STARTD CONNECTION TO IPSFP (KEY6)
 IPUFA              NOT STARTD CONNECTION TO IPUFA (AOCA)
 IPUFB              NOT STARTD CONNECTION TO IPUFB (AOCB)
 IPUFC              NOT STARTD CONNECTION TO IPUFC (AOCC)
 IPUFD              NOT STARTD CONNECTION TO IPUFD (AOCD)
 IPUFM   AOC7       ACTIVE     CONNECTION TO IPUFM (AOC7)
 IPUF8              NOT STARTD CONNECTION TO IPUF8 (AOC8)
 IPVFH              NOT STARTD CONNECTION TO IPVFH (TSCF2)




 Command ===>
   PF1=Help   PF2=End    PF3=Return                        PF6=Roll
                         PF9=Refresh            PF11=Right  PF12=Retrieve
```

Figure 17. DISPGW Command Dialog Panel 1

- The **Domain** field shows the domain ID of the system to which a gateway has been defined, known as the *gateway domain*.
- The **Sdfroot** 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 and NNT sessions:

  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.

  SESSFAIL
  > The attempt to start a session with the domain ended with a VTAM® request failure. Refer to DSI046I$ in the netlog for details.

- The **Description** field shows a description of the gateway domain, obtained from the automation control file.

If you press PF11 on this panel, a panel similar to Figure 18 on page 43 is displayed.

```
AOFK2GLR                SA z/OS  - Command Dialogs     Line  1    of 11
Domain ID   = IPUF9     ---------- DISPGW  ----------    Date = 11/26/99
Operator ID = NETOP1                                     Time = 16:01:19
      System = AOC9                            Focal Point =  IPUFM
Domain    via       Direct Inb/Outb Stat  Adjacent   Alt Adj   Product
------    ------    --------------------  --------   -------   --------------
IPSFM     IPSFM     ACTIVE    ACTIVE                           SA z/OS 2.3
IPSFN     IPSFN     ACTIVE    ACTIVE                           SA z/OS 3.1
IPSFO     IPSFO     INACTIVE  ACTIVE
IPSFP     IPSFP     INACTIVE  ACTIVE
IPUFA     IPUFA     INACTIVE  ACTIVE
IPUFB     IPUFB     INACTIVE  ACTIVE
IPUFC     IPUFC     INACTIVE  ACTIVE
IPUFD     IPUFD     INACTIVE  ACTIVE
IPUFM     IPUFM     ACTIVE    ACTIVE                           SA z/OS 3.1
IPUF8     IPUF8     INACTIVE  SESSFAIL
IPVFH     IPVFH     INACTIVE  INV OPID




Command ===>
   PF1=Help    PF2=End    PF3=Return                          PF6=Roll
                          PF9=Refresh    PF10=Left   PF11=Right   PF12=Retrieve
```

Figure 18. DISPGW Command Dialog Panel 2

- The **Domain** field shows the domain ID of the system to which a gateway has been defined, known as the *gateway domain*.
- The **Via** field shows the domain through which this system is communicating with the gateway domain and can have one of the following values:

  XCF   Indicates that XCF is used as the transport mechanism. This is the case when the gateway domain is residing in the same sysplex.

  *IP *   Indicates that the transport mechanism is via RMTCMD using IP.

  SNA   Indicates that the transport mechanism is via RMTCMD using SNA.

  RPC   Indicates that the "remote procedure call" technique is used as the transport mechanism.

  For downlevel SA z/OS systems, this field shows the domain through which this system is communicating with the gateway domain. NNT is used as the transport mechanism.
- The **Direct Inb/Outb Stat** field shows 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 **Adjacent** field shows the adjacent domain through which this gateway is connected.
- The **Alt Adj** field shows the alternate adjacent domain through which this gateway is connected.
- The **Product** field shows the automation product on the gateway domain.

If you press PF11 on this panel, a panel similar to Figure 19 on page 44 is displayed.

DISPGW

```
AOFK2GLC                  SA z/OS  - Command Dialogs     Line  1    of 11
Domain ID   = IPUF9     ---------- DISPGW   ----------    Date = 12/17/97
Operator ID = NETOP1                                      Time = 15:36:56
      System =  AOC9                          Focal Point =  IPSFM
Domain     Req to/from      Last out/in      INT to/from   Invalid   Loop back
------    -------------   ---------------    -------------  --------  ---------
IPSFM       148       71   DOMSTA   DOMSTA        0       0        0          0
IPSFN        20        0   DOMCON                 0       0        0          0
IPSFO        19        0   DOMCON                 0       0        0          0
IPSFP        20        0   DOMCON                 0       0        0          0
IPUFA        28        0   DOMCON                 0       0        0          0
IPUFB        23        0   DOMCON                 0       0        0          0
IPUFC        27        0   DOMCON                 0       0        0          0
IPUFD        25        0   DOMCON                 0       0        0          0
IPUFM        59       97   DOMSTA   DOMSTA        0       0        0          0
IPUF8        22        0   DOMCON                 0       0        0          0
IPVFH         0        0                          0       0        0          0




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

Figure 19. DISPGW Command Dialog Panel 3

- The **Domain** field is the same as on the previous panel.
- The **Req to/from** field shows the number of gateway requests to the gateway domain from this domain, and from the gateway domain to this domain.
- The **Last out/in** field shows the first 8 bytes of the last gateway request from this domain to the gateway domain, and the last gateway request from the gateway domain to this domain.
- The **Int to/from** field shows the number of gateway requests between the gateway domain and the other domains that were routed through this domain.
- The **Invalid** field shows the number of requests to this domain from the gateway domain that were invalid.
- The **Loop back** field shows the number of requests from this domain to the gateway domain that looped back to this domain.

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. Refer to "Examples" for more details.

Syntax

```
►►─── DISPINFO ── subsystem ──┬──────────────────────────────┬──┬───────────────────────┬──►◄
                              └─ TARGET= ──┬── system_name ──┘  ├── OUTDSN=dsname ──────┤
                                           ├── domain_ID ─────┤  └── OUTMODE= ──┬── LINE ──┤
                                           └── sysplex_name ──┘                 ├── AUTO ──┤
                                                                                └── NETLOG ┘
```

Parameters

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

TARGET
> For information on the TARGET parameter, refer to "The TARGET Parameter" on page 10.

OUTDSN
> For information on the OUTDSN parameter, refer to "The OUTDSN Parameter" on page 13.

OUTMODE
> For information on the OUTMODE parameter, refer to "The OUTMODE Parameter" on page 12.

Restrictions and Limitations

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

Examples

DISPINFO

```
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    Type  : NORM
 Last termination  : 09:46:38 on 09/01/06

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

Figure 20. 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, refer to the customization dialogs
and to *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 applicable the DISPINFO command invokes the INGCICS or INGIMS
commands, as shown in Figure 21 on page 47. For more information see
"INGCICS" on page 99 or "INGIMS" on page 120.

```
┌─────────────────────────────────────────────────────────────────────────────┐
│ EVEKYCMD              SA z/OS  - Command Dialogs    Line  1    of 3          │
│ Domain ID   = IPSFM    ---------- INGCICS ----------   Date = 05/06/05       │
│ Operator ID = NETOP1                                   Time = 08:49:12       │
│                                                                             │
│ Resource        => CICSK1H/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    =>                                                          │
│                 =>                                                          │
│                                                                             │
│ TASK STATUS                                                                 │
│ IEE341I CICSK1H         NOT ACTIVE                                          │
│                                                                             │
│                                                                             │
│                                                                             │
│                                                                             │
│                                                                             │
│                                                                             │
│                                                                             │
│ Command ===>                                                                │
│    PF1=Help      PF2=End      PF3=Return   PF4=DISPINFO      PF6=Roll        │
│                               PF9=Refresh                   PF12=Retrieve    │
└─────────────────────────────────────────────────────────────────────────────┘
```

Figure 21. INGCICS Command Dialog Panel

DISPMSGS

Purpose

The DISPMSGS command displays which automation operators receive the automated messages.

Syntax
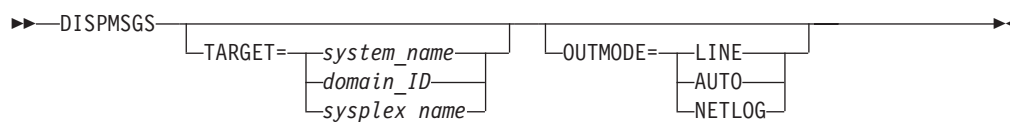
```
►►──DISPMSGS──────────────────────────────────────────────────────────────►◄
               └─TARGET=─┬─system_name─┬─┘  └─OUTMODE=─┬─LINE───┬─┘
                         ├─domain_ID───┤              ├─AUTO───┤
                         └─sysplex_name─┘              └─NETLOG─┘
```

Parameters

TARGET
For information on the TARGET parameter, refer to "The TARGET Parameter" on page 10.

OUTMODE
For information on the OUTMODE parameter, refer to "The 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 22 on page 48.

```
  AOFK2SM               SA z/OS  - Command Dialogs     Line  1    of 17
  Domain ID  = IPSNO     ---------- DISPMSGS ----------   Date = 06/27/00
  Operator ID = NETOP1          System = KEY3            Time = 15:05:53

  Message      Primary Receivers              Secondary Receivers
  -------      -----------------              -------------------
  '*AOF01'     AUTWRK01 AUTGSS   AUTSYS
               AUTBASE
  '*AOF02'     AUTWRK02 AUTGSS   AUTSYS
               AUTBASE
  '*AOF03'     AUTWRK03 AUTGSS   AUTSYS
               AUTBASE
  '*AOF04'     AUTWRK04 AUTGSS   AUTSYS
               AUTBASE
  '*AOF05'     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=Roll
                             PF9=Refresh           PF12=Retrieve
```

Figure 22. Authorized Message Receivers (DISPMSGS) 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

```
►►──DISPMTR──────────────────────────────────────────────────────────────►
            └─monitor─┬──────────────┬─┘   └─RESOURCE=resname─┘
                      └─REQ=DETAIL──┘


►──┬──────────────────────────┬──┬─OUTMODE=─┬─LINE───┬─┬──►◄
   └─TARGET=─┬─system_name─┬──┘            ├─AUTO───┤
             ├─domain_ID───┤              └─NETLOG─┘
             └─sysplex_name─┘
```
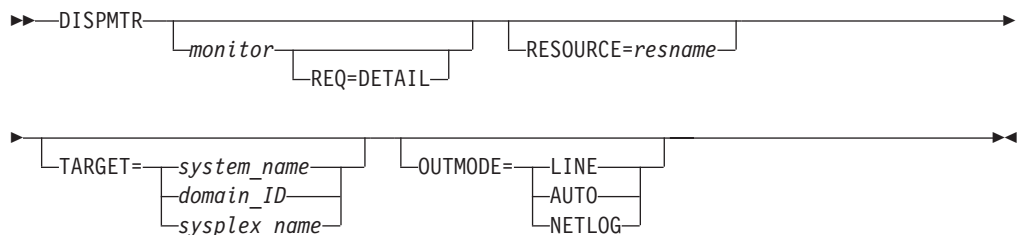
Parameters

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

resname
> The resource name for which the associated monitor, or monitors, should be displayed. 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, refer to "The TARGET Parameter" on page 10.

OUTMODE
> For information on the OUTMODE parameter, refer to "The OUTMODE Parameter" on page 12.

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 23 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
 --- ----------- -------- --------  ------------ -------------------
  _  CICSMON1     AOC8
  _  SAPMON       AOC8








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

Figure 23. DISPMTR Initial Command Dialog Panel

Pressing the PF11 key scrolls horizontally to the next screen of information. A panel similar to Figure 24 on page 50 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 = 13:15:07

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

Cmd Monitor      System   Status message
--- ----------- -------- -------------------------------------------
 _   CICSMON1    AOC8     TRANSIENT DATA QUEUE 65% FULL
 _   SAPMON      AOC8     APPLICATION SERVER RESONDING SLOWLY




 

 

 

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

Figure 24. DISPMTR Command Dialog Panel 2

Pressing the PF11 key again scrolls horizontally to the next screen of information.
A panel similar to Figure 25 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 = 13:15:15

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

Cmd Monitor      System   Description
--- ----------- -------- -------------------------------------------
 _   CICSMON1    AOC8     CICS Monitor 1
 _   SAPMON      AOC8     SAP Monitor




 

 

 

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

Figure 25. DISPMTR Command Dialog Panel 3

- 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 Lets you reset the health status of the resource being monitored to
         NORMAL.

  B Lets you start the monitor resource (make it available).

  C Lets you stop the monitor (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** field shows the name of the monitor.
- The **System** field shows the name of the system where the monitor runs.
- The **Status** field 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** field shows when the resource was last monitored.
- The **Status message** field shows message that is associated with the status. If the message has been truncated it will end with "..." -- use command code D to view full details about the message.
- The **Description** field shows descriptive information about the monitor resource.

The SORT, FIND, and RFIND subcommands are supported. Refer to "Deciding the Format of the Command Output (Fullscreen only)" on page 13 for information.

If you enter command code D for a resource, a panel similar to Figure 26 on page 52 is displayed.

DISPSCHD

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

Monitor       : CICSMON1
System        : AOC8
 Description   : CICS Monitor 1 - used to check link to IMS Prod

 Start Command :
 Stop Command  :

 Monitor Command :
 Interval      : hh:mm

Monitor Status : ACTIVE  at yyyy-mm-dd hh:mm:ss
HEALTH Status  : NORMAL
                  ABC000I TRANSIENT DATA QUEUE IS 65% FULL

 History       : yyyy-mm-dd hh:mm_ss  ->  OK
                           message
                 yyyy-mm-dd hh:mm:ss  ->  DEGRADED
                           message
                 yyyy-mm-dd hh:mm:ss  ->  DEGRADED
                           message



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

Figure 26. DISPMTR Command Dialog Panel Showing Details for a Monitor

DISPSCHD

Purpose

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

Syntax

Destination:

Dest_list:

```
        ┌─ , ─────────┐
├─( ◄───┤ Destination ├─ )───────────────────────────────────────────┤
```

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, refer to "The OUTMODE Parameter" on page 12.

OUTMODE
For information on the OUTMODE parameter, refer to "The 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 27 is displayed.

Figure 27. DISPSCHD Command Dialog Panel

```
  AOFKAASC                  SA z/OS  - Command Dialogs    Line  1   of 6
  Domain ID   = IPUF9     ---------- DISPSCHD ----------   Date = 08/14/07
  Operator ID = NETOP1                                     Time = 21:57:58

  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
```

- 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

```
>>--DISPSFLT---+-REQ=GET-+---------------------------------------------->
               +-REQ=SET-+
                          +-RESOURCE=--(--+--<--resource_name--+--)--+

>----+------------------------------+--+-TARGET=--+-system_name-+-+---->
     +-STATUS=--(--+--<--status--+--)--+          +-domain_id---+
                   +--¬--+                         +-sysplex_name+
                   +--\--+

>----+--------------------------------+---------------------------------><
     +-OUTMODE=--+-LINE---+-+
                 +-AUTO---+
                 +-NETLOG-+
```

Parameters

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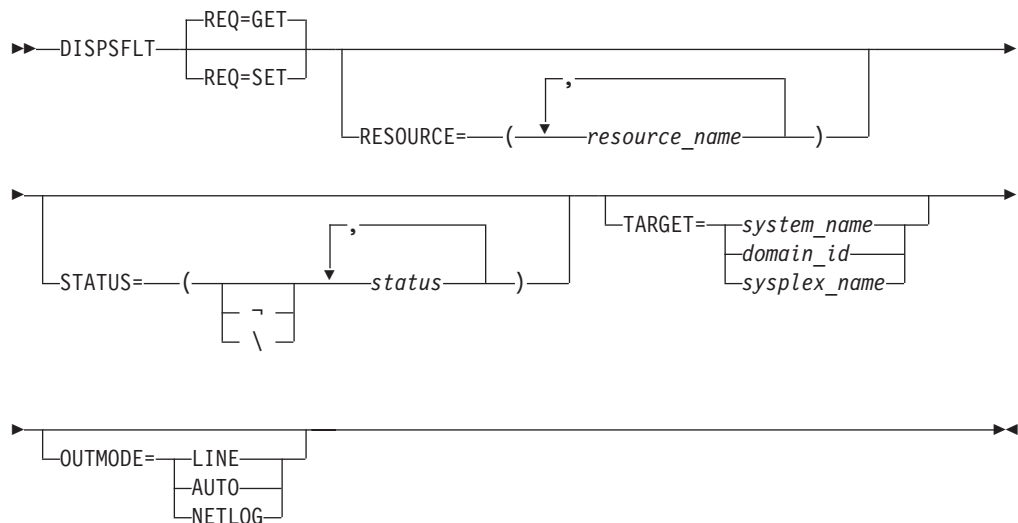
   Specifies the type of the request. It can be one of the following:

   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, refer to "The TARGET Parameter" on page 10.

OUTMODE

For information on the OUTMODE parameter, refer to "The 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 clist.

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 28 is displayed.

```
AOFKSTA3                  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

  Target Systems  ( 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 28. DISPSFLT Sample 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 **Target** Systems field shows the name of the target system.
- If you press PF4 the filter settings are cleared.

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

```
                          ALL
►►──DISPSTAT──────┬────────────────────────┬──────────────────────────►
                  │   ┌─*ALLKIDS───┐        │
                  └───┤─*KIDS──────├────────┘
                      ├─*ALLPARENTS┤
                      ├─*PARENTS───┤
                      └─subsystem──┘
                   ┌──────────────┐
                   │              │
                   ▼─subsystem────┘


                                              ┌─ALL2CONS=NO──┐
►──────────────┬──────────────────────────┬───┴──────────────┴──────────►
               │                 ┌──,──┐   │   └─ALL2CONS=YES─┘
               │                 │     │   │
               └─STATUS=──(──┬───┼─────▼─status──┬──)──┘
                            │ ┌─¬─┐   │
                            └─┤   ├───┘
                              └─\─┘


►──────────────┬──────────────────────────────┬────────────────────────────►◄
               │                               │
               └─TARGET=──┬─ Destination ─┬────┼──────────────────
                          ├─ Dest_list ───┤    └─OUTDSN=dsname─────┐
                          └─*ALL──────────┘    └─OUTMODE=──┬─LINE──┤
                                                           ├─AUTO──┤
                                                           └─NETLOG┘
```

Destination:

```
├──┬─system_name──┬──────────────────────────────────────┤
   ├─domain_ID────┤
   └─sysplex_name─┘
```

Dest_list:

```
        ┌──,──┐
        │     │
├──(──┬─▼─ Destination ─┬──)────────────────────────────────┤
      └─────────────────┘
```

Parameters

ALL
>   Displays the current information for all automated subsystems.

subsystem
>   Specifies the particular subsystem whose status or automation flags you want to check. You can specify any automated subsystem.

*ALLKIDS
>   Lists all children and children of children of the selected subsystem.

*KIDS
>   Lists the direct children of the selected subsystem.

*ALLPARENTS
>   Lists all parents and parents of parents of the subsystem.

*PARENTS
Lists the direct parents of the selected subsystem.

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)

ALL2CONS
Specifies whether or not a complete list of columns is displayed. The parameter only applies to line mode. The following are valid values:

NO   Displays only 60 characters of display data for each resource. This is the default.

YES   Displays the complete list of columns.

For example, you can specify:
```
DISPSTAT cics* OUTMODE=LINE ALL2CONS=YES
```

TARGET
For information on the TARGET parameter, refer to "The TARGET Parameter" on page 10.

OUTDSN
For information on the OUTDSN parameter, refer to "The 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, refer to "The 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 29.

```
AOFKSTA5                    SA z/OS  - Command Dialogs       Line  1  of 441
Domain ID   = IPUFM     -------- DISPSTAT ----------      Date = 09/02/06
Operator ID = OPER1                                       Time = 13:02:53
 A dispflgs  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    JOB NAME  A I S R T RS TYPE     Activity
---  -----------    --------   --------  --------  ------------ -------- ---------
     HUGSGX         UP         AOCA      HUGSGX    _ _ _ _ _    MVS      --none--
  _  HUGSHUTINIT    UP         AOCA      HUGSHUTI  _ _ _ _ _    MVS      --none--
  _  HUGSRVGRPT2    ENDED      AOCA      HUGSGT2   _ _ _ _ _    ONE SHOT --none--
  _  HUGSRVGTRA1    DOWN       AOCA      HUGSGTR1  _ _ _ _ _    MVS      --none--
  _  HUGSTART       INACTIVE   AOCA      HUGSTART  _ _ _ _ _    MVS      --none--
  _  HUGTRIG1       DOWN       AOCA      HUGTRIG1  _ _ _ _ _    MVS      --none--
  _  HUGWTSO        UP         AOCA      HUGWTSO   _ _ _ _ _    MVS      --none--
  _  HUGWVTAM       UP         AOCA      HUGWVATM  _ _ _ _ _    MVS      --none--
  _  IRRDPTAB       ENDED      AOCA      IRRDPTAB  _ _ _ _ _    ONE SHOT --none--
  _  JESWTR         ENDED      AOCA      JESWTR    _ _ _ _ _    ONE SHOT --none--
  _  JES2           UP         AOCA      JES2      _ _ _ _ _    MVS      --none--
  _  JLP111A        UP         AOCA      JLP111A   _ _ _ _ _    MVS      --none--
  _  JLP111B        UP         AOCA      JLP111B   _ _ _ _ _    MVS      --none--
  _
Command ===>
 PF1=Help     PF2=End      PF3=Return    PF4=INGLIST   PF5=Filters  PF6=Roll
 PF7=Back     PF8=Forward  PF9=Refresh   PF10=Previous PF11=Next    PF12=Retrieve
```

Figure 29. Display of Status of All Automated Resources (DISPSTAT)

- 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 automation flags are as follows.

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

  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.

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

- 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.

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

PF10 and PF11 let you scroll horizontally.

If you press PF11 on this panel, a panel similar to Figure 30 is displayed.

```
AOFKSTA5                    SA z/OS  - Command Dialogs       Line  1  of 441
Domain ID   = IPUFM     -------- DISPSTAT ----------       Date = 09/02/06
Operator ID = OPER1                                        Time = 13:03:26
 A dispflgs  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     LAST CHANGED      LAST MONITORED
---  -----------  --------  -------- --------  -------- --------
     HUGSGX        UP         08/31/06 10:20:39 09/02/06 12:15:58
 _   HUGSHUTINIT   UP         09/01/06 09:45:05 09/02/06 12:15:58
 _   HUGSRVGRPT2   ENDED      08/31/06 10:22:26 09/02/06 12:15:58
 _   HUGSRVGTRA1   DOWN       08/31/06 10:20:33 09/02/06 12:15:58
 _   HUGSTART      INACTIVE   08/31/06 10:20:57 09/02/06 12:15:58
 _   HUGTRIG1      DOWN                         09/02/06 12:15:58
 _   HUGWTSO       UP         08/31/06 10:20:36 09/02/06 12:15:58
 _   HUGWVTAM      UP         08/31/06 10:20:48 09/02/06 12:15:58
 _   IRRDPTAB      ENDED      09/01/06 09:46:38 09/02/06 12:15:58
 _   JESWTR        ENDED      08/31/06 10:20:48 09/02/06 12:15:58
 _   JES2          UP         08/31/06 10:20:33 09/02/06 12:15:58
 _   JLP111A       UP         08/31/06 10:20:49 09/02/06 12:15:58
 _   JLP111B       UP         08/31/06 10:20:53 09/02/06 12:15:58
 _

Command ===>
 PF1=Help    PF2=End     PF3=Return    PF4=INGLIST   PF5=Filters  PF6=Roll
 PF7=Back    PF8=Forward PF9=Refresh  PF10=Previous PF11=Next     PF12=Retrieve
```

Figure 30. DISPSTAT Command Dialog Times Panel

- The **RESOURCE** field shows the name of the resource.

- The **STATUS** field shows the status of the resource as supplied by the automation agent.
- 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.

If you press PF11 on this panel, a panel similar to Figure 31 is displayed.

```
AOFKSTA5               SA z/OS  - Command Dialogs    Line  1  of 441
Domain ID   = IPUFM     -------- DISPSTAT ----------    Date = 09/02/06
Operator ID = OPER1                                     Time = 13:03:45
 A dispflgs  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    DESCRIPTION
---  -----------  --------  -------------------------------------------------
     HUGSGX       UP        only test for RR
_    HUGSHUTINIT  UP        Application with shutinit command
_    HUGSRVGRPT2  ENDED     Server group with transients
_    HUGSRVGTRA1  DOWN      Server group with transients
_    HUGSTART     INACTIVE  HUG application with prestart...
_    HUGTRIG1     DOWN      HUG application with triggers
_    HUGWTSO      UP        resource for combination move-basic
_    HUGWVTAM     UP        resource for combination move-basic
_    IRRDPTAB     ENDED     RACF dynamic parsing table init a
_    JESWTR       ENDED     Write SYSLOG after IPL
_    JES2         UP        JES2 application for each test system
_    JLP111A      UP        MAWA/P
_    JLP111B      UP        MAWA/P

Command ===>
 PF1=Help    PF2=End     PF3=Return    PF4=INGLIST   PF5=Filters  PF6=Roll
 PF7=Back    PF8=Forward PF9=Refresh  PF10=Previous PF11=Next     PF12=Retrieve
```

Figure 31. DISPSTAT Command Dialog Description Panel

- The **RESOURCE** field shows the name of the resource.
- The **STATUS** field shows the status of the resource as supplied by the automation agent.
- The **DESCRIPTION** field shows a description of the subsystem, from the automation control file.

Press PF11 to return to the first DISPSTAT panel.

Press PF5 to display the DISPSFLT panel. For a description of the DISPSFLT command refer to "DISPSFLT" on page 54.

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
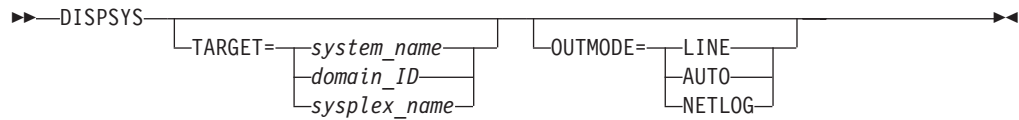
```
►►──DISPSYS──────────────────────────────────────────────────────►◄
            └─TARGET=─┬─system_name──┬─┘  └─OUTMODE=─┬─LINE───┬─┘
                      ├─domain_ID────┤               ├─AUTO───┤
                      └─sysplex_name─┘               └─NETLOG─┘
```

Parameters

TARGET
> For information on the TARGET parameter, refer to "The TARGET Parameter" on page 10.

OUTMODE
> For information on the OUTMODE parameter, refer to "The 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 32.

```
 AOFKADAE              SA z/OS  - Command Dialogs    Line  1    of 98
 Domain ID  = IPSFO    ---------- DISPSYS ----------   Date = 01/27/07
 Operator ID = NETOP1        System  = SYS3            Time = 12:17:12

  System         : SYS3          in Sysplex  : SYS1PLEX
  Domain         : IPSFO
  Sysplex Group  : KEY1PLEX
  XCF Group  name : INGXSGA0

  Software
    Operating System  : z/OS 01.07.00
    NetView           : Tivoli NetView for z/OS V5R1
       Tower(s)       : SA MVSCMDMGT NPDA NLDM
    System Automation : V3R2M0
       Tower(s)       : SYSOPS PROCOPS

  Configuration
    Data set    : SYS3.SAMPLE.V320.DEV.ACF(ACFZ992)
    Built by    : GIS 01/23/07 11:18:37
    Activated   : 01/23/07 11:19:06

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

Figure 32. DISPSYS Command Dialog Panel

At the end of the panel, WLM-related data is displayed if you have enabled resource aware application move, as shown in Figure 33 on page 63.

```
 AOFKADAE                  SA z/OS  - Command Dialogs     Line  1   of 39
 Domain ID   = IPSFO      ---------- DISPSYS ----------    Date = 01/27/06
 Operator ID = NETOP1          System = SYS3              Time = 17:24:39

       INFREQUENT THRESHOLD COMMAND ISSUED
    2006-01-27 06:35:34 :
      AOF589I 06:35 : RECOVERY FOR MVSESA SMFDUMP CONTINUING -
      INFREQUENT THRESHOLD COMMAND ISSUED
    2006-01-27 12:39:25 :
      AOF589I 12:39 : RECOVERY FOR MVSESA SMFDUMP CONTINUING -
      INFREQUENT THRESHOLD COMMAND ISSUED
    2006-01-27 14:00:10 :
      05 DSI802A IPSFO REPLY WITH VALID NCCF SYSTEM OPERATOR COMMAND

  WLM Capacity Data
    Time stamp of WLM query      : 2006-01-27 17:18
    Total SUs last 10 minutes    : 30851058
    Used SUs last 10 minutes     : 2035866
    Resources with DS=AVAILABLE  : 3
    Expected free SUs            : 28815192

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

Figure 33. DISPSYS Command Dialog Panel 2

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

DISPTREE

Purpose

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

Syntax
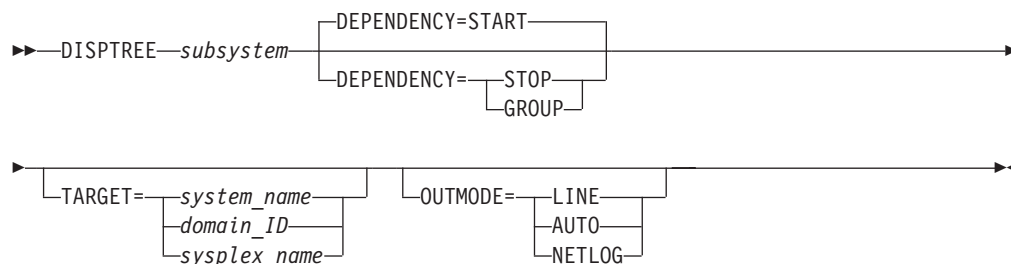
Parameters

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, refer to "The TARGET Parameter" on page 10.

OUTMODE
> For information on the OUTMODE parameter, refer to "The 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 34 on page 65 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       System ==> 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              PF11=Right  PF12=Retrieve
```

Figure 34. DISPTREE Sample Panel

- The **Subsystem** field shows the name of the subsystem
- The **System** 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─┐   └─OUTMODE=──┬─LINE──┐
                                   ├─domain_ID───┤              ├─AUTO──┤
                                   └─sysplex_name┘              └─NETLOG┘
```

```
   ┌─────────────────────────────────────────────────────────────────────────────┐◀▶
   └─WAIT=nnn─┘
```
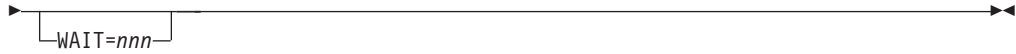
Parameters

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

TARGET
> For information on the TARGET parameter, refer to "The TARGET Parameter"
> on page 10.

OUTMODE
> For information on the OUTMODE parameter, refer to "The 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 for which a trigger is defined, a panel similar to
Figure 35 is displayed.

```
 AOFLT000                    SA z/OS  - Command Dialogs      Line  1    of 4
 Domain ID   = IPSFO      ---------- DISPTRG  ----------     Date = 10/25/99
 Operator ID = NETOP1           System  = KEY3               Time = 13:26:58

  Resource   ==>  TRGG006AA10/APL/KEY3
  System     ==>  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=Roll
                             PF9=Refresh           PF12=Retrieve
```

Figure 35. DISPTRG Command Dialog Panel

* The **Resource** field shows the name of the resource that uses the trigger.
* The **System** 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 (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

```
►►──DRAINJES──subsystem──────────────────────────────────────────────►
                        └─TARGET=──┬─ Destination ─┬─┘
                                   ├─ Dest_list ───┤
                                   └─*ALL──────────┘

►──────────────────────────────────────────────────────────────────►◄
   └─OUTMODE=──┬─LINE───┬──┘
              ├─AUTO───┤
              └─NETLOG─┘
```

Destination:

```
├──┬─system_name──┬────────────────────────────────────────────────┤
   ├─domain_ID────┤
   └─sysplex_name─┘
```

Dest_list:

```
                ┌─,──────────────┐
├──(──▼── Destination ──┴──)──────────────────────────────────────┤
```
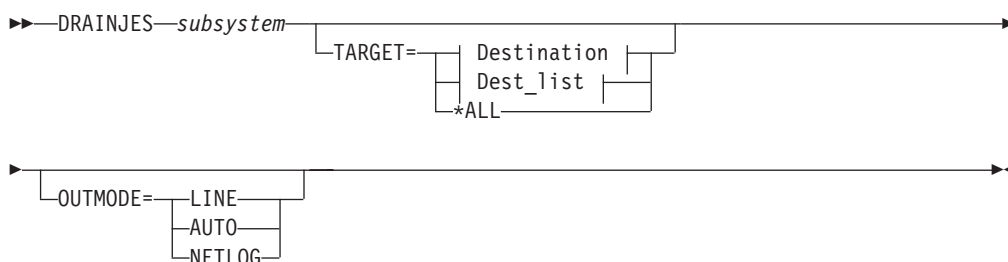
Parameters

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 on which you can specify the subsystem. If you are in line mode an error message is displayed.

TARGET
>   For information on the TARGET parameter, refer to "The TARGET Parameter" on page 10.

OUTMODE
For information on the OUTMODE parameter, refer to "The 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

```
►►──EXPLAIN──┬─────────────┬──┬──────────────────────────────────┬──►◄
             ├──status─────┤  └─TARGET=──┬─system_name──┬─────────┘
             └──subsystem──┘             ├─domain_ID────┤
                                         └─sysplex_name─┘
```
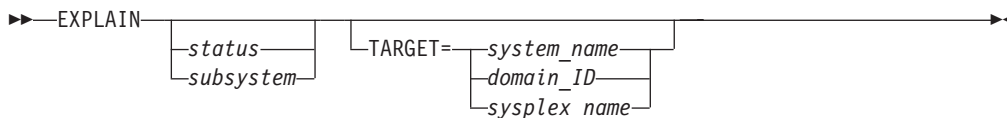
Parameters

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, refer to "The 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 36 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=Roll
                                                             PF12=Retrieve
```

Figure 36. EXPLAIN Sample 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 also 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.

Syntax

```
                            ┌─STATUS──────────────────────────────┐
►►──INGAMS──┬─────────────────────────────────────┬─              ┌─────────────┐
            ├─SET──name──MODE=PAM─────────────────┤          └─DSN=dsname─┘
            ├─DETAILS──name───────────────────────┤
            ├─DIAG────────────────────────────────┤
            │      └─REQ=──┬─SNAPSHOT─┐            │
            │              ├─STARTREC─┤            │
            │              ├─STOPREC──┤            │
            │              └─STATS────┘            │
            ├─DISABLE─────────────────────────────┤
            ├─ENABLE──────────────────────────────┤
            ├─SUSPEND──SYSTEMS=(*all│system1 system2 ...)─┤
            ├─RESUME──SYSTEMS=(*all│system1 system2 ...)──┤
            └─REFRESH─CFG=──┬─dsname─────────────┐
                           ├─dsname(generation)─┤
                           ├─*──────────────────┤
                           └─*(generation)──────┘

►──┬──────────────────────────────┬──┬─OUTMODE=──┬─LINE───┬──┬──►◄
   └─TARGET=──┬─system_name──┐     │             ├─AUTO───┤
             ├─domain_id────┤     │             └─NETLOG─┘
             └─sysplex_name─┘     │
```
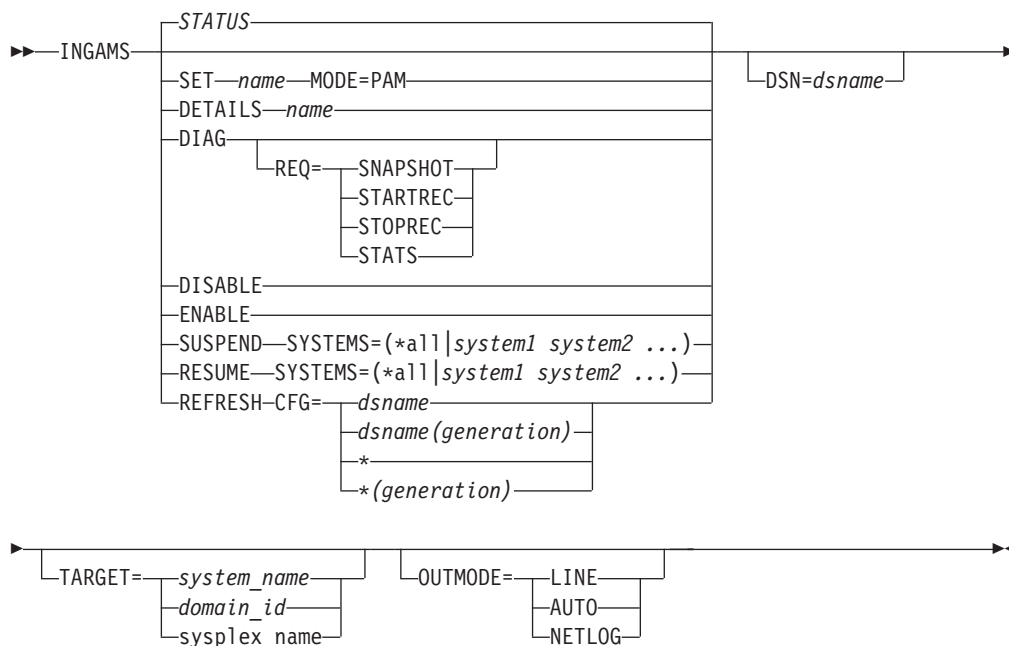
Parameters

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

SET
Changes the operation mode of the specified automation manager.

name
Is the name of the automation manager.

MODE
Specifies the mode of operation, this can be:

PAM   Primary automation manager

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.

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 for which to suspend or resume the sending of orders. If multiple systems are specified, they must be enclosed in parentheses.

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

REFRESH

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

Notes:

1. INGAMS REFRESH does not delete globals 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 globals.

   All deleted entry types and their associated globals will be 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. An asterisk (*) can be used 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 a GDG base data set name is specified, the latest generation (0) is used.

dsname (generation)

Specifies the name of a generation data group (GDG) and the generation number (zero or signed integer) of a generation data set within the GDG.

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.

TARGET
For information on the TARGET parameter, refer to "The TARGET Parameter" on page 10.

OUTMODE
For information on the OUTMODE parameter, refer to "The OUTMODE Parameter" on page 12.

Restrictions and Limitations

None.

Usage

The INGAMS command operates sysplexwide. For an overview refer to "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 37 is displayed.

```
 INGKYAM0                 SA z/OS  - Command Dialogs      Line  1    of 2
 Domain ID  = IPSFO      ---------- INGAMS  ----------    Date = 04/04/06
 Operator ID = NETOP1          Sysplex = KEY1PLEX         Time = 10:51:32

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

 Cmd  System    Member     Role   Status    Sysplex   XCF-Group Release  Comm
 ---  --------  ---------  -----  --------  --------  --------- -------  ----
      KEY3      KEY3$$$$2  SAM    READY     KEY1PLEX  INGXSGA0  V2R3M0   XCF
 _    KEY3      KEY3       AGENT  READY     KEY1PLEX  INGXSGA0  V2R3M0   XCF
 _    KEY3      KEY3$$$$1  PAM    READY     KEY1PLEX  INGXSGA0  V2R3M0   XCF
 _




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

Figure 37. INGAMS Command Dialog Panel 1

- 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   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 takeover file processing.
    – Disable takeover file processing.

- Suspend a system; that is, specify the name of the system or systems to be suspended in the field.
- Resume a suspended system; that is, specify the name of the suspended system or systems to be resumed in the field.

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.

C Displays the refresh configuration data panel. You need to enter the name of the data set containing the automation control file fragments and the configuration members.

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

For further information, see "Initiating Diagnostic Functions" on page 77 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:

  blank   The status is unknown. This is always the case if you work with SA OS/390 1.3.

  NOT READY The automation agent or manager is initializing.

  READY   The member is completely initialized.

  PENDING   Indicates that the automation manager is in the process of initializing as a primary automation manager (PAM).

  SELECTED   The automation manager is selected to become the next primary automation manager (PAM).

  STOPPING   The automation manager is terminating.

  REFRESH   Indicates that the automation manager performs a configuration refresh.

> COMM   Is the type of communication being used between the automation manager and the automation agent.

- 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 FIND/RFIND/SORT commands are supported. Refer to "Deciding the Format of the Command Output (Fullscreen only)" 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 38. Switching into primary mode is considered a directed takeover.

```
INGKYAM1                    SA z/OS  - Command Dialogs
Domain ID   = IPSFO     ---------- INGAMS  ----------    Date = 04/04/06
Operator ID = NETOP1          Sysplex = KEY1PLEX         Time = 10:51:49

Specify or revise the following data:

  Action  ==>  __      1.  Make primary Automation manager (PAM)
                       2.  Enable  Takeover File
                       3.  Disable Takeover File
                       4.  Suspend System      _____
                       5.  Resume System       _____


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




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

Figure 38. 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.
>
> **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.

System

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 39 on page 76 is displayed.

```
 INGKYAM3                SA z/OS  - Command Dialogs      Line  1    of 43
 Domain ID   = IPSFO       ---------- INGAMS  ----------    Date = 04/04/06
 Operator ID = NETOP1          Sysplex = KEY1PLEX          Time = 10:52:13

 Automation Manager  : KEY3$$$$1       running on system : KEY3
 Operation mode      : PAM           Job name         : AMA0
 Status              : READY         Start type       : COLD
 XCF-Groupname       : INGXSGA0
 Start time          : 30 MAR 2006 14:37:43
 PAM selected time   : 30 MAR 2006 14:37:49
 Config refresh time : 31 MAR 2006 23:55:45

 Takeover file       : AOC.AM.OY.HSATKOVR
 Status              : ENABLED

 Workitem Statistics
   External          : 88
   Internal          : 19
         :
 CPU time  (secs)    : 10.726

 Suspended Systems   : SAT1     SAT2

 Logic Deck ...
   Release           : V3R2M0
   Date built        : 21 Mar 2006
   Time built        : 12:47:12
   Last APAR         : NONE

 Config dataset name : USER.V32.KEYPLEX.ACF
 Config member       : HSAZ999
                              Z999CLGC  STRUCTURE   20060501095015
                              Z999CRES  STRUCTURE   20060505083934
                              Z999CSCH  SCHEDULE    20060505083934
 Config token        : 2006050508393400029F092064
 Config version      : 01

 Diagnostic Info
   Snapshot size         : 945128
   Number of resources   : 135
   Number of requests    : 44
   Number group requests : 43

                                --------Number of Messages--------
 Queue                          maximum  current     high      low
 HSA.INGXSGOY.WORKITEM.QUEUE    No-Data  No-Data  No-Data  No-Data
 HSA.INGXSGOY.AGENT.QUEUE       No-Data  No-Data  No-Data  No-Data
 HSA.INGXSGOY.STATE.QUEUE       No-Data  No-Data  No-Data  No-Data

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

Figure 39. INGAMS Command Dialog Panel to Show Details

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 **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.

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 **Queue** section shows MQ statistics about the various queues used by SA z/OS.

Note that the last three sections (Configuration, Diagnostic Info, and Queue) 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 40 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)_____

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










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

Figure 40. INGAMS Command Dialog Panel to Refresh the Configuration

- In the **System** 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.
- 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.

Initiating Diagnostic Functions

If you enter command code D for a primary automation manager, a panel similar to Figure 41 on page 78 is displayed.

```
 INGKYAM4                  SA z/OS  - Command Dialogs
 Domain ID   = IPSFO     ---------- INGAMS   ----------     Date = 09/15/07
 Operator ID = NETOP1          Sysplex = KEY1PLEX           Time = 13:29:22

  Specify or revise the following data:

    Action  ==>  __       1.  Write Snapshot
                          2.  Start recording
                          3.  Stop recording
                          4.  Work item Statistics

    Data set name ==>  _____

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




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

Figure 41. INGAMS Command Dialog Panel to Initiate Diagnostic Functions

For options 1–3, you need to fill in the following fields:

- In the **Data set name** field 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.

- In the **System** field 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.

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 42 on page 79.

```
INGKYAM5                  SA z/OS  - Command Dialogs    Line  1    of 8
Domain ID   = IPSFo       ---------- INGAMS   ----------   Date = 09/15/07
Operator ID = NETOP1          Sysplex = KEY1PLEX          Time = 13:29:57

Cmd:  S Details                                   Snapshot: 2007-09-15 13:29:55
                          Since
Cmd  Task       Status   (secs)  13:48 -1  -2  -3  -4  -5  -6  -7  -8  -9 -10
---  ---------- -------- ------- ----- --- --- --- --- --- --- --- --- --- ---
 _    ADMIN      IDLE
 _    QUERY1     IDLE                    4   5      10               2   5  11   6
 _    QUERY2     IDLE
 _    QUERY3     IDLE
 _    UPDATER1   IDLE                                            1
 _    UPDATER2   IDLE
 _    UPDATER3   IDLE
 _    UPDATER4   IDLE




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

Figure 42. 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 300 work items processed by each of the tasks that build the automation manager kernel.

Note: The history information is not persistent or available when the automation manager runs on a system that is running an earlier version of SA z/OS.

The following data is shown:

Snapshot
> The snapshot timestamp shows the time of the query.

Task The name of the task.

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 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 history query (INGAMS DIAG REQ=STATS) was made or refreshed.

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 43 on page 80.

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

                                               Snapshot: 2007-09-15 13:29:55
                  Starting Elapsed
      Task      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=Roll
                 PF8=Forward  PF9=Refresh                  PF12=Retrieve
```

Figure 43. 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
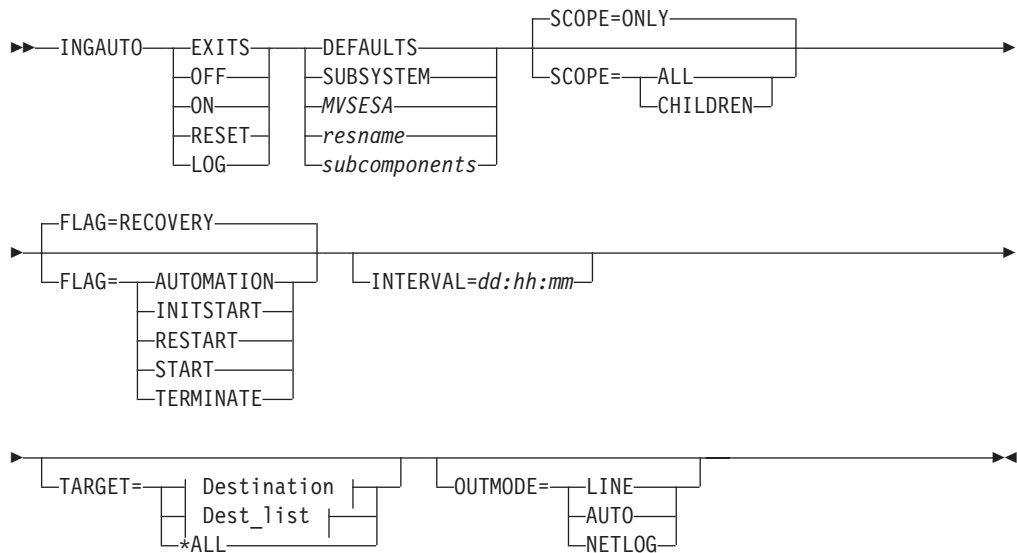
```
►►──INGAUTO──┬─EXITS─┬──┬─DEFAULTS──────┬──┬─SCOPE=ONLY─────────┬────────►
             ├─OFF───┤  ├─SUBSYSTEM─────┤  └─SCOPE=──┬─ALL──────┤
             ├─ON────┤  ├─MVSESA────────┤            └─CHILDREN─┘
             ├─RESET─┤  ├─resname───────┤
             └─LOG───┘  └─subcomponents─┘


   ┌─FLAG=RECOVERY────────────┐
►──┤                          ├──┬────────────────────┬────────────────►
   └─FLAG=──┬─AUTOMATION─┬─────┘  └─INTERVAL=dd:hh:mm──┘
            ├─INITSTART──┤
            ├─RESTART────┤
            ├─START──────┤
            └─TERMINATE──┘


►──┬─────────────────────────┬──┬──────────────────────┬──────────────►◄
   └─TARGET=──┬─Destination─┬─┘  └─OUTMODE=──┬─LINE───┬─┘
             ├─Dest_list───┤               ├─AUTO───┤
             └─*ALL────────┘               └─NETLOG─┘
```

Destination:

```
├──┬─system_name─┬──────────────────────────────────────────────┤
   ├─domain_id───┤
   └─sysplex_name┘
```

Dest_list:

```
        ┌─,────────┐
        │          │
├──(──▼─┤ Destination ├──)──────────────────────────────────┤
```

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.

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). Refer to *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.
>
> If no interval is specified, the flag is changed indefinitely.

TARGET
> For information on the TARGET parameter, refer to "The TARGET Parameter" on page 10.

OUTMODE
> For information on the OUTMODE parameter, refer to "The 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
                     Note : Be sure to specify the correct sub-component name
  System         =>   AOC8          System name, domain ID, sysplex name, *ALL
  Scope          =>   ONLY          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=Roll            PF12=Retrieve
```

Figure 44. 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, refer to "INGCFL" on page 98. If you issue INGCF in line mode, only the display function is available.

The INGCF command supports the following parameters:
- DRAIN

Serves to remove 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

  Serves to activate a coupling facility, connect it with the systems of a sysplex and to populate it with structures.

- 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.

Syntax

```
►►──INGCF─────────────────────────────────────────────────────────►
            ┌─DRAIN──┤ cfname ├────────────────────────────┐
            ├─ENABLE─┤ cfname ├────────────────────────────┤
            ├─PATH───┤ cfname ├────────────────────────────┤
            │                  ┌─CONDITION=NO──────────┐    │
            └─STRUCTURE─┤ cfname ├─┤                 ├───┘
                              └─CONDITION──┬─=─┬─NO──┘
                               └─COND─────┘    └─YES─┘

►──────────────────────────────────────────────────────────────►◄
   └─TARGET=─┬─system_name──┬─┘  └─OUTMODE=─┬─LINE───┬─┘
            ├─domain_ID────┤              ├─AUTO───┤
            └─sysplex_name─┘              └─NETLOG─┘
```

cfname:

```
├──┬───────────┬──────────────────────────────────────────┤
   └─CF_name─┘
```
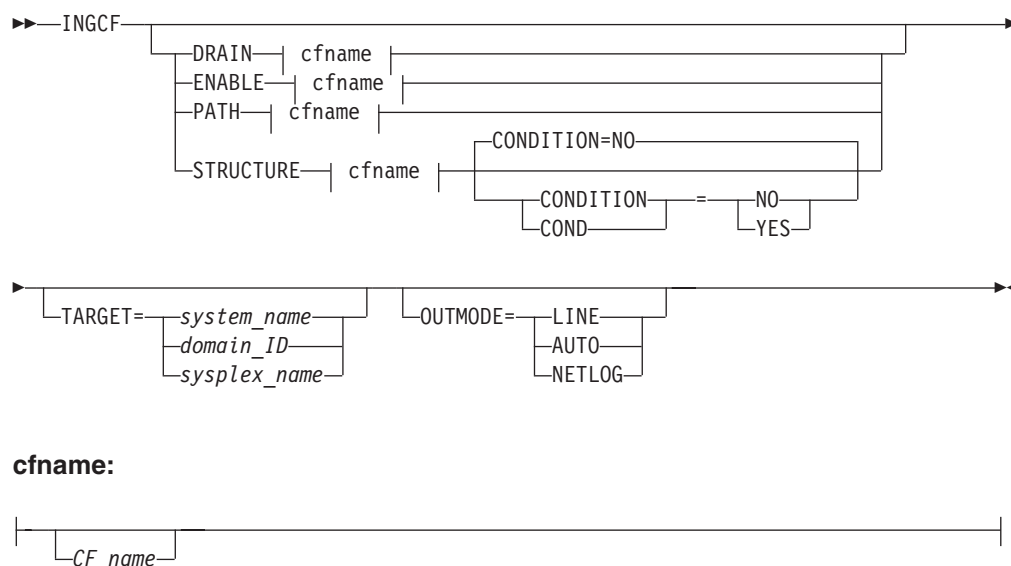
Parameters

DRAIN
> Prepares a coupling facility for removal from the sysplex.

ENABLE
> (Re)integrates a coupling facility into a sysplex.

PATH
> Controls the sender paths of a coupling facility.

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

CF_name
> 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.

TARGET
> For information on the TARGET parameter, refer to "The TARGET Parameter" on page 10.

OUTMODE
> For information on the OUTMODE parameter, refer to "Additional Parameters for System Operations Commands" on page 10.

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 on which the coupling facility resides.

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 has no connection to any system and can be removed from the sysplex.

DRAINED NOHWACC
> The coupling facility has no 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 is not available.

NORMAL
> The coupling facility may have allocated structures and is connected to all systems.

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 2.7 or below.
> * 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 has no alternate coupling facility defined in its preference list, or the alternate coupling facilities 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 97.

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 has no 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 has no 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 90). INGCF STRUCTURE accepts a rebuild request for structures with this condition, but deallocates them (see "Rebuild (R)" on page 96).

No connections. System-managed rebuild supported.
> The structure can be rebuilt.
>
> The structure has no 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.

Example

If you issue INGCF without any parameters, a panel with all coupling facilities of the sysplex is displayed, as shown in Figure 45.

```
 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 / 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=Roll
                         F9=Refresh                       F12=Retrieve
```

Figure 45. 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. 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.

3. 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.

4. Disconnect the coupling facility from the systems with which it is connected.
5. 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 88.

*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.

*DRAIN (F4)

Disconnects the coupling facility from its connected systems by setting the sender path(s) 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 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 which runs under z/VM.

Note that these actions can only be performed if INGCF 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

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 INGCF with the option DRAIN, you can specify the coupling facility to be drained, for example by entering `INGCF DRAIN CF01`. If you do not specify a coupling facility name, INGCF 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.

The only action that is enabled is REBUILD with F10. Pressing F10 calls the confirmation panel.

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 inan empty panel.

No more structures are allocated in the coupling facility, so that the coupling facility can be released from the connections with the systems of the sysplex. Consequently, INGCF 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 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. 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
4. 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 which runs under z/VM.

*ENABLE (F4)

Sets the sender path(s) of all systems of the sysplex to ONLINE. This action is enabled when the coupling facility is active.

*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 INGCF 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 INGCF DRAIN and then reintegrate it with INGCF 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 INGCF ENABLE is called in full mode. In line mode, only the display function is available.

Example

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 INGCF with the option ENABLE, 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 side 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.

The structure list contains three entries with the condition 'Structure is currently allocated in CF01.'. These are the structures that are currently allocated in CF01, but have CF02 at the first position in their preference list.

Pressing F10 populates the coupling facility.

```
 INGLX901                 SA z/OS  - Command Dialogs    Line   1   of 3
 Domain Id   = IPSFO      ------ INGCF ENABLE -------         Date = 02/20/01
 Operator Id = NETOP1                                         Time = 11:17:35

 Coupling Facility ==> CF02           Status . . . . . . : NORMAL
 Sysplex . . . . . ==> KEY1PLEX       Permission . . . . : ALL
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 Structure          Condition
 ----------------   ------------------------------------------------------------
 GRPYCSQ_ADMIN      System-managed rebuild is supported.
 GRPYHSAQUEUE       System-managed rebuild is supported.
 HSA_LOG




 Command ===>
 F1=Help      F2=End      F3=Return                        F6=Roll
                          F9=Refresh                       F12=Retrieve
```

Figure 46. ENABLE Command Dialog Panel: After Populating

The POPULATE action is no longer available because all structures whose preference list starts with CF02 are allocated in CF02.

INGCF PATH

Purpose
The INGCF 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      ------- INGCF PATH --------         Date = 06/20/01
 Operator ID = HIR                                            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 47. PATH Command Dialog Panel

The following command codes are available:

F Sets the sender path OFFLINE.

N Sets the sender path ONLINE.

- If you have issued INGCF 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

INGCF STRUCTURE

```
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 . . . . . ==> KEY1PLEX          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
  ---------------- - -  --------------------------------------------------------
_ DSNA_GBP0            U  Duplex rebuild is active.
_ DSNA_GBP32K      P U
_ DSNA_LOCK1          S  Duplex rebuild is active.
_ DSNA_SCA           S  System-managed rebuild is supported.
_ ISGLOCK
_ ISTGENERIC             System-managed rebuild is supported.
_ IXCGRS
_ IXCVLF
Command ===>
F1=Help     F2=End      F3=Return                        F6=Roll
                        F9=Refresh                       F12=Retrieve
```

Figure 48. 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.

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 88.

*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 **Coupling Facility** field is an input field, if you have specified INGCF 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.

INGCFL

Purpose

The INGCFL routine supports line mode for INGCF other than display capability. For further information refer to "INGCF" on page 83.

Syntax

```
>>--INGCFL----ACTIVATE--------CF_name----RESP--=--SYNC----------------------->
            |-DEACTIVATE-|            |-RESP--=--ASYNC-|
            |-DRAIN------|
            |-ENABLE-----|
            |-POPULATE---|
            |-REBUILD----|


>---------------------------------------------------------------------------><
       |-TARGET--=----system---|
                  |-domain--|
                  |-sysplex-|
```
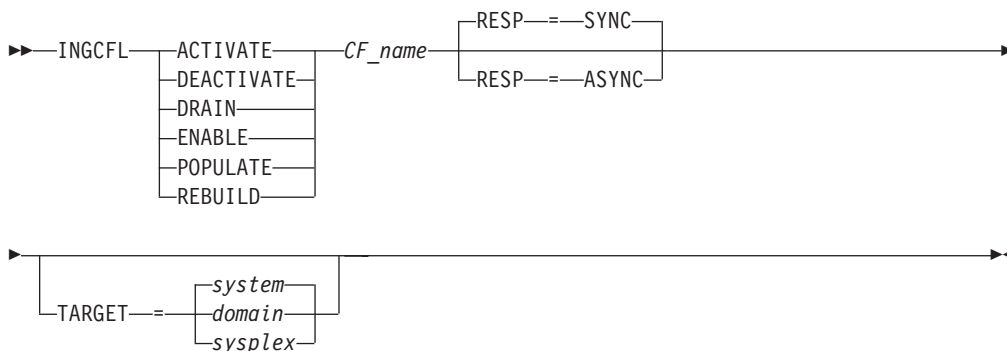
Parameters

cfname
    Is the name of the CF.

ACTIVATE
    Activates the coupling facility.

DEACTIVATE
    Deactivates the coupling facility after performing DRAIN.

DRAIN
    Sets the sender paths to OFFLINE after performing a REBUILD.

ENABLE
    Sets the sender paths to ONLINE after performing ACTIVATE.

POPULATE
    Starts the populate process of the coupling facility after performing ENABLE.

REBUILD
    Starts the rebuild process of the coupling facility.

RESP
    Specifies whether the final result is returned synchronously via return code or asynchronously via 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 which 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

```
►►──INGCICS──subsystem──REQ=──┬─CMD───────┬──────────────────────────────────────►
                              ├─BROADCAST─┤  └─CMD=cics_transaction─┘
                              └─INFO──────┘

►────────────────────────────────────────────────────────────────────────────────►
     └─MSG=message─┘   └─ROUTE=cics_route_options─┘   └─TARGET=target─┘

►──────────────────────────────────────────────────────────────────────────────►◄
     └─OUTMODE=──┬─LINE───┬──┘
                 ├─AUTO───┤
                 └─NETLOG─┘
```

Parameters

resource

The resource specifies the name of the CICS subsystem to which the command will be issued. 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 will wait up to twice the defined system waittime parameter for a result.

MSG

Specifies the message to be sent to all or selected CICS terminals/users for the REQ=BROADCAST request. Enclose the message in single or double quotation marks.

ROUTE

Specifies the CICS routing information used to select which 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, refer to "The TARGET Parameter" on page 10.

OUTMODE

For information on the OUTMODE parameter, refer to "The 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 refer to "Overview of Commands that Operate Sysplexwide" on page 9.

Examples

If you enter INGCICS REQ=CMD a panel similar to Figure 49 on page 101 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
System             =>                     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=Roll
               PF8=Forward  PF9=Refresh                    PF12=Retrieve
```

Figure 49. INGCICS REQ=CMD Sample 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 **System** field shows the name of the system (system name, domain ID, or sysplex name) to which the command should be routed. 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. 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 will appear in the blank area after the CICS Message field.

If you specify `INGCICS REQ=BROADCAST` a panel similar to Figure 50 on page 102 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
System          =>                    System name, domain ID or sysplex name
Request         => BROADCAST          CMD, BROADCAST or INFO
CICS Transaction => CMSG R=&ROUTE',&MESSAGE',HEADING=YES,S
CICS Route      => ALL
CICS Message    => test1
                =>




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

Figure 50. INGCICS REQ=BROADCAST Sample Panel

Do not change the &ROUTE and &MESSAGE parameters in the CICS Transaction
field, they are resolved to the corresponding panel fields.

If you specify INGCICS REQ=INFO a panel similar to Figure 51 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=Roll
                  PF8=Forward  PF9=Refresh                     PF12=Retrieve
```
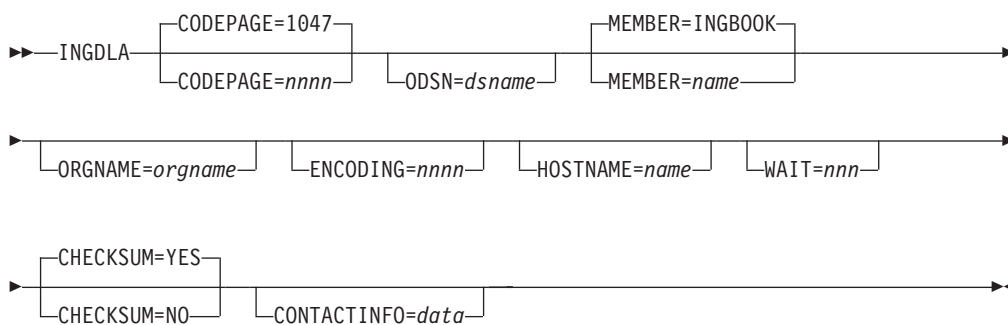
Figure 51. INGCICS REQ=INFO Sample Panel

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

```
>>--INGDLA--+------------------+--+----------------+--+--MEMBER=INGBOOK----+-->
            +--CODEPAGE=1047---+  +--ODSN=dsname---+  +--MEMBER=name-------+
            +--CODEPAGE=nnnn---+
```

```
>--+-------------------+--+---------------+--+---------------+--+----------+-->
   +--ORGNAME=orgname---+  +--ENCODING=nnnn+  +--HOSTNAME=name+  +--WAIT=nnn+
```

```
>--+--CHECKSUM=YES-----+--+-----------------+--><
   +--CHECKSUM=NO------+  +--CONTACTINFO=data+
```

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 refer to "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.

```
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
```
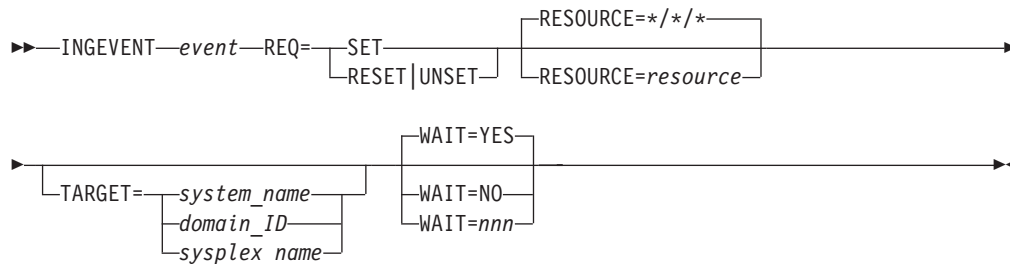
Figure 52. SA z/OS Discovery Library Adapter Report

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, refer to "The TARGET Parameter" on page 10.

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

Wildcards are not supported.

Usage

The INGEVENT command operates sysplexwide. For an overview refer to "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 AOCPLEX. -
         FROM=AOCA
IPUFA    AOF099I FUNCTION COMPLETED
```
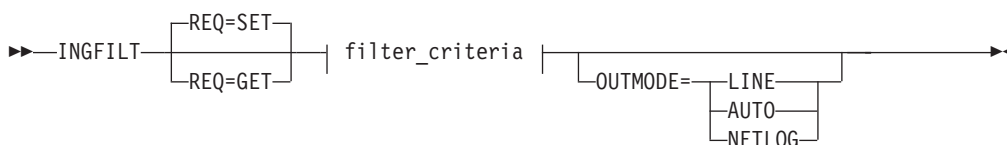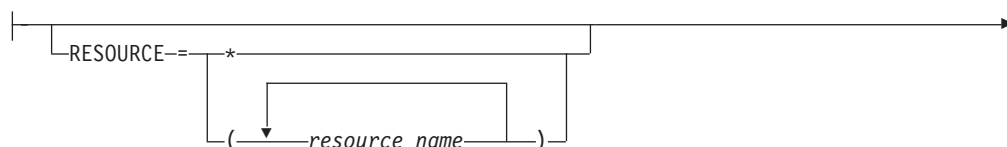
INGFILT

Purpose

The INGFILT command restricts the amount of information shown in the INGLIST display. Use INGFILT to set a default filter for the operator's logon. If an asterisk (*) is specified, the filter is reset.
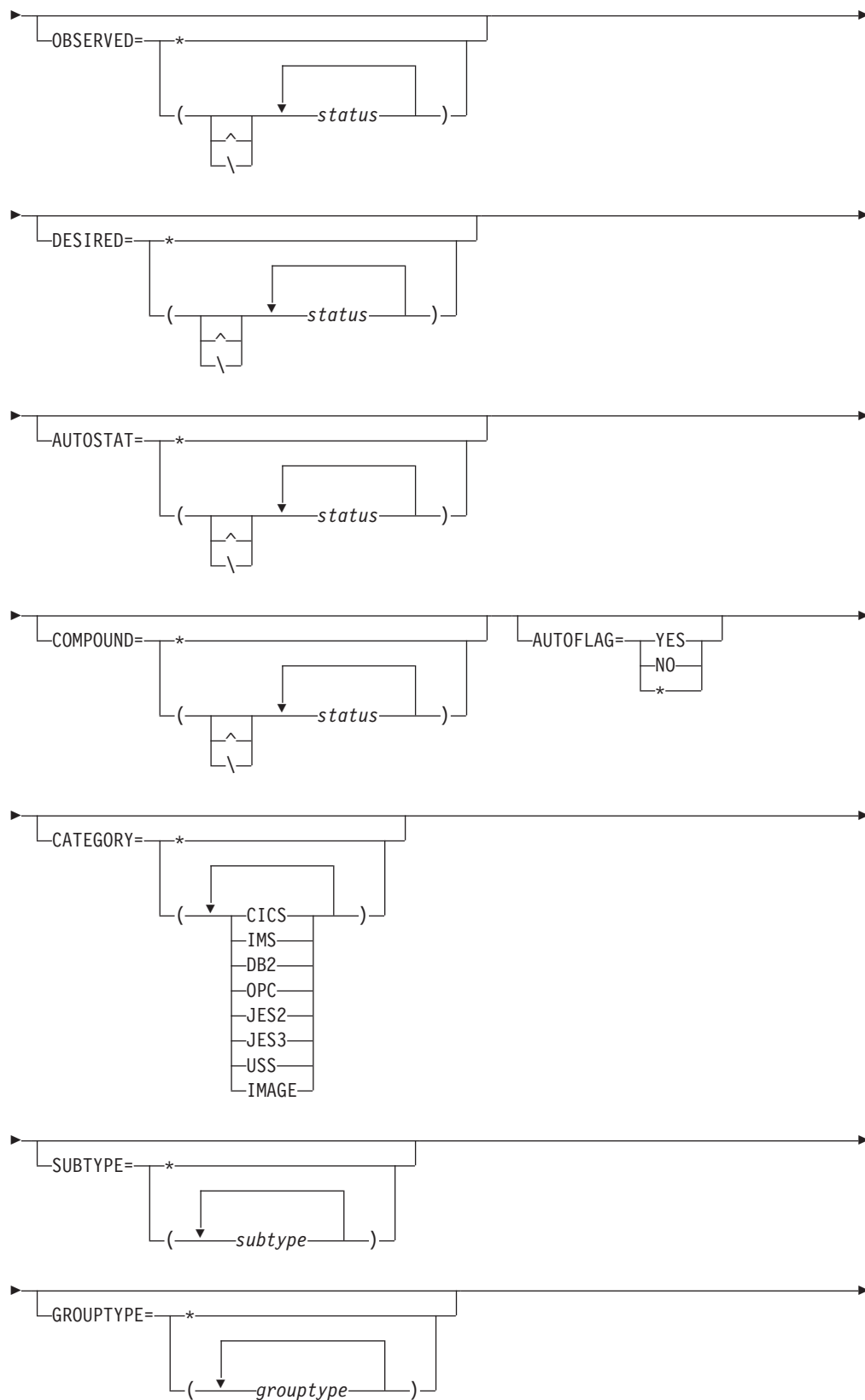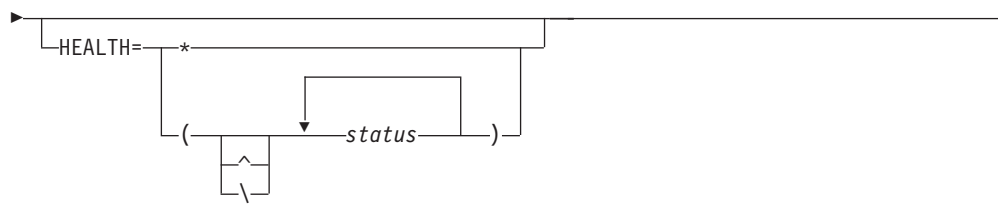
Syntax

filter_criteria:

```
├──┬─────────────────────────────────┬──────────────────────────►
   └─OBSERVED=─┬─*──────────────────┬─┘
              │        ┌──────────┐ │
              └─(─┬────▼─ status ─┬─)─┘
                  └─^─┐
                    └─\─┘
```

```
├──┬─────────────────────────────────┬──────────────────────────►
   └─DESIRED=─┬─*──────────────────┬──┘
             │        ┌──────────┐ │
             └─(─┬────▼─ status ─┬─)─┘
                 └─^─┐
                   └─\─┘
```

```
├──┬─────────────────────────────────┬──────────────────────────►
   └─AUTOSTAT=─┬─*──────────────────┬─┘
             │        ┌──────────┐ │
             └─(─┬────▼─ status ─┬─)─┘
                 └─^─┐
                   └─\─┘
```

```
├──┬──────────────────────────────┬──┬────────────────┬──────────►
   └─COMPOUND=─┬─*──────────────┬─┘  └─AUTOFLAG=─┬─YES─┬┘
             │        ┌──────┐ │              ├─NO──┤
             └─(─┬────▼ status ─┬─)─┘              └─*───┘
                 └─^─┐
                   └─\─┘
```

```
├──┬─────────────────────────────────┬──────────────────────────►
   └─CATEGORY=─┬─*──────────────────┬─┘
              │     ┌──────────┐   │
              └─(─┬─▼──┬─CICS──┬┬─)─┘
                    ├─IMS───┤
                    ├─DB2───┤
                    ├─OPC───┤
                    ├─JES2──┤
                    ├─JES3──┤
                    ├─USS───┤
                    └─IMAGE─┘
```

```
├──┬─────────────────────────────────┬──────────────────────────►
   └─SUBTYPE=─┬─*───────────────────┬─┘
             │      ┌───────────┐  │
             └─(─┬──▼─ subtype ─┬─)─┘
```

```
├──┬─────────────────────────────────┬──────────────────────────►
   └─GROUPTYPE=─┬─*──────────────────┬─┘
              │      ┌────────────┐ │
              └─(─┬──▼─ grouptype ─┬─)─┘
```

```
►──┬─────────────────────────────────────────────────────────────────────┬──┤
   └─HEALTH=─┬─*─────────────────────────────┬─┘
            │           ┌─────────────────┐  │
            │           │   ◄─────────    │  │
            └─(─┬──────┬─┴─status─────────┴─)─┘
                ├──^───┤
                └──\───┘
```

Parameters

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, INGFILT 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.

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=*.

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.

OUTMODE
For information on the OUTMODE parameter, refer to "The OUTMODE Parameter" on page 12.

Restrictions and Limitations

None.

Usage

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

The INGFILT command lets you set filter options at operator logon from within the operator's initial clist.

Examples

If you enter `ingfilt` a panel similar to Figure 53 on page 110 is displayed.

```
  INGKYFLT                  SA z/OS  - Command Dialogs
  Domain ID   = IPUFA     ---------- INGFILT  ----------     Date = 09/24/03
  Operator ID = NETOP1                                       Time = 13:50:03

  Specify or revise the filter criteria:

    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        ==>  *_____


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

Figure 53. INGFILT 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, "v 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, or JES3.

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.

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:
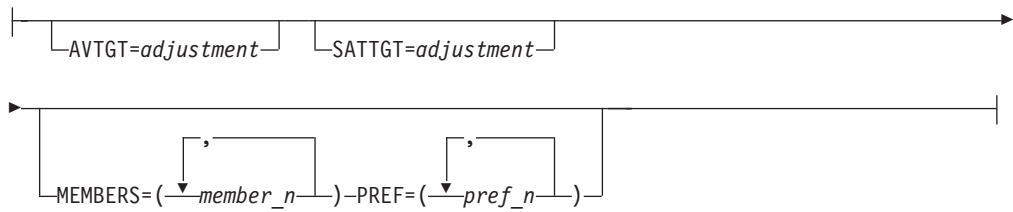
- Move an application from one system to another by terminating the application and starting it on a system of your choice.
- Activate or deactivate a group.
- Adjust the availability or satisfactory target (server group only).

Syntax

```
                    ,
                    ▼
►►─INGGROUP──┬─ group_name ─┬─┤ ACTION options ├─┬─WAIT=YES─┬────────►
                                                 ├─WAIT=NO──┤
                                                 └─WAIT=nnn─┘

►──┬────────────────────────────┬──┬──────────────────────────┬──►◄
   └─TARGET=─┬─system_name─┬─────┘  └─OUTMODE=─┬─LINE───┬───────┘
             ├─domain_id───┤                   ├─AUTO───┤
             └─sysplex_name┘                   └─NETLOG─┘
```

ACTION options:

```
                       ┌─,─────────┐
├──┬─ACTION=─┬─EXCLUDE─┬──SYSTEMS=(─▼─sysname─┴─)─────────────────┬──────────────┤
   │         ├─AVOID───┤                                         │
   │         └─INCLUDE─┘                                         │
   ├─ACTION=─┬─ACTIVATE─┬──────────────────────────────────────┤ │
   │         └─PACIFY───┘                                        │
   ├─ACTION=MEMBERS──────────────────────────────────────────────┤
   ├─ACTION=POLICY───────────────────────────────────────────────┤
   │               ┌─────────────┐                               │
   │               │   ┌─────────▼─┐                             │
   │          └─GROUPTYPE=(─▼─grouptype─┴─)─┘                    │
   ├─ACTION=OVERRIDES────────────────────────────────────────────┤
   │                  ┌──────────────────┐                       │
   │            └─GROUPTYPE=(─▼─grouptype─┴─)─┘                   │
   ├─ACTION=RESET────────────────────────────────────────────────┤
   ├─ACTION=DEFAULT──────────────────────────────────────────────┤
   └─ACTION=ADJUST─┤ ADJUST options ├────────────────────────────┘
```

ADJUST options:

```
├──┬─────────────────────┬──┬────────────────────┬────────────────────►
   └─AVTGT=adjustment─────┘  └─SATTGT=adjustment──┘

       ┌─,──────────┐         ┌─,───────┐
►──┬───────────────────────────────────────────────────────┬──────────┤
   └─MEMBERS=(─▼─member_n─┴─)─PREF=(─▼─pref_n─┴─)─┘
```

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 multiple application groups.
> - For an ACTIVATE/PACIFY action, you may specify multiple application groups.
> - For a MEMBERS action, you may specify only a single application group.

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.

ADJUST
> Indicates that you want to temporarily adjust a group's policy.

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

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.

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, for which the preference value should be set. 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, refer to "The TARGET Parameter" on page 10.

OUTMODE
> For information on the OUTMODE parameter, refer to "The OUTMODE Parameter" on page 12.

Restrictions and Limitations

None.

Usage

The INGGROUP command operates sysplexwide. For an overview refer to "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 54 is displayed.

```
INGKYGRA                    SA z/OS  - Command Dialogs
Domain ID   = IPUFA     ---------- INGGROUP ----------   Date = 04/07/05
Operator ID = NETOP1          Sysplex = AOC8PLEX          Time = 18:34:50


 Specify or revise the following data:

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

  Action   =>  _____    EXCLUDE-AVOID-INCLUDE or ACTIVATE-PACIFY or
                           RESET, DEFAULT

  Group(s) =>  _____
               _____
               _____
               _____
               _____

  System(s)=>  _____
               _____



Command ===>
 PF1=Help    PF2=End     PF3=Return   PF4=Members              PF6=Roll
                                      PF10=GO              PF12=Retrieve
```

Figure 54. INGGROUP Command Dialog Panel

This panel allows you to change the policy of application groups. You may specify:
- The target sysplex for the command through the system 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 through the action field. The policy options are explained later.
- Next you must specify 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/*".

- Finally, 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.

The policy items that you can change are:

Exclude
> This causes the group to immediately deselect all group members on the excluded systems and not to select them again. The group will tell those group members to make themselves unavailable. If possible the groups will activate members on non-excluded systems to try and maintain availability.

Avoid Unlike Exclude, Avoid will not cause an immediate deselection of members on the avoided system, but it will heavily bias the group against reselecting them once they have become deselected for some the reason. Avoid can be used to remove applications from a system without incurring unplanned outages.

Include
> Include basically undoes a previous Exclude or Avoid action. Group members on Included systems are available for selection at their normal priority. Depending on your preferences settings and which group members are currently active, an Include may cause a disruptive return home for the application.

Pacify This makes the group passive. It will immediately depropagate all votes from all of its members. This may cause the desired state of some of its members to change, resulting in their being started or stopped.

Activate
> This makes a group active. When a group becomes active, it will select the members that it needs to have available to make the group available and propagate MakeAvailable requests to them. Those members that are not selected will be propagated MakeUnavailable requests. Note that if a member has a preference of 1 it will always be propagated a MakeUnavailable request, and that if it has a preference of 0 (a passive member) it will never be propagated any sort of request.

Reset This sets the preference value that is assigned to each member of the group to its initial value.

Default
> This sets the availability target, satisfactory target, group passive attribute, and the member's preference value to the value defined in the policy.

After entering the appropriate fields for the policy item that you want to change, press PF10 to proceed with the action.

Press PF4 to display the "members detail" panel where you can 'fine tune' the group by changing the preferences of its individual members. This panel, as shown in Figure 55 on page 117, displays all the groups that are currently available, with the message Multiple instances found for */APG. In this case, only a single group name should be specified.

```
AOFKSEL4                SA z/OS - Command Dialogs    Line  1  of 92
Domain ID  = IPUFA     ---------- INGGROUP ----------   Date = 04/07/05
Operator ID = NETOP1                                    Time = 18:36:07

 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

 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=Roll                 PF8=Forward          PF12=Retrieve
```

Figure 55. INGGROUP Command Dialog Panel Showing Members' Detail

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
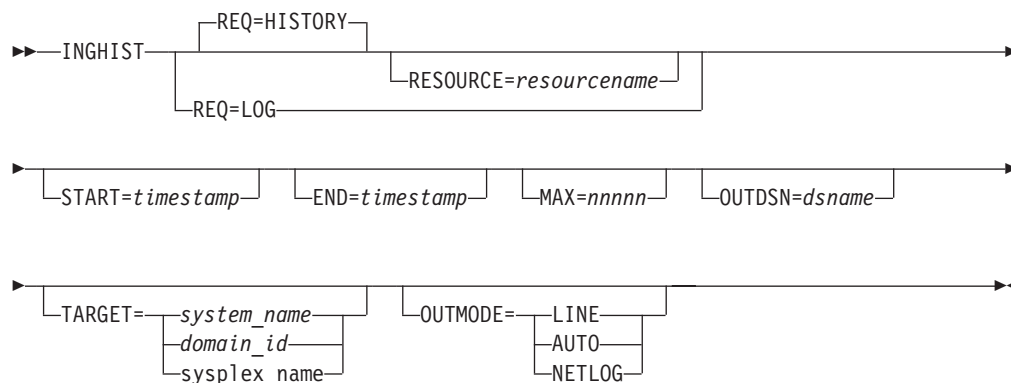
Specifies the request to be performed. It can have the following keywords:

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.

OUTDSN

For information on the OUTDSN parameter, refer to "The OUTDSN Parameter" on page 13.

TARGET

For information on the TARGET parameter, refer to "The TARGET Parameter" on page 10.

OUTMODE

For information on the OUTMODE parameter, refer to "The 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 refer to "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 56 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=Roll
                            PF9=Refresh              PF12=Retrieve
```

Figure 56. INGHIST Command Dialog Panel

The FIND/RFIND subcommands are supported. Refer to "Deciding the Format of the Command Output (Fullscreen only)" on page 13 for information.
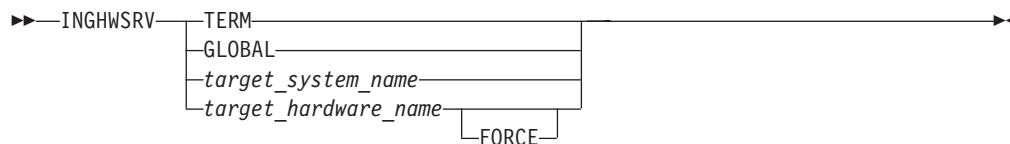
INGHWSRV

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

```
►►──INGHWSRV──┬─TERM──────────────────┬──────────────────►◄
              ├─GLOBAL────────────────┤
              ├─target_system_name────┤
              └─target_hardware_name──┘
                                  └─FORCE─┘
```

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 any console-enabled IMS command.
- Broadcast messages to all or selected IMS users.
- Issue a list of defined transactions and view the output.
- Display the output of IMS transactions in fullscreen or pipeable line mode.

Syntax

```
►►──INGIMS──resource──REQ=──┬─CMD───────┬──────────────────────────────────────►
                            ├─BROADCAST─┤  └─CMD=ims_transaction─┘
                            └─INFO──────┘

►──┬───────────────┬──┬──────────────────────────┬──┬─────────────────┬────────►
   └─MSG=message──┘    └─ROUTE=ims_route_options─┘    └─TARGET=target─┘

►──┬────────────────────────┬──────────────────────────────────────────────────►◄
   └─OUTMODE=──┬─LINE───┬──┘
               ├─AUTO───┤
               └─NETLOG─┘
```
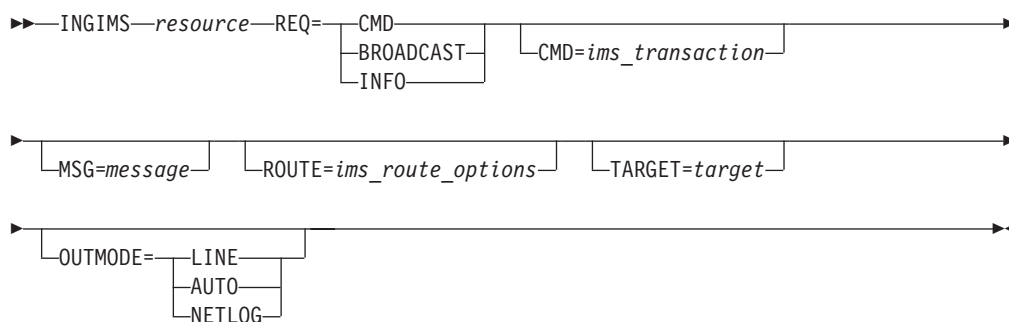
Parameters

resource
  The resource specifies the name of the IMS subsystem to which the command

is issued. 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: You need not specify the fully-qualified name of the resource. However, the command requires enough information to execute the request against a unique IMS subsystem. The command does not support issuing requests to multiple IMS subsystems at the same time.

REQ
Specifies the request to be issued to the IMS subsystem. It can be one of the following:

CMD   Issues an IMS transaction and displays the results.

BROADCAST
Issues an IMS 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 IMSINFO user message policy of the subsystem specified by the resource name.

CMD
Specifies the IMS transaction and its parameters to be executed for a REQ=CMD type request. Enclose the command in single or double quotation marks if the command and parameters contain spaces.

Note: Do not specify the prefix '/' character for IMS commands.

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 which 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 CMSG transaction to route messages to IMS terminals/users. See the CMSG transaction for the details of the parameters for that transaction.

TARGET
For information on the TARGET parameter, refer to "The TARGET Parameter" on page 10.

OUTMODE
For information on the OUTMODE parameter, refer to "The 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.

Usage

The INGIMS command operates sysplexwide. For an overview refer to "Overview of Commands that Operate Sysplexwide" on page 9.

Examples

If you enter `ingims` a panel similar to Figure 57 is displayed.

```
  EVEKYCMD                 SA z/OS  - Command Dialogs      Line
  Domain ID   = IPSFM      ---------- INGIMS   ----------  Date = 04/11/03
  Operator ID = NETOP1                                     Time = 18:11:35

  Resource        =>  _____   Format: name/type/system
  System          =>  _____        System name, domain ID or sysplex name
  Request         =>  CMD_____       CMD, BROADCAST or INFO
  IMS Command     =>  _____
  IMS Route       =>  _____
  IMS Message     =>  _____
                  =>  _____




  Command ===>
    PF1=Help      PF2=End      PF3=Return   PF4=DISPINFO      PF6=Roll
                               PF9=Refresh                    PF12=Retrieve
```
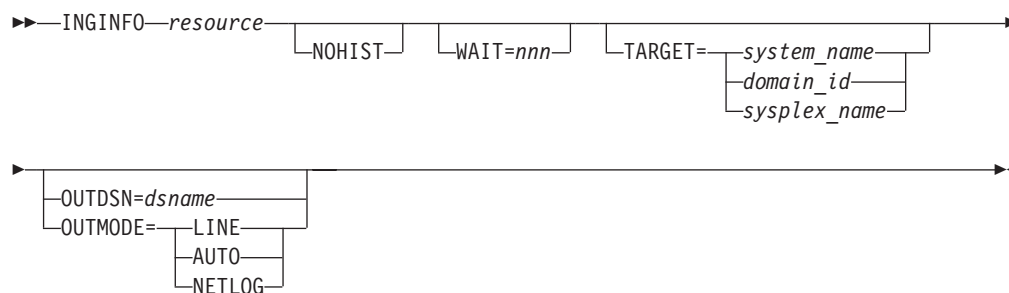
Figure 57. INGIMS Command Dialog Panel

- 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 **System** field shows the name of the system (system name, domain ID, or sysplex name) to which the command should be routed. 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 CMD, BROADCAST, or INFO.
- The **IMS Command** field shows the IMS transaction to be executed on the IMS subsystem specified by the resource field.
- 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 will appear in the blank area after the IMS Message field.

If you specify `INGIMS EIMSDBRC REQ=BROADCAST` a panel similar to Figure 58 on page 123 is displayed.

```
 ┌─────────────────────────────────────────────────────────────────────────┐
 │ EVIKYCMD                SA z/OS  - Command Dialogs      Line             │
 │ Domain ID   = IPSFM     ---------- INGIMS  ----------   Date = 04/11/03  │
 │ Operator ID = NETOP1                                    Time = 18:11:56  │
 │                                                                          │
 │ Resource         => EIMSDBRC/APL/AOC8            Format: name/type/system│
 │ System           =>                     System name, domain ID or sysplex name│
 │ Request          => BROADCAST           CMD, BROADCAST or INFO           │
 │ IMS Command      => BROADCAST                                            │
 │ IMS Route        => ACTIVE                                               │
 │ IMS Message      =>                                                      │
 │                  =>                                                      │
 │                                                                          │
 │                                                                          │
 │                                                                          │
 │                                                                          │
 │                                                                          │
 │                                                                          │
 │                                                                          │
 │ Command ===>                                                             │
 │   PF1=Help     PF2=End      PF3=Return   PF4=DISPINFO      PF6=Roll      │
 │                             PF9=Refresh                   PF12=Retrieve  │
 └─────────────────────────────────────────────────────────────────────────┘
```

Figure 58. INGIMS REQ=BROADCAST Sample Panel

INGINFO

Purpose

INGINFO displays details about a particular group or resource from the
automation manager point of view. The following information can be displayed:

- Resource statuses.
- Dependency statuses.
- Resource settings.
- Existing relationships to other resources.
- Pending requests and votes for the resource.
- History information collected for the resource.

Syntax

```
►►──INGINFO──resource──────────────────────────────────────────────────────►
                      └─NOHIST─┘  └─WAIT=nnn─┘  └─TARGET=─┬─system_name─┬─┘
                                                          ├─domain_id───┤
                                                          └─sysplex_name┘

►──┬──────────────────────────┬────────────────────────────────────────────►◄
   ├─OUTDSN=dsname────────────┤
   └─OUTMODE=─┬─LINE───┬───────┘
              ├─AUTO───┤
              └─NETLOG─┘
```

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, refer to "The TARGET Parameter" on page 10.

OUTDSN
For information on the OUTDSN parameter, refer to "The OUTDSN Parameter" on page 13.

OUTMODE
For information on the OUTMODE parameter, refer to "The OUTMODE Parameter" on page 12.

Restrictions and Limitations

None.

Usage

The INGINFO command operates sysplexwide. For an overview refer to "Overview of Commands that Operate Sysplexwide" on page 9.

Examples

If you enter, for example, `inginfo TPXA/APL/KEY3` a panel similar to Figure 59 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
  System     ==>  _____      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 59. 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
- Resource notification filtering to SDF, NMC, or SMF

There are two input fields, **Resource** and **System**, 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.

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.

INGLIST

Purpose

The INGLIST command displays details about one or more resources.

Syntax

```
►►──INGLIST──┬──────────┬─┤ filter criteria ├──┬──────────────────────────────┬──►
             └─resource─┘                       └─TARGET=──┬─system_name──┬────┘
                                                           ├─domain_id────┤
                                                           └─sysplex_name─┘

►──┬─────────────────────┬──┬──────────┬──┬─────────────┬──►◄
   ├─OUTDSN=dsname───────┤  └─WAIT=nnn─┘  └─MEMBERS=YES─┘
   └─OUTMODE=──┬─LINE───┬┘
               ├─AUTO───┤
               └─NETLOG─┘
```

filter criteria:

```
├──┬─────────────────────────────────────┬──────────────────────────────▶
   └─OBSERVED=─┬─*──────────────────────┬─┘
              │         ┌──────────┐    │
              └─(─┬───┬─▼─status─┬─)─────┘
                  └─^─┘          
                  └─\─┘

▶──┬─────────────────────────────────────┬──────────────────────────────▶
   └─DESIRED=─┬─*───────────────────────┬─┘
             │          ┌──────────┐    │
             └─(─┬───┬──▼─status─┬─)─────┘
                 └─^─┘           
                 └─\─┘

▶──┬─────────────────────────────────────┬──────────────────────────────▶
   └─AUTOSTAT=─┬─*──────────────────────┬─┘
              │         ┌──────────┐    │
              └─(─┬───┬─▼─status─┬─)─────┘
                  └─^─┘          
                  └─\─┘

▶──┬─────────────────────────────────────┬──┬─AUTOFLAG=─┬─YES─┬─┬────────▶
   └─COMPOUND=─┬─*──────────────────────┬─┘              └─NO──┘
              │         ┌──────────┐    │
              └─(─┬───┬─▼─status─┬─)─────┘
                  └─^─┘          
                  └─\─┘

▶──┬─────────────────────────┬──┬─────────────────────────────┬─────────▶
   └─CATEGORY=─┬─CICS──┬──────┘  └─SUBTYPE=─┬─*────────────────┬─┘
             ├─IMS───┤                    │      ┌──────────┐ │
             ├─DB2───┤                    └─(─────▼─subtype─┬─)─┘
             ├─OPC───┤
             ├─JES2──┤
             ├─JES3──┤
             ├─USS───┤
             └─IMAGE─┘

▶──┬─────────────────────────────────┬──┬─HEALTH=─┬─*──────────────────┬─┤
   └─GROUPTYPE=(─┬─grouptype─┬───────┘          │      ┌──────────┐    │
                 │           │                  └─(─┬───┬─▼─status─┬─)───┘
                 └───────────┘                      └─^─┘
                                                    └─\─┘
```
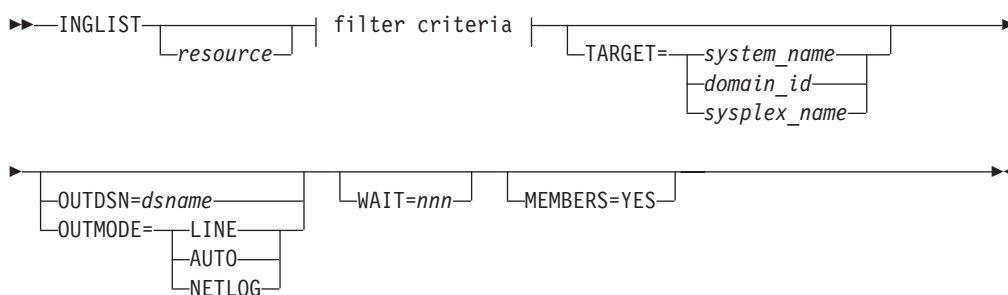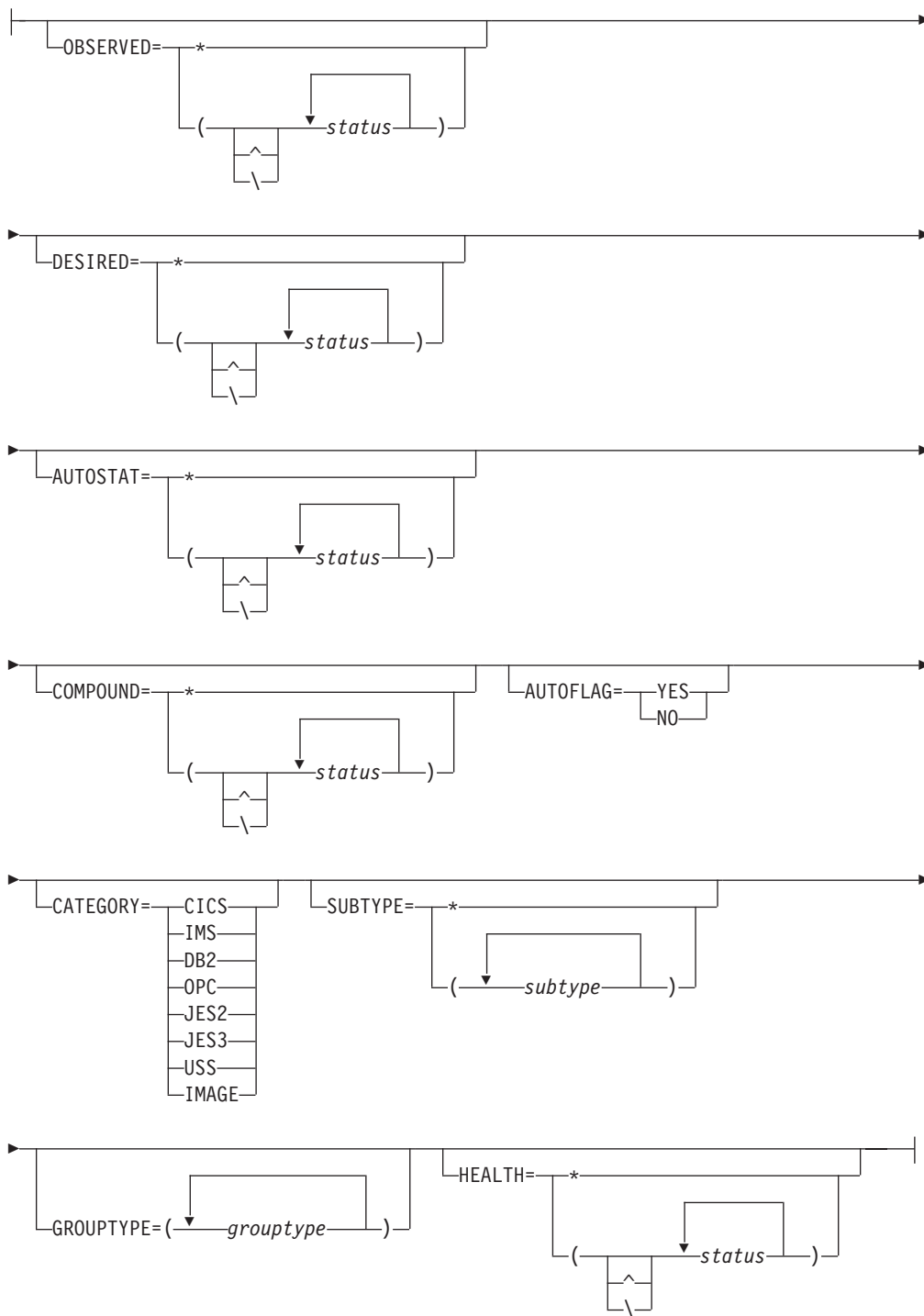
Parameters

resource

    Specifies the name of the resource(s) 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 (*) can be used as wildcard characters.

filter criteria

The filter criteria to be applied prior to displaying the data. See also "INGFILT" on page 106 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.

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.

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.

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.

AUTOFLAG

Specifies the automation flag to be displayed. It can be either YES or NO and can be abbreviated.

CATEGORY

Specifies the category that the resource belongs to. More than one value can be specified.

SUBTYPE

Specifies the subtype of the resource.

GROUPTYPE

Specifies the type (nature) of the resource group. More than one value can be specified.

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.

For further information about statuses, refer to *IBM Tivoli System Automation for z/OS User's Guide*.

TARGET

For information on the TARGET parameter, refer to "The TARGET Parameter" on page 10.

OUTDSN

For information on the OUTDSN parameter, refer to "The 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, refer to "The 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 refer to "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 60.

```
 INGKYST0                SA z/OS  - Command Dialogs    Line  1    of 383
 Domain ID   = IPSNO      -------- INGLIST  ---------    Date = 09/22/03
 Operator ID = NETOP1          Sysplex = KEY1PLEX        Time = 16:13:19
 CMD: A Update   B Start    C Stop    D INGRELS   E INGVOTE   F INGINFO
      G Members  H DISPTRG  I INGSCHED  J INGGROUP  M DISPMTR   / 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 60. INGLIST Command Dialog Panel 1

You can scroll horizontally with the PF10 and PF11 keys to see additional information about the resource (these panels are not shown here). 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 131.

  B Start. Calls the INGREQ command dialog to make the resource available. Refer to "INGREQ" on page 180 for further information.

  C Stop. Calls the INGREQ command dialog to make the resource unavailable. Refer to "INGREQ" on page 180 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 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.

  M Invokes the DISPMTR command to show the monitors that have been defined for the selected resource.
- 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, and OPC.

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 slash character (/) to make the selected line the first line of the display.

The SORT, FIND, and RFIND subcommands are supported. Refer to "Deciding the Format of the Command Output (Fullscreen only)" 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 61 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   _____                  INTERNAL
   8. Set Agent Status        _____


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

Figure 61. 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.

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.

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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 two 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. With the INGLKUP command you can list all active jobs, started tasks (STCs) and APPC/MVS transaction programs. With an exclude list, you can 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.

Syntax

1. Syntax for JOB display
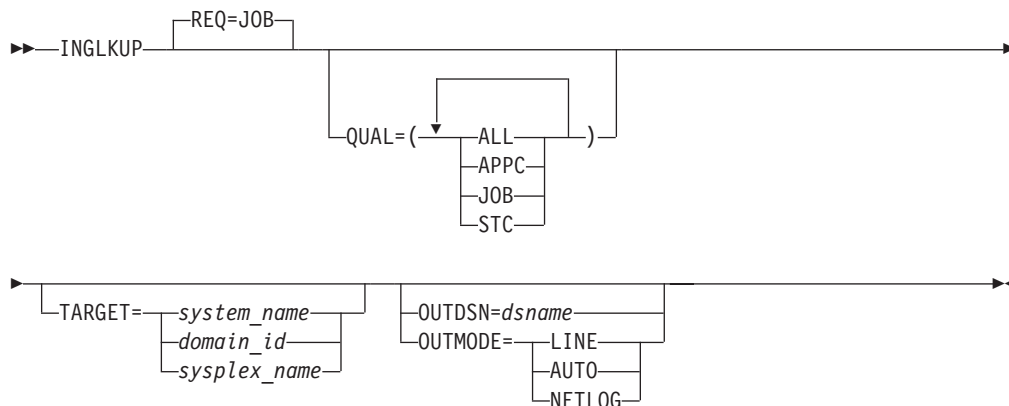
2. Syntax for diagnostic display

```
►►──INGLKUP─────────────────REQ=COLLECT─────────────────────────────────►◄
              └─resource─┘              └─OUTDSN=dsname─┘
```
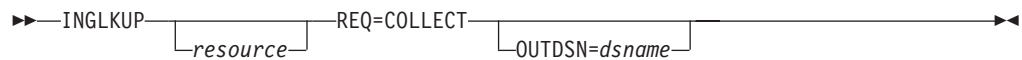
Parameters

REQ
>   Specifies the type of request to be performed.
>
>   REQ=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.
>
>   REQ=COLLECT causes diagnostic information to be displayed in the netlog if OUTDSN is not specified.

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 will be displayed.
>
>   Resource 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.

TARGET
>   For information on the TARGET parameter, refer to "The TARGET Parameter" on page 10.

OUTDSN
>   For information on the OUTDSN parameter, refer to "The 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, refer to "The 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

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 Name   Is INGLKUP.

Entry Type   Is EXCLUDE.

Keyword/Data

Is JOB=*jobname* (where *jobname* specifies the JOB or STC to be excluded from the display). Wildcard is supported in *jobname*.

When a resource name is specified with REQ=COLLECT, the output from the following commands is collected:

- INGINFO
- INGRELS
- INGSCHED
- DISPINFO
- DISPTRG

When a resource name is not specified with REQ=COLLECT, the output from the following commands is collected:

- INGLIST
- DISPSTAT

Whether a resource name is specified 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 62 is displayed.

```
 INGKYLU0                    SA z/OS  - Command Dialogs    Line  1    of 24
 Domain ID   = IPSFP     ---------- INGLKUP  ----------    Date = 06/28/02
 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
  _  BTSO       BTSO      AAAZSSEM  S           KEY4      ** CANCELLED **
  _  BZOEWTO1             J                     KEY4
  _  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=Roll
                PF8=Forward  PF9=Refresh                    PF12=Retrieve
```

Figure 62. INGLKUP Command Dialog Panel

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. Refer to "Deciding the Format of the Command Output (Fullscreen only)" on page 13 for information.

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 RecycleBoth 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 COLDBoth 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 SAVESaves 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 RefreshIf 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=REPLWhen 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 63 on page 137 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=Roll
                   PF8=Forward                                 PF12=Retrieve
```

Figure 63. 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 within a time interval of 24 hours.

After the changed definitions have been used to start up or shut down an application, or after the given timeout interval has expired, 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, refer to the online help and to *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
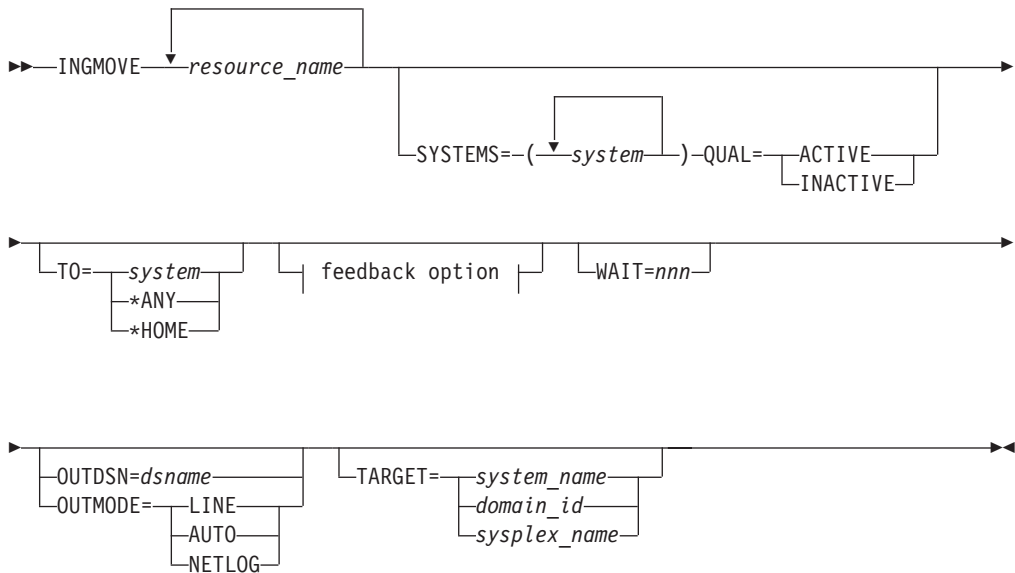
Feedback option:
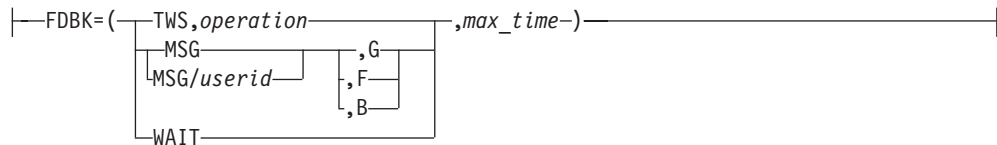
Parameters

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.

TWS   Use this parameter to return the completion of the command to TWS:

operation   Identifies the TWS operation, consisting of:

1. Application description ID

2. Workstation name

3. Operation number

4. Input arrival timestamp

The various parts must be separated with a blank.

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).

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 linemode.

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 linemode.

TARGET
For information on the TARGET parameter, refer to "The TARGET Parameter" on page 10.

OUTDSN
For information on the OUTDSN parameter, refer to "The OUTDSN Parameter" on page 13.

OUTMODE
For information on the OUTMODE parameter, refer to "The 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 64 on page 141 is displayed.

```
INGKYMV0                 SA z/OS  - Command Dialogs             1 of 7
Domain ID   = IPSNO      ---------- INGMOVE  ----------    Date = 09/10/04
Operator ID = NETOP1          Sysplex = KEY1PLEX           Time = 12:18:00

CMD: 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     AOCA      AOCB      AOCC      AOCD       _____
                                AOCE      AOCF      AOCG
 _   MOVDISRN      AVAILABLE    AOCB      AOCD                          *_____
 _   MOVDISRY      AVAILABLE    AOCB      AOCD
 _   MOVPLEXA      AVAILABLE    AOCA      AOCB      AOCC      AOCD       AOCB____
                                AOCE      AOCF
 _   MOVPLEXB      SOFTDOWN     AOCA      AOCB      AOCC      AOCD       =_____
 _   MOVPLEXC      SOFTDOWN     AOCA      AOCB      AOCC      AOCD       _____
 _   MOVPLEXD      AVAILABLE    AOCA      AOCB      AOCC                 _____


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

Figure 64. INGMOVE Command Dialog Panel

This panel shows all sysplex application groups of type MOVE (referred to as *move groups* below) 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) 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. You can designate the system by specifying:
  - The name of the system in the input field.
  - An asterisk (*). This means that the group is moved back to its home system. If more than one home system exists, it is moved to the 1st one in the list.
  - An equals sign (=). This is a shorthand 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. Refer to "INGREQ" on page 180 for further information.

C   Stop. Calls the INGREQ command dialog to make the resource unavailable. Refer to "INGREQ" on page 180 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.

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 65 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      AOCD      now
     MOVPLEXA      AOCA      AOCB      now
     MOVPLEXB                AOCB      at recycle
```

Figure 65. 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.

INGNTFY

Purpose

INGNTFY adds, changes, or deletes notification operator settings.

Syntax

```
►►──INGNTFY──────────────────────────────────────────────────────►

              ┌─your_opid─┐
    ──┬─ON────┴───────────┴─ Settings ─┬──
      │       ┌─your_opid─┐            │
      ├─OFF───┴───────────┴─ Settings ─┤
      │          ┌─your_opid─┐         │
      ├─ADD──┬───┴─opid──────┴── Settings ─┤
      │      └─opid─┘                   │
      ├─DELETE─opid─────────────────────┤
      │          ┌─your_opid─┐          │
      └─QUERY────┴─opid──────┴──────────┘


►──┬─────────────────────────┬──┬──────────────────────┬──►◄
   └─TARGET=─┬─system_name──┐ │  └─OUTMODE=─┬─LINE───┐ │
             ├─domain_ID────┤ │             ├─AUTO───┤ │
             ├─sysplex_name─┤ │             └─NETLOG─┘ │
             └─*ALL─────────┘ │
```

Settings:

```
       ┌─CLASS──=──(──40,80──)──────────┐
├──────┤                                ├──────────────────────►
       │          ┌──,──┐               │    ┌──,──┐
       └─CLASS──=──(──▼─class──)─┘       └─HELDMSG=──(──▼─type──)─┘

►──┬──────────────────────────┬──────────────────────────────┤
   └─DESC='description'──┘
```
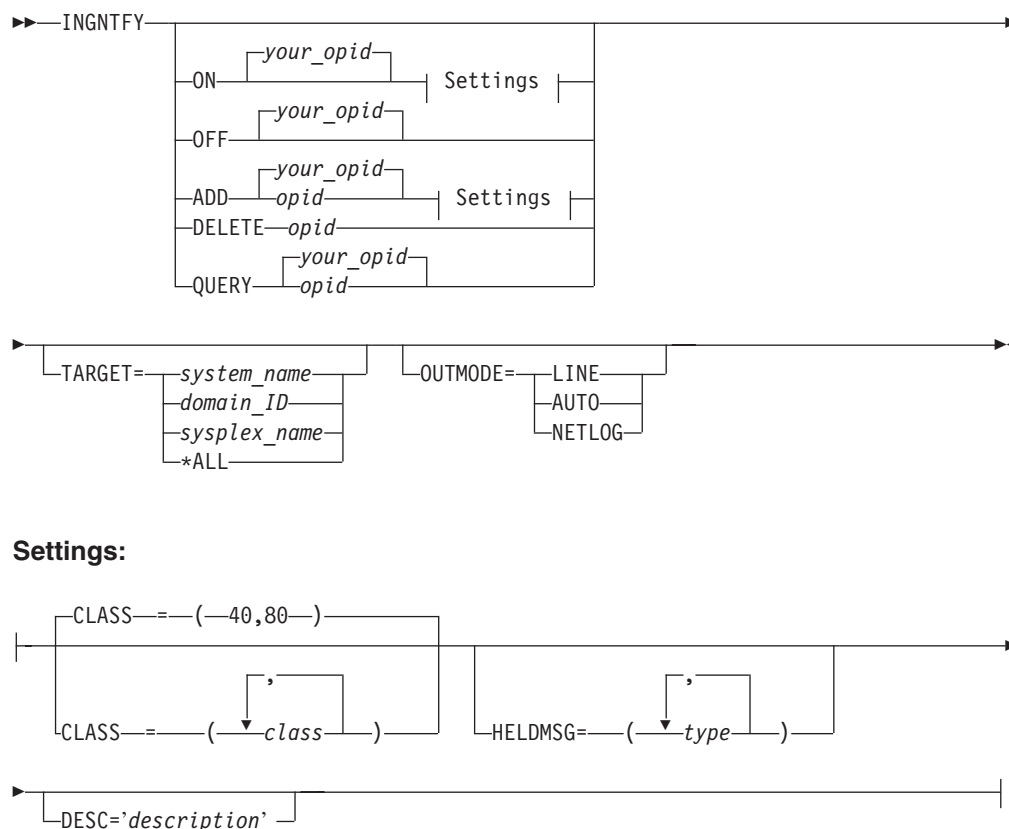
Parameters

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

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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.

QUERY
Displays information about the operator 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. Refer to *IBM Tivoli System Automation for z/OS Messages and Codes* for information on 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, refer to "The TARGET Parameter" on page 10.

OUTMODE
For information on the OUTMODE parameter, refer to "The OUTMODE Parameter" on page 12.

For further details of message types and message notifications, refer to *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 66 is displayed.

```
  AOFKAANT                    SA z/OS  - Command Dialogs     Line  1   of 3
  Domain ID   = IPUN8      ---------- INGNTFY  ----------    Date = 12/20/02
  Operator ID = NETOP1                                       Time = 13:52:17

  Cmd:  A Add    C Show/Change settings    D Delete    O Turn OFF msg receiving

  Cmd Operator  System   Log  Rcv  Description
  --- --------  -------- ---  ---  --------------------------------------------
      GIS       AOC8      Y    Y   GISELA STUART
   _  DON       AOC8      Y    N   DON JONES
   _  MIK       AOC8      Y    Y   MIK SMITH
   _




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

Figure 66. 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.
- 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.

INGOPC

Purpose

The INGOPC 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 INGOPC command is either full screen or in pipeable line mode.

Syntax

```
>>--INGOPC---| Resource |-------------REQ=--LIST----TYPE=--APPL---------------->
             |                |             |-MOD-|         |-OP--|
             |   ,<---------- |                             |-SR--|
             |  (--| resource_name |--)|                    |-WS--|
                                                            |-CAL-|

>------------------------------------------------------------------------------>
    |-TARGET=target-|  |-OUTMODE=--LINE----|  |-| MOD options |--|
                                |-AUTO--|       |-| LIST options |-|
                                |-NETLOG-|

>------------------------------------------------------------------------------>
    |-| APPL Selection criteria |-|  |-| OP Selection criteria |-|

>--------------------------------------------------------------------------><
    |-| SR Selection criteria |-|  |-| WS Selection criteria |-|
```

MOD options:

```
              ;<-------------
|---UPDATE--=--(--keyword=value--)---------------------------------------------|
```

LIST options:

```
               ;<-------------
|---TWSPARM---=--(--keyword=value--)-------------------------------------------|
```

APPL Selection criteria:

```
|---AD=appl-id---IA=yymmddhhmm-------------------------------------------------|
```

OP Selection criteria:

```
├──AD=appl-id──IA=yymmddhhmm──OPNO=nnnn──JOBNAME=jobname──STATUS=status─────────►

►──ERRCODE=error_code──GROUP=group──OWNER=owner──PRIORITY=priority───────────────►

►──WSNAME=workstation────────────────────────────────────────────────────────────┤
```

SR Selection options:

```
├───SRNAME──=──special_resource─────────────────────────────────────────────────┤
```

WS Selection options:

```
├──WSNAME=workstation────────────────────────────────────────────────────────────┤
```

Parameters

resource

> The resource specifies the OPC 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 INGOPC 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 OPC 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 OPC subsystem. It can be one of the following:

> **LIST** Lists OPC Current Plan resources.

> **MOD** Modifies OPC 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, etc. 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><blank(s)>=<blank(s)><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 OPC. 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 OPC jobname. This field is used to qualify requests of type OP and is optional for all requests.

STATUS

Specifies the OPC status. This field is used to qualify requests of type OP and is optional for all requests.

ERRCODE

Specifies the OPC error code. This field is used to qualify requests of type OP and is optional for all requests.

GROUP

Specifies the OPC group. This field is used to qualify requests of type OP and is optional for all requests.

OWNER

Specifies the OPC owner. This field is used to qualify requests of type OP and is optional for all requests.

PRIORITY

Specifies the OPC priority. This field is used to qualify requests of type OP and is optional for all requests.

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 name or domain ID) 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, refer to "The TARGET Parameter" on page 10.

OUTMODE

For information on the OUTMODE parameter, refer to "The OUTMODE Parameter" on page 12.

Restrictions and Limitations

To use the INGOPC command system operations must be initialized.

Usage

The INGOPC command operates sysplexwide. For an overview refer to "Overview of Commands that Operate Sysplexwide" on page 9.

Examples

If you type INGOPC a panel similar to Figure 67 on page 150 is displayed.

```
EVJKYRQ0                 SA z/OS  - Command Dialogs
Domain ID   = IPSFM     ---------- INGOPC  ----------      Date = 05/08/03
Operator ID = NETOP1                                       Time = 04:28:39

   Resource    =>  _____       format: name/type/system
   System      =>  _____     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=Roll
                                                          PF12=Retrieve
```

Figure 67. INGOPC Command Dialog Panel

- The **Resource** field shows the name of the OPC active controller subsystem to be used for issuing the requests. The format is name/type[/system]. Wildcards are supported.
- The **System** field shows the name of the system (system name, domain ID, or sysplex name) to which the command should be routed. 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 OPC Current Plan resource to be specified.
- The **Application** field specifies the OPC 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 OPC 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 OPC 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 OPC 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 OPC 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 OPC 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 OPC 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 OPC 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 OPC priority associated with an operation. This field is used to qualify requests of type OP and is optional for all requests.

- The **Workstation** field specifies the OPC 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 OPC 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.

If you specify INGOPC * REQ=LIST TYPE=APPL a panel similar to Figure 68 is displayed.

```
 INGKYSTO               SA z/OS  - Command Dialogs  Line 1   of 65
 Domain ID  = IPSFM     -------- INGOPC   ---------    Date = 04/10/02
 Operator ID = AFRANCK        Sysplex = KEY1PLEX        Time = 16:19:30
 CMD: A Update    B Operations                              / scroll
                       Application Occurrence List
                     Input Arrival          Error
 CMD  Application Id  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=Roll
```

Figure 68. INGOPC REQ=LIST TYPE=APPL Sample Panel

If you specify INGOPC * REQ=LIST TYPE=OP a panel similar to Figure 69 is displayed.

```
 INGKYSTO               SA z/OS  - Command Dialogs  Line  1    of 3
 Domain ID   = IPSFM     -------- INGOPC   ---------    Date = 04/10/02
 Operator ID = NETOP1         Sysplex = KEY1PLEX        Time = 16:23:08
 CMD: A Update                                              / scroll
                          Operations List
      Op.  -------JES-------                             Err. Work
 CMD  Num. Name     Number   Status    Reason            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=Roll
```

Figure 69. INGOPC REQ=LIST TYPE=OP Sample Panel

INGOPC

If you specify INGOPC * REQ=LIST TYPE=SR a panel similar to Figure 70 is displayed.

```
 INGKYSTO                SA z/OS  - Command Dialogs  Line  1    of 26
 Domain ID   = IPSFM     -------- INGOPC   ---------    Date = 04/10/02
 Operator ID = NETOP1         Sysplex = KEY1PLEX         Time = 16:27:11
 CMD: A Update                                                    / scroll
                         Special Resources List
                                               --Actual-- -Default--
 CMD  Name                                     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=Roll
```

Figure 70. INGOPC REQ=LIST TYPE=SR Sample Panel

If you specify INGOPC * REQ=LIST TYPE=WS a panel similar to Figure 71 is displayed.

```
 INGKYSTO                SA z/OS  - Command Dialogs  Line  1    of 7
 Domain ID   = IPSFM     -------- INGOPC   ---------    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
 _    WTO1 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=Roll
```

Figure 71. INGOPC REQ=LIST TYPE=WS Sample Panel

If you specify INGOPC * REQ=LIST TYPE=CAL a panel similar to Figure 72 on page 153 is displayed.

```
INGKYSTO               SA z/OS  - Command Dialogs  Line  1    of 2
Domain ID  = IPSFM     -------- INGOPC   ---------    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=Roll
```

Figure 72. INGOPC REQ=LIST TYPE=CAL Sample 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 which 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. Refer to "Deciding the Format of the Command Output (Fullscreen only)" on page 13 for further information.

Pressing PF5 displays a filter selection panel similar to Figure 73 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/OPC 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=Roll
```

Figure 73. INGOPC Filter Sample 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.

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. If it is called in line mode, only the display functions are available.

Syntax

```
►►──INGPLEX──────────────────────────────────────────────────────────►
            ├─CDS──┬───────────────────────────────────────┤
            │      └─TYPE=──┬─ARM─────┬──┬──────────────┬──┤
            │               ├─CFRM────┤  └─DETAIL=CHPID─┘
            │               ├─LOGR────┤
            │               ├─SFM─────┤
            │               └─SYSPLEX─┘
            │        (1)
            ├─CF──────────────────────────────────────────┤
            ├─CONsole─────────────────────────────────────┤
            ├─DUMP────────────────────────────────────────┤
            ├─IPL──┬─DEL=──┤ IPLRECD ├──────────────────┬─┤
            │      ├─SHOW=─┤ IPLRECD ├──────────────────┤
            │      ├─DISP=─┤ IPLREC  ├──────────────────┤
            │      ├─COMP=─┤ IPLREC  ├─WITH=─┤ IPLREC ├──┤
            │      └─LIST=sysname──────────────────────────┘
            ├─SDump───────────────────────────────────────┤
            ├─SLIP──┬────────────┬──┬──────────────────┬──┤
            │       └─ID=slipid──┘  └─SYSTEM=sysname────┘
            ├─SVCdump──┬──────────────────────────────────┤
            │          └─sysname──┬────────────────────┬──┤
            │                     │        (2)  ┌─LIST─┐ │
            │                     └─REQ─────=──┼─COMP─┼─┘
            │                                   └─DUMP─┘
            └─SYStem──────────────────────────────────────┘

►─┬──────────────────────────────┬─┬──────────────────────┬──►◄
  └─TARGET=─┬─system_name───┬─┘   └─OUTMODE=─┬─LINE───┬─┘
            ├─domain_ID─────┤                 ├─AUTO───┤
            └─sysplex_name──┘                 └─NETLOG─┘
```
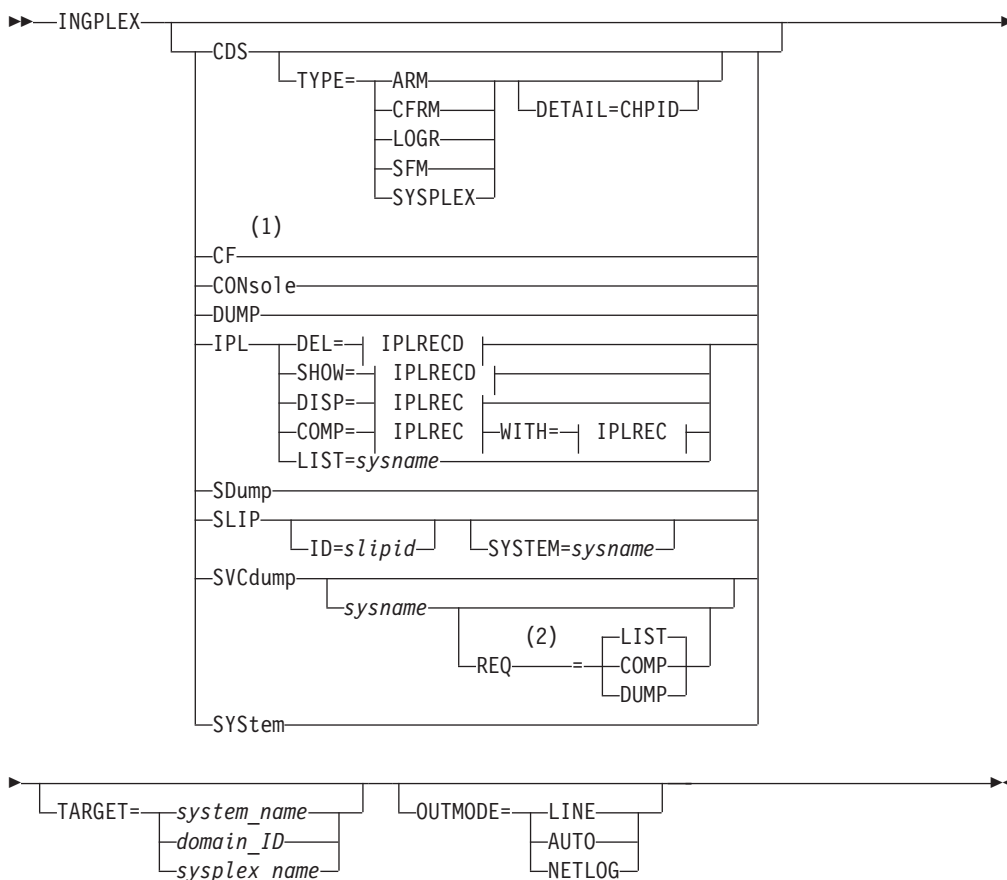
IPLRECD:

├──*sysname*/*timestamp*──┤

IPLREC:

├──*sysname*/*timestamp*[/*member*[/*suffix*]]──────────────────────────────────┤

Notes:

1   For details see "INGCF" on page 83.

2   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 159.

TYPE

The type of CDS for which the CDS function is issued. 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 169.

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 170.

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 176.

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 173.

SYStem
> Displays information about a member system of the sysplex.

TARGET
> For information on the TARGET parameter, refer to "The TARGET Parameter" on page 10 Note that the TARGET parameter is not supported in msys for Operations..

OUTMODE
> For information on the OUTMODE parameter, refer to "Additional Parameters for System Operations Commands" on page 10.

Example

If you specify INGPLEX without parameters, the selection panel shown in Figure 74 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=Roll
                                                               F12=Retrieve
```

Figure 74. 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 165.

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 167.

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 83.

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 159.

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 169.

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 170, "INGPLEX SVCdump" on page 173, and "INGPLEX SLIP" on page 176.

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 211.

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:

*allocate alternate CDS (A)

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.

display CHPIDs (C)

Displays information about the channel paths for the selected CDS type.

display CDS information (D)

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, namely:

display policy (D)

Displays details about the selected policy.

start policy (S)

Makes the selected policy the active policy.

The policy switch must be confirmed before it is executed.

*switch alternate CDS to primary CDS (P)

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 75 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=Roll
 PF7=Back     PF8=Forward  F9=Refresh                        F12=Retrieve
```

Figure 75. INGPLEX CDS Command Dialog Panel

The panel header contains sysplex-related information about the system on which the INGPLEX command was executed. 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 RETRY 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 **COUPLE**xx field shows the COUPLE*xx* 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 dat 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 75 on page 160, and press Enter. INGPLEX CDS displays the confirmation panel shown in Figure 76.

```
 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 76. 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 77.

```
 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.PXESCDS
       ALTERNATE: 16   KEYUSR  261C  SYS1.KEY1.AXESCDS
 _   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=Roll
 PF7=Back    PF8=Forward   F9=Refresh                      F12=Retrieve
```

Figure 77. 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 75 on page 160, and press Enter. The panel shown in Figure 78 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.PXESCDS
  KEYUSR  261C  08/29/2000 08:47:42 SYS1.KEY1.AXESCDS
 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
   --------      --  ---  ----------  --------  --------
 _ BZOEPOL  ACTIVE  2   19  02/10/2001  10:05:47  BZOE
 _ 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=Roll
             PF8=Forward   F9=Refresh                      F12=Retrieve
```

Figure 78. 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** field, 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 79.

```
 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                               F6=Roll
                                        F10=Go       F11=Cancel  F12=Retrieve
```

Figure 79. 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 75 on page 160, and press Enter. The panel shown in Figure 80 on page 164 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 80. 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 on which the CDS resides.
- 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 to which the device belongs.

INGPLEX SYStem

Purpose
The SYSTEM function displays the target sysplex name, its GRS mode and its member systems.

Example
Figure 81 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            ----------- SSUM -----------
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 81. 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

T Displays detailed signalling path information for all coupling facility structures

- 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** field shows the name of the system.
- The **Status** field shows the status of the system.
- The **Monitor Timestamp** field shows the last time stamp recorded for status monitoring on this system.
- The **INTERVAL** field 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 82.

```
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 82. 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=Roll
                       F9=Refresh                       F12=Retrieve
```

Figure 83. INGPLEX CONS Command Dialog Panel

The following command codes are available:

D   Displays details for the console

R   Displays the actual requests for the console

- 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 **Cmd** field lets you specify the command codes shown on the panel. Enter the appropriate letter next to the resource name, and press Enter.
- 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 has no command authority.

SYS   INFO commands and any commands from the system control command group may be entered form 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 CONSOL*xx* 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 from which this console is receiving unsolicited messages. 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
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
Cmds: 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 84. 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 operationg 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 85is 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 85. INGPLEX Dump Options Panel

If you select option 1, the panel shown in Figure 86 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 86. 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 exlusively 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 for which amout of time (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 87 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 87. 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 on which the SDUMP options are being changed. 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 which 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 SVCDUMP 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 88. INGPLEX SVCDUMP Target System Selection Panel

- The **Sel** field lets you select a system from which a multisystem dump is issued.
- 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 89 on page 174 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                            F12=Retrieve
```

Figure 89. 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 90 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                                selected
 _               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 90. 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 91.

```
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 ..... ==>  Y    LPA ...... ==>  _   LSQA ..... ==>  _    NUC ...... ==> Y
PSA ...... ==>  _    RGN ...... ==>  Y   SERVERS .. ==>  _    SQA(*) ... ==> Y
SUMSUMP(*) ==>  Y    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 91. 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 RFIND 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 91.
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 92. 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 93. 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 which 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
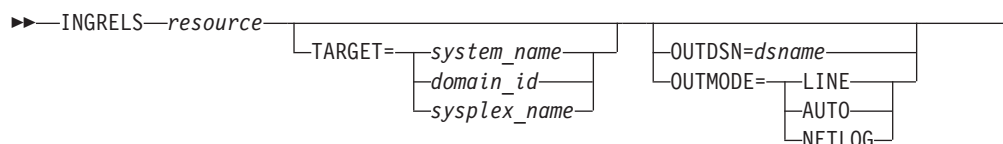
```
►►──INGRELS──resource──────────────────────────────────────────────────────────►
                       └─TARGET=─┬─system_name─┬─┐ ┌─OUTDSN=dsname─┐
                                 ├─domain_id───┤   ├─OUTMODE=─┬─LINE──┐
                                 └─sysplex_name┘   └          ├─AUTO──┤
                                                              └─NETLOG┘
```

```
                         ┌─SHOW=EXPANDED──┐
►►─┬──────────┬──┼────────────────┼──────────────────────────────────►◄
   └─WAIT=nnn─┘  └─SHOW=COLLAPSED─┘
```

Parameters

resource
> Specifies the name of the resource to be displayed. The format is
> *name/type[/system]*.

TARGET
> For information on the TARGET parameter, refer to "The TARGET Parameter"
> on page 10.

OUTDSN
> For information on the OUTDSN parameter, refer to "The OUTDSN
> Parameter" on page 13.

OUTMODE
> For information on the OUTMODE parameter, refer to "The 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 refer to
"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 94 on page 179 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
 System     ==>  _____        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 94. 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 **System** 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.

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- 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.

Furthermore, 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 95.

```
INGKYRL0                 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
 System     ==>  _____         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 95. 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:

```
►►── INGREQ ──┬─ resource ─┬── REQ= ──┬── START ──┤ startup parms ├──────────────►
              └── ALL ─────┘          ├── UP ─────┤                │
                                      ├── STOP ───┤ shutdown parms ├
                                      └── DOWN ───┘
```

```
        ┌── PRI=LOW ────────┐
►─┬──────────────────────┬──┬───────────────────────────────────────────►
  │      ┌── FORCE ──┐    │  │                ┌── ,00:00 ──┐  │
  └─ PRI= ┤           ├────┘  └─ EXPIRE=( ─┬──────────┬──┤            ├─ ) ─┘
          └── HIGH ───┘                    ├── * ─────┤  └── ,time ──┘
                                           ├── date ──┤
                                           └─ +hh:mm ─┘
```

```
►─┬──────────────────────────────────────────────────────►
  └─ TIMEOUT=( interval ─┬──────────────┬── ) ─┘
                         │    ┌── MSG ───┐│
                         └─ , ┤          ├┘
                              └── CANCEL ┘
```

```
►─┬──────────────────────────────────────────────────────────►
  │           ┌◄──────────────┐       │
  └─ REMOVE= ─┬─ ( ─┬─ AVAILABLE ─┬── ) ─┤
              │     ├── DEGRADED ─┤     │
              │     ├── SYSGONE ──┤     │
              │     └── UNKNOWN ──┘     │
              ├── * ──────────────────┤
              └── NO ─────────────────┘
```

```
              ┌── OVERRIDE=NO ──────────┐  ┌── PRECHECK=YES ──┐
►─┤ feedback option ├─┬────────────────────┬─┬──────────────────┬──►
                      │           ┌◄─────┐  │  └── PRECHECK=NO ───┘
                      └─ OVERRIDE=( ─┬─ ALL ─┬── ) ─┘
                                     ├── DPY ─┤
                                     ├── FLG ─┤
                                     ├── INIT ┤
                                     ├── STS ─┤
                                     ├── TRG ─┤
                                     └── UOW ─┘
```

```
  ┌── VERIFY=YES ──────┐              ┌── WAIT=YES ──┐
►─┤                     ├─┬───────────────┬─┤             ├─┬──────────────┬──►
  └─ VERIFY= ─┬── NO ──┬─┘ └─ SOURCE=source ─┘ ├── WAIT=NO ──┤ └─ CMT=text ──┘
             └── WTOR ─┘                       └── WAIT=nnn ─┘
```

```
►─┬───────────────────────────────┬─┬──────────────────────┬─┬──────────────┬──►
  └─ TARGET= ─┬── system_name ──┬─┘ └─ OUTMODE= ─┬── LINE ──┬┘ └─ APPLPARMS= ─┘
              ├── domain_id ─────┤              ├── AUTO ──┤
              └── sysplex_name ──┘              └── NETLOG ┘
```

```
         ┌──────────────────────────────────────────────────────────────►◄
►──┬──────────┬──────────────────────────────────────────────────────────►◄
   └─MULT=YES─┘
```

Startup parms:

```
   ┌─SCOPE=ONLY─┐  ┌─TYPE=NORM─┐
├──┼────────────┼──┼───────────┼──────────────────────────────────────────┤
   └─SCOPE=ALL──┘  └─TYPE=user─┘
```

Shutdown parms:

```
   ┌─SCOPE=ALL─────────┐  ┌─TYPE=NORM──────┐  ┌─RESTART=NO──┐
├──┼───────────────────┼──┼────────────────┼──┼─────────────┼─────────────►
   └─SCOPE=─┬─ONLY─────┬┘  └─TYPE=─┬─IMMED─┬┘  └─RESTART=YES─┘
           └─CHILDREN─┘           └─FORCE─┘

   ┌─INTERRUPT=NO──┐
►──┼───────────────┼───────────────────────────────────────────────────────┤
   └─INTERRUPT=YES─┘
```

To cancel a request:

```
                                              ┌─VERIFY=YES────┐
►►──INGREQ──resource──REQ=CANCEL──┬────────────────┬──┼───────────────┼──────►
                                  └─SOURCE=source─┘  └─VERIFY=─┬─NO───┬┘
                                                              └─WTOR─┘

   ┌─WAIT=YES─┐
►──┼──────────┼──┬──────────────────────────┬──┬──────────────────────┬──────►
   ├─WAIT=NO──┤  └─TARGET=─┬─system_name─┬──┘  └─OUTMODE=─┬─LINE───┬──┘
   └─WAIT=nnn─┘            ├─domain_id───┤                ├─AUTO───┤
                          └─sysplex_name─┘                └─NETLOG─┘

►──┤ feedback option ├────────────────────────────────────────────────────►◄
```

Feedback option:

```
├──FDBK=(──┬─TWS,operation──────────┬──,max_time─────────────────)──────────┤
          ├─MSG──────────┬──┬─,G─┬──┘         └─,exp_status─┘
          ├─MSG/userid───┤  ├─,F─┤
          │              │  └─,B─┘
          └─WAIT─────────┘
```

Parameters

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.

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.

REMOVE
Indicates the condition under which 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 will be 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.

STS

The current observed status of the resource is ignored by the agent during INGREQ precheck processing. Override STS does not affect automation 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.

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.

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 by means of 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.

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.

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.

Note: The comment is translated to uppercase.

TARGET

For information on the TARGET parameter, refer to "The TARGET Parameter" on page 10.

OUTMODE

For information on the OUTMODE parameter, refer to "The 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.

TWS Use this parameter to return the completion of the command to TWS:

operation Identifies the TWS operation, consisting of:
1. Application description ID
2. Workstation name
3. Operation number
4. Input arrival timestamp

The various parts must be separated with a blank.

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).

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.

When you do a NORM or IMMED shutdown, the only options allowed are:
- For a DBCTL region: PURGE, FREEZE
- For an XRF CTL region in BACKUP mode: BACKUP
- For a CTL region: PURGE, FREEZE or DUMPQ

When you do a FORCE the only options allowed are DUMP or NODUMP.

The FDBK parameter will only monitor resources within the local sysplex.

Usage

The INGREQ command operates sysplexwide. For an overview refer to "Overview of Commands that Operate Sysplexwide" on page 9.

Examples

If you enter INGREQ a panel similar to Figure 96 is displayed.

```
 INGKYRU0                 SA z/OS  - Command Dialogs     Page   1 of 2
 Domain ID  = IPSFO      ---------- INGREQ  ----------   Date = 04/27/06
 Operator ID = NETOP1                                    Time = 18:52:41

   Resource   =>  CICS/APL/KEY4                    format: name/type/system
   System     =>  _____       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=Roll
                                              PF11=Next    PF12=Retrieve
```

Figure 96. INGREQ Command Dialog Panel 1

- The **Resource** field shows the name of the resource to be processed. The format is *name/type[/system].* Wildcard is supported.
- The **System** field shows the name of the system (system name, domain ID, or sysplex name) to which the command should be routed. 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 under which 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 Parms** field shows modifications or parameters to the START or STOP request.

If you press PF11 a panel similar to Figure 97 is displayed.

```
 INGKYRU2                SA z/OS  - Command Dialogs     Page   2 of 2
 Domain ID  = IPSFP     ---------- INGREQ  ----------   Date = 04/27/06
 Operator ID = NETOP1                                   Time = 18:59:03

   Resource    =>  _____    format: name/type/system
   System      =>  _____      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                     PF6=Roll
                                     PF10=Previous       PF12=Retrieve
```

Figure 97. INGREQ Command Dialog Panel 2

- The **Timeout** field shows the time within which the request must complete. 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.

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- 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──────────────┤ Report options ├──────────────────────────────►
         └─RESET─┘                         └─RESOURCE=name─┘

►─────────────────────────────────────────────────────────────────────►◄
   └─TARGET=──┤ Destination ├──┐   ┌─OUTDSN=dsname──────┐
             ├─ Dest_list ├──┤   └─OUTMODE=──┬─LINE──┐
             └─*ALL─────────┘              ├─AUTO──┤
                                            └─NETLOG┘
```

Report options:

```
      ┌─STATS=SUMMARY──────┐
├──────┼────────────────────┼──────────────────────────────────────────┤
       └─STATS=──┬─DETAIL─┐
                 └─NONE───┘
```

Destination:

```
├──┬─system_name──┬─────────────────────────────────────────────────────┤
   ├─domain_ID────┤
   └─sysplex_name─┘
```

Dest_list:

```
        ┌──────────────────┐
        ▼                  │
├──(─────┤ Destination ├──┴──)────────────────────────────────────────┤
```
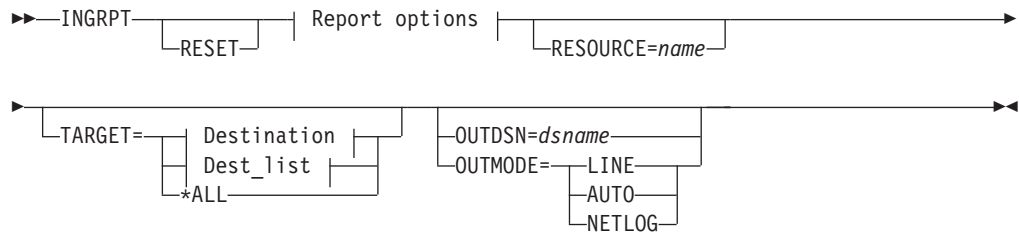
Parameters

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 for which you want to collect the statistics, 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, refer to "The TARGET Parameter" on page 10.

OUTDSN

For information on the OUTDSN parameter, refer to "The OUTDSN Parameter" on page 13.

OUTMODE

For information on the OUTMODE parameter, refer to "The OUTMODE Parameter" on page 12.

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 98 on page 192.

```
 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 98.

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.

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.

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

```
>>--INGSCHED---------------------------------------WAIT=YES------------------------------------>
             |--schedule--| schedule options |--|   |--WAIT=NO--|
             |--resource--| resource options |      |--WAIT=nnn-|
```

```
    ┌─────────────────────────────────────────────────────────────────────►
►─┬─                                             ─┬──────────────────────────┬─►◄
  └─TARGET=─┬─system_name─┬─                       ├─OUTDSN=dsname────────────┤
           ├─domain_id───┤                       └─OUTMODE=─┬─LINE───┬─┘
           └─sysplex_name─┘                                 ├─AUTO───┤
                                                            └─NETLOG─┘
```

schedule options:

```
   ┌─REQ=DISP ─DATE=curr_date ─DAYS=1────────────────────┐
├──┼─────────────────────────────────────────────────────┼──────────────────────┤
   └─REQ=─┬─BASE────────────────────────────────────┬─┘
          ├─DEL──┤ date ├─┤ days ├──────────────────┤
          ├─DISP─┤ date ├─┤ days ├──────────────────┤
          ├─REPL─┤ date ├─┤ priority ├─┤ timeslots ├┤
          └─RESOURCES───────────────────────────────┘
```

resource options:

```
   ┌─REQ=DISP ─DATE=curr_date ─DAYS=1────────────────────┐
├──┼─────────────────────────────────────────────────────┼──────────────────────┤
   └─REQ=─┬─DEL──┤ date ├─┤ days ├──────────────────┬─┘
          ├─DISP─┤ date ├─┤ days ├──────────────────┤
          └─REPL─┤ date ├─┤ priority ├─┤ timeslots ├┘
```

date:

```
   ┌─DATE=curr_date─┐
├──┼────────────────┼──────────────────────────────────────────────────────────┤
   └─DATE=YYYYMMDD──┘
```

days:

```
   ┌─DAYS=1────┐
├──┼───────────┼──────────────────────────────────────────────────────────────┤
   └─DAYS=1..366─┘
```

priority:

```
├──┬────────────────────────────────────┬──────────────────────────────────────┤
   │        ┌─LOW──┐     ┌─LOW──┐        │
   └─PRI=(──┴──────┴──,──┴──────┴──)─────┘
            └─HIGH─┘     └─HIGH─┘
```

timeslots:

```
├──┬──────────────────────┬──┬────────────────────────┬──────────────────────────┤
   │        ┌─,─┐          │  │         ┌─,─┐          │
   └─UP=(───▼─hhmm-hhmm─┴──)─┘  └─DOWN=(─▼─hhmm-hhmm─┴──)─┘
```

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).

DATE
> Specifies the date in yyyymmdd format for which the delete or replace of the override should be done.
>
> *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, refer to "The TARGET Parameter" on page 10.

OUTDSN

For information on the OUTDSN parameter, refer to "The OUTDSN Parameter" on page 13.

OUTMODE

For information on the OUTMODE parameter, refer to "The 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 refer to "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 99 on page 196 is displayed.

INGSCHED

```
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=Roll
                                PF9=Refresh             PF12=Retrieve
```

Figure 99. 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 100 on page 197 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=Roll
                               PF9=Refresh               PF12=Retrieve
```
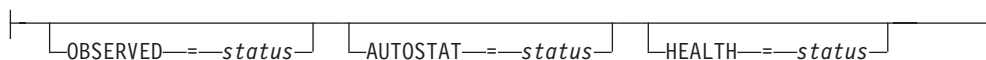
Figure 100. INGSCHED Command Dialog Panel Showing Schedule Details

- 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 101 on page 198, 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, overtype 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.

INGSCHED

```
 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 101. 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 102 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=Roll
                              PF9=Refresh                    PF12=Retrieve
```

Figure 102. 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. Refer to "Deciding the Format of the Command Output (Fullscreen only)" on page 13 for information.

Showing Resource Overrides

A panel similar to Figure 103 shows schedule overrides for the selected resource.

```
 INGKYSP2                    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___
                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 103. 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

```
                        ┌─RESP=YES,──────┐        ┌─OPER=defined/issuing_task_ID,─┐ (1)
►►──INGSEND──┤                ├────────┤                               ├──────►
                        └─RESP=──┬─ACK──┬──,─┘        └─OPER=──operator_ID──,─────────┘
                                      ├─CORR─┤
                                      └─NO───┘
```

```
         ┌─TO=current target domain,──────┐ (2)   ┌─CRM=RMTCMD,─┐
►────┤                                    ├──────┤             ├──────────────────►
         └─TO=──┬─FP──────────────┬──,─┘         └─────────────┘
                      │       ┌─domain─┐ │
                      └─netid.──┴────────┘
```

```
         ┌─CORRWAIT=defined/10,─┐
►────┤                          ├──CMD=command────────────────────────────────►◄
         └─CORRWAIT=value,───────┘
```
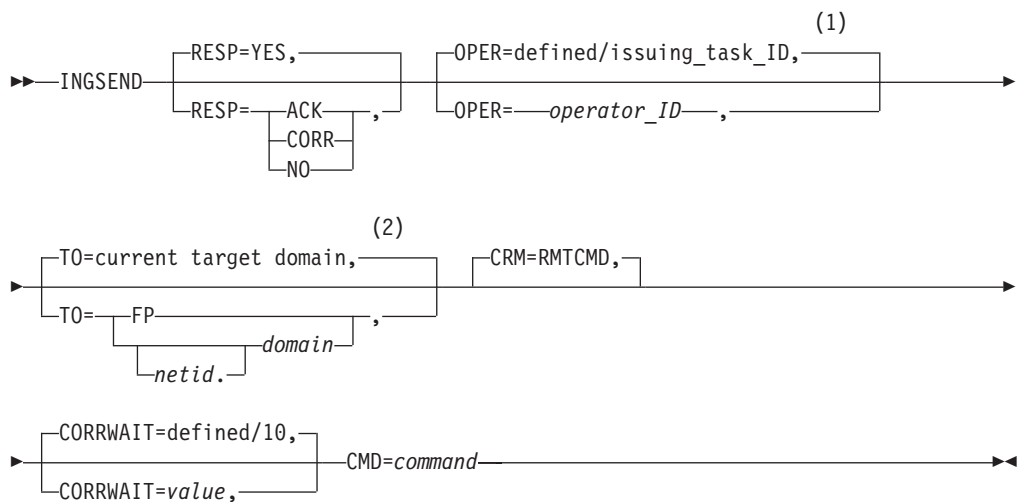
Notes:

1   The default value can be defined using the SA z/OS customization dialog. If not 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

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 means of the Netview WINDOW command.See *Restrictions* on correlating command output.

OPER

Specifies the operator by which 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 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 to which the command is being issued.

[netid].domain
　　Specifies the domain to which the command is being issued. 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 INGSEND 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.

A default command routing mechanism can be predefined for each target system using the customization dialog. Refer to *IBM Tivoli System Automation for z/OS User's Guide* for further information. If you do not predefine a command routing mechanism in this way, it will default to RMTCMD.

CORRWAIT

Specifies the CORRWAIT value (in seconds) to be used when INGSEND uses NetView PIPES. The Corrwait 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 INGSEND command will not execute under the primary POI task (PPT).
- INGSEND 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='. INGSEND sends the command defined by the start and end delimiter. Examples of INGSEND with commands that use delimiters are shown in "Examples."

Examples

The following examples show how INGSEND is used and correctly delimited:

1. Consider the following example:

   ```
   "INGSEND 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 INGSEND is concerned even though there are delimiter characters in it:

   ```
   INGSEND RESP=ACK,TO=CNM01,CMD=MVS $D'RMF'
   ```

3. The following is correctly delimited:

   ```
   INGSEND 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:

   ```
   INGSEND 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:

   ```
   INGSEND 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:

   ```
   INGSEND RESP=ACK,TO=CNM01,CMD='MVS $D'RMF' "
   ```

If you enter INGSEND without specifying any parameters, a panel similar to Figure 104 will be displayed.

```
 INGKYSND                 SA z/OS  - Command Dialogs
 Domain ID   = IPUN8    ---------- INGSEND ----------   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 104. INGSEND Command Dialog Panel

The available fields correspond to the parameters of the INGSEND command (see "Parameters" on page 200 for details).

INGSESS

Purpose

INGSESS displays OMEGAMON® session definitions, the session status and statistical information about the session.

Syntax

```
>>--INGSESS----------------------REQ=DISPLAY------------------------------------------------------------------------------------------------>
              |_session_name_|   |_REQ=---DETAIL----|
                                      |-START----|
                                      |-STOP-----|


>----------------------------------------------------------------------------------------------------------------------------------------><
     |_TARGET=---system_name---|   |_OUTDSN=dsname-----|
              |-domain_ID----|     |_OUTMODE=---LINE----|
              |_*ALL---------|               |-AUTO----|
                                             |_NETLOG--|
```
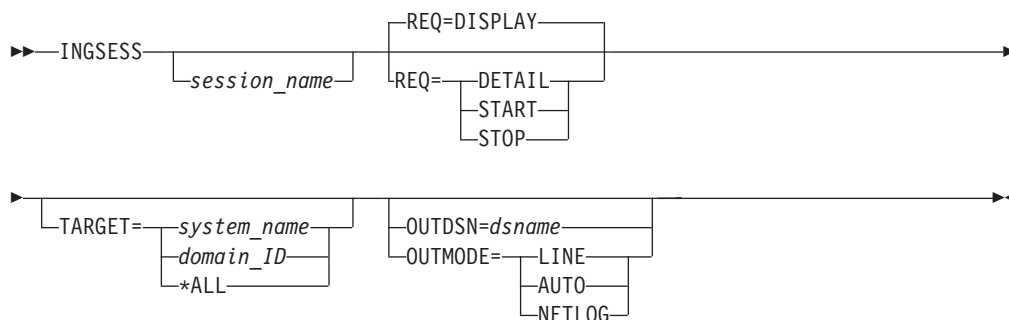
Parameters

session_name
> The name of the OMEGAMON session that an action is requested for. This parameter is only useful in line mode.
>
> 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, refer to "The TARGET Parameter" on page 10.

OUTDSN
> For information on the OUTDSN parameter, refer to "The OUTDSN Parameter" on page 13.

OUTMODE
> For information on the OUTMODE parameter, refer to "The OUTMODE Parameter" on page 12.

Examples

Figure 105 on page 205 is displayed when you enter the INGSESS command at the NetView command line.

```
INGKYSS0               SA z/OS  - Command Dialogs    Line  1    of 8
Domain ID  = IPSFM     -------- INGSESS  ---------    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  SessOper
--- ----------- -------- -------- ---------- -------- -------- --------
    CICSKY41     KEYA     OMIICICS ACTIVE     IPSPOC0  SAOM     AOFSES01
 _  DB2SGG4      KEYA     OMIIDB2  ACTIVE     IPSPD2C  SAOM     AOFSES02
 _  DB2SG14      KEYA     OMIIDB2  SESSFAIL   IPSPD2C  SAOM     AOFSES01
 _  IMS742CR     KEYA     OMIIIMS  ACTIVE     IPSPOI0  SAOM     AOFSES02
 _  IMS743CR     KEYA     OMIIIMS  MAINT      IPSPOI0  SAOM     AOFSES01
 _  JHSY4MVS     KEYA     OMIIMVS  ACTIVE     IPSPM2RC SAOM     AOFSES02
 _  JHSY4MV2     KEYA     OMIIMVS  INACTIVE   IPSPM2RC SAOM     AOFSES01
 _  OMSY4MVS     KEYA     OMIIMVS  ACTIVE     IPSPM2RC SAOM     AOFSES01




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

Figure 105. INGSESS Command Dialog Display

- 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 106 is
displayed.

```
 INGKYSS1                 SA z/OS  - Command Dialogs     Line  1    of 22
 Domain ID   = IPXNG       ---------- INGSESS ----------   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=Roll
                           PF9=Refresh                      PF12=Retrieve
```

Figure 106. INGSESS Command Dialog Detail Display

- 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 clists. 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 or reset the Group failed flag
- Set the start or stop type for a resource

Syntax

```
►►─INGSET──┬─CANCEL──resource──REQUEST=request──SOURCE=source──┬─ Confirm ─┬──────►
           │                                                   └─VERIFY=NO─┘
           ├─KILL──resource──REQUEST=request──SOURCE=source──────────────────┤
           └─SET──resource──┤ Status options ├──┤ Command_Parm ├──┤ Flags ├──┘
```

```
        ┌─WAIT=YES─┐
►───────┼──────────┼──┬─────────────────────┬──┬─OUTMODE=──┬─LINE───┬─┬──────►◄
        ├─WAIT=NO──┤  └─TARGET=──┬─system_name─┬┘           ├─AUTO───┤
        └─WAIT=nnn─┘             ├─domain_id────┤           └─NETLOG─┘
                                 └─sysplex_name─┘
```

Confirm:

```
     ┌─VERIFY=YES─────┐
├─────┼────────────────┼───────────────────────────────────────────────┤
      └─VERIFY=──┬─NO───┬┘
                 └─WTOR─┘
```

Status options:

```
         ┌─OBSERVED──=──status─┐  ┌─AUTOSTAT──=──status─┐  ┌─HEALTH──=──status─┐
─────────┴─────────────────────┴──┴─────────────────────┴──┴───────────────────┴──────
```

Command_Parm:

```
         ┌─STARTPARM=──┬─parm─┬─┐  ┌─STOPPARM=──┬─parm─┬─┐  ┌─STARTTYPE=starttype─┐
─────────┴─────────────┴──*───┴─┴──┴────────────┴──*───┴─┴──┴─────────────────────┴──►

   ┌─STOPTYPE=stoptype─┐
►──┴─────────────────────┴──────────────────────────────────────────────────────────
```

Flags:

```
         ┌─AUTOFLAG=──┬─YES─┬─┐  ┌─HOLDFLAG=──┬─YES─┬─┐
─────────┴────────────┴─NO──┴─┴──┴────────────┴─NO──┴─┴─────────────────────────────
```
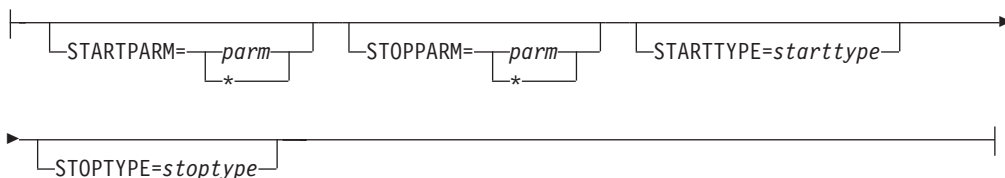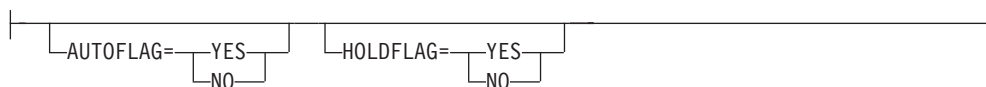
Parameters

CANCEL

Removes a request.

resource

Specifies the resource for which the request is to be canceled. 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 for which the request is to be killed. 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
- Group failed flag
- Start type for next startup
- Stop type for next shutdown

Wildcard is supported for the SET parameter.

resource

Specifies the resource for which an attribute is to be set. 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.

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.

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 by means of 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, refer to "The TARGET Parameter" on page 10.

OUTMODE
For information on the OUTMODE parameter, refer to "The 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.

4 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 AOF099I 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 refer to 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 by which you can initiate one of these actions are only displayed when you are authorized to perform the action.

Syntax

```
>>--INGSTR--------------------------------------------------------------------->
           └─strname[*]─┘  └─CONDition=─┬─No──┬─┘  └─ALL=─┬─No──┬─┘
                                        └─Yes─┘           └─Yes─┘

>--┬─────────────────────────────────────┬──┬──────────────────┬──────────────><
   └─TARGET=─┬─system_name──┬─┘            └─OUTMODE=LINE─┘
             ├─domain_ID────┤
             └─sysplex_name─┘
```
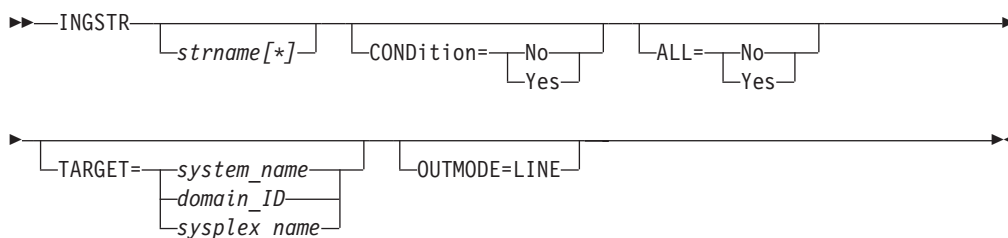
Parameters

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, refer to "The TARGET Parameter" on page 10.

OUTMODE
> For information on the OUTMODE parameter, refer to "The 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 has no alternate coupling facility defined in its preference list, or the alternate coupling facilities 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 97.

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 has no 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 has no 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 has no 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 107 on page 215.

```
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                                CFA
_ DSNA_LOCK1          S  CFA      CFA        CFA       CFB
_ 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 107. 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 108 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)
   ----------------  - -  --------  --------  -----------------
 _ DSNA_GBP0             U  CFA      CFB
 _   Condition ...:  Duplex rebuild is active.
 _ DSNA_GBP1             S                   CFA       CFB
 _   Condition ...: *Structure is not allocated.
 _ DSNA_GBP2             U  CFA                        CFB
 _   Condition ...:
 _ DSNA_GBP32K                                CFA
 _   Condition ...: *Structure is not allocated.
 _ DSNA_LOCK1            S  CFB      CFA      CFA       CFB
 _   Condition ...:  Duplex rebuild is active.
 _ DSNA_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 108. 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 109 on page 217. 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 ----------        Date = 11/23/04
Operator Id = NETOP1                                        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 109. REALLOCATE Confirmation Panel

Line Command Output

If you enter, for example, the command INGSTR D* COND=Y ALL=Y
OUTMODE=LINE, this produces line command output, as shown in Figure 110.

```
Structures: D*
Sysplex...: KEYAPLEX

Structure         P D  Old       New       Pref. Location(s)  Condition
----------------  - -  --------  --------   -----------------  --------------------------
DSNA_GBP0           U  CFA       CFB                           Duplex rebuild is active.
DSNA_GBP1           S                       CFA       CFB      *Structure is not allocated.
DSNA_GBP2           U  CFA                             CFB
DSNA_GBP32K                                 CFA                *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 110. 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─────────────────────────────────────────────────────────────►
              ├─DEFAULTS──┤    └─CRIT=(nn,hh:mm)─┘   └─FREQ=(nn,hh:mm)─┘
              ├─SUBSYSTEM─┤
              ├─MVSESA────┤
              ├─resname───┤
              └─filter────┘

►──────────────────────────────────────────────────────────────────────►
    └─INFR=(nn,hh:mm)─┘   └─TARGET=──┬─ Destination ─┬─┘
                                     ├─ Dest_list ───┤
                                     └─*ALL──────────┘

►────────────────────────────────────────────────────────────────────►◄
    └─OUTMODE=──┬─LINE───┬─┘
                ├─AUTO───┤
                └─NETLOG─┘
```

Destination:

```
├──┬─system_name──┬─────────────────────────────────────────────────┤
   ├─domain_ID────┤
   └─sysplex_name─┘
```

Dest_list:

```
            ┌──────,───────┐
├──(──▼─ Destination ─┴──)──────────────────────────────────────────┤
```
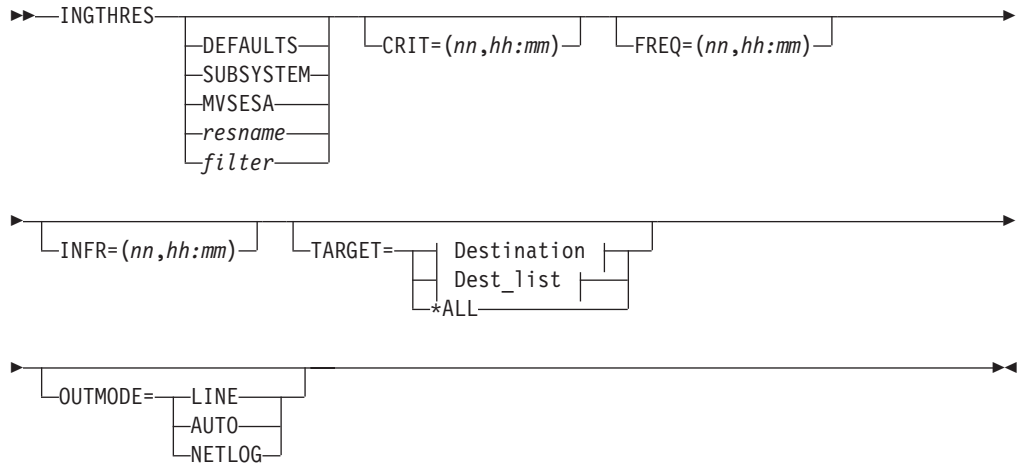
Parameters

If you do not specify a subsystem, the INGTHRES panel is displayed.

DEFAULTS

Sets the default settings for all automated resources. All automated resources that do not have their own threshold settings or that do not belong to a group that has its own settings use these defaults.

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.*.

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.

hh:mm
Specifies the time period before the threshold is reached: hh = hours, mm = minutes.

TARGET
For information on the TARGET parameter, refer to "The TARGET Parameter" on page 10.

OUTMODE
For information on the OUTMODE parameter, refer to "The 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, the following actions occur:

Threshold exceeded	What SA z/OS does
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 111.

```
 INGKYTH0               SA z/OS  - Command Dialogs     Line  1    of 4
 Domain ID   = IPSFM    ---------- INGTHRES ----------   Date = 12/07/01
 Operator ID = NETOP1                                    Time = 14:25:05

 Cmd:  A Add thresholds   C Change thresholds    D Delete thresholds

 Cmd  System    Resource           Critical      Frequent    Infrequent
 ---  --------  ----------------  -----------   -----------  -----------
      KEY1      DEFAULTS
 _    KEY1      MVSESA            1 in 01:00    1 in 02:00   1 in 04:00
 _    KEY1      SUBSYSTEM         1 in 00:05    1 in 00:30   1 in 01:00
 _    KEY1      JES2              1 in 01:00    1 in 04:00   1 in 08:00




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

Figure 111. 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 for which the thresholds are defined. 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. The format of the thresholds is *nn* in *hh:mm*. This means that the threshold is exceeded if more than *nn* errors occur within *hh* hours and *mm* minutes.

If you specify command code A, a panel similar to Figure 112 on page 221 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    =>                       Group or specific resource
   System      =>  KEY1        System name, domain ID, sysplex name or *all

   Critical    =>  1    errors in  01:00     Time (HH:MM)
   Frequent    =>  1    errors in  02:00     Time (HH:MM)
   Infrequent  =>  1    errors in  04:00     Time (HH:MM)



   Pressing ENTER will set the THRESHOLD values




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

Figure 112. 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

```
►►─INGTOPO──┬─INIT────────────────┬──────────────────────────────►◄
            │     └─task_name─┘    │
            ├─REBUILD──plex────────┤
            ├─SWEEP────────────────┤
            └─SWEEPSYS──plex───────┘
```

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.

INGTOPO can be called with INIT at any time. INGTOPO then either rebuilds the SA z/OS objects by querying the automation managers or performs only the necessary update operations.

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.

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

```
►►──INGTRIG──┬─────────┬──┬─TARGET=─┬─system_name──┬──┬──────────────►
             └─trigger─┘  │         ├─domain_id────┤  │
                          │         └─sysplex_name─┘  │

►──┬────────────────────┬──┬─────────┬──────────────────────────────►◄
   └─OUTMODE=─┬─LINE───┬─┘  └─WAIT=nnn─┘
             ├─AUTO───┤
             └─NETLOG─┘
```
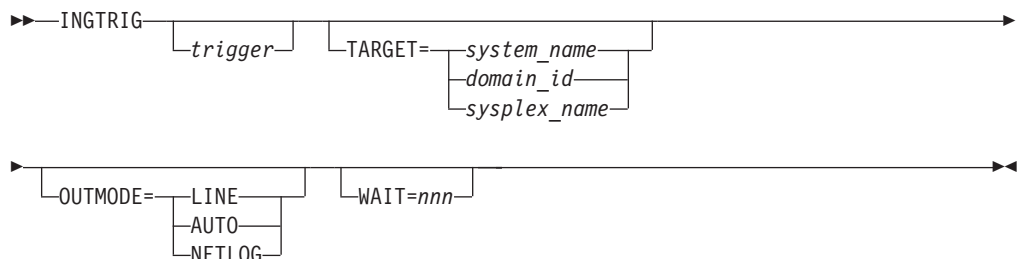
Parameters

trigger
> Specifies the name of the trigger for which the resource using the trigger should be displayed.

TARGET
> For information on the TARGET parameter, refer to "The TARGET Parameter" on page 10.

OUTMODE
> For information on the OUTMODE parameter, refer to "The 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 downlevel systems cannot be shown.

Usage

The INGTRIG command operates sysplexwide. For an overview refer to "Overview of Commands that Operate Sysplexwide" on page 9.

Examples

If you enter `ingtrig` a panel similar to Figure 113 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
_   MDOTRGI3   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=Roll
                              PF9=Refresh             PF12=Retrieve
```

Figure 113. 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.

The FIND/RFIND and SORT subcommands are supported. Refer to "Deciding the Format of the Command Output (Fullscreen only)" 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 114.

```
 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 114. 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. Refer to "Deciding the Format of the Command Output (Fullscreen only)" on page 13 for information.

INGVOTE

Purpose

The INGVOTE command displays:

- All pending requests that were entered from the automation manager.
- All pending votes of a specified resource.

Syntax

```
>>--INGVOTE----------------STATUS=ALL------------------------------------------------------------------------>
              |_resource_|  |_STATUS=--WINNING----|  |_SOURCE=name_|
                                      |-NOWINNING-|
                                      |-LOSING----|
                                      |_NOLOSING__|


>------------------------------------------------------------------------------------------------------------>
     |_EXCLUDE=(--res_type--)_|  |_WAIT=nnn_|  |_TARGET=--system_name---|
                                                        |-domain_id-----|
                                                        |_sysplex_name__|


>------------------------------------------------------------------------------------------------------------><
     |_OUTDSN=dsname-----|
     |_OUTMODE=--LINE--|
               |-AUTO---|
               |_NETLOG_|
```
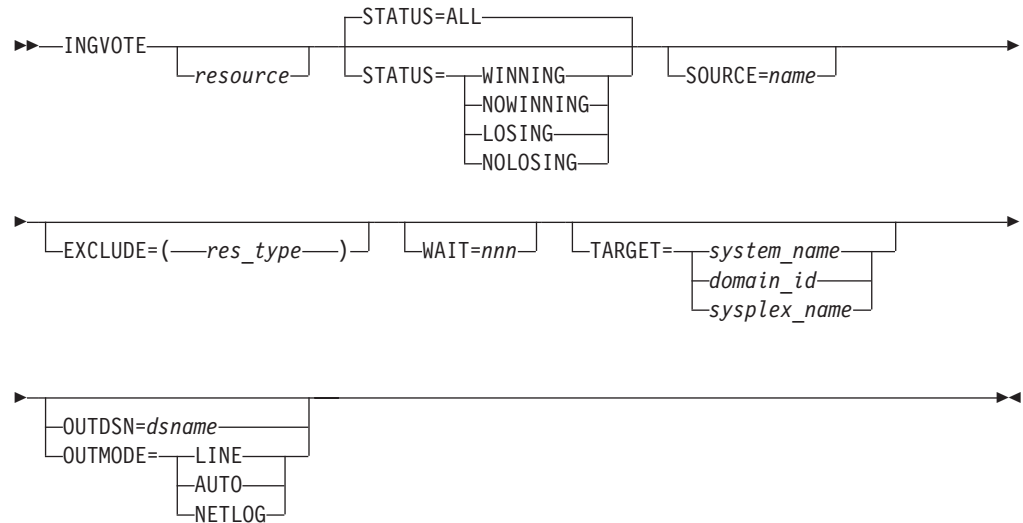
Parameters

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. Wildcard is supported, for example, SOURCE=OPER*.

TARGET

For information on the TARGET parameter, refer to "The TARGET Parameter" on page 10.

OUTDSN

For information on the OUTDSN parameter, refer to "The OUTDSN Parameter" on page 13.

OUTMODE

For information on the OUTMODE parameter, refer to "The 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.

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 refer to "Overview of Commands that Operate Sysplexwide" on page 9.

Examples

If you enter `ingvote` a panel similar to Figure 115 is displayed.

```
 INGKYRQ2                SA z/OS  - Command Dialogs     Line  1    of 72
 Domain ID   = IPUFA      ---------- INGVOTE ----------    Date = 07/04/00
 Operator ID = NETOP1          Sysplex = AOCPLEX           Time = 15:42:32

 Cmd:  C Cancel request   K Kill request    S Show details    V Show votes
 Cmd Name         Type System   Request Data
 --- ----------- ---- -------- ------ -------------------------------------------
  _   BNKNACHT     SVP          Req : MakeUnAvailable
                                Org : SCHEDULE
                                Pri : 01120000  Should Be Down - Schedule
                                Stat: Winning/Unsatisfied
  _   BZOMSCMV     SVP          Req : MakeAvailable_Only
                                Org : SCHEDULE
                                Pri : 02140000  Must Be Up - Schedule
                                Stat: Winning/Unsatisfied
  _   HOURLY       SVP          Req : MakeAvailable_Only
                                Org : SCHEDULE
                                Pri : 02140000  Must Be Up - Schedule
                                Stat: Winning/Unsatisfied
  _   HUGDAY       SVP          Req : MakeAvailable_Only

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

Figure 115. 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.

  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. Refer to the online help for further information.

The subcommands FIND/RFIND are supported. Refer to "Deciding the Format of the Command Output (Fullscreen only)" on page 13 for information.

Line-mode Output

The linemode output of the INGVOTE command has been enhanced to show additional information about the request:

- Timeout option
- Application parameters
- Request options (command type, Restart option, Override option, Autoremove option)

Figure 116 shows an example.

```
Sysplex = AOC8PLEX
Resource    Type System   Request Data                        1 Dec 2003 17:54:36
----------- ---- --------  ------------------------------------------------------
BZOENEW     APL  AOC8      Req : MakeUnAvailable
                          At  : 2003-12-01  17:53:59
                          Org : OPERATOR(DON)
                          Pri : 02720000  Must Be Down - Operator
                          Exp : 2003-12-31  12:00:00
                          Stat: Winning/Satisfied
                          Opt : TYPE=NORM RESTART=NO OVERRIDE=(TRG,STS,INIT)
                                REMOVE=(SYSGONE)
                          Appl: Don Smith, IBM Germany
*** End of Display ***
```

Figure 116. INGVOTE Linemode Output

JES2

Purpose

The JES2 command issues JES2 subsystem commands so that you get a fullscreen response that you can page through. This is in contrast to issuing JES2 commands on the SA z/OS command line and watching the response roll off the screen.

Syntax

```
►►─JES2─jes2_command──────────────────────────────────────────────────────────►◄
```

Parameters

jes2-command
>   Specifies any valid JES2 command name, including parameters.

Restrictions and Limitations

None.

Usage

Specify the operands using any valid JES2 command syntax.

See *JES2 Commands* for command and syntax definitions.

Examples

The DU command is used to display the status of all or specified local JES2-controlled non-direct access devices. If you enter `jes2 du,all` you will see a fullscreen display similar to Figure 117.

```
  AOFK3GEN            SA z/OS  - Command Response Display   Page  1    of 1
  Command:  MVS $ DU,ALL,L=Z
                            MVS $ DU,ALL,L=Z
  $HASP636 17.24.23 $DU,ALL
  OFFLOAD1  DSN=SYS4.JES2.OFFLOAD1,STATUS=DRAINED,
            ARCHIVE=ONE
  OFFLOAD2  DSN=SYS4.JES2.OFFLOAD2,STATUS=DRAINED,
            ARCHIVE=ONE




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

Figure 117. JES2 DU,ALL Display

In this example, the ALL operand displays detailed information about all local JES2-controlled devices, active remote devices, and internal readers. Note that the command line shows the actual JES2 command that was issued and not what you typed in.

MONITOR

Purpose

The MONITOR command causes the SA z/OS monitoring routine to be run.

Syntax

```
►►──MONITOR────────────────────────────────────────────────────────────────►◄
                ┌────,────┐         ┌─TARGET=──┬─system_name──┐
                ▼         │                     ├─domain_id────┤
                ├─subsystem┤                    └─sysplex_name─┘
                └─*abc─────┘
```
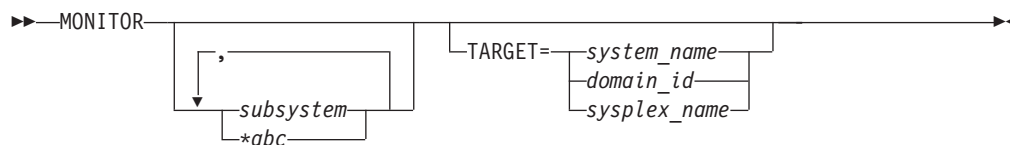
Parameters

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.

*abc
> Has the effect of a filter to be applied 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, refer to "The 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

```
►►──OPCAQRY──┬───────────┬──┬───────────┬──┬─TARGET=──┬─system_name──┬─┬──►
             └─subsystem─┘  └─REQ=DETAIL─┘            ├─domain_ID────┤
                                                       ├─sysplex_name─┤
                                                       └─*ALL─────────┘
```

```
                ┌──OUTMODE=─┬─LINE──┬──────────────────────────────────────────◄┤
                            ├─AUTO──┤
                            └─NETLOG┘
```
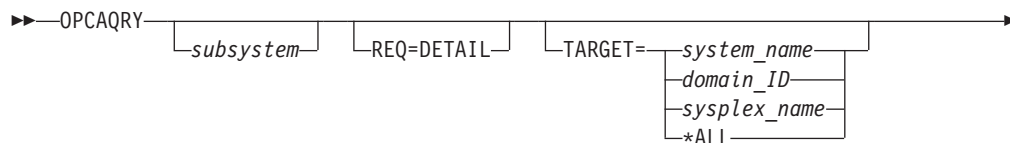
Parameters

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*

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, refer to "The TARGET Parameter" on page 10.

OUTMODE

> For information on the OUTMODE parameter, refer to "The 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 118 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
 --- ----------- -------- ---------------- -------- -------- ----- ------------
  _    OPCAO01     KEY4      OPCAO#TESTAD      STOP     04/28/06 17:00 Complete
  _    OPCAO02     KEY4      OPCAO#TESTAD      RECYCLE  04/28/06 17:14 Complete
  _    RMF         KEY4      OPCAO#TESTAD      STOP     04/29/06 18:05 In progress
  _                KEY4      OPCAO#TESTAD      COMMAND  04/29/06 18:07 In progress




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

Figure 118. 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. Refer to "Deciding the Format of the Command Output (Fullscreen only)" 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 119 on page 232 is displayed.

```
EVJKYQR1               SA z/OS  - Command Dialogs    Line  1    of 3
Domain ID   = IPSFP    -------- OPCAQRY  ---------   Date = 05/19/06
Operator ID = NETOP1        System  = KEY4           Time = 18:09:32


 Subsystem            : OPCAO1
 System               : KEY4            in Sysplex : KEY1PLEX
 Description          : Dummy MVS resource
 Job Name             : OPCAO1

 Status               : Complete

 Application          : OPCAO#TESTAD
 Workstation          : NV04

 Operation number     : 10
 Arrived in SA z/OS   : 05/19/06 09:50

 Request              : STOP
   Parameter 1        :
   Parameter 2        :
 Expected Status      : DOWN

 Last completed Status : D
 Last sequence number  : 0009
 Curr sequence number  : 0009

 Timer flag           : 0
 Completion flag      : 1
 Check Module         : EVJESPTE

 Timer interval       : 00:05
 Timer id             : OPCAO1DT


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

Figure 119. OPCAQRY Command Dialog Panel Showing Details for a Subsystem

If details are requested for a command, a panel similar to Figure 120 on page 233 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         : OPCAO#TESTAD
 Workstation         : NV04
 Operation number    : 10
 IA Time             : 04/28/06 17:00
 Job Name            : OPCAO1
 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 120. OPCAQRY Showing Details for a Command

If the command is in an error condition, the details that are displayed are similar
to those in Figure 121.

```
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         : OPCAO#TESTAD
 Workstation         : NV04
 Operation number    : 10
 IA Time             : 04/28/06 17:00
 Job Name            : OPCAO1
 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 121. OPCAQRY Showing Details for a Command in Error

Line Command Output

Figure 122 on page 234 shows an example of the line mode output for OPCAQRY.

```
  Subsystem   System   Application        Request  Date     Time   Status
  ----------  -------- ----------------   -------- -------- ----- ------------
  OPCAO01     KEY4     OPCAO#TESTAD       STOP     01/28/05 17:00 Complete
  OPCAO02     KEY4     OPCAO#TESTAD       RECYCLE                 Complete
  RMF         KEY4     OPCAO#TESTAD       STOP                    In progress
              KEY4     OPCAO#TESTAD       COMMAND  06/29/05 18:07 In progress
  *** End of Display ***
```

Figure 122. OPCAQRY Line Mode Output

RESTART

Purpose

The RESTART command checks a specified subsystem, or all subsystems defined to SA z/OS on a particular system, and sets the HOLD flag to No.

Syntax

```
►►──RESTART──┬───────────┬──┬─TARGET=──┬──Destination──┬──┬────────►
             └─subsystem─┘  │          ├──Dest_list────┤  │
                            │          └──*ALL──────────┘  │
```

```
►──┬──────────────────────────────┬────────────────────────────────►◄
   └─OUTMODE=──┬─LINE───┬──────────┘
              ├─AUTO───┤
              └─NETLOG─┘
```

Destination:

```
├──┬─system_name──┬───────────────────────────────────────────────┤
   ├─domain_ID────┤
   └─sysplex_name─┘
```

Dest_list:

```
         ┌──────,───────┐
├──(──▼──┤ Destination ├──)───────────────────────────────────────┤
```
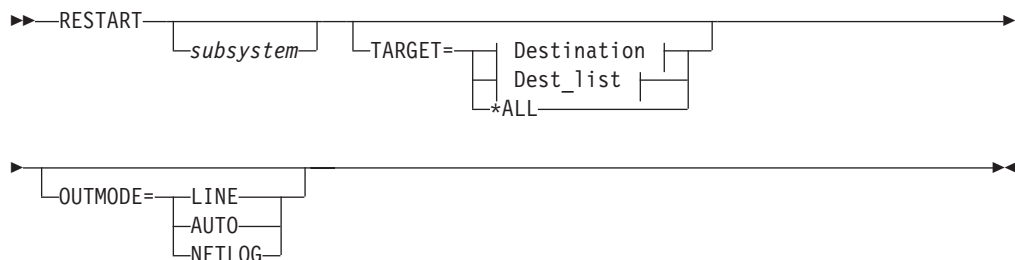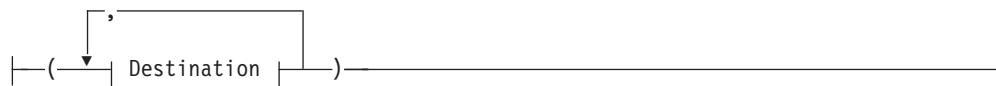
Parameters

subsystem
> Specifies the name of the subsystem to be allowed to start. If no subsystem name is specified, SA z/OS attempts to restart all subsystems.

TARGET
> For information on the TARGET parameter, refer to "The TARGET Parameter" on page 10.

OUTMODE
> For information on the OUTMODE parameter, refer to "The OUTMODE Parameter" on page 12.

Restrictions and Limitations

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

Usage

The RESTART command can be used to enable the subsystems for start after the operator has replied NOSTART to the AOF603D reply.

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

```
                    ┌─SUBSYSTEM─┐
►►─RESYNC───────────┼───────────┼────────────────────────────────────────►◄
                    │           │   ┌─TARGET=─┬─ Destination ─┬─┐
                    ├─REGISTER──┤             ├─ Dest_list ───┤
                    ├─AM────────┤             └─*ALL──────────┘
                    ├─WTOR──────┤
                    ├─XCF───────┤
                    ├─SMF───────┤
                    ├─TIMER─────┤
                    ├─NTFYOP────┤
                    ├─GATEWAY───┤
                    ├─SDF───────┤
                    ├─FP────────┤
                    └─UTCOFFSET─┘
```

Destination:

```
├─┬─system_name──┬─────────────────────────────────────────────────────┤
  ├─domain_ID────┤
  └─sysplex_name─┘
```

Dest_list:

```
           ┌─,──────────────┐
           ▼                │
├──(───────┬─ Destination ─┬┴──)──────────────────────────────────────────┤
```
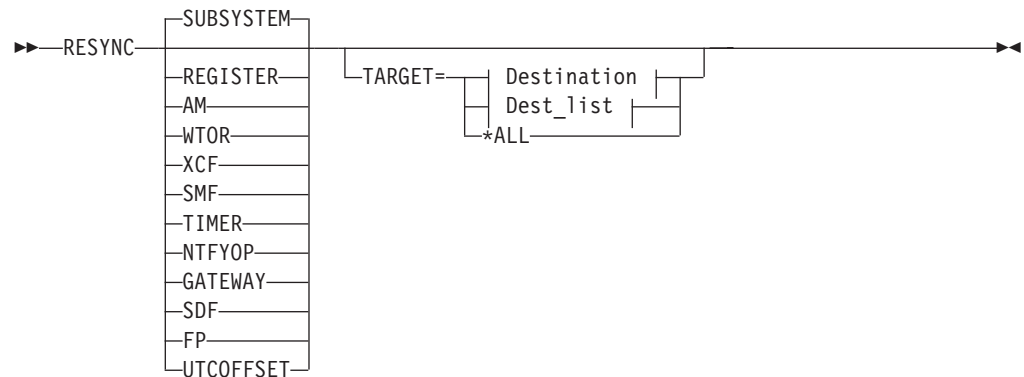
Parameters

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.

FP Resends the status information for the local SDF to the SDF focal point.

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, refer to "The TARGET Parameter" on page 10.

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 on 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 CLISTs 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`. All AOF messages, except informational ones, will be held.

SETSTATE

Purpose

SETSTATE changes the agent automation status of a given subsystem.

Syntax

```
►►─── SETSTATE ─── subsystem ─┬─ AUTODOWN ─┬─┬─ SCOPE=ONLY ──────┬─┬─ START=NO ──┬─►
                             ├─ CTLDOWN ──┤ └─ SCOPE=─┬─ ALL ─────┬┘ └─ START=YES ─┘
                             ├─ ENDED ────┤           └─ CHILDREN ─┘
                             ├─ MOVED ────┤
                             ├─ RESTART ──┤
                             └─ UP ───────┘

   ┌─ OVERRIDE=NO ──────────┐
►──┴─ OVERRIDE=─┬─ ALL ─┬────┴─┬─ TARGET=─┬─ Destination ─┬──────┬──────►
                ├─ EVT ─┤      │          └─ Dest_list ───┘      │
                ├─ FLG ─┤      └─ *ALL ─────────────────────────┘
                ├─ SVP ─┤
                └─ TRG ─┘

►──┬──────────────────────────┬──────────────────────────────────────►◄
   └─ OUTMODE=─┬─ LINE ───┬────┘
               ├─ AUTO ───┤
               └─ NETLOG ─┘
```

Destination:

```
├─┬─ system_name ──┬─────────────────────────────────────────────────┤
  ├─ domain_ID ────┤
  └─ sysplex_name ─┘
```

Dest_list:

```
         ┌──,──────┐
├──(──▼──┤ Destination ├──)────────────────────────────────────┤
```
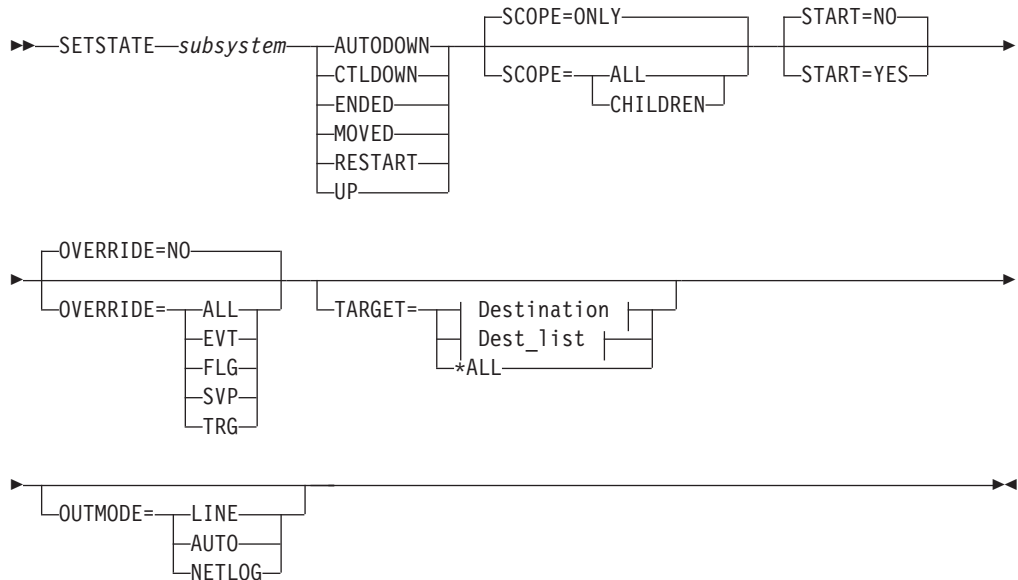
Parameters

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.

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, SVP, and EVT overrides on.
>>
>> **EVT**   The startup or shutdown conditions will be ignored.
>>
>> **FLG**   The appropriate automation flags will be ignored for the resource.
>>
>> **SVP**   The service period will be ignored.
>>
>> **TRG**   The current trigger settings will be ignored.
>
> **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, refer to "The TARGET Parameter" on page 10.
>
> **OUTMODE**
>> For information on the OUTMODE parameter, refer to "The 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 TSO` a panel similar to Figure 123 on page 241 is displayed.

```
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
  System     =>  _____     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 123. SETSTATE Command Dialog Panel

SETTIMER

Purpose

SETTIMER displays all scheduled timers. You can also add, change, or delete timers.

Syntax
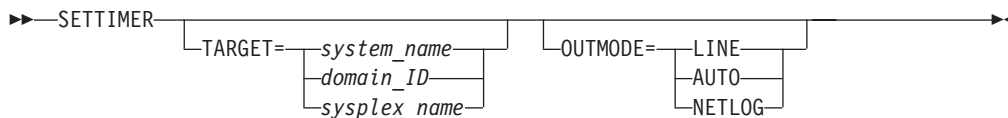
```
►►─SETTIMER─────────────────────────────────────────────────────────►◄
            └─TARGET=─┬─system_name──┬─┘ └─OUTMODE=─┬─LINE───┬─┘
                      ├─domain_ID────┤              ├─AUTO───┤
                      └─sysplex_name─┘              └─NETLOG─┘
```

Parameters

TARGET

For information on the TARGET parameter, refer to "The TARGET Parameter" on page 10.

OUTMODE

For information on the OUTMODE parameter, refer to "The 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 refer to *IBM Tivoli System Automation for z/OS Planning and Installation*.

Usage

For instructions on how to add, change, or delete timers, refer to *IBM Tivoli System Automation for z/OS User's Guide*.

Examples

If you enter `settimer` a panel similar to Figure 124 is displayed.

```
AOFKATI               SA z/OS  - Command Dialogs   Line  1   of 12
Domain ID   = IPSFP      ---------- SETTIMER ----------   Date = 07/28/06
Operator ID = NETOP1        System = KEY4              Time = 15:54:50
Enter ADD on the COMMAND line to create a new timer entry
or use CMD selections A add, C change, or D delete to modify existing timers.
CMD TIMER-ID SCHEDULED TIME    TYPE  TASK     INTERVAL     CLOCK SAVE CTUP
--- -------- ---------------- ----- -------- ------------ ----- ---- ----
  _   MEMSTORE 07/28/06 15:56:03 EVERY AUTO2    000 00:02:00 GMT   NO
        Cmd: MEMSTORE 5% 5
  _   IDLEOFF  07/28/06 16:00:13 EVERY AUTO1    000 00:10:00 GMT   NO
        Cmd: IDLEOFF 60
  _   AOFGATE  07/28/06 16:01:55 EVERY PPT      000 00:15:00 GMT   NO
        Cmd: AOFRASCD GATOPER AOFR1IGT
  _   AOFCCON  07/28/06 16:13:55 EVERY PPT      000 00:59:00 GMT   NO
        Cmd: AOFRASCD SYSOPER MVS D C
  _   AOFMON   07/28/06 16:13:55 EVERY PPT      000 00:59:00 GMT   NO
        Cmd: AOFRASCD MONOPER MONITOR $SYSTEM
  _ AOFI0001 07/28/06 18:00:00 AT    PPT                   LOCAL NO
        Cmd: AOFRASCD MONOPER AOFRASAF AUTOMATION MVSESA,OPTION=RESET


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

Figure 124. Display of Scheduled Timers (SETTIMER)

- The **CMD** field allows you to specify whether you want 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.
- 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.

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 **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 or not 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 or not 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 **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 **Cmd** field 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 125.

```
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=Roll
               PF8=Forward  PF9=Refresh                 PF12=Retrieve
```

Figure 125. Adding or Changing Timers (SETTIMER)

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®	**Day of Week**: Specify the day of the week (Monday through Sunday). Only the first three characters are required (for example, FRI for FRIDAY). **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.
EVERY	**Interval**: The number of days (0–365) to elapse before the timer is run. **From/To**: You can also specify the time of day the interval is to start and to end. If omitted, the timer runs from midnight to midnight. **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.

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.

Part 3. SA z/OS I/O Operations Commands

This part describes SA z/OS I/O operations commands in detail — their purpose, format, and specifics of how to use them.

For general information about SA z/OS commands, refer to *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, refer to Appendix B, "General Considerations for I/O Operations Commands," on page 437.

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 .

Safe Switching

I/O operations 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 operations 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 operations 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 operations, I/O operations 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 424.

FICON Switches

FICON switches allow imbedded space characters on port names. Consequently, I/O operations will not issue message IHVD106I when detecting imbedded blanks in port names of FICON switches.

However, I/O operations 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 operations console commands.

FICON Cascaded Switches

I/O operations supports cascaded switches with some restrictions:

1. For CTC connections on cascaded switches, I/O operations can neither display CTC control unit data nor manage CTC devices. The reason for this is that when I/O operations 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 operations commands affecting E_Ports (Allow, Prohibit, Unblock, WRITEPORT and WRITESWCH) 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 dealloction 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 operations 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, refer to "PROHIBIT" on page 277.

Syntax

```
>>--Allow----(portaddress_x)----------(portaddress_y)-------swchdevn----ALSO----------->
          |---portname_x------|    |---portname_y------|  |--*------| |--ONLY--|
          |---generic_name----|    |---generic_name----|
                                   |
                                   |---(*)--------swchdevn-----ALSO-----------
                                   |---*------|--*-------|
```

```
>------------------Vary------NOForce-----BAckout-------------------------->-<
      |--IGNore--| |------|  |--------|  |----------|
                             |--NOCheck-| |--NOBackout-|
                       |--NOVary Force NOBackout----Force NOBackout----|
```
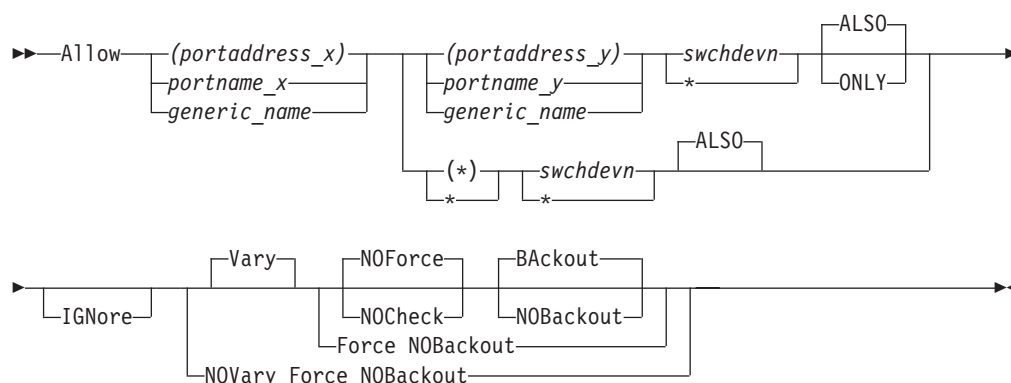
Parameters

(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 "Port Switching Commands" on page 429.

(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 "Port Switching Commands" on page 429.

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 417.

Options

ALSO|ONLY

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 424.

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 431.

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
```
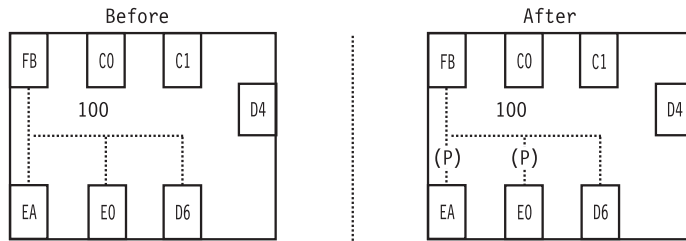

Figure 126. ALLOW Command: Sample 1

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
```
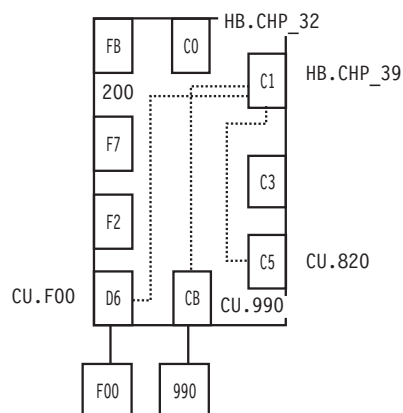
Figure 127. ALLOW Command: Sample 2

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 291 for information on the reciprocal command.

Syntax
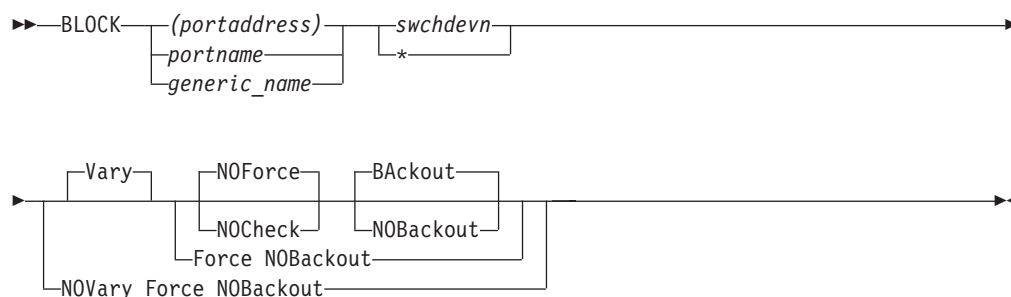
Parameters

(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 "Port Switching Commands" on page 429.

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 417.

Options

Connectivity options

For a discussion on Vary | NOVary, NOForce | NOCheck | Force, and BAckout | NOBAckout see "Making Connectivity Changes" on page 424.

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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 427 provides more information.
- If a parallel CHPID is involved, "A Parallel Channel in Block (BL) Mode" on page 431 provides more information.

Examples

```
B (D6) 100
IHVC000I BLOCK      command successful
```
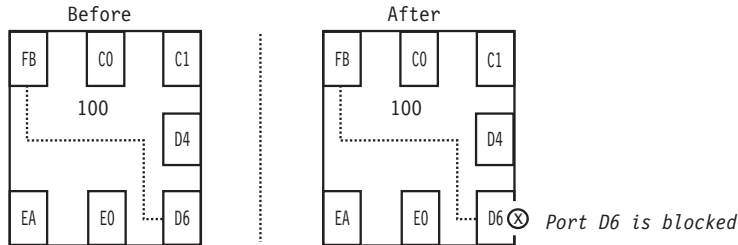

Figure 128. BLOCK Command: Sample 1

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
```
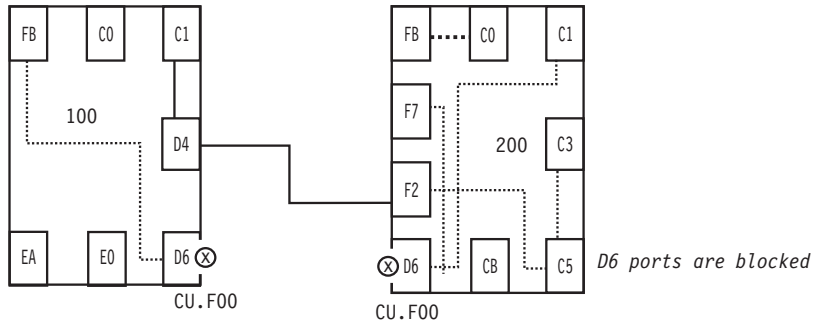

Figure 129. BLOCK Command: Sample 2

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" on page 418. See "UNCHAIN" on page 293 for the reciprocal command.

Note: The CHAIN command is not applicable to FICON switches.

Syntax

```
►►─CHAIN──┬─(portaddress_e)─┬──destination_swchdevn──┬─(portaddress_m)─┬──────►
          └─portname_e──────┘                        └─portname_m──────┘


►──┬─(portaddress_a)─┬──passthru_swchdevn─────────────────────────────────────►
   └─portname_a──────┘


►──┬──┬─Vary──┬──┬─NOForce─┬──┬─BAckout───┬──────────────────────────────◄►
   │  └───────┘  └─NOCheck──┘  └─NOBackout─┘
   │             └─Force NOBackout──────────┘
   └─NOVary Force NOBackout──────────────────┘
```
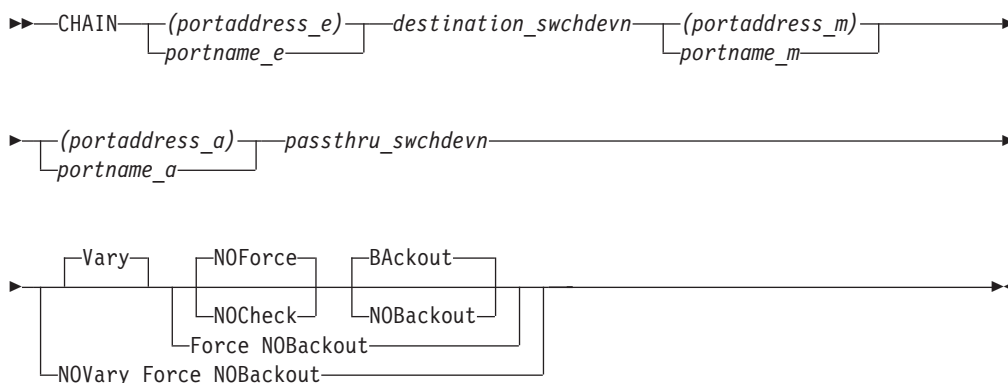
Parameters

(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 "Port Switching Commands" on page 429.

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 417.

(portaddress_m) | portname_m
Specifies middle port by its port address (enclosed in parentheses) or by its port name. For a discussion, see "Port Switching Commands" on page 429.

(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 "Port Switching Commands" on page 429.

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 417.

Options

Connectivity options

For a discussion on Vary|NOVary, NOForce|NOCheck|Force, and BAckout|NOBAckout see "Making Connectivity Changes" on page 424.

Usage

- Additional steps may be required. See "Chain and Unchain a Switchable Path" on page 418.
- 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" on page 418 for more information.

Examples

```
CHAIN (F2) 200 (D4) (C1) 100
IHVC000I CHAIN      command successful
```
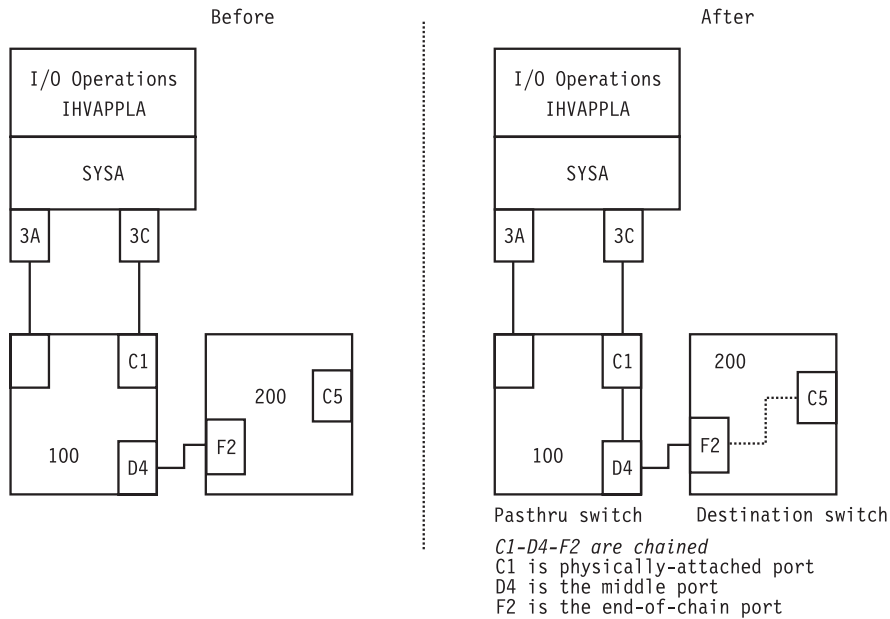

Figure 130. CHAIN Command: Sample 1

```
CHAIN (E0) 100 (D6) (CB) 200
IHVC000I CHAIN      command successful
```
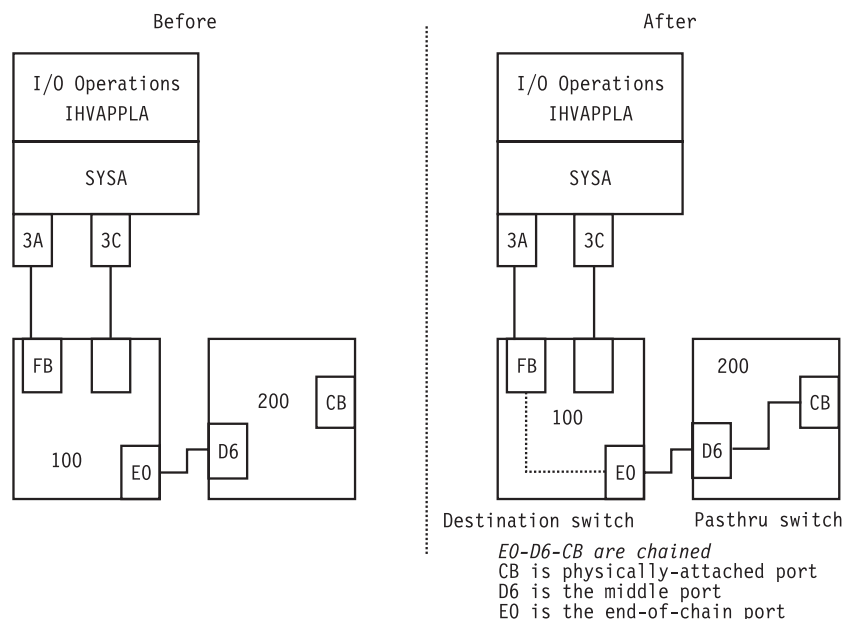
Figure 131. CHAIN Command: Sample 2

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 256 for the reciprocal command.

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 "Port Switching Commands" on page 429.

(portaddress_y)|portname_y

Specifies the other target port by its port address or by its port name. For a discussion, see "Port Switching Commands" on page 429.

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 417.

Options

Connectivity options

For a discussion on Vary|NOVary, NOForce|NOCheck|Force, and BAckout|NOBAckout see "Making Connectivity Changes" on page 424.

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" on page 418 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.

See "Port Switching Commands" on page 429 for more information.

```
C (FB) (D6) 100
IHVC000I CONNECT    command successful
```
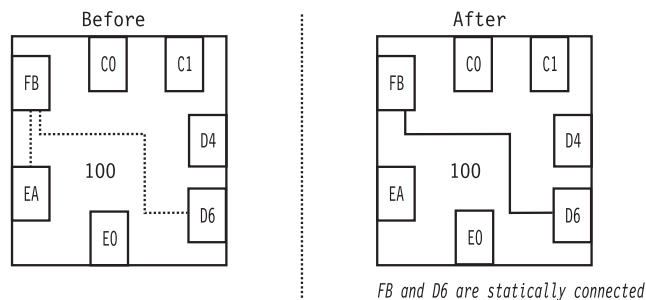

Figure 132. CONNECT Command Sample

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 255 for the reciprocal command.

Note: The DISCONNECT command is not applicable to FICON switches.
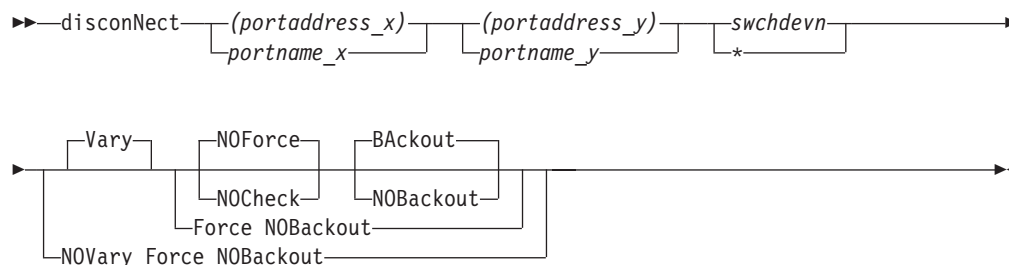
Syntax

▶▶── disconNect ──┬─ *(portaddress_x)* ─┬──┬─ *(portaddress_y)* ─┬──┬─ *swchdevn* ─┬──────────────▶
　　　　　　　　　　└─ *portname_x* ──────┘　└─ *portname_y* ──────┘　└─ * ──────────┘

▶──┬─── Vary ───┬──┬─ NOForce ─┬──┬─ BAckout ───┬──────────────────────────◀
　　│　　　　　　　│　└─ NOCheck ─┘　└─ NOBackout ─┘
　　│　　　　　　　└─ Force NOBackout ─┘
　　└─ NOVary Force NOBackout ─┘

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 "Port Switching Commands" on page 429.

(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 417.

Options

Connectivity options

　　For a discussion on Vary|NOVary, NOForce|NOCheck|Force, and BAckout|NOBAckout see "Making Connectivity Changes" on page 424.

Usage

If a CVC CHPID is involved, "An ESCON-in-Converted-Mode (CVC) Path" on page 427 provides more information.

Examples

```
N (FB) (D6) 100
IHVC000I DISCONNECT command successful
```

DISPLAY CHP

Purpose

Use the DISPLAY CHP command to display data about one or about all the channel path identifiers (CHPIDs) online to the operating system (host) image on which the issuing I/O operations is running.

Syntax

```
►►──DISPLAY CHP──┬─chpid─┬──────────────────────────────────────────────►◄
                 └──*────┘
```

Parameters

chpid
    Specifies a single channel path identifier (CHPID)

*   All CHPIDs known to the issuing I/O operations

Usage

For more information on the data that is displayed, see the references under the fields:

```
IHVC824I                        PORT
IHVC825I     CHP   SWCH            STATUS
IHVC826I CHP TYPE  DEVN LSN PORT H S C  P PORT NAME
A        B   C     D   E   F    G         H
```

A   Message
B   Channel path ID (see "Channel Types" on page 422)
C   Channel type (see "Channel Types" on page 422)
D   Switch device number (see "Switch Identifiers" on page 417)
E   Logical switch number (see "Logical Switch Number (LSN)" on page 418)
F   Port address (see "Port Addresses" on page 432)
G   Port status codes (see "Switch Port Hardware Status on a Display Command" on page 428)
H   Port name (see "Using Port Names as a Tool in Switching Commands" on page 427)

Examples

```
D C 3C
IHVC815I                            PORT
IHVC816I        CHP    SWCH             STATUS
IHVC817I CHP    TYPE    DEVN LSN PORT H S C  P  PORT NAME
IHVC818I 3C     CNC_S   0200 02  F2   C          HA.CHP_3C
IHVC81BI CHAINED TO:    0100 01  D4   C    C1    LINK.200
IHVC82EI D4 CONNECTED TO:         C1  C    D4    HA.CHP_3C
```
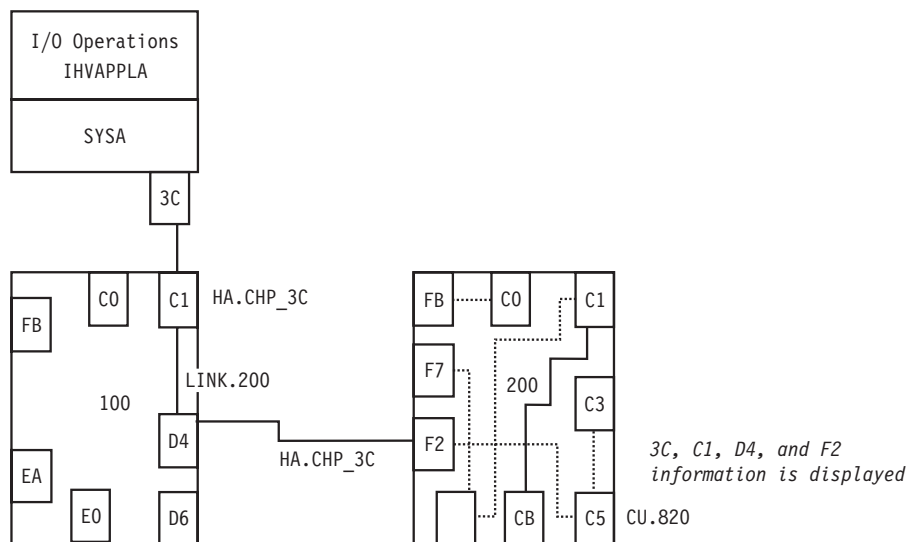
Figure 133. DISPLAY CHP Command: Sample 1

```
D C 3A
IHVC815I                              PORT
IHVC816I       CHP    SWCH           STATUS
IHVC817I CHP   TYPE   DEVN LSN PORT H S C  P  PORT NAME
IHVC818I 3A    CNC_S  0100 01  FB          P  HA.CHP_3A
```
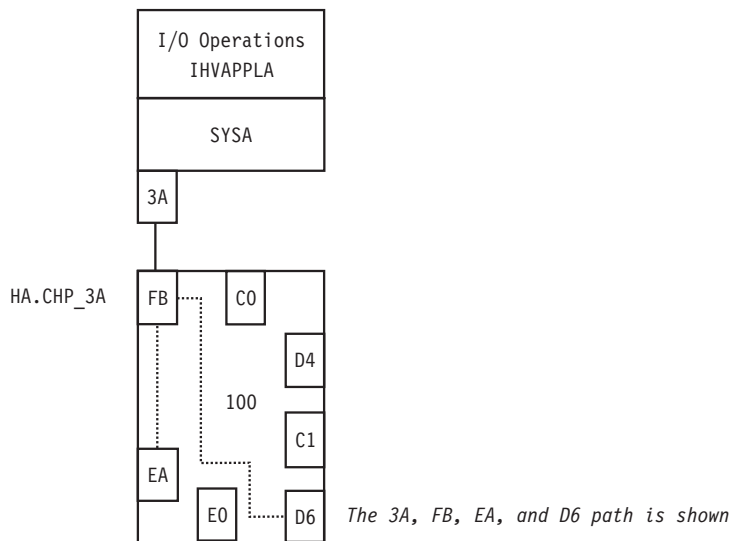

Figure 134. DISPLAY CHP Command: Sample 2

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

```
►►──DISPLAY DEV──┬─devn───┬─swchdevn─┬───────────────────────────────────►◄
                 │        └─*────────┤
                 ├─lower-upper──┬────swchdevn─┘
                 ├─lower-*──────┤
                 └─*────────────┘
```

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 417.

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                              PORT
IHVC825I          CHP   SWCH          STATUS
IHVC826I DEVN CHP TYPE  DEVN LSN PORT H S C  P PORT NAME
A        B    C   D     E    F   G        H
```

A Message
B Channel path ID (see "Channel Types" on page 422)
C Channel type (see "Channel Types" on page 422)
D Switch device number (see "Switch Identifiers" on page 417)
E Logical switch number (see "Logical Switch Number (LSN)" on page 418)
F Port address (see "Port Addresses" on page 432)
G Port status codes (see "Switch Port Hardware Status on a Display Command" on page 428)
H Port name (see "Using Port Names as a Tool in Switching Commands" on page 427)

Examples

```
D D F01 *
IHVC824I                              PORT
IHVC825I        CHP   SWCH            STATUS
IHVC826I DEVN CHP TYPE  DEVN LSN PORT H S C  P PORT NAME
IHVC827I 0F01 3A  CNC_S 0100 01  FB           HA.CHP_3A
IHVC82AI CNTL UNIT DATA:0100 01  D6           CU.F00
IHVC827I      3D  CNC_S 0200 02  F7           HA.CHP_3D
IHVC82AI CNTL UNIT DATA:0200 02  D6           CU.F00
```


Figure 135. 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 267 for the related command, and "Processing a Vary Path Request" on page 433 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 nameand 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 432.

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 417.

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: IHVAPPL /IHVHOST  SYSPLEX/SYSTEM: IHVPLEX /IHVSYS
IHVC804I NAME     LEVEL  PHYSICAL IDENTIFIER      SYSPLEX  SYSTEM
A        B
```

A Message

B VTAM name (see "VTAM Application Name" on page 434) TCP/IP host name (see "TCP/IP Host Name" on page 434)

```
IHVC805I    THE FOLLOWING SWCHS ARE ATTACHED:
IHVC806I     SWCH
IHVC807I     DEVN  LSN  UNIQUE ID
A            B    C    D
```

A Message

B Switch device number (see "Switch Identifiers" on page 417)

C Logical switch number (see "Logical Switch Number (LSN)" on page 418)

D   Switch ID number (see "Switch Unique Identifier" on page 432)

Examples

```
D H IHVHOST1
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 SWCHS ARE ATTACHED:
IHVC806I     SWCH
IHVC807I      DEVN  LSN  UNIQUE ID
IHVC200I      1001  01    009032005IBM510000000A7260
IHVC200I      1002  02    009032005IBM510000000A7465
```
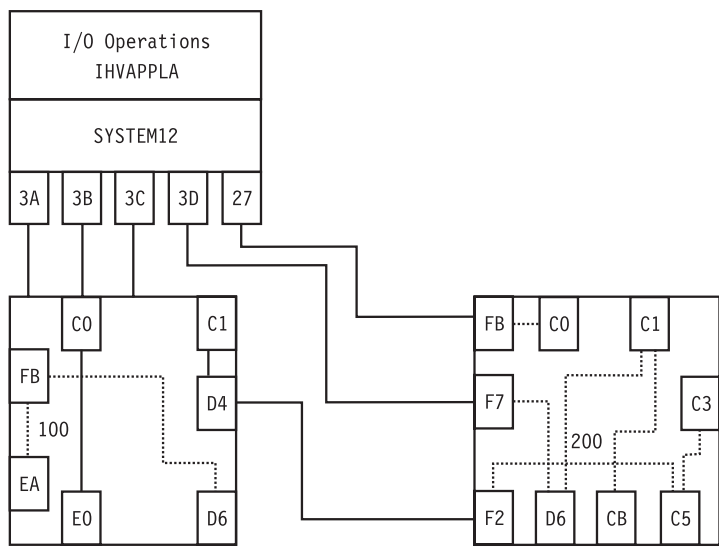

Figure 136. DISPLAY HOST Command: Sample 1

```
D H *
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 002084B16IBM02000000001795A 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 Vtam name detected:
IHVC885I SYSPLEX    SYSTEMS---------------------------------------|
IHVC886I IHVPLEX1   IHVSYS5,  IHVSYS8,          ,        ,       ,
```

Figure 137. DISPLAY HOST Command: Sample 2

DISPLAY NAME

Purpose

Use the DISPLAY NAME command to display data about the implemented ports on a switch to which port names have been assigned. (See "WRITE" on page 295 for the command used to assign port names.)

Syntax
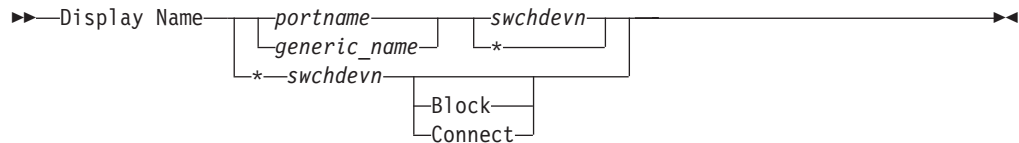
Parameters

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 "Port Switching Commands" on page 429.

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 417.

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.

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
```

A   Message

B   Port name (see "Using Port Names as a Tool in Switching Commands" on page 427)
C   Switch device number (see "Switch Identifiers" on page 417)
D   Logical switch number (see "Logical Switch Number (LSN)" on page 418)
E   Port address (see "Port Addresses" on page 432)
F   Port status codes (see "Switch Port Hardware Status on a Display Command" on page 428)
G   I/O definition (see "Switch Ports" on page 426)

Examples

```
D N * 100
IHVC844I                                              PORT
IHVC845I                          SWCH                STATUS  I/O
IHVC846I PORT NAME                DEVN   LSN   PORT  H S C  P DEF
IHVC847I HA.CHP_88.CVC            0100   01    C0        E0 P CH
IHVC847I HA.CHP_3C                0100   01    C1        D4 P
IHVC847I LINK.200                 0100   01    D4    C   C1 P
IHVC847I CU.F00                   0100   01    D6        P CU
IHVC847I CU.B20.9034              0100   01    E0        C0 P CU
IHVC847I CU.190                   0100   01    EA        P CU
IHVC847I HA.CHP_3A                0100   01    FB        P CH
```
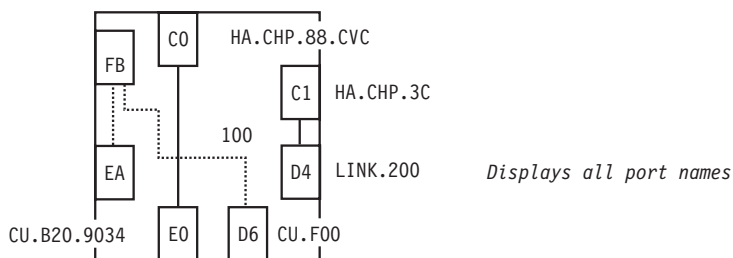

Figure 138. DISPLAY NAME Command: Sample 1

```
D N CU.F00 *
IHVC844I                                              PORT
IHVC845I                          SWCH                STATUS  I/O
IHVC846I PORT NAME                DEVN   LSN   PORT  H S C  P DEF
IHVC847I CU.F00                   0100   01    D6        P CU
IHVC847I CU.F00                   0200   02    D6        CU
```
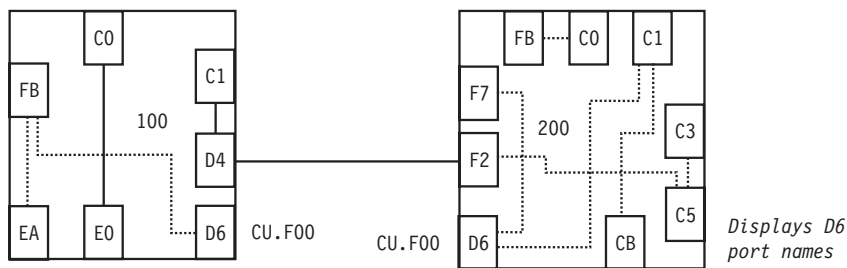

Figure 139. DISPLAY NAME Command: Sample 2

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

```
►►──Display──Port───┬─(portaddress)──swchdevn────────┬───────────────────────────►◄
                    └─(*)──swchdevn──┬──────────┬────┘
                                     ├─Block────┤
                                     └─Connect──┘
```

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 432.

swchdevn
Specifies the switch device number on which the port is located. The switch must be allocated to the issuing I/O operations. For a discussion, see "Switch Identifiers" on page 417.

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).

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                                        PORT
IHVC845I                          SWCH              STATUS  I/O
IHVC846I PORT NAME                DEVN    LSN    PORT  H S C  P DEF
A         B                       C       D      E     F      G
```

A	Message
B	Port name (see "Using Port Names as a Tool in Switching Commands" on page 427)
C	Switch device number (see "Switch Identifiers" on page 417)
D	Logical switch number (see "Logical Switch Number (LSN)" on page 418)
E	Port address (see "Port Addresses" on page 432)
F	Port status codes (see "Switch Port Hardware Status on a Display Command" on page 428)
G	I/O definition (see "Switch Ports" on page 426)

```
IHVC849I ALLOW/PROHIBIT MASK FOR THIS PORT:
A        B
```

A   Message

B   Allow or prohibit mask (see "Allow│Prohibit Mask of a Port" on page 426)

Examples

```
D P (D6) 100
IHVC844I                                            PORT
IHVC845I                            SWCH             STATUS  I/O
IHVC846I PORT NAME                  DEVN   LSN  PORT H S C  P DEF
IHVC847I CU.F00                     0100   01   D6        P CU


IHVC849I ALLOW/PROHIBIT MASK FOR THIS PORT:
IHVC84AI     A/P    PORT    PORT NAME                  I/O DEF
IHVC84BI      A     C0      HA.CHP_88.CVC                 CH
IHVC84BI      P     C1      HA.CHP_3C                     CH
IHVC84BI      A     C2
IHVC84BI      A     C3
IHVC84BI      A     C4
:
IHVC84BI      A     FB      HA.CHP_3A                     CH
IHVC84BI      A     FE                                    CU
```
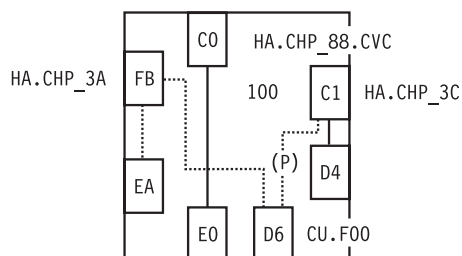

Figure 140. DISPLAY PORT Command Sample

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. Especially in cases in which one or more vary path requests failed, the DISPLAY RESULTS command is a useful tool to help you analyze the resulting configuration status.

For related commands, see "DISPLAY HOST" on page 261 and "DISPLAY VARY" on page 274.

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 274.

- 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 vtamnm1 /tcpname1     plexnam1    sysname1
IHVC505I    No failures detected by this host
IHVC808I VTAMNAME/TCP HOST     SYSPLEX     SYSTEM
IHVC201I vtamnm2 /tcpname2     plexnam1    sysname2
IHVC525I    This host has been RESET off
IHVC500I SWCH DEVN LSN UNIQUE ID                    STATUS      CODE
A        B        C   D
```

A	Message
B	Switch device number (see "Switch Identifiers" on page 417)
C	Logical switch number (see "Logical Switch Number (LSN)" on page 418)
D	Unique identifier (see "Switch Unique Identifier" on page 432)

Examples

Example 1

As shown in the figure below, 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.


```
          I/O Operations
            IHVAPPLA

             SYSB

       3A        3C

       FB                 200
            100
                    D6        CB
              E0
  Destination switch   Pasthru switch

     E0-D6-CB are chained
     CB is physically-attached port
     D6 is the middle port
     E0 is the end-of-chain port
```
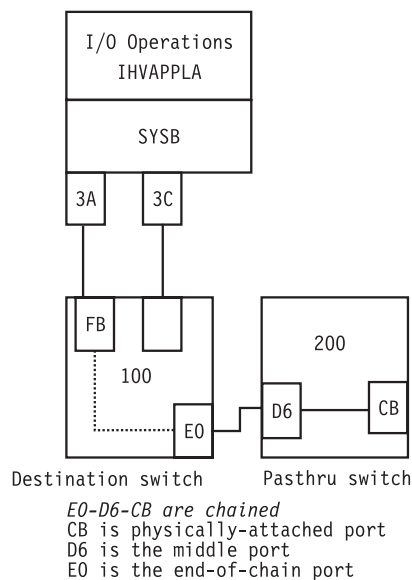
Figure 141. DISPLAY RESULTS Command: Scenario 1

The user then entered the DISPLAY RESULTS command to analyze the cause of failure.

```
D R
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
IHVC500I SWCH DEVN LSN UNIQUE ID                       STATUS      CODE
IHVC501I    0100   01  009032002IBM01000000034893  OPERATIONAL    00
IHVC520I    Command not sent to this SWCH
IHVC500I SWCH DEVN LSN UNIQUE ID                       STATUS      CODE
IHVC501I    0200   02  009032002IBM02000000093622  OPERATIONAL    00
IHVC906I    Cannot DISCONNECT CHAINed port D6
IHVC906I    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*.
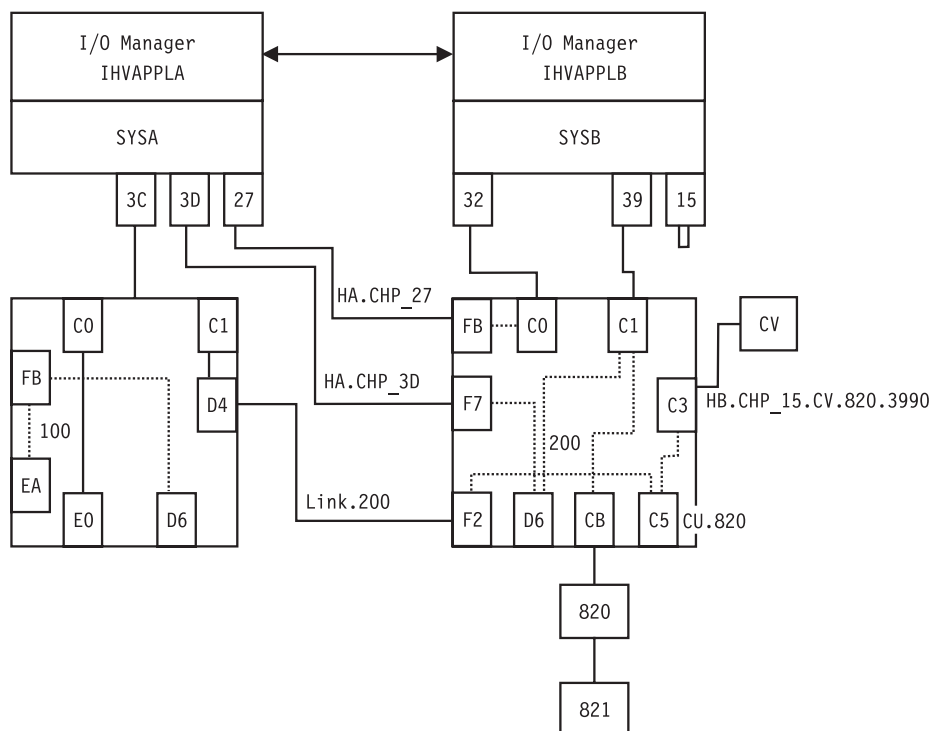
Figure 142. DISPLAY RESULTS Command: Scenario 2

The user entered the DISPLAY RESULTS command to analyze the cause of failure.

```
D R
IHVC999I I/O operations display
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
IHVC500I SWCH DEVN LSN UNIQUE ID                  STATUS      CODE
IHVC501I    0100   01  009032002IBM01000000034893  OPERATIONAL   00
IHVC520I    Command not sent to this SWCH
IHVC500I SWCH DEVN LSN UNIQUE ID                  STATUS      CODE
IHVC501I    0200   02  009032002IBM02000000093622  OPERATIONAL   00
IHVC622I    ESCON Converter Model 2 paths may require DISABLEMENT:
IHVC623I    ID  TYPE  MOD SERIAL NUMBR  PORT LOGICAL NAME / UNIQUE ID
IHVC626I    CU 003990 G03 000000090046   C5  CU.820
IHVC627I    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.
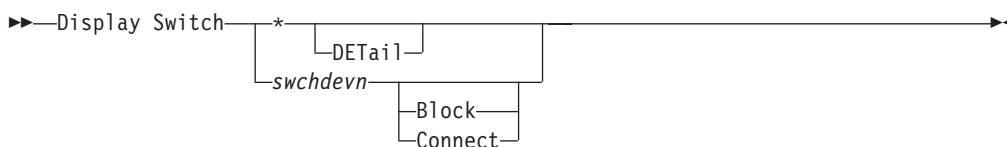
Syntax

```
►►──Display Switch──┬──*──────────────────────────────────►◄
                    │        └─DETail─┘
                    └─swchdevn──┬──────────┬──
                               ├─Block───┤
                               └─Connect─┘
```

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 417.

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.

Usage

For more information on the displayed output, see the references under the fields:

```
IHVC833I SWCH                              PORTS    SWCH       STATUS
IHVC834I DEVN LSN UNIQUE ID                INSTALLED STATUS     CODE
A        B   C   D                         E
```

A Message

B Switch device number (see "Switch Identifiers" on page 417)

C Logical switch number (see "Logical Switch Number (LSN)" on page 418)

D Unique identifier (see "Switch Unique Identifier" on page 432)

E Installed ports (see "HCD Term" on page 417)

```
IHVC273I Swch LSN Unique id                Tag   Status      SC Flags
         A    B   C                        D     E           F  G
IHVC274I          LIC    EC level  Sense bytes 0-15
                  H      I         J
IHVC275I          Ins Imp 1st LP  Sense bytes 16-31
                  K   L   M   N
```

A Switch device number (see "Switch Identifiers" on page 417)

B Logical switch number (see "Logical Switch Number (LSN)" on page 418)

C Unique identifier (see "Switch Unique Identifier" on page 432)

D Tag of the node element descriptor (NED)

E Switch status

F Switch status code

G Switch internal flags

H Switch licensed internal code (LIC) version and release

I Engineering change (EC) level

J Sense data

K Installed ports (see "HCD Term" on page 417)

L Implemented ports without CUP

M First implemented port

N Logical paths

```
IHVC835I               PORT
IHVC836I              STATUS
IHVC837I      PORT    H S C  P   PORT NAME                      I/O DEF
A             B       C          D                              E
```

A Message

B Port number (see "Port Addresses" on page 432)

C Port status code (see "Switch Port Hardware Status on a Display Command" on page 428)

D Port name (see "Using Port Names as a Tool in Switching Commands" on page 427)

E I/O definition (see "Switch Ports" on page 426)

Examples

Example 1

```
D S 100
IHVC833I SWCH                                    PORTS    SWCH       STATUS
IHVC834I DEVN LSN UNIQUE ID                    INSTALLED STATUS      CODE
IHVC838I 0100 01  009032002IBM01000000034893     61    OPERATIONAL   00
IHVC835I               PORT
IHVC836I               STATUS
IHVC837I      PORT    H S C  P    PORT NAME                 I/O DEF
IHVC839I      C0          E0 P    HA.CHP_88.CVC               CH
IHVC839I      C1          D4 P    HA.CHP_3C                   CH
IHVC839I      C2             P
IHVC839I      C3             P
IHVC839I      C4             P
:
IHVC839I      D4          C1 P    LINK.200                    CU
:
IHVC839I      FB             P    HA.CHP_3A                   CH
IHVC839I      FE                                              CU
```
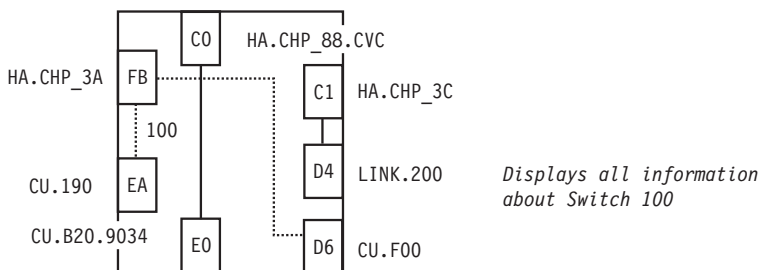

Figure 143. DISPLAY SWITCH Command: Sample 1

Example 2

```
D S * DETAIL
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 80000000
         05.04 0980522   NO SENSE DATA
         242 248   4 255
1006 06  009033001IBM51000000010065 0000 OPERATIONAL   00 80000000
         02.02 C22815    NO SENSE DATA
          17  16 192  64
100B 0B  009032002IBM51000000001400 0000 OPERATIONAL   00 80000000
         04.01 C89957    NO SENSE DATA
          61  60 192  64
1010 10  006064001MCD01000001311AB9 0000 OPERATIONAL   00 80000000
         N/A   N/A      NO SENSE DATA
          65  64   4 256
1011 11  006140001MCD010000013124DA 0000 OPERATIONAL   00 80000000
         N/A   N/A      NO SENSE DATA
         135 144   4 256
101A 1A  009032003IBM51000000002483 0000 OPERATIONAL   00 80000000
         04.03 0970808   NO SENSE DATA
         101 124 128 255
```

Example 3

```
D S *
IHVC833I SWCH                                        PORTS   SWCH       STATUS
IHVC834I DEVN LSN UNIQUE ID                      INSTALLED STATUS       CODE
IHVC838I 0100 01  009032002IBM01000000034893        61    OPERATIONAL  00
IHVC838I 0200 02  009032002IBM02000000093622        61    OPERATIONAL  00
IHVC838I 0400 04                                     0    NOT OPEN     1C
```
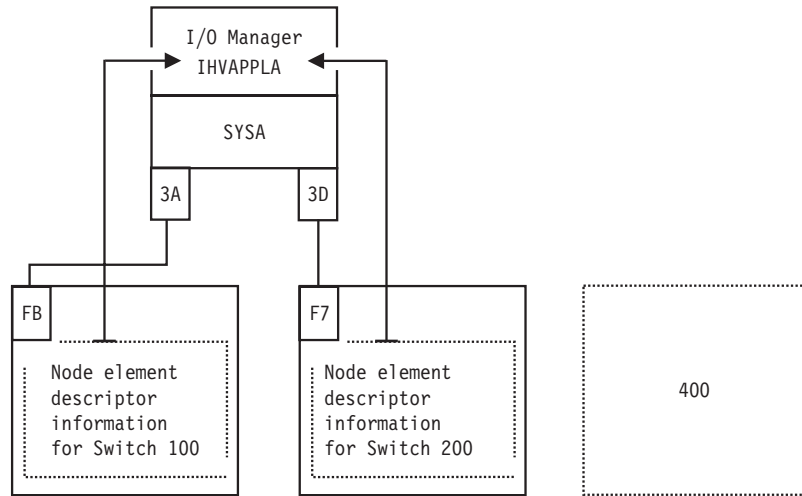
Figure 144. DISPLAY SWITCH Command: Sample 2

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 283. 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──────────────────────────────────────────────────────────────▶◀
```

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) 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 261 and "DISPLAY RESULTS" on page 267 for related commands, and "Processing a Vary Path Request" on page 433 for more information.

Syntax

```
►►──Display Vary──┬──vtamname────┬──┬──number_of_varys──┬──┬────────┬──►◄
                  └──tcphostname─┘  └──*────────────────┘  ├──FAIL──┤
                                                           └──SYNC──┘
```
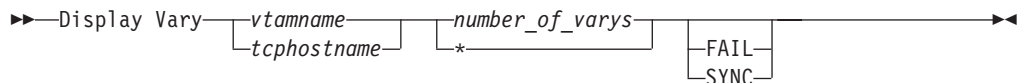
Parameters

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

SYNC

Specifies that the vary path requests built with the Sync Switch command be displayed.

FAIL

Specifies only the failed vary path requests (if any), or Varies from a connectivity 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.

Examples

```
D V name
IHVC999I I/O operations display
IHVC811I VARY TYPE   TRIED  FAILED 1ST   90 FAILURES (DEV,CHP)
IHVC819I OFFLINE       5       3  (0190,3A)(019E,3A)(019D,3A)(    , )
IHVC215I BACKOUT       2       0  (    ,  )(    ,  )(    ,  )(    , )
IHVC232I CONFIG TYPE TRIED  FAILED 1ST   90 FAILURES (CHP)
IHVC879I No failed CONFIGs on previous command
IHVC872I SYNC TYPE     NUMBER    1ST   90 VARYS (DEV,CHP)
IHVC875I No SYNC VARYs detected on previous command
IHVC853I CONFIG TYPE   NUMBER    1ST   90 CONFIGs (CHP)
IHVC877I 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 294 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) on which the issuing I/O operations is running.

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 417.

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 248 for the reciprocal command.

Syntax
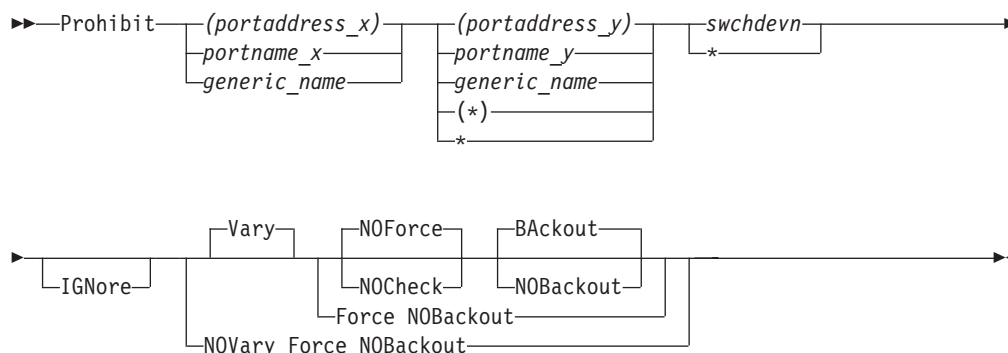
Parameters

(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 "Port Switching Commands" on page 429.

(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 "Port Switching Commands" on page 429.

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 417.

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

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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 424.

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 431.

Examples

```
P (FB) (D6) 100
IHVC000I PROHIBIT   command successful
```
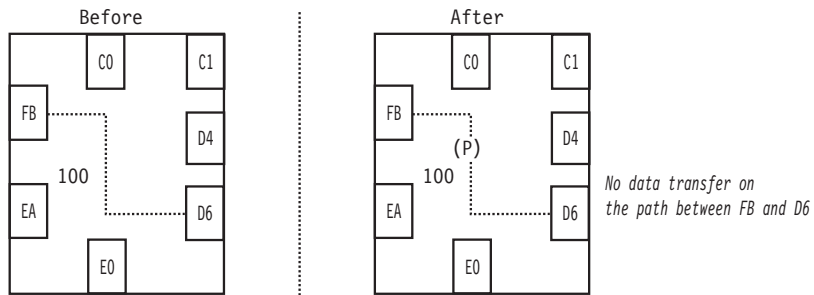

Figure 145. PROHIBIT Command: Sample 1

```
P HB.CHP_39 CU.* 200
IHVC000I PROHIBIT   command successful
```
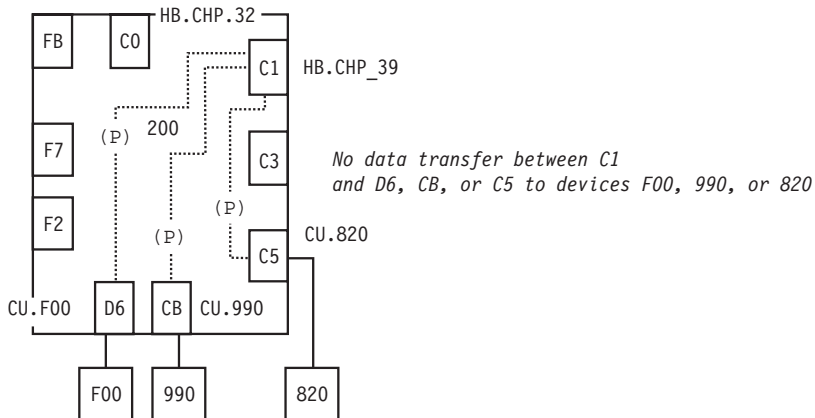

Figure 146. PROHIBIT Command: Sample 2

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 287 for information on the reciprocal command.

Syntax

```
►►──REMOVE Chp──chpid─┬─vtamname────┬──────┬─Vary─┬──┬─NOForce─┬──┬─BAckout────┬──►
                      └─tcphostname─┘             └─NOCheck─┘  └─NOBackout──┘
```

```
   ┌─CONDitional───┐
►──┤               ├──────────────────────────────────────────────────────────►◄
   └─UNCONDitional─┘
```
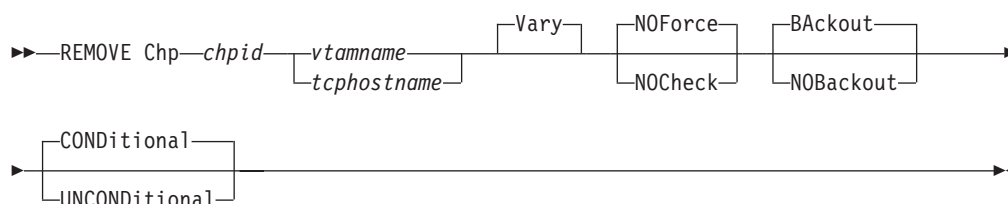
Parameters

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.

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 on which the target I/O operations is running, 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 289 for the reciprocal command, and "Remove (Quiesce) a Switch" on page 428 for discussion.

Syntax

```
►►─REMOVE Switch─swchdevn─┬─────┬─┬─Vary─────────┬─┬─NOForce─┬─┬─BAckout───┬─┬─►
                          │     │ │              │ │         │ │           │
                          │     │ ├─Vary─────────┤ └─NOCheck─┘ └─NOBackout─┘
                          │     │ │              │
                          │     │ ├─Force NOBackout─────────┤
                          │     │ │
                          │     │ └─NOVary Force NOBackout──┘

►─┬─NODisable─┬─────────────────────────────────────────────────────────────►◄
  │           │
  └─Disable───┘
```
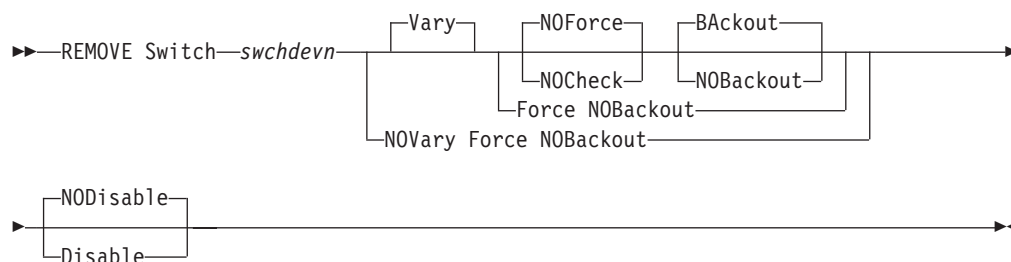
Parameters

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 417.

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 424.

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 289.

  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, refer to 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 261, "DISPLAY RESULTS" on page 267, or "DISPLAY VARY" on page 274. Consider rerunning the command with the Force and Disable options.

Examples

```
REMOVE S 200 D
IHVC000I REMOVE    command successful
```
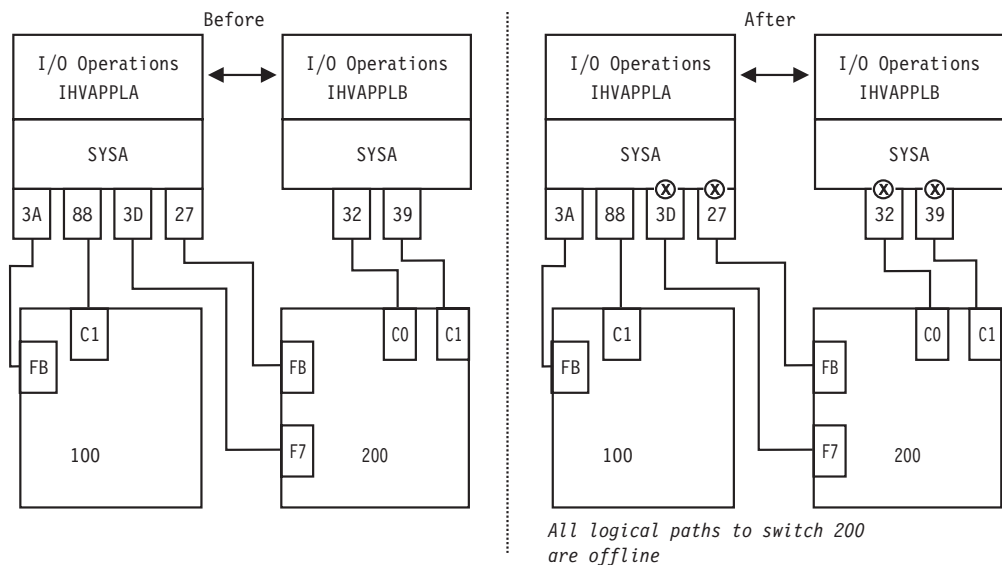

Figure 147. REMOVE SWITCH Command Sample

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 261 for the related command.

Syntax

```
                                          ┌─ON──┐
►►──Reset Host──┬─vtamname────┬────────────┼─────┼──────────────────────►◄
                └─tcphostname─┘            ├─OFF──┤
                                           └─PURGE─┘
```
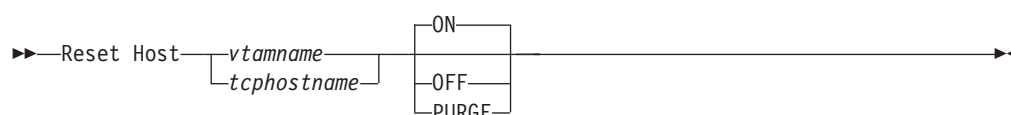
Parameters

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 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 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:
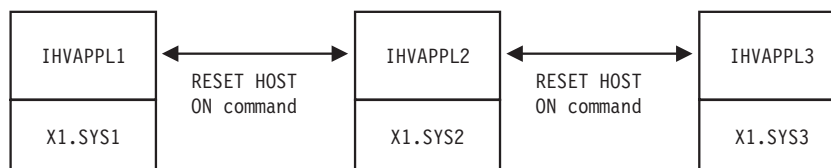
Figure 148. RESET HOST Command: Scenario 1

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:
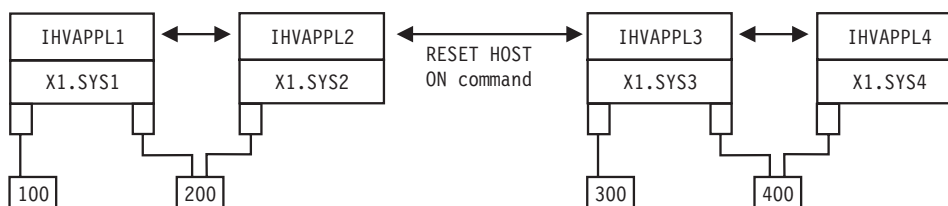
Figure 149. RESET HOST Command: Scenario 2

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.

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 417.

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 417.)
- Port names and port attributes. (See "Port Switching Commands" on page 429.)
- 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────────────────────────────────────────────►◄
                    └─*─────┘
```
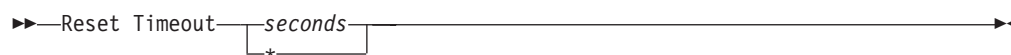
Parameters

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 on which the target I/O operations is running. See "REMOVE CHP" on page 279 for information on the reciprocal command.

Syntax

```
►►──RESTORE Chp──chpid───vtamname──────┬─Vary─┬──┬─NOForce─┬──┬─BAckout───┬──►
                        └─tcphostname─┘  └──────┘  └─NOCheck─┘  └─NOBackout─┘

 ►──┬─CONDitional───┬────────────────────────────────────────────────────►◄
    └─UNCONDitional─┘
```
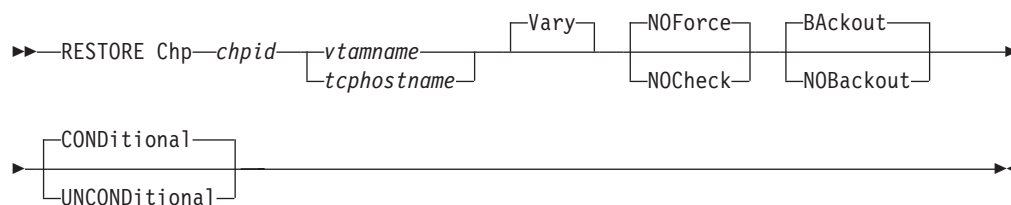
Parameters

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.

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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.

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).

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 on which the target I/O operations is running, 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 on which the target program is running.
- 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 281 for the reciprocal command and "Restore (Enable) a Switch" on page 426 for a discussion.

Syntax

```
►►──RESTORE Switch──swchdevn──┬──────┬──┬─Vary──┬──┬─NOForce─┬──┬─BAckout───┬──►◄
                              │      │  │       │  │         │  │           │
                              │      │  │       │  └─NOCheck─┘  └─NOBackout─┘
                              │      │  └─Force NOBackout───────────────────┘
                              │      │
                              └──────┴─Novary Force NOBackout────────────────
```
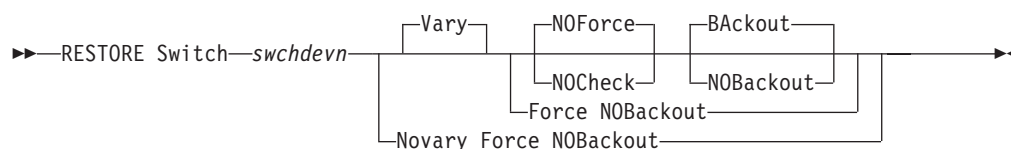
Parameters

swchdevn
> Specifies the switch to be restored. For a discussion, see "Switch Identifiers" on page 417.

Options

Connectivity options

> For a discussion on Vary|NOVary, NOForce|NOCheck|Force, and BAckout|NOBackout see "Making Connectivity Changes" on page 424.

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, which was disabled with the Remove Switch command, with another switch, any previous chaining data is voided. 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" on page 418 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

```
►►──SYNC Switch──swchdevn──┬─Process───┬──────────────────────────────►◄
                           └─NOProcess─┘
```
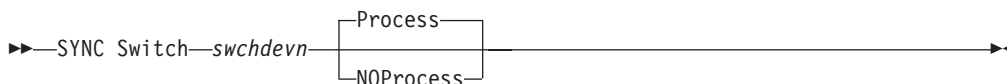
Parameters

swchdevn
> Specifies the switch. For a discussion, see "Switch Identifiers" on page 417.

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 274 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 251 for the reciprocal command.

Syntax
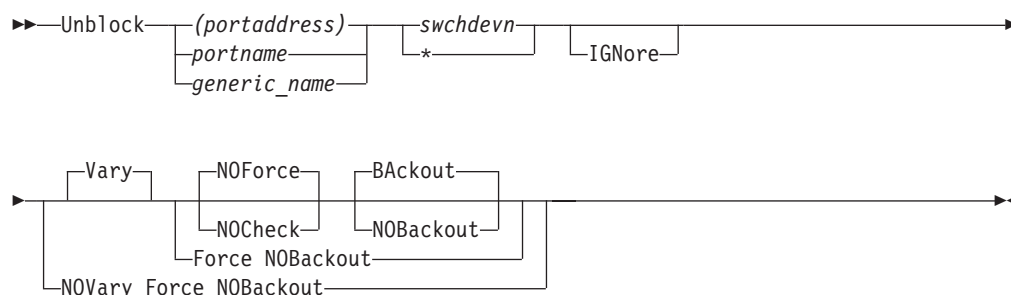
Parameters

(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 "Port Switching Commands" on page 429.

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 417.

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 424.

Usage

If a CVC or parallel CHPID is involved, see "A "Partially-ESCON" Path" on page 422 for more information.

Examples

```
UNBLOCK (D6) 100
IHVC000I UNBLOCK    command successful
```
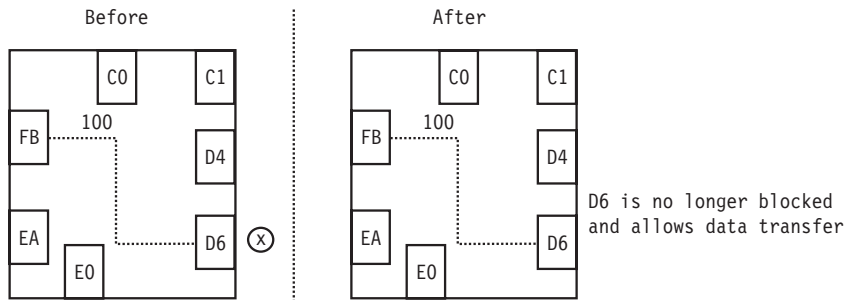

Figure 150. UNBLOCK Command: Sample 1

```
U CU.F00 *
IHVC000I UNBLOCK    command successful
```
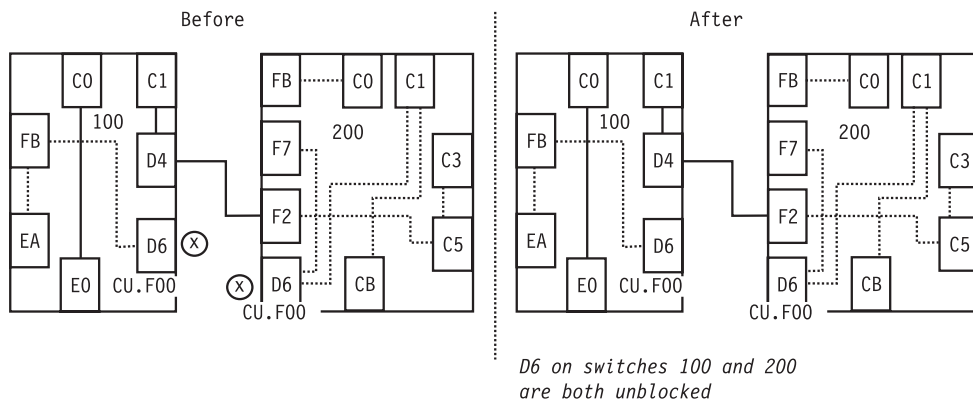

Figure 151. UNBLOCK Command: Sample 2

UNCHAIN

Purpose

Use the UNCHAIN command to cancel the definition of a chain in a chained path. See "Chain and Unchain a Switchable Path" on page 418 for more information. See "CHAIN" on page 253 for the reciprocal command.

Note: The UNCHAIN command is not applicable to FICON switches.

Syntax

```
►►──UNCHAIN──┬─(portaddress_e)─┬──destination_swchdevn──┬─(portaddress_m)─┬──────►
             └─portname_e──────┘                        └─portname_m──────┘


►──┬─(portaddress_a)─┬──passthru_swchdevn───────────────────────────────────────►
   └─portname_a──────┘


►──┬──────┬─┬─Vary─────┬─┬─NOForce─┬─┬─BAckout────┬──────────────────────────────►◄
            │          │ └─NOCheck─┘ └─NOBackout──┘
            │          │ └─Force NOBackout─────┘
            └─NOVary Force NOBackout─┘
```
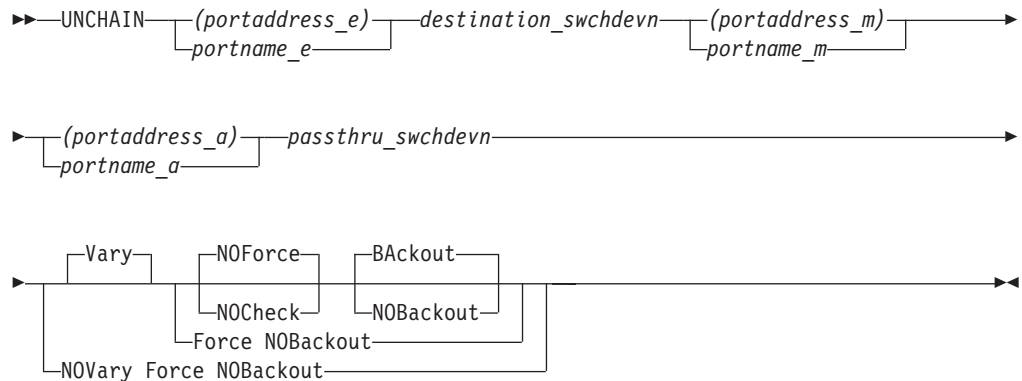
Parameters

(portaddress_e) | portname_e
Specifies the end port by its port address (enclosed in parentheses) or by its port name. For a discussion, see "Port Switching Commands" on page 429.

destination_swchdevn
Specifies the device number of the destination switch in the chained path. For a discussion, see "Switch Identifiers" on page 417.

(portaddress_m) | portname_m
Specifies middle port by its port address (enclosed in parentheses) or by its port name. For a discussion, see "Port Switching Commands" on page 429.

(portaddress_a) | portname_a
Specifies the port in the chained path to which the CHPID or control unit is physically attached by its port address (enclosed in parentheses) or by its port name. For a discussion, see "Port Switching Commands" on page 429.

passthru_swchdevn
Specifies the device number of the passthru switch in the chained path. For a discussion, see "Switch Identifiers" on page 417.

Options

Connectivity options

For a discussion on Vary | NOVary, NOForce | NOCheck | Force, and BAckout | NOBackout see "Making Connectivity Changes" on page 424.

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 voided if either of the chained switches is replaced.

Examples

```
UNCHAIN (F2) 200 (D4) (C1) 100
IHVC000I UNCHAIN    command successful
```
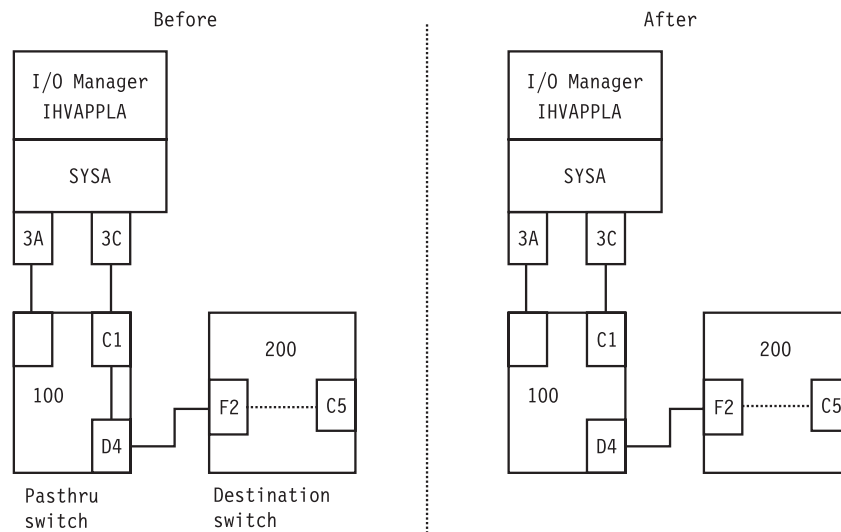

Figure 152. UNCHAIN Command Sample

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 275 for the reciprocal command.

Syntax

```
►►──UNLOCK──────────────────────────────────────────────────────────────►◄
```

Examples

```
UNLOCK
IHVC000I UNLOCK     command successful
```

WRITE

Purpose

Use the WRITE command to assign, or to write, a port name to an addressable port on one or on all the switches 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 427 for more information.

(portaddress)
Specifies the addressable port to which the port name is being assigned.

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 417.

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 under "A Simple Way to Modify a Switch Matrix" on page 432.
  - 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 153. WRITE Command: Sample 1

```
WRITE CU.F00 (D6) *
IHVC000I WRITE      command successful
```


Figure 154. WRITE Command: Sample 2

Part 4. SA z/OS Processor Operations Commands

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, refer to *IBM Tivoli 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 which 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 partion). The processor hardware which 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 371). 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.

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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. Since 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. Refer to "ISQXPSM" on page 409 for more information about the ISQXPSM command.

Chapter 5. 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

```
►►──ISQCCMD──┬─target_system_ProcOps_name──────┬──────────────────►
             ├─target_hardware_name.LPAR_name──┤
             ├─group_name──────────────────────┤
             └─subgroup_name───────────────────┘
```

```
►──ACTIVATE──FORCE──(──┬─NO──┬──┬──────────────────────┬──)──────►
                       └─YES─┘  ├─,S──(wait_units)──────┤
                                ├─,M──(wait_units)──────┤
                                └─,H──(wait_units)──────┘
```

```
                ┌───────────────────────────────────────────┐
►──────────────┼─────────────────────────────────────────────┼───────────►◄
               └─CNAME(profile_name)─┬─────────────────────────────────┘
                                     │ ┌──────────────────────────┐
                                     └─┼─XATIME(yyyymoddhhmi─┬────┬─)─┬──┬─────────┬─┘
                                       │                    └─UTC┘   │  │ Options │
                                       └─XBTIME(yyyymoddhhmi─┬────┬─)─┘  └─────────┘
                                                            └─UTC┘
```

Options:

```
├──INTERVAL(dddhhmi)──┬───────────────────────────────┬──────────┤
                      └─COUNT──(──count_of_intervals──)─┘
```

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 400 for a list of status settings.

Parameters

For a definition of *target_system_ProcOps_name*, *target_hardware_name.LPAR_name*, *group_name*, and *subgroup_name*, refer to "ISQCCMD" on page 371.

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 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.

S Specifies that the timeout value is measured in seconds.

M Specifies that the timeout value is measured in minutes.

H Specifies that the timeout value is measured in hours.

wait-units

Specifies an optional timeout value in 1-to-5 decimal digits, ranging from 0 to 65535. This value provides the OCF with an interval for delaying the acceptance of, or rejection of, the command. The presence of this value in the operand causes the OCF to signal a quiesce event to the operating system control program, for those operating systems that support this action.

A timeout value is only allowed on timed command requests.

When a timeout value is specified with *FORCE(NO)*, the associated command is held pending until the control program enters a quiesced state, or until the timeout value expires. If the timeout value expires, the command is treated as a FORCE(NO) with no timeout value.

When a timeout value is specified with FORCE(YES), the associated command is held pending until the control program enters a quiesced state, or until the timeout value expires. If the timeout value expires, the command is treated as a FORCE(YES) with no timeout value.

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 a profile to be sent to the processor's support element. If this keyword is not used, SA z/OS selects a profile name from among those specified in the configuration dialogs, and uses it in the ACTIVATE operations management command sent to the support element. The selection is based on

the current status (ESA or LPAR) of the target hardware and the actual status of the target system. If this keyword is not used and no appropriate profile name was specified in the configuration dialogs, SA z/OS processor operations omits the CNAME operand from the ACTIVATE command sent to the support element.

profile_name
> Indicates the name of the profile. It is recommended to let processor operations select the profile name automatically rather than overriding processor operations' selection with the profile_name parameter.

XATIME
> Specifies a time <*at or after*> which the associated command may begin processing. The time specified is determined by the OCF clock of the receiving support element.

yyyy
> Specifies a year, in 4 decimal digits. It must be greater than 1988.

mo Specifies a month of the year, in 2 decimal digits, from 01 to 12.

dd Specifies a day of the month, in 2 decimal digits, from 01 to 31.

hh Specifies an hour of the day, in 2 decimal digits, from 00 to 23.

mi Specifies a number of minutes, in 2 decimal digits, from 00 to 59.

UTC
> If present, indicates that the time is coordinated universal time.

The system must be power-on reset in LPAR mode before sending a scheduled request for a secondary OCF. If it is not, the request is rejected.

The default, if XATIME is not explicitly stated, is for the command to be processed immediately.

When XATIME is not accompanied by an XBTIME, there is no end time by which command processing must be started.

XBTIME
> Specifies a time <*at or before*> which the associated command must begin processing. A combination of XATIME and XBTIME specifies a "timing-window" within which processing is to be attempted.

yyyy
> Specifies a year, in 4 decimal digits. It must be greater than 1988.

mo Specifies a month of the year, in 2 decimal digits, from 01 to 12.

dd Specifies a day of the month, in 2 decimal digits, from 01 to 31.

hh Specifies an hour of the day, in 2 decimal digits, from 00 to 23.

mi Specifies a number of minutes, in 2 decimal digits, from 00 to 59.

UTC
> Indicates that the time is coordinated universal time.

The system must be power-on reset in LPAR mode before sending a scheduled request for a secondary OCF. If it is not, the request is rejected.

When XBTIME is not accompanied by an XATIME, the command may be processed immediately.

INTERVAL
> Indicates that the associated command is to be processed repeatedly. It

specifies the time span between processing repetitions. The specified value is added to XATIME, XBTIME, or both (if both are present in the command), to determine the next processing time.

ddd
    Specifies a number of days, in 3 decimal digits, from 000 to 048.

hh Specifies a number of hours, in 2 decimal digits, from 00 to 23.

mi Specifies a number of minutes, in 2 decimal digits, from 00 to 59.

Notes:

1. The default, if INTERVAL is not explicitly stated, is one execution of the command.

2. INTERVAL is only valid if XATIME or XBTIME, or both, are also present in the command.

3. Within a given timing-window, there may be only one repetition of a command.

COUNT
Specifies the number of times, based on specified timing controls, that processing of an operations command should be attempted. Timing controls are provided through the combined use of the XATIME, XBTIME, INTERVAL, and COUNT operands.

count-of-intervals
Is a decimal value, from 1 to 65535. This value indicates the maximum number of times that processing is to be attempted and is decremented after each processing attempt. When the count has been decremented to zero, the request is removed from the timed list.

The default value, if COUNT is not explicitly stated, is for the timing-window interval to be repeated forever, or until canceled.

Use of the COUNT operand requires that INTERVAL and a combination of either XATIME or XBTIME are provided with the ACTIVATE command.

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.

When 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.

For target hardware that is configured for a NetView connection (NVC) you can delay execution of the ACTIVATE command by using the scheduled request operands (XATIME, XBTIME, INTERVAL, and COUNT). Use these operands carefully. Once an ACTIVATE command with scheduled request operands has been sent to the target system (or target systems), there is no further interaction with the focal-point system until the ACTIVATE command eventually completes execution, which could be hours or even days later. Moreover, when the command includes the INTERVAL operand and possibly also the COUNT operand, the ACTIVATE commands can run multiple times, further extending the duration and impact of the effects of the original ACTIVATE command that was issued on the focal-point system.

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 overrules 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: CNAME, XATIME, XBTIME, INTERVAL, COUNT and the S, H, M timeout values of the FORCE parameter are not supported.

Remark:

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.

SNMP-connected target hardware cannot process the following parameters:
INTERVAL
XATIME
XBTIME
The S, H, M timeout values of the FORCE parameter

Return Codes

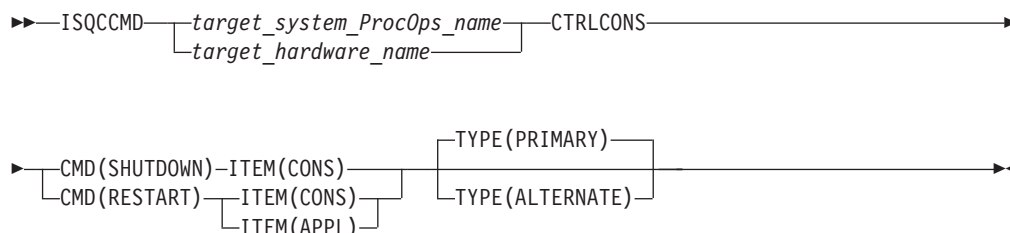The ISQCCMD command (described on page 371) generates the return codes for common command processing.

The ACTIVATE Command

The effects of an ACTIVATE common command issued to an OCF-based processor depend on several factors, the most important of which are the profile(s) used during command processing and the current and intended state of the processor.

Table 3 on page 308 shows the relationships among these factors and the processing results in various circumstances. The meaning of the columns in the table is as follows:

Column Heading	Meaning
Intended Result of ACTIVATE	The mode of the target hardware (ESA or LPAR) and the processing you want to take place as a result of the ACTIVATE command. You indicate your intention by means of the profile that you specify on the command or that processor operations or the support element selects for use.

Column Heading	Meaning
Current Target Hardware State and Mode	The actual state and mode of the processor at the time you issue the command. The current state can be: • POWERED OFF • POWER-ON RESET REQUIRED • POWER-ON RESET COMPLETE If the state is POWER-ON RESET COMPLETE, a target system may or may not have been activated.
Profile Name in ACTIVATE Command Issued by User	The name of a profile you specified in the CNAME operand of the ACTIVATE command, or None.
Profile Name(s) Available from Configuration Dialogs	The names of one or more profiles that may have been defined to processor operations in the configuration dialogs. If no CNAME operand is specified on the ACTIVATE command, processor operations looks for a profile name of the appropriate type in the internal table built from the configuration dialog input. Reset, Image, and Load profile names may be specified on the Target System Description panels for OCF-based processors. See the description of panels ISQDPT5B and ISQDPT5C in *IBM Tivoli System Automation for z/OS Customizing and Programming*.
Operands in ACTIVATE Command processor operations Sends to Support Element	Processor operations sometimes modifies the ACTIVATE command you issue, and it sends the modified command to the processor's support element. These two columns show how processor operations indicates which profile and operations command facility (OCF) are to be used for processing the command.
Profile Name	The profile name, if any, that processor operations puts in the CNAME operand.
OCF	The indication processor operations gives of the operations command facility (OCF) to be used. The primary OCF is indicated by omitting the OCFNAME operand, and a secondary OCF is indicated by giving the OCF's name in the OCFNAME operand.
Support Element (SE)	These two columns describe the effects of the ACTIVATE command from the perspective of the processor's support element.
Recommended Profile	The profile(s) IBM recommends using for the circumstances described in the columns to the left.
Processing	The processing the support element performs as a result of the ACTIVATE command sent by processor operations.

Table 3. Profiles and the ACTIVATE Command for OCF-Based Processors

Intended Result of ACTIVATE	Current Target Hardware State and Mode	Profile Name in Activate Command Issued by User	Profile Name Available from Customization Dialogs	Operands in ACTIVATE Command Processor Operations Sends to Support Element		Recommended Profile	Support Element (SE) Processing
				Profile Name	OCF		
ESA mode Power-on reset CPC Optionally IPL target system (CPC)	POWER-ON RESET REQUIRED or POWERED OFF	CNAME operand	Not used	Profile specified in user command	Primary	Reset profile with AUTOACT operand pointing to Load profile	SE powers on CPC (if required) and performs power-on reset processing as specified in the specified Reset profile. SE IPLs the CPC as specified in a Load profile: • If AUTOACT operand in Reset profile points to a Load profile, SE uses that Load profile. • If Reset profile has no AUTOACT operand, SE uses the default Load profile. If the name specified in the command is not a Reset profile, SE rejects the command.
		None	Reset profile	Reset profile specified in customization dialogs	Primary		
			None	None	Primary		SE powers on CPC (if required) and performs power-on reset processing as specified in the default Reset profile. If the default Reset profile points to a Load profile (as it does when initially set up by IBM), SE IPLs the CPC using that profile. • If the default Reset profile has no AUTOACT operand, SE uses the default Load profile.
ESA mode IPL target system (CPC)	POWER-ON RESET COMPLETE	CNAME operand	Not used	Profile specified in user command	Primary	Load profile	IPLs the CPC as specified in the Load profile.
	Target system activated or not activated	None	Load profile	Load profile specified in customization dialogs	Primary		
	ESA mode		None	None	Primary		IPLs the CPC as specified in the Load profile pointed to in the default Reset profile. • If the default Reset profile has no AUTOACT operand, SE uses the default Load profile.

Table 3. Profiles and the ACTIVATE Command for OCF-Based Processors (continued)

Intended Result of ACTIVATE	Current Target Hardware State and Mode	Profile Name in Activate Command Issued by User	Profile Name Available from Customization Dialogs	Operands in ACTIVATE Command Processor Operations Sends to Support Element		Support Element (SE)	
				Profile Name	OCF	Recommended Profile	Processing
ESA mode Power-on reset CPC Optionally IPL target system (CPC)	POWER-ON RESET COMPLETE	CNAME operand	Not used	Profile specified in user command	Primary	Reset profile with AUTOACT operand pointing to Load profile	Initializes the target hardware into ESA mode as specified in the specified Reset profile. SE IPLs the CPC as specified in a Load profile: • If AUTOACT operand in Reset profile points to a Load profile, SE uses that Load profile. • If Reset profile has no AUTOACT operand, SE uses the default Load profile. If the name specified in the command is not a Reset profile, SE rejects the command.
	Target system activated or not activated LPAR mode	None	Reset profile	Reset profile specified in customization dialogs	Primary		
			None	None	Primary		Initializes the target hardware into ESA mode as specified in the SE's default Reset profile. If the default Reset profile points to a Load profile (as it does when initially set up by IBM), SE IPLs the CPC using that profile. • If the default Reset profile has no AUTOACT operand, SE uses the default Load profile.

ACTIVATE

Table 3. Profiles and the ACTIVATE Command for OCF-Based Processors (continued)

Intended Result of ACTIVATE	Current Target Hardware State and Mode	Profile Name in Activate Command Issued by User	Profile Name Available from Customization Dialogs	Operands in ACTIVATE Command Processor Operations Sends to Support Element		Support Element (SE)	
				Profile Name	OCF	Recommended Profile	Processing
LPAR mode Power-on reset CPC Optionally activate one or more target systems (partitions) Optionally IPL one or more target systems (partitions)	POWER-ON RESET REQUIRED or POWERED OFF	CNAME operand	Not used	Profile specified in user command	Primary	Reset profile with AUTOACT operand pointing to Image profile(s)	SE powers on CPC (if required) and performs power-on reset processing as specified in the specified Reset profile. • If specified profile is not a Reset profile, SE rejects the command. SE activates partitions specified in Image profile(s) pointed to by the AUTOACT operand in Reset profile. • If no Image profiles are specified, no partitions are activated. • If an Image profile contains Load information, the image is IPLed. – A load is not attempted if the Image is in coupling facility mode.
		None	Reset profile	Reset profile specified in customization dialogs	Primary		
			None	None	Primary		As initially set up by IBM, the default Reset profile specifies ESA mode. Therefore, for the SE to be able to use default profiles to power-on reset the CPC in LPAR mode and to activate partitions as described above, the default Reset profile must have been changed to specify LPAR mode. In that case, processing is as described above.

Table 3. Profiles and the ACTIVATE Command for OCF-Based Processors (continued)

Intended Result of ACTIVATE	Current Target Hardware State and Mode	Profile Name in Activate Command Issued by User	Profile Name Available from Customization Dialogs	Operands in ACTIVATE Command Processor Operations Sends to Support Element		Support Element (SE)	
				Profile Name	OCF	Recommended Profile	Processing
LPAR mode Activate target system (partition) Optionally IPL target system (partition)	POWER-ON RESET COMPLETE Target system not activated LPAR mode	CNAME operand	Not used	Profile specified in user command	Secondary	Image profile	SE activates and possibly IPLs partition as specified in an Image or Load profile • If the specified profile is an Image profile: – Activate partition using specified Image profile. – If the Image profile contains Load information, the image is IPLed. - A load is not attempted if the Image is in coupling facility mode. • If the specified profile is a Load profile: – Activate partition using Image profile with the same name as the partition – IPL partition using specified Load profile. - If the Image profile specifies coupling facility mode, the SE does not activate the partition. If the name specified in the command is neither an Image nor Load profile, SE rejects the command.
		None	Image or Load profile	Image profile specified in customization dialogs, if available. Otherwise, Load profile	Secondary		
		None	None	None	Secondary		SE attempts to use the default Image profile and usually fails. Succeeds only when the partition is named "DEFAULT".

Table 3. Profiles and the ACTIVATE Command for OCF-Based Processors (continued)

Intended Result of ACTIVATE	Current Target Hardware State and Mode	Profile Name in Activate Command Issued by User	Profile Name Available from Customization Dialogs	Operands in ACTIVATE Command Processor Operations Sends to Support Element		Support Element (SE)	
				Profile Name	OCF	Recommended Profile	Processing

LPAR mode
 	
Activate target system (partition)
 	
Optionally IPL target system (partition)
	POWER-ON RESET COMPLETE
	
	Target system activated
	
	LPAR mode
		CNAME operand	Not used	Profile specified in user command	Secondary	Image profile	SE activates and possibly IPLs partition as specified in an Image or Load profile
							• If the specified profile is an Image profile:
							 – Deactivate partition.
							 – Activate partition using specified Image profile.
							 – If the Image profile contains Load information, the image is IPLed.
							  - A load is not attempted if the Image is in coupling facility mode.
							• If the specified profile is a Load profile:
							 – IPL partition using specified Load profile.
							  - If the partition is in coupling facility mode, the Activate fails.
							
							If the name specified in the command is neither an Image nor Load profile, SE rejects the command.

		None	Load or Image profile	Load profile specified in customization dialogs, if available. Otherwise, Image profile	Secondary		
			None	None	Secondary		IPLs the partition as specified in the SE's default Image profile.

Table 3. Profiles and the ACTIVATE Command for OCF-Based Processors (continued)

Intended Result of ACTIVATE	Current Target Hardware State and Mode	Profile Name in Activate Command Issued by User	Profile Name Available from Customization Dialogs	Operands in ACTIVATE Command Processor Operations Sends to Support Element		Support Element (SE)	
				Profile Name	OCF	Recommended Profile	Processing
LPAR mode Power-on reset CPC Optionally activate one or more target systems (partitions)	POWER-ON RESET COMPLETE Target system activated or not activated	CNAME operand	Not used	Profile specified in user command	Primary	Reset profile with AUTOACT operand pointing to Image profile(s)	Initializes the target hardware into LPAR mode as specified in the specified Reset profile. Activates partition(s) specified in the Image profile(s) if the Reset profile contains an AUTOACT operand pointing to Image profile(s). • If no Image profiles are specified, no partitions are activated. • If an Image profile contains Load information, the image is IPLed. If the name specified in the command is a Load profile, the SE remains in ESA mode and it IPLs the CPC. If the name specified in the command is neither a Reset nor Load profile, SE rejects the command.
	ESA mode	None	Reset profile	Reset profile specified in customization dialogs	Primary		
Optionally IPL one or more target systems (partitions)			None	None	Primary		As initially set up by IBM, the default Reset profile specifies ESA mode. Therefore, for the SE to be able to use default profiles to power-on reset the CPC in LPAR mode and to activate partitions as described above, the default Reset profile must have been changed to specify LPAR mode. In that case, processing is as described above.

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

```
►►─ISQCCMD──┬─target_system_ProcOps_name─────┬──CBU───────────────────────►
            ├─target_hardware_name.LPAR_name─┤
            └─target_hardware_name───────────┘


        ┌─CMD(STATUS)──────────────────────────┐
►─┬──────┴──────────────────────────────────────┴─────────────────────────►◄
  ├─CMD(UNDO)────────────────────────────────┤
  │                                           │
  │  ┌─CMD(ACTIVATE)─┐ ┌─PW(password)─┐       │
  └──┴─CMD(TESTACT)──┴─┴──────────────┴───────┘
```
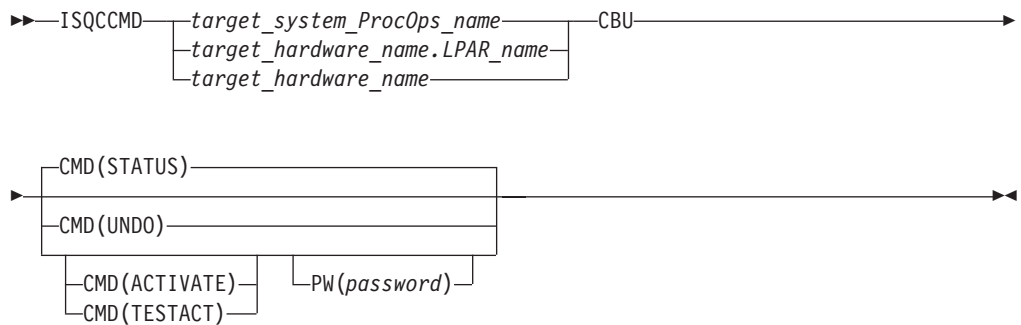
Requirements

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 system 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.

Parameters

For a definition of *target_system_ProcOps_name*, *target_hardware_name.LPAR_name*, and *target_hardware_name*, refer to "ISQCCMD" on page 371.

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 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 control program (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:
| * 2.10: 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. If a CBU
request is issued for a NetView connection, it cannot be processed.

Return Codes

The ISQCCMD command (described on page 371) 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─┬──CCNTL────────────────────────▶◀
             └─target_hardware_name───────┘      └─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* and *target_hardware_name*, refer to "ISQCCMD" on page 371.

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 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 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 of SNMP Connections" on page 372.

Restrictions and Limitations

The CCNTL common command is only supported for SNMP connections. 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 (described on page 371) 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─┬──CPCDATA──────────────────►◄
             └─target_hardware_name───────┘
```

Requirements

The requirements for the CPCDATA 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*, refer to "ISQCCMD" on page 371.

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 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 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 of SNMP Connections" on page 372.

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 (described on page 371) 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

```
►►──ISQCCMD──┬─target_system_ProcOps_name─┬──CTRLCONS────────────────────────►
             └─target_hardware_name───────┘


                                              ┌─TYPE(PRIMARY)───┐
►──┬─CMD(SHUTDOWN)─ITEM(CONS)──────────┬──────┼─────────────────┼────────────►◄
   └─CMD(RESTART)──┬─ITEM(CONS)─┬──────┘      └─TYPE(ALTERNATE)─┘
                   └─ITEM(APPL)─┘
```

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* and *target_hardware_name*, refer to "ISQCCMD" on page 371.

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 00B000*xx*, where *xx* is the condition code:

82 Invalid Session Type of ASYNC encountered. It must be SYNC.

Return Codes

The ISQCCMD command (described on page 371) 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
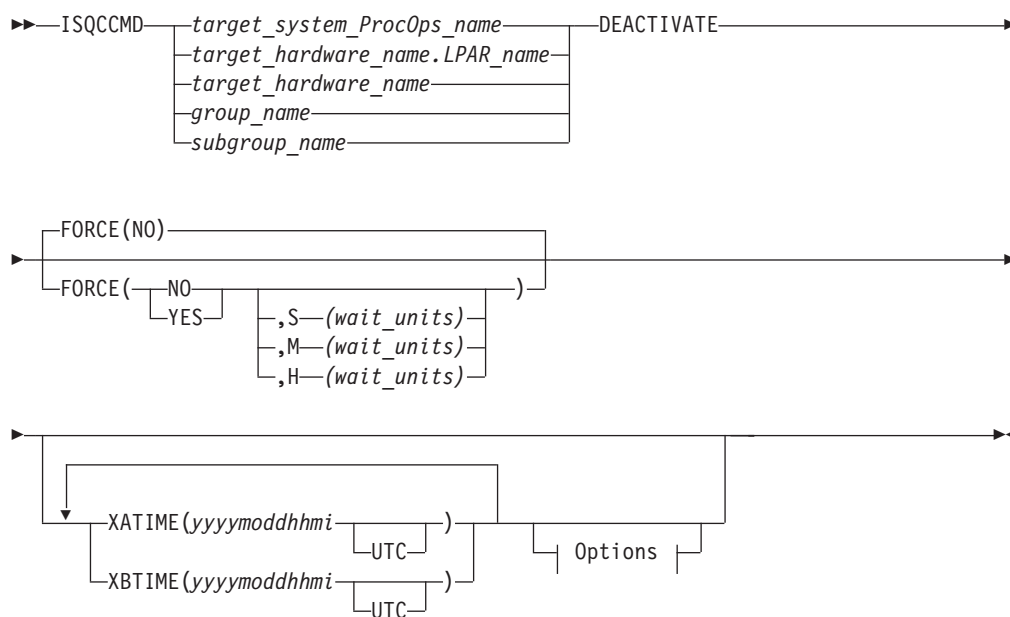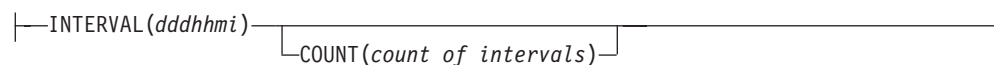
```
►►──ISQCCMD───┬─target_system_ProcOps_name────┬──DEACTIVATE─────────────────────►
              ├─target_hardware_name.LPAR_name─┤
              ├─target_hardware_name───────────┤
              ├─group_name─────────────────────┤
              └─subgroup_name──────────────────┘


    ┌─FORCE(NO)──────────────────────────────────┐
►───┤                                            ├──────────────────────────────►
    └─FORCE(─┬─NO──┬──┬────────────────────┬──)──┘
             └─YES─┘  ├─,S──(wait_units)───┤
                      ├─,M──(wait_units)───┤
                      └─,H──(wait_units)───┘


►──┬──────────────────────────────────────────────────┬──────────────────────►◄
   │  ┌──────────────────────────────────┐             │
   └──▼─┬─XATIME(yyyymoddhhmi─┬──────┬─)─┬──┬─────────┬─┘
        │                     └─UTC──┘   │  ┤ Options ├
        └─XBTIME(yyyymoddhhmi─┬──────┬─)─┘  └─────────┘
                              └─UTC──┘
```

Options:

```
├──INTERVAL(dddhhmi)──┬───────────────────────────┬──────────────────────┤
                      └─COUNT(count_of_intervals)─┘
```

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*, refer to "ISQCCMD" on page 371.

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.

S Specifies that the timeout value is measured in seconds.

M Specifies that the timeout value is measured in minutes.

H Specifies that the timeout value is measured in hours.

wait-units

Specifies an optional timeout value in 1-to-5 decimal digits, ranging from 0 to 65535. This value provides the OCF with an interval for delaying the acceptance of, or rejection of, the command. The presence of this value in the operand causes the OCF to signal a quiesce event to the operating system control program, for those operating systems that support this action.

A timeout value is only allowed on timed command requests.

When a timeout value is specified with FORCE(NO), the associated command is held pending until the control program enters a quiesced state, or until the timeout value expires. If the timeout value expires, the command is treated as a FORCE(NO) with no timeout value.

When a timeout value is specified with FORCE(YES), the associated command is held pending until the control program enters a quiesced state, or until the timeout value expires. If the timeout value expires, the command is treated as a FORCE(YES) with no timeout value.

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*.

XATIME

Specifies a time *<at or after>* which the associated command may begin processing. The time specified is determined by the OCF clock of the receiving support element.

yyyy

Specifies a year, in 4 decimal digits. It must be greater than 1988.

mo Specifies a month of the year, in 2 decimal digits, from 01 to 12.

dd Specifies a day of the month, in 2 decimal digits, from 01 to 31.

hh Specifies an hour of the day, in 2 decimal digits, from 00 to 23.

mi Specifies a number of minutes, in 2 decimal digits, from 00 to 59.

UTC
> If present, indicates that the time is coordinated universal time.

The system must be power-on reset in LPAR mode before sending a scheduled request for a secondary OCF. If it is not, the request is rejected.

The default, if XATIME is not explicitly stated, is for the command to be processed immediately.

When XATIME is not accompanied by an XBTIME, there is no end time by which command processing must be started.

XBTIME
> Specifies a time *<at or before>* which the associated command must begin processing. A combination of XATIME and XBTIME specifies a "timing-window" within which processing is to be attempted.

yyyy
> Specifies a year, in 4 decimal digits. It must be greater than 1988.

mo Specifies a month of the year, in 2 decimal digits, from 01 to 12.

dd Specifies a day of the month, in 2 decimal digits, from 01 to 31.

hh Specifies an hour of the day, in 2 decimal digits, from 00 to 23.

mi Specifies a number of minutes, in 2 decimal digits, from 00 to 59.

UTC
> Indicates that the time is coordinated universal time.

The system must be power-on reset in LPAR mode before sending a scheduled request for a secondary OCF. If it is not, the request is rejected.

When XBTIME is not accompanied by an XATIME, the command may be processed immediately.

INTERVAL
> Indicates that the associated command is to be processed repeatedly. It specifies the time span between processing repetitions. The specified value is added to XATIME, XBTIME, or both (if both are present in the command), to determine the next processing time.

ddd
> Specifies a number of days, in 3 decimal digits, from 000 to 048.

hh Specifies a number of hours, in 2 decimal digits, from 00 to 23.

mi Specifies a number of minutes, in 2 decimal digits, from 00 to 59.

Notes:
1. The default, if INTERVAL is not explicitly stated, is one execution of the command.
2. INTERVAL is only valid if XATIME or XBTIME, or both, are also present in the command.
3. Within a given timing-window, there may be only one repetition of a command.

COUNT
: Specifies the number of times, based on specified timing controls, that processing of an operations command should be attempted. Timing controls are provided through the combined use of the XATIME, XBTIME, INTERVAL, and COUNT operands.

    count-of-intervals
    : Is a decimal value, from 1 to 65535. This value indicates the maximum number of times that processing is to be attempted and is decremented after each processing attempt. When the count has been decremented to zero, the request is removed from the timed list.

    The default value, if COUNT is not explicitly stated, is for the timing-window interval to be repeated forever, or until canceled.

    Use of the COUNT operand requires that INTERVAL, and a combination of either XATIME or XBTIME.

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.

If a time-out value (S, M, H) is entered in the FORCE specification, it is translated to a WITHIN value on the CP FORCE command.

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: XATIME, XBTIME, INTERVAL, COUNT parameters are not supported.

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 (described on page 301).
- The DEACTIVATE common command does not close processor operations PC ports. Use the ISQXCLS command (described on page 396) to perform these actions.
- On processor S/390® Multiprise® 3000 from the 390-CMOS hardware family, the DEACTIVATE common command will issue a power-off if no more images are found operational. The integrated support element is also switched off. This is different from other processors of the 390-CMOS family, where the power-off stage of the DEACTIVATE command only affects the CPC but not the SE. A powered-off Multiprise 3000 cannot be restarted using SA z/OS processor operations. The system must be started manually before the OCF can be used to perform an ACTIVATE command remotely.
- SNMP-connected target hardware cannot process the following parameters:

  INTERVAL

  XATIME

  XBTIME

  The S, H, M timeout values of the FORCE parameter

Return Codes

The ISQCCMD command (described on page 371) 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
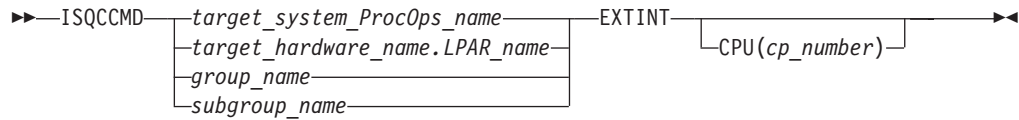
```
►►──ISQCCMD──┬─target_system_ProcOps_name─────┬──EXTINT──┬──────────────────┬──►◄
             ├─target_hardware_name.LPAR_name─┤          └─CPU(cp_number)─┘
             ├─group_name─────────────────────┤
             └─subgroup_name──────────────────┘
```

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*, refer to "ISQCCMD" on page 371.

CPU
    Indicates a central processor is to be interrupted.

(cp_number)
    Is the address of the central processor to be interrupted.

    Valid values are 0–9. The *cp_number* variable is dependent on the type, model and configuration of the processor targeted. The following processors are supported: zSeries, 390-CMOS, and system z9.

    No space is allowed between the keyword CPU and the left parenthesis.

Defaults

This command defaults to the current central processor on the addressed target hardware if a central processor is not specified.

To find out this value for a target system hardware connected with a NetView connection, issue the following command string (note that this command cannot be used for target hardware with an SNMP connection):

```
ISQSEND target SC PROFILE OP(READ) TYPE(LOAD) CNAME(profile_name)
```

For SNMP-connected target hardware, the PROFILE common command may be used to retrieve this information.

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: The CPU parameter is not supported.

Restrictions and Limitations

- This command is not supported for coupling facility target systems.
- The values for the CPU keyword cannot exceed what is physically installed in the processor.
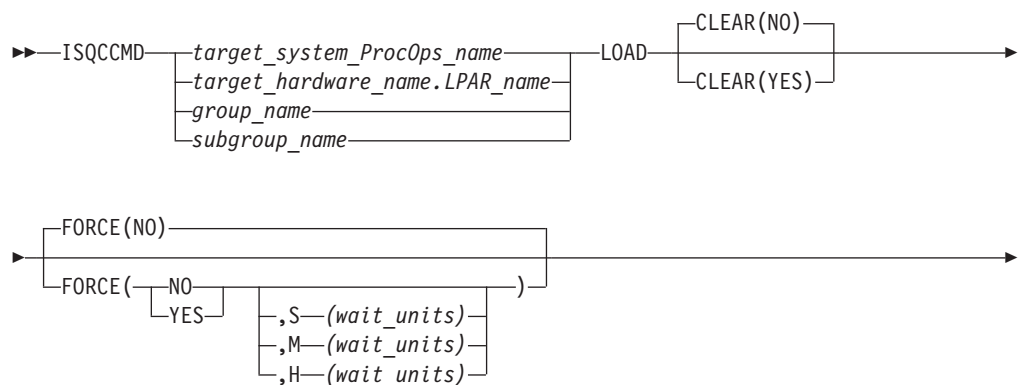
Return Codes

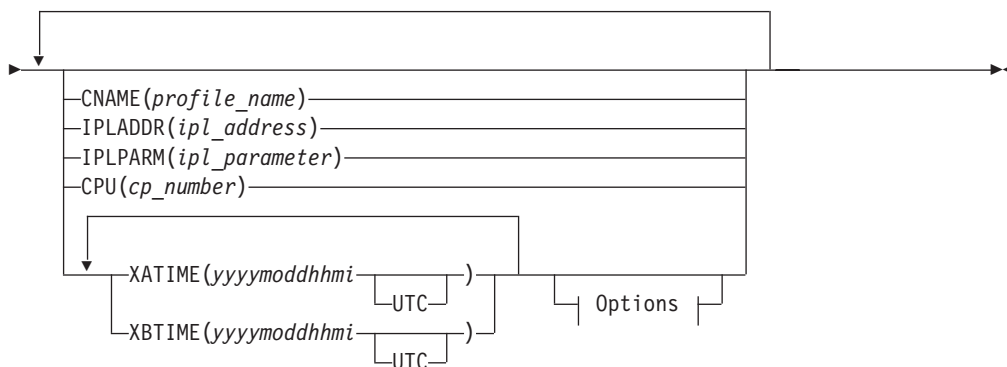The ISQCCMD command (described on page 373) generates the return codes for common command processing.

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─────┬──GETCLUSTER─────────────────►◄
             └─target_hardware_name.LPARname──┘
```

Requirements

Processor operations must be active for this command to complete successfully.

The addressed target system must be initialized to ProcOps for this command to complete successfully. If the target hardware name is specified, at least one target system that is running on that hardware must be initialized to ProcOps.

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 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 (described on page 373) 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

```
►►──ISQCCMD──┬─target_system_ProcOps_name──┬──GETSDGR──────────────────────►◄
             └─target_hardware_name.LPARname─┘
```

Requirements

Processor operations must be active for this command to complete successfully.

The addressed target system must be initialized to ProcOps for this command to complete successfully. If the target hardware name is specified, at least one target system that is running on that hardware must be initialized to ProcOps.

Parameters

None.

Defaults

None.

DEGRADED Reasons Returned

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. 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 (described on page 373) 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.LPARname───┘
```

Requirements

Processor operations must be active for this command to complete successfully.

The addressed target system must be initialized to ProcOps for this command to complete successfully. Likewise, the target system that is associated with the *target_hardware_name.LPARname* specification must be initialized to ProcOps.

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 (described on page 373) 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──┬──GETISTAT──────────────────►◄
             └─target_hardware_name.LPARname─┘
```

Requirements

Processor operations must be active for this command to complete successfully.

The addressed target system must be initialized to ProcOps for this command to complete successfully. Likewise, the target system that is associated with the *target_hardware_name.LPARname* specification must be initialized to ProcOps.

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 (described on page 373) 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 GETIINFO 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──┬──GETSINFO─────────────────────►◄
             └─target_hardware_name.LPARname─┘
```

Requirements

Processor operations must be active for this command to complete successfully.

The addressed target system must be initialized to ProcOps for this command to complete successfully. Likewise, the target system that is associated with the *target_hardware_name.LPARname* specification must be initialized to ProcOps.

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 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 (described on page 373) 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.LPARname─┘
```

Requirements

Processor operations must be active for this command to complete successfully.

The addressed target system must be initialized to ProcOps for this command to complete successfully. Likewise, the target system that is associated with the *target_hardware_name.LPARname* specification must be initialized to ProcOps.

Parameters

None.

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 (described on page 373) generates the return codes for common command processing.

ICNTL

Purpose
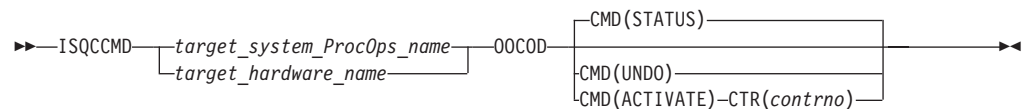
The ICNTL common command allows you to query and change LPAR-specific values and settings. The PR/SM™ hardware component or WLM use this information to manage partition performance and to distribute shared processor resources among the images of a CPC. Changing the image control values and settings with ICNTL allows you to influence LPAR performance and LPAR resource capacities at run time.

Syntax

```
►►──ISQCCMD──┬─target_system_ProcOps_name──┬──ICNTL──────────────────────►
             └─target_hardware_name.lparname─┘
```

```
        ┌─CMD(LIST)─────────────────────────────────┐   ┌─PT(GPP)──────────┐
──►──────┤                                           ├───┤                  ├──────────►◄
        ├─CMD(UPDATE)─VAR(─┤ vnm ├─)─VAL(vll)─┤       └─PT(─┤ proctp ├─)─┘
        └─CMD(READ)─VAR(─┤ vnm ├─)───────────┘
```

vnm:

```
├──┬─CLUSTR─┬──────────────────────────────────────────────────────────┤
   ├─DEFCAP─┤
   ├─GRPPRF─┤
   ├─PWC────┤
   ├─PWCC───┤
   ├─PWI────┤
   ├─PWIC───┤
   ├─PWMN───┤
   ├─PWMX───┤
   └─WLME───┘
```

proctp:

```
├──┬─GPP─┬─────────────────────────────────────────────────────────────┤
   ├─IFA─┤
   ├─IFL─┤
   ├─ICF─┤
   └─IIP─┘
```
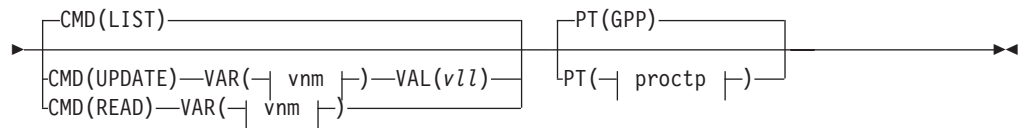
Requirements

The requirements for the ICNTL command to complete successfully are:

- Processor operations must be active.
- The addressed target system or target hardware.lpar must have been initialized using command ISQXIII.

Parameters

For a definition of *target_system_ProcOps_name* and *target_hardware_name.lparname*, refer to "ISQCCMD" on page 371.

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.

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.

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 Refer to the value information for the "VAR parameter" on page 334.

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

      IFA   Integrated Facility for Applications processor

      IFL   Integrated Facility for LINUX processor

      ICF   Internal Coupling Facility processor

      IIP   z9 Integrated Information Processor

> Note: You cannot specify special purpose processors for the CLUSTR,
> DEFCAP, 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 of SNMP Connections" on page 372.

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 (IFA, IFL, ICF, IIP) for the CLUSTR, DEFCAP, GRPPRF, or WLME command parameters.

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 00B000*xx*, 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.

6G
The processor type value of the request is invalid. The request is rejected.

Return Codes

The ISQCCMD command (described on page 371) 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
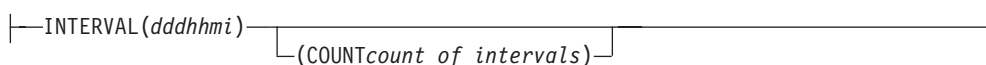
```
>>-ISQCCMD---target_system_ProcOps_name-------------LOAD--CLEAR(NO)------->
            |-target_hardware_name.LPAR_name-|              |-CLEAR(YES)-|
            |-group_name---------------------|
            |-subgroup_name------------------|

      FORCE(NO)
>--+-------------------------------------------------->
   |-FORCE(--NO--------------------------------)-|
            |-YES-| |-,S--(wait_units)-|
                    |-,M--(wait_units)-|
                    |-,H--(wait_units)-|
```

```
                ┌──────────────────────────────────────────────────┐
                ▼                                                    │
►►─────┬─ CNAME(profile_name) ──────────┬──────────────────────────────────►◄
       ├─ IPLADDR(ipl_address) ─────────┤
       ├─ IPLPARM(ipl_parameter) ───────┤
       └─ CPU(cp_number) ───────────────┘

              ┌─────────────────────────────────┐
              ▼                                  │
           ┬─ XATIME(yyyymoddhhmi ───────)─┬   ┌─ Options ─┐
           │                   └─UTC─┘     │   │           │
           └─ XBTIME(yyyymoddhhmi ───────)─┘
                               └─UTC─┘
```

Options:

```
├── INTERVAL(dddhhmi) ──────────────────────────────────────────────────┤
                     └─(COUNTcount_of_intervals)─┘
```

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*, refer to "ISQCCMD" on page 371.

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.

S Specifies that the timeout value is measured in seconds.

M Specifies that the timeout value is measured in minutes.

H Specifies that the timeout value is measured in hours.

wait-units
>   Specifies an optional timeout value in 1-to-5 decimal digits, ranging from 0 to 65535. This value provides the OCF with an interval for delaying the acceptance of, or rejection of, the command. The presence of this value in the operand causes the OCF to signal a quiesce event to the operating system control program, for those operating systems that support this action.
>
>   A timeout value is only allowed on timed command requests.
>
>   When a timeout value is specified with FORCE(NO), the associated command is held pending until the control program enters a quiesced state, or until the timeout value expires. If the timeout value expires, the command is treated as a FORCE(NO) with no timeout value.
>
>   When a timeout value is specified with FORCE(YES), the associated command is held pending until the control program enters a quiesced state, or until the timeout value expires. If the timeout value expires, the command is treated as a FORCE(YES) with no timeout value.

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.

CPU
Indicates that the variable following it in parentheses is the central processor address parameter.

(cp_number)
>   Specifies the central processor address.
>
>   Valid values are 0–9. The *cp_number* variable is dependent on the type, model and configuration of the processor targeted. The following processors are supported: zSeries, 390-CMOS, and system z9.

Specifying this parameter also changes the value in the internal variable for the addressed target system to the number of the specified central processor address. No space is allowed between the keyword CPU 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 SA z/OS sends to the support element has a CNAME operand with the Load profile name 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 its default Load profile.

profile_name

Indicates the name of the 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.

XATIME

Specifies a time *<at or after>* which the associated command may begin processing. The time specified is determined by the OCF clock of the receiving support element.

yyyy

Specifies a year, in 4 decimal digits. It must be greater than 1988.

mo Specifies a month of the year, in 2 decimal digits, from 01 to 12.

dd Specifies a day of the month, in 2 decimal digits, from 01 to 31.

hh Specifies an hour of the day, in 2 decimal digits, from 00 to 23.

mi Specifies a number of minutes, in 2 decimal digits, from 00 to 59.

UTC

If present, indicates that the time is coordinated universal time.

The system must be power-on reset in LPAR mode before sending a scheduled request for a secondary OCF. If it is not, the request is rejected.

The default, if XATIME is not explicitly stated, is for the command to be processed immediately.

When XATIME is not accompanied by an XBTIME, there is no end time by which command processing must be started.

XBTIME

Specifies a time *<at or before>* which the associated command must begin processing. A combination of XATIME and XBTIME specifies a "timing-window" within which processing is to be attempted.

yyyy

Specifies a year, in 4 decimal digits. It must be greater than 1988.

mo Specifies a month of the year, in 2 decimal digits, from 01 to 12.

dd Specifies a day of the month, in 2 decimal digits, from 01 to 31.

hh Specifies an hour of the day, in 2 decimal digits, from 00 to 23.

mi Specifies a number of minutes, in 2 decimal digits, from 00 to 59.

UTC
> Indicates that the time is coordinated universal time.

The system must be power-on reset in LPAR mode before sending a scheduled request for a secondary OCF. If it is not, the request is rejected.

When XBTIME is not accompanied by an XATIME, the command may be processed immediately.

INTERVAL
Indicates that the associated command is to be processed repeatedly. It specifies the time span between processing repetitions. The specified value is added to XATIME, XBTIME, or both (if both are present in the command), to determine the next processing time.

ddd
> Specifies a number of days, in 3 decimal digits, from 000 to 048.

hh Specifies a number of hours, in 2 decimal digits, from 00 to 23.

mi Specifies a number of minutes, in 2 decimal digits, from 00 to 59.

Notes:
1. The default, if INTERVAL is not explicitly stated, is one execution of the command.
2. INTERVAL is only valid if XATIME or XBTIME, or both, are also specified in the command.
3. Within a given time-frame, there may be only one repetition of a command.

COUNT
Specifies the number of times, based on specified timing controls, that processing of an operations command should be attempted. Timing controls are provided through the combined use of the XATIME, XBTIME, INTERVAL, and COUNT operands.

count-of-intervals
> Is a decimal value, from 1 to 65535. This value indicates the maximum number of times that processing is to be attempted and is decremented after each processing attempt. When the count has been decremented to zero, the request is removed from the timed list.

The default value, if COUNT is not explicitly stated, is for the timing-window interval to be repeated forever, or until cancelled.

Use of the COUNT operand requires that INTERVAL, and a combination of either XATIME or XBTIME.

Defaults

The LOAD command defaults to CLEAR(NO) and to FORCE(NO).

The *ipl_address*, *ipl_parameter*, and *cp_number* parameters default to the values defined in the configuration dialogs, unless they have been changed with the ISQVARS or ISQXOPT command, described on page 407, in which case the values defined by the ISQVARS or ISQXOPT command are used.

For OCF-based processors, the *ipl_address*, *ipl_parameter*, and *cp_number* parameters default to the values specified in the Load profile. You can find out these values by issuing the following command string:

```
ISQSEND target SC PROFILE OP(READ) TYPE(LOAD) CNAME(profile_name)
```

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 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: CNAME, CPU, XATIME, XBTIME, INTERVAL, COUNT and the S, H, M timeout values of the FORCE parameter are not supported.

Restrictions and Limitations

SNMP-connected target hardware cannot process the following parameters:

INTERVAL

XATIME

XBTIME

The S, H, M timeout values of the FORCE parameter

This command is not supported for coupling facility target systems.

The CPU load parameter is not supported for SNMP connections. If one is specified, it is ignored. The values for *cp_number* cannot exceed what is physically installed in the processor.

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 (described on page 301). 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 NVC connections a LOAD command can be executed, using a load profile specified with the CNAME keyword in addition to other keywords such as IPLADDR, that may have a different value than the ones stored in the profile.

For SNMP connections, this is not supported. 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 (described on page 371) 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

```
►►──ISQCCMD──┬─target_system_ProcOps_name─┬──OOCOD──┬─CMD(STATUS)──────────────┬──►◄
             └─target_hardware_name───────┘         ├─CMD(UNDO)────────────────┤
                                                    └─CMD(ACTIVATE)─CTR(contrno)─┘
```

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.

Parameters

For a definition of *target_system_ProcOps_name* and *target_hardware_name*, refer to "ISQCCMD" on page 371.

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:

- 2.10: IBM System z10
- 2.9: IBM System z9
- 2.8: IBM eServer zSeries 990

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 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 00B000*xx*, where *xx* is the condition code:

83 Invalid OOCOD command provided (it must be STATUS, ACTIVATE or UNDO).

84 No Order Number 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 (described on page 371) 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

```
►►──ISQCCMD──┬─target_system_ProcOps_name─────┬──PROFILE────────────────────►
             └─target_hardware_name.lpar_name─┘


►──┬─CMD(──┬─OPEN──┬──)──────────────────────────────────────┬──────────────►◄
   │       └─CLOSE─┘                                          │
   ├─CMD(LIST)──TYPE(─┤ ptype ├─)──────────────────────────── │
   │                                        ┌─PT(GPP)───────┐ │
   ├─CMD(UPDATE)─┤ update parms ├──┬────────┴───────────────┴─┘
   └─CMD(READ)─┤ read parms ├──────┘        └─PT(─┤ proctp ├─)─┘
```

ptype:

```
├──┬─RESET─┬─────────────────────────────────────────────────────────────────┤
   ├─IMAGE─┤
   ├─LOAD──┤
   └─GROUP─┘
```

update parms:

```
├──TYPE(─┤ ptype ├─)──NAME(pname)──VAR(─┤ pvar ├─)──VAL(pval)─────────────────┤
```

read parms:

```
├──TYPE(─┤ ptype ├─)──NAME(pname)─────────────────────────────────────────────┤
                                   └─VAR(─┤ pvar ├─)─┘
```
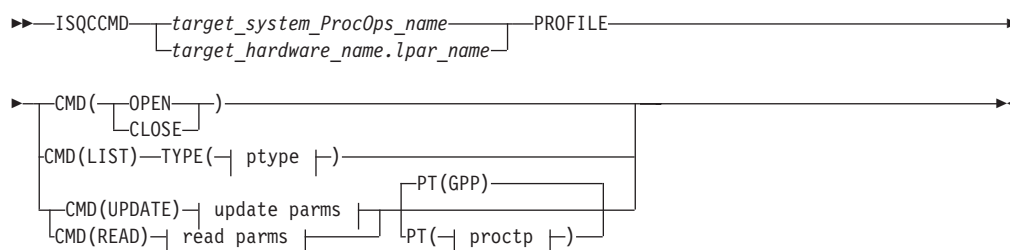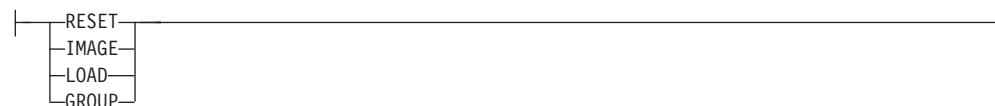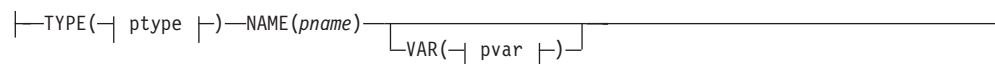
pvar:

```
├──┬─AUTOIPL──┬─────────────────────────────────────────────────────────┤
   ├─BRLBA────┤
   ├─BPS──────┤
   ├─CAPACITY─┤
   ├─CPD──────┤
   ├─CPDRES───┤
   ├─CPS──────┤
   ├─CPSRES───┤
   ├─CS───────┤
   ├─CSRES────┤
   ├─DEFCAP───┤
   ├─ENDTSL───┤
   ├─ES───────┤
   ├─ESRES────┤
   ├─GRPPRF───┤
   ├─IPLADR───┤
   ├─IPLPRM───┤
   ├─IPLTYP───┤
   ├─IOCDS────┤
   ├─LUN──────┤
   ├─OSSLP────┤
   ├─PWI──────┤
   ├─PWIC─────┤
   ├─PWMN─────┤
   ├─PWMX─────┤
   ├─PRT──────┤
   ├─PRTT─────┤
   ├─WLME─────┤
   └─WWPN─────┘
```

proctp:

```
├──┬─GPP─┬────────────────────────────────────────────────────────────────┤
   ├─IFA─┤
   ├─IFL─┤
   ├─ICF─┤
   └─IIP─┘
```

Requirements

The requirements for the PROFILE command to complete successfully are:

- Processor operations must be active.
- The addressed target system must be initialized. 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.lpar_name*, refer to "ISQCCMD" on page 371.

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 352), 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.

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 355).

ES The amount of Central Storage, in megabytes, allocated at partition activation time for use as expanded storage.

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. Refer to 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 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.

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").

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 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:

pval
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.

pval
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

IFA Integrated Facility for Applications processor

IFL Integrated Facility for LINUX processor

| **ICF** | Internal Coupling Facility processor |
| **IIP** | z9 Integrated Information Processor |

Note: 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 of SNMP Connections" on page 372.

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. This is different to the ISQSEND PROFILE command for NVC connections, which supports the full set of the 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 00B000*xx*, 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.

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 (described on page 371) 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

```
►►─ISQCCMD──┬─target_system_ProcOps_name─┬──RESERVE──────────────────────────────►
            └─target_hardware_name───────┘
```

```
         ┌─RCMD(LIST)─────────────────┐
►────────┼────────────────────────────┼────────────────────────────────────────►◄
         └─RCMD(─┬─OFF─┬─)─RNAME(rnm)──┘
                 └─ON──┘
```
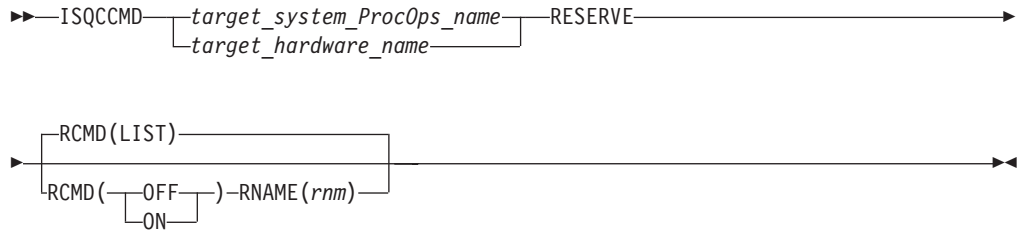
Requirements

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*, refer to "ISQCCMD" on page 371.

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.

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 (described on page 371) 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).
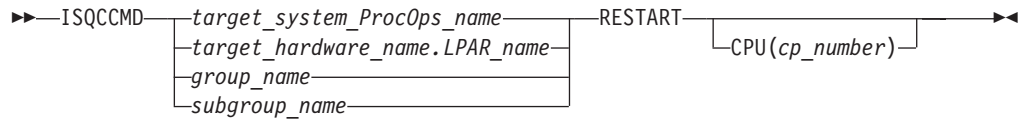
Syntax

```
►►──ISQCCMD──┬─target_system_ProcOps_name───┬──RESTART──┬──────────────────┬──►◄
             ├─target_hardware_name.LPAR_name─┤          └─CPU(cp_number)──┘
             ├─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*, refer to "ISQCCMD" on page 371.

CPU
Indicates that a central processor is to be restarted.

cp_number
Specifies the central processor address.

Valid values are 0–9. The *cp_number* variable is dependent on the type, model and configuration of the processor targeted. The following processors are supported: zSeries, 390-CMOS, and system z9.

No space is allowed between the keyword CPU and the left parenthesis.

Defaults

This command defaults to the current central processor on the addressed target hardware if a central processor is not specified. Depending on the processor, the current central processor may be the default specified on the processor's OPRCTL panel.

To find out this value issue the following command string:
```
ISQSEND target SC PROFILE OP(READ) TYPE(LOAD) CNAME(profile_name)
```

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: The CPU parameter is not supported.

Restrictions and Limitations

- The values for the CPU keyword cannot exceed what is physically installed in the processor.

- For SNMP-connected target hardware the CPU keyword is not supported.

Return Codes

The ISQCCMD command (described on page 371) 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
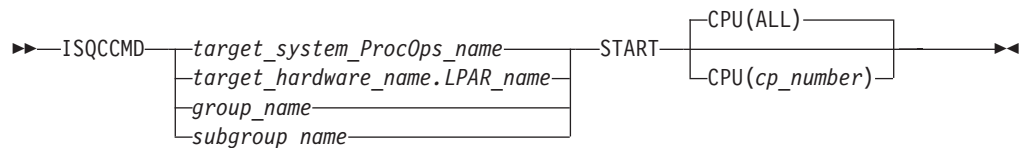
```
>>-ISQCCMD----target_system_ProcOps_name-------------START--┬-CPU(ALL)--------┬-----><
              ├-target_hardware_name.LPAR_name-┤             └-CPU(cp_number)--┘
              ├-group_name---------------------┤
              └-subgroup_name------------------┘
```

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*, refer to "ISQCCMD" on page 371.

CPU(ALL)
Specifies all central processors are to be started. This is the default. No space is allowed between the keyword CPU and the left parenthesis.

CPU(*cp_number*)
Specifies the number of the central processor to be started.

Valid values are 0–9. The *cp_number* variable is dependent on the type, model and configuration of the processor targeted. The following processors are supported: zSeries, 390-CMOS, and system z9.

No space is allowed between the keyword CPU and the left parenthesis.

Defaults

The START command defaults to CPU(ALL).

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

- The values for the CPU number cannot exceed what is physically installed in the processor.
- This command is not supported for coupling facility target systems.
- For SNMP-connected target hardware the CPU keyword is not supported.

Return Codes

The ISQCCMD command (described on page 371) 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
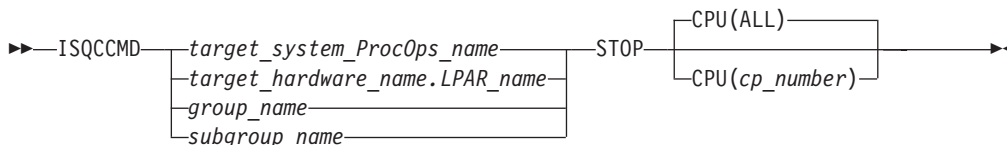
```
>>--ISQCCMD----target_system_ProcOps_name--------STOP---CPU(ALL)--------------------><
                --target_hardware_name.LPAR_name--          --CPU(cp_number)--
                --group_name------
                --subgroup_name------
```

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*, refer to "ISQCCMD" on page 371.

CPU(ALL)
Specifies that all central processors are to be stopped. This is the default. No space is allowed between the keyword CPU and the left parenthesis.

CPU(*cp_number*)
Specifies the number of the central processor to be stopped.

Valid values are 0–9. The *cp_number* variable is dependent on the type, model and configuration of the processor targeted. The following processors are supported: zSeries, 390-CMOS, and system z9.

No space is allowed between the keyword CPU and the left parenthesis.

Defaults

The STOP command defaults to CPU(ALL).

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

- The values for the CPU keyword cannot exceed what is physically installed in the processor.
- This command is not supported for coupling facility target systems.
- For SNMP-connected target hardware the CPU keyword is not supported.

Return Codes

The ISQCCMD command (described on page 371) 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
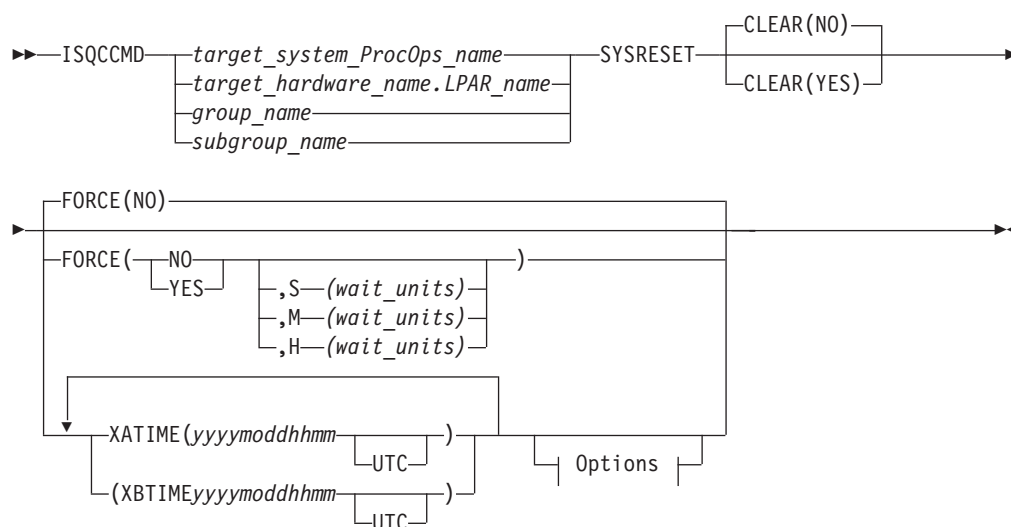
```
                                                      ┌─CLEAR(NO)──┐
►►─ISQCCMD──┬─target_system_ProcOps_name────┬─SYSRESET─┼────────────┼─►
            ├─target_hardware_name.LPAR_name─┤          └─CLEAR(YES)─┘
            ├─group_name─────────────────────┤
            └─subgroup_name──────────────────┘

      ┌─FORCE(NO)──────────────────────────────────────┐
►──────┼────────────────────────────────────────────────┼──────────────►◄
       │          ┌─NO──┐  ┌──────────────────┐          │
       └─FORCE(───┴─YES─┴──┼──────────────────┼───)──────┤
                           ├─,S─(wait_units)──┤          │
                           ├─,M─(wait_units)──┤          │
                           └─,H─(wait_units)──┘          │
                    ┌◄─────────────────────────┐         │
                    ├─XATIME(yyyymoddhhmm──┬────┬─)─┤ ┌──────────┐
                    │                       └─UTC┘   └─┤ Options ├─┘
                    └─(XBTIMEyyyymoddhhmm──┬────┬─)─┘
                                           └─UTC┘
```

Options:

```
├──INTERVAL(dddhhmi)──────────────────────────────────────────────┤
                      └─COUNT(count_of_intervals)─┘
```

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*, refer to "ISQCCMD" on page 371.

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.

S Specifies that the timeout value is measured in seconds.

M Specifies that the timeout value is measured in minutes.

H specifies that the timeout value is measured in hours.

wait-units
Specifies an optional timeout value in 1-to-5 decimal digits, ranging from 0 to 65535. This value provides the OCF with an interval for delaying the acceptance of, or rejection of, the command. The presence of this value in the operand causes the OCF to signal a quiesce event to the operating system control program, for those operating systems that support this action.

A timeout value is only allowed on timed command requests.

When a timeout value is specified with FORCE(NO), the associated command is held pending until the control program enters a quiesced

state, or until the timeout value expires. If the timeout value expires, the command is treated as a FORCE(NO) with no timeout value.

When a timeout value is specified with FORCE(YES), the associated command is held pending until the control program enters a quiesced state, or until the timeout value expires. If the timeout value expires, the command is treated as a FORCE(YES) with no timeout value.

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.

XATIME
Specifies a time *<at or after>* which the associated command may begin processing. The time specified is determined by the OCF clock of the receiving support element.

yyyy
Specifies a year, in 4 decimal digits. It must be greater than 1988.

mo Specifies a month of the year, in 2 decimal digits, from 01 to 12.

dd Specifies a day of the month, in 2 decimal digits, from 01 to 31.

hh Specifies an hour of the day, in 2 decimal digits, from 00 to 23.

mi Specifies a number of minutes, in 2 decimal digits, from 00 to 59.

UTC
If present, indicates that the time is coordinated universal time.

The system must be power-on reset in LPAR mode before sending a scheduled request for a secondary OCF. If it is not, the request is rejected.

The default, if XATIME is not explicitly stated, is for the command to be processed immediately.

When XATIME is not accompanied by an XBTIME, there is no end time by which command processing must be started.

XBTIME
Specifies a time *<at or before>* which the associated command must begin processing. A combination of XATIME and XBTIME specifies a "timing-window" within which processing is to be attempted.

yyyy
Specifies a year, in 4 decimal digits. It must be greater than 1988.

mo Specifies a month of the year, in 2 decimal digits, from 01 to 12.

dd Specifies a day of the month, in 2 decimal digits, from 01 to 31.

hh Specifies an hour of the day, in 2 decimal digits, from 00 to 23.

mi Specifies a number of minutes, in 2 decimal digits, from 00 to 59.

UTC
Indicates that the time is coordinated universal time.

The system must be power-on reset in LPAR mode before sending a scheduled request for a secondary OCF. If it is not, the request is rejected.

When XBTIME is not accompanied by an XATIME, the command may be processed immediately.

INTERVAL

Indicates that the associated command is to be processed repeatedly. It specifies the time span between processing repetitions. The specified value is added to XATIME, XBTIME, or both (if both are present in the command), to determine the next processing time.

ddd
Specifies a number of days, in 3 decimal digits, from 000 to 048.

hh Specifies a number of hours, in 2 decimal digits, from 00 to 23.

mi Specifies a number of minutes, in 2 decimal digits, from 00 to 59.

Notes:

1. The default, if INTERVAL is not explicitly stated, is one execution of the command.
2. INTERVAL is only valid if XATIME or XBTIME, or both, are also present in the command.
3. Within a given timing-window, there may be only one repetition of a command.

COUNT

Specifies the number of times, based on specified timing controls, that processing of an operations command should be attempted. Timing controls are provided through the combined use of the XATIME, XBTIME, INTERVAL, and COUNT operands.

count-of-intervals

Is a decimal value, from 1 to 65535. This value indicates the maximum number of times that processing is to be attempted and is decremented after each processing attempt. When the count has been decremented to zero, the request is removed from the timed list.

The default value, if COUNT is not explicitly stated, is for the timing-window interval to be repeated forever, or until cancelled.

Use of the COUNT operand requires that INTERVAL, and a combination of either XATIME or XBTIME.

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: XATIME, XBTIME, INTERVAL, COUNT and the S, H, M timeout values of the FORCE parameter are not supported.

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.

SNMP-connected target hardware cannot process the following parameters:
> INTERVAL
> XATIME
> XBTIME
> The S, H, M timeout values of the FORCE parameter

Return Codes

The ISQCCMD command (described on page 371) generates the return codes for common command processing.

SYSRESET

Chapter 6. Host-based Commands

ISQCCMD

Purpose

The ISQCCMD command issues a common command.

Syntax

```
►►──ISQCCMD──┬─target_system_ProcOps_name────┬──common_command──────────────────►◄
             ├─target_hardware_name.LPAR_name─┤
             ├─group_name─────────────────────┤
             ├─subgroup_name──────────────────┤
             └─target_hardware_name───────────┘
```

Requirements

Processor operations must be active.

The addressed target system must be initialized unless the specified common command is ACTIVATE (described on page 301).

Parameters

target_system_ProcOps_name
> Is the processor operations name of the target system.

target_hardware_name.LPAR_name
> Is the identifier of the target system in SNMP message format.

group_name
> Is the name of the group that subgroup(s) and target system(s) are members of.

subgroup_name
> Is the name of the subgroup that the target system(s) are members of.

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 common command to the specified target system.

Restrictions and Limitations

- *Target_hardware_name* is valid only for the common commands DEACTIVATE and CBU.
- *Group_name* or *subgroup_name* must be processor operations-enabled as defined in the SA z/OS customization dialogs to be a valid parameter.

Specifying an SNMP Timeout Value

For target hardware connections of type SNMP, 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 a ISQCCMD 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 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 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 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 of SNMP Connections

For target hardware connections of type SNMP, the immediate command responses cannot be captured with TRAP and WAIT in programs that issue the ISQCCMD. You can retrieve the immediate HW responses by using a PIPE KEEP stage in your programs. Use 'ISQ.SNMP' as the KEEP name.

The common commands that support KEEP ISQ.SNMP are:
- CCNTL
- CPCDATA
- ICNTL
- GETCLUSTER
- GETIINFO
- GETISTAT
- GETSDGR
- GETSINFO
- GETSSTAT
- PROFILE

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

4   Command processing has been accepted.

8   Command processing has been rejected.

12   Command processing has failed.

32   The processor operations environment 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 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

```
>>--ISQCMON--+--ON--+----------------------------------------><
             |      |
             +--OFF-+
```

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 (described on page 382).

Refer to *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.

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─┬──────────────────────►◄
                                 └─OC─┘ └─command_name─┘
```

Requirements

The requirements for this command to complete successfully are:

- Processor operations must be active.
- The target system specified with *target_system_name* must be initialized.

Parameters

target_system_name
    Specifies the name of the target system.

SC
    Specifies the active system console connection.

OC
    Specifies the active operator console connection.

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 can 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" on page 375.

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

```
>>--ISQHELP--+--ISQ--------------+----------------------------><
             +--command_name-----+
             +--ISQCCMD--+----------------------+--+
                         +--common_command_name-+
```
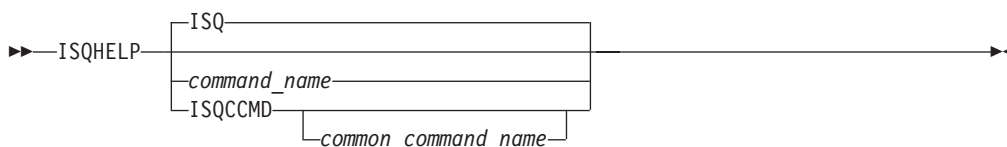
Requirements

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.

Refer to *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

```
                                        ┌─FORCE(NO)──┐
►►──ISQIPSWT──target-hardware-name──┬────────────┬──────────────►◄
                                        └─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 a target console lock.

Syntax

```
►►──ISQOVRD──target_system_ProcOps_name──────────────────────────────────►◄
                                         ├─OC─┤
                                         └─SC─┘
```

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

Defaults

None.

Usage

The ISQOVRD command removes the console 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 a console lock for the issuing operator, it simply removes the lock on the console.
- 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 a target system 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.

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

```
►►──┬───────┬──ISQSEND──┬─target_system_ProcOps_name─┬──┬──OC──┬──command──────►◄
    └─NVASIS─┘           └─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

target_system_ProcOps_name
Is the name of the target system.

target_hwname.Lparname
Is 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
Is the command to be processed and any parameters that are associated with that command. Use the ISQSEND command to send operating system 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. Refer to 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 NVC or TCPIP connections. For ProcOps SNMP connections, ISQCCMD must be used to perform Operations Management functions.

NVC Operations management commands, for example, PROFILE, or QUERY READ (CPCDATA). For further information, refer to *S/390 Managing your Processors*.

TCPIP Operations management commands in this case 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 occured       //
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 systems with processor operations commands. This command can be issued from an automation routine.

Syntax

```
►►──ISQSTART──┬─────────────────────┬──┬───────┬──►◄
              ├──data_set_name──────┤  └─DEBUG─┘
              └──AOF_CTL_FILE_NAME──┘
```

Requirements

The NetView program must have at least read authority to the data set containing the control file.

You may need special authorization to use this command.

Parameters

data_set_name
Is the name of the data set that contains the control file produced by the customization dialogs Build Processor Control file function. It cannot be a partitioned data set (PDS) member. The control file is in a proprietary, non-readable format.

AOF_CTL_FILE_NAME
This SA z/OS common global variable name contains the data set name from the customization dialog Processor Control file build. This is an alternative way of starting Processor Operations. The Processor Control file data set name is provided through the automation control file (ACF) of the Processor Operations focal point system.

DEBUG
Provides additional diagnostics, which are written to the NetView log.

Defaults

There are no defaults for this command when processor operations is first started — you must provide the data set name for initial startup. When restarting, this command defaults to using the same data set specified the previous time the command was issued.

Usage

To perform an initial start, specify a data set name. To perform a restart, do not specify a data set name. The data set name is specified with the configuration dialogs during installation or customization.

An initial start loads the specified configuration control file created with the configuration dialogs during installation and starts all processor operations tasks to establish the processor operations tasking environment. The configuration file also indicates which, if any, target systems should be initialized (not the IPL process).

In addition to starting processor operations initially, an initial start lets you change the processor operations configuration, by specifying a different data set name. (During installation, the installer may have gone through the configuration dialogs several times defining multiple processor operations configurations and generating a different control file for each.) To change the processor operations configuration, use the ISQSTOP command to stop processor operations before issuing the ISQSTART command with the data set name to initiate the initial start.

You usually do a restart after a processor operations task has failed to restart all processor operations tasks to re-establish the processor operations tasking environment. If the processor operations environment has not already been established by a previous ISQSTART command that specified a data set name, the restart will fail.

When you issue ISQSTART, it adds you to the interested operators list accessed by the ISQCMON command. This list is for messages 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 AOF_CTL_FILE_NAME start parameter is used, SA z/OS on the ProcOps focal point system must be fully initialized, otherwise ISQSTART processing will be suspended. If the SA z/OS initialization completes within a 5 minute suspension period, ISQSTART processing will be continued. If not, the ISQSTART command terminates without being processed.

  Note that this restriction also applies if ISQSTART is issued while an ACF REFRESH is in progress on the ProcOps 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 *data_set_name* cannot be DEBUG.
- The specified *data_set_name* must be a sequential data set.
- The DEBUG parameter is restricted to IBM service use only.

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.

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 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 4 on page 392 identifies the keywords for the values you can view or change with the ISQVARS command.

Syntax

```
►►─ISQVARS─┬─GET──┬──┬─TGT─target_system_ProcOps_name─┬──keyword──────►
           ├─GETL─┤  ├─OCF─ocf_name──────────────────┤
           ├─GETT─┤  ├─THW─target_hardware_name───────┤
           └─GETC─┘  ├─LUN─luname─────────────────────┤
                     └─GRP─┬─group_name────┬──────────┘
                           └─subgroup_name─┘

►─┬─MSG──────┬──────────────────────────────────────────────────────►◄
  └─variable─┘


►►─ISQVARS─┬─PUT──┬──┬─TGT─target_system_ProcOps_name─┬──keyword──────►
           ├─PUTL─┤  ├─THW─target_hardware_name───────┤
           ├─PUTT─┤  ├─LUN─luname─────────────────────┤
           └─PUTC─┘  └─GRP─┬─group_name────┬──────────┘
                           └─subgroup_name─┘

►─┬─'value'──┬──────────────────────────────────────────────────────►◄
  └─variable─┘


►►─ISQVARS─┬─GET──┬──LIST─┬─TGTLIST─┬──variable─────────────────────►◄
           ├─GETL─┤       ├─THWLIST─┤
           ├─GETT─┤       ├─GRPLIST─┤
           └─GETC─┘       └─SBGLIST─┘
```

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.

keyword
Is the name of the SA z/OS value to be retrieved or set. Table 4 on page 392 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 4 on page 392.

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.

keyword

Is the name of the SA z/OS keyword whose value is to be retrieved or set. Table 4 on page 392 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 4 on page 392.

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.

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 4 on page 392.

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...
```

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 4 on page 392 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 *list* option.
134	*msg* and *list* 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.
140	The PUT function completed successfully.
141	*msg* 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.
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*, 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.
187	You cannot use the ISQVARS command to change the current value of the specified internal variable.
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.

List of DEGRADED Reasons Returned

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 pipla '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 by use of the ISQVARS command if they are valid values.

In Table 4 on page 392, the SA z/OS values are sorted according to the contents of
the *Name* column, which identifies the keyword name of the value. The column
Access 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 column **ISQVARS** 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 4 lists the ISQVARS keywords sorted by keyword name.

Table 4. 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 domainid
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.
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.
Target hardware connection type	ctype	read	THW	Type of processor operations NVC or SNMP to focal-point NetView
IPL message: response to duplicate volume IEA212A IPL message	dvol	write	TGT	A list of zero to 12 three-digit hexadecimal control unit addresses, separated from each other by one or more blanks. These addresses identify the devices to be left online (MVS only).
Group name list	grplist	read	GET LIST	A list of group names. The names are separated by one or more blanks.

Table 4. 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	9672, 9674, 3000, 2003, eServer, or zSeries machine type nbr
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).
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 *target_hardware_name.LPAR_name*. 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 NVC/SNMP connection.
NetView connection status summary	nvcs	write	THW	Valid values are: NVC SESSION PROBLEM, ACTIVE, NVC SESSION BUSY, SNMP SESSION PROBLEM or blank. For read, you may also get CLOSED and DORMANT in addition to the values that you can write.
Operator console lock	oclockn	read	TGT	Name of operator who issued the lock; blank if not 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

Table 4. ISQVARS Keywords Sorted by Keyword Name (continued)

Keyword Description	Name	Access	ISQVARS	Valid Values and Comments
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	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. The initial value is taken from the value entered in the SA z/OS Customization Dialog Processor Information panel (AOFGCPD0).
Path Poll Retries	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. The initial value is taken from the value entered in the SA z/OS Customization Dialog Processor Information panel (AOFGCPD0).
Primary focal point	primfp	read	THW	Primary focal-point NetView domainid.
Subgroup name list	sbglist	read	GET LIST	A list of subgroup names. The names are separated by one or more blanks.
System console lock	sclockn	read	TGT	Name of operator who issued the lock; blank if not set.
System console status	scstat	read	TGT	NVC SESSION BUSY, NVC SESSION PROBLEM, SNMP SESSION PROBLEM, ACTIVE, CLOSED, DORMANT, and blank.
Support Element address	seaddr	write	THW	IP address or hostname of THWs 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. |
LPAR: partition automatic IPL	taipl	write	TGT	Y or N.
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.
Target system description	tdesc	read	TGT	

Table 4. ISQVARS Keywords Sorted by Keyword Name (continued)

Keyword Description	Name	Access	ISQVARS	Valid Values and Comments
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 subgroup(s) associated with this group or the group name(s) for a target system.
Target system name list	tgtlist	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, and DEGRADED.
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, NVC SESSION BUSY, and NVC SESSION PROBLEM
Target system console status summary	tscb	read	TGT	Blank.
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.

Table 4. ISQVARS Keywords Sorted by Keyword Name (continued)

Keyword Description	Name	Access	ISQVARS	Valid Values and Comments
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 and NOT ACTIVE.
Target System SubGroup name	tsubgrp	read	TGT or GRP	Target system names within a subgroup or the subgroup name(s) 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, 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, refer to *IBM Tivoli System Automation for z/OS Messages and Codes*.

ISQXCLS

Purpose

For a screen-oriented processor the ISQXCLS command closes a target system or some part of the processor operations environment. Closing a target system automatically closes the system console (if there are no other active logical partitions) and operator console ports and sets the target system status to CLOSED.

Syntax

```
►►──ISQXCLS──target_system_ProcOps_name──┬────┬──────────────►◄
                                         ├─OC─┤
                                         └─SC─┘
```

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.

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 or NVC connection.

Defaults

None.

Usage

You can close a target system to end the communication between the target and focal point over the processor operations path.

Closing 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.

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.
4	The console connection was locked by another task.
8	You used syntax that was not valid.
12	A NetView or processor operations service problem occurred.
16	A severe error occurred.
32	The processor operations environment does not exist; the ISQXCLS 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)
- Individual target hardware status
- Individual target system status
- Connection path status
- Interested operator list

Syntax

```
►►──ISQXDST─────────────────────────────────────────────────────────────►◄
              └─target_system_ProcOps_name─┘
```

Requirements

Processor operations must be active.

Parameters

target_system_ProcOps_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.
>
> See "Examples" on page 400 for a description of the status values for target systems.

Defaults

The status summary panel that shows the overall status of all target systems.

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 target systems without exiting the status facility. Refer to *IBM Tivoli System Automation for z/OS Defining Automation Policy* and to *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
```

To display the status of a specific target system, issue:
```
ISQXDST target_system_ProcOps_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 supported by the status facility. 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.

Restrictions and Limitations

The following restrictions or limitations apply to this command:
- Do not issue this command with ISQEXEC 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

```
ISQESUM              SA z/OS Proc-Ops Target Status Summary    Updates: Dynamic
  Control file in use: SATEST.SYSTEM.V22.IPSFO.ISQCNTL        NMC Bridge: INACTIVE
 I isqxiii C isqxcls O isqxopt  A,B view netlogs E events       Debug Mode: OFF
 Cmd    Target System   Status     Focal Points - Primary: IPSFO Backup: IPUFM


        CFA            CLOSED
        CFB            CLOSED
        CFF            CLOSED
        CF1            UNKNOWN
        CF61           INITIALIZED
        CF62           INITIALIZED
        KEYA           STAGE-1 ACTIVATE COMPLETE
        KEYB           IPL COMPLETE
        KEYC           IPL COMPLETE
        LNXOLI1        NOT ACTIVE
        TEL01FE        LOAD FAILED




 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
```

Figure 155. 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) Target system attention status indicating a DCCF message has been detected.

DISABLED WAIT
> (red) Target system attention status indicating a disabled wait condition has been detected.

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 MVS 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 to attract your attention to the fact 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) MVS 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.

NOT OPERATING
> (red) Target hardware indicates a not operating condition for the image. No CP status is available for problem determination.

NVC SESSION BUSY
> (red) NVC Path Only: An attempt to use the NetView Connection returned a Busy condition. Retry the request.

NVC SESSION PROBLEM
> (red) NVC Path Only: An attempt to use the NetView Connection returned an error. Use command FOCALPT to determine sphere of control for SPCS and ALERT of the SE.

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.

UNDECIDABLE
> (yellow) SNMP Path Only: The target hardware is not 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, this is to attract your attention to the fact 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) 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, this is to attract your attention to the fact 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, this is to attract your attention to the fact 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.

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.

Syntax

```
►►──ISQXIII──target_system_ProcOps_name──┬────┬──────────────────────►◄
                                          ├─OC─┤
                                          └─SC─┘
```

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 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.

Defaults

None.

Usage

Issue the ISQXIII command to a target system to prepare it 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.

The ACTIVATE common command initializes a target system and its associated console connections as part of their larger procedures.

Notes:

1. If the Reset profile of the associated processor specifies that multiple LPARs should be activated, initializing *one* of these LPARs causes the initialization of *all the other* LPARs that are specified. In this case, one ISQ461I message for each initialized target system is issued.

2. After initializing the first target system of a target hardware, the "initialized" message ISQ062I triggers a loop for the other target systems of the same target hardware. This loop checks whether the other target systems should also be initialized. The end of this loop is indicated by an ISQ801I message.

Restrictions and Limitations

The following restrictions or limitations apply:

- To re-initialize a target system, you must first close it with the ISQXCLS command (described on page 396).
- To initialize a console connection, the target system must have been initialized previously.

Return Codes

0   The ISQXIII command processed successfully and the processor operations environment for the specified target system has been initialized or re-initialized.

4   During initialization of a target system one or more of the following problems occurred:

- No system consoles could be contacted.
- No operator consoles could be contacted.

8   You used syntax that is not valid, specified a target system that is not initialized.

12   An internal error occurred.

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 console to serialize operations to that console with other operator tasks.

Syntax

```
►►──ISQXLOC──target_system_ProcOps_name──┬──OC──┬──────────────────────────────◄
                                         └──SC──┘
```

Requirements

The requirements for this command to complete successfully are:
*   Processor operations must be active.
*   The console must not be locked by another task.

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).

Defaults

None.

Usage

All processor operations commands that require serialization automatically lock the console when they start and unlock the console when they complete.

The lock is a logical entity that prevents processor operations operations from being sent to the console—they are rejected unless issued by the same task that issued the ISQXLOC command—until the lock is removed by the ISQXUNL command (described on page 411).

If you are going to issue several commands to a target system, you can issue the ISQXLOC command to lock access to the console 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 console.

If the ISQXLOC command is issued within an automation procedure, or within a set of called automation procedures, the locked console should be unlocked (using the ISQXUNL command) after all processing of the automation procedure is completed. It is not normally necessary to lock a console 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 console was already locked by the current task.

8 You used syntax that is not valid, specified a target system name that is not valid, or specified a target system that is not initialized.

12 The console is locked by another task.

32 The processor operations environment does not exist; the ISQXLOC command was not processed.

Return codes greater than 8 not listed above — 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 port or a target system console. When added, you can monitor a console and receive all message traffic for that console.

The following messages are sent to the interested operator's NetView screen:

- Operating system messages from target systems
- Processor hardware messages
- Hardware status change messages
- Command completion messages from the processor hardware

Messages for interested operators are all prefixed with the message ID ISQ901I and are copies of the original ISQ900I messages that ProcOps provides.

Syntax
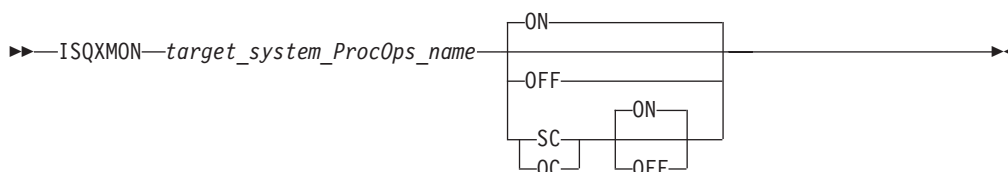
```
>>--ISQXMON--target_system_ProcOps_name--+--ON---+--------------><
                                         +--OFF--+
                                         +--SC--+--ON---+
                                         '--OC--' '--OFF-'
```

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.

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).

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.

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 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.

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.

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 156 on page 408 in basic-mode using an OCF-based processor
• Figure 157 on page 408 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 156. 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 157. 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 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

```
►►──ISQXPSM──target_hardware_name──┬─START────────────┬──────────────►◄
                                   ├─STOP─────────────┤
                                   ├─STATUS───────────┤
                                   └─CMD──(────┤ PSM_command ├──)─┘
```

PSM_command:

```
├──┬─ISQACT──MH──────────────────────────┬──────────────────────────┤
   ├─ISQCLEAR──┬─M─┬───────────────────┤
   │           └─C─┘
   ├─ISQQUERY──QE──────────────────────┤
   ├─ISQSTATUS─────────────────────────┤
   └─ISQTRACE──┬─MSERV────┬──┬─ON──┬──┘
               ├─CSERV────┤  └─OFF─┘
               ├─MH───────┤
               ├─LOGGER───┤
               ├─CNSERVER─┤
               └─TCPIP────┘
```

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.

Defaults

None.

Usage

Refer to Chapter 7, "PSM Commands," on page 413 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. In order to use the full set of the commands, a VM user must be logged on as PSM and enter the commands at the PSM console.

Return Codes

0
: The ISQXPSM command completed successfully.

4

- 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 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

- ISQSEND returned an error while processing a START, STOP, or STATUS request.

- Error 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 console lock instituted by the ISQXLOC command.

Syntax

```
►►─ISQXUNL─ target_system_ProcOps_name ─┬─OC─┬──────────────────────────────────────►◄
                                        └─SC─┘
```

Requirements

The requirements for this command to complete successfully are:

- Processor operations must be active.
- The addressed console 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 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).

Defaults

None.

Usage

The ISQXUNL command removes a console lock established by the ISQXLOC command (described on page 403). 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 console lock.

Return Codes

0   The ISQXUNL command completed successfully.
4   The specified console was not locked.
8   One of the following was specified:
   - Invalid syntax

- Invalid target system name
- Target system 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 7. PSM Commands

Special Requests

The following special requests may be executed by the PSM Command Server. To issue these requests you must be logged on to the PSM. The individual requests are:

- "ISQACT" on page 413
- "ISQCLEAR" on page 413
- "ISQMSG" on page 413
- "ISQPSM" on page 414
- "ISQQUERY" on page 414
- "ISQSTATUS" on page 414
- "ISQTRACE" on page 414
- "STOPALL" on page 415

ISQACT

```
►►──ISQACT────────────────────────────────────────────────────►◄
            └─MH─┘
```
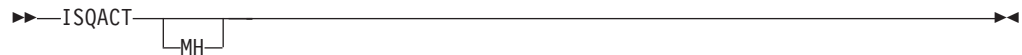
ISQACT is used to activate a thread after it has stopped.

MH indicates the Message Handler thread is to be reactivated. This is useful in cases where the MH threads 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─┤ ├─ON──┤
           └─MSGID──┘ └─OFF─┘
```

ISQMSG is used to change the way that messages are displayed to the console user 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 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 spills over to another line, the continuation line is 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 spilling of message text to 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.

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.

ISQQUERY

►►──ISQQUERY──┬──┬──►◄
             ├─Q─┤
             └─E─┘

ISQQUERY displays:
- How many entries are in the Message Queue (Q operand)
- A list of current events and event monitors (E operand)

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* may 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.

Appendix A. Definitions for I/O Operations Commands

This appendix provides additional information for using I/O operations commands.

ESCON/FICON Director Switch

The following is an example of a diagram that is used in this document to illustrate an ESCON director (or switch, as it is usually called).

```
                                    Control unit port (always FE)
                                    A dynamic connection (.....)

     ┌────┐ ┌────┐
     │ FE │ │ C0 │
     └────┘ └────┘         ┌────┐
                           │ D2 │
                           └────┘
                   (P)              Prohibited connection

     BLDG_222_SWCH3        ┌────┐
                           │ D4 │ ⊗   A blocked port
        0300               └────┘
                                    A dynamic connection (between C0 and D6)
     ┌────┐┌────┐  ┌────┐
     │ EA ││ E0 │  │ D6 │
     └────┘└────┘  └────┘
                                    A static connection (---)
                                    Switch number (0300)
                                    Location description (BLDG_222_SWCH3)
```
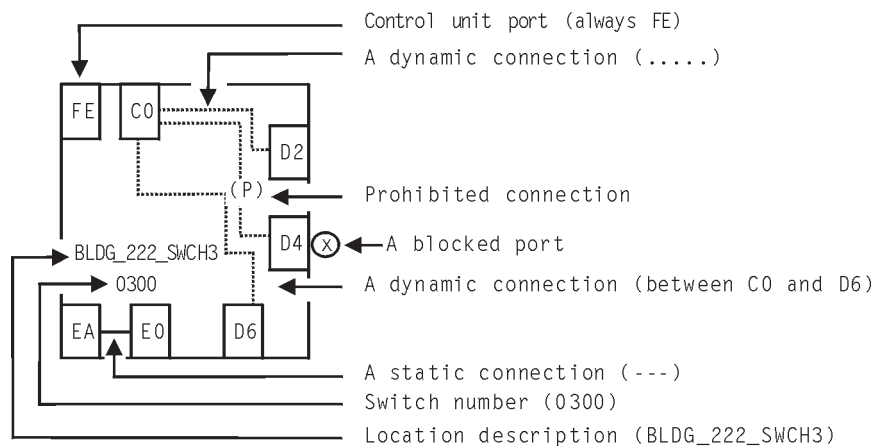
Figure 158. Sample of an ESCON Director Diagram

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 operations. The ADDRESS parameter of the IODEVICE macro in the I/O Definition File (IODF) specifies the switch device number.

In many I/O operations commands, a switch device number is required in the input to identify a switch that is allocated to the issuing I/O operations (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 operations 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 operations to show the LSN also for cascaded switches.

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 operations 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 operations 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 operations to resolve the LSN also for the above-mentioned switches.

In many I/O operations commands, a switch device number is required in the input to identify a switch that is allocated to the issuing I/O operations (primary host). The program also displays the switch device number on output.

Chain and Unchain a Switchable Path

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 to which the I/O interface of the channel is physically attached in a CH chain and the I/O interface of the control unit is attached in a CU chain.

M   Port to which the A port is statically connected 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.
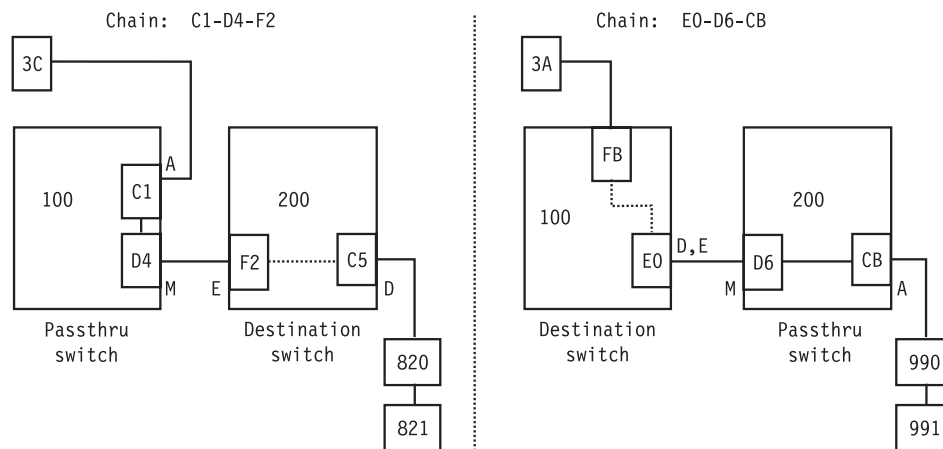
Figure 159. Examples of Chained Paths.

Chaining a Path

1. You must define a chained path to I/O operations, and remove this definition when it is no longer needed.

2. The I/O operations used to define a chain or remove its definition must have dynamic access via 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 operations 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 operations issues. See "Processing a Vary Path Request" on page 433 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 operations 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 operations 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 operations 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 operations 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 159 on page 418 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 operations' consensus vary-path processing.

Two Scenarios for a CH Chain in a CNC Path

Configuration:
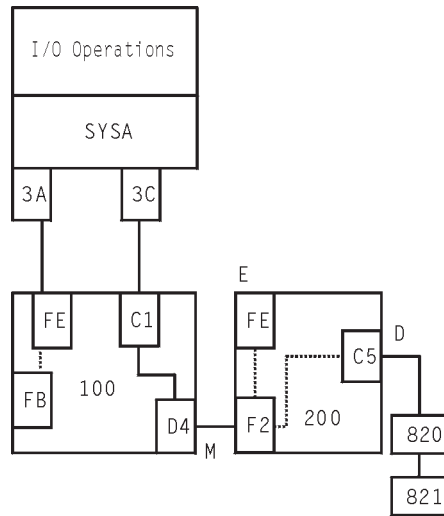
Figure 160. Chain: Scenario 1.

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:

```
┌─────────────────┐       ┌─────────────────┐
│  I/O Operations │◄─────►│  I/O Operations │
├─────────────────┤       ├─────────────────┤
│      SYSA       │       │      SYSB       │
└──┬────┬─────────┘       └───┬────┬────┬───┘
  ┌┴┐  ┌┴┐                   ┌┴┐  ┌┴┐  ┌┴┐
  │3C│ │3E│                  │27│ │36│ │3B│
  └┬┘  └┬┘                   └┬┘  └┬┘  └┬┘
```
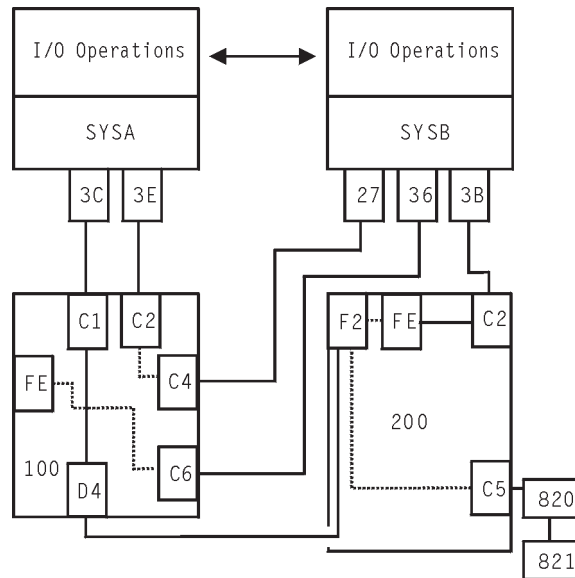
Figure 161. Chain: Scenario 2.

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
```

When a Command Fails

If you receive a message that a command failed, you first make sure I/O
operations 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 operations is started.** In MVS/ESA, to check if I/O operations
  has been started on the primary host, enter `display jobs,`
  I/0_operations_procedure_name. If the I/O operations procedure name appears
  in the list, I/O operations has been started.
- **Determine why the command failed.** If a command does not complete
  successfully, I/O operations 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 operations-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.

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 operations 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 operations cannot always ensure the same degree of system integrity that it can for "fully" ESCON paths.

Channel Types

Types of channels:

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
CNC_P	A point-to-point ESCON channel
CNS_S	A switchable ESCON channel
CTC_P	A point-to-point channel-to-channel channel
CTC_S	A switchable channel-to-channel channel
CVC_P	A point-to-point converted channel
CBY_P	A point-to-point byte converter channel
FC	A FICON point-to-point channel
FC_S	A FICON switched channel
FCV	A FICON-to-ESCON bridge
FC_?	A FICON incomplete

> **Note:** The last character of the DCM managed channels' acronyms is 'M', for example, FCM or CNCSM.

ICR	Internal coupling receiver
ICS	Internal coupling sender
ICP	Internal coupling peer
OSA	An open systems adapter channel
BLOCK	A parallel channel operating in block mode
BYTE	A parallel channel operating in byte mode
UNDEF	A channel that is not defined

Types Of Channels

I/O operations 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 operations 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.

ESCON Channels

I/O operations supports the following types of ESCON channels.

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 operations can display data about a CNC channel path and change its connectivity.

An ESCON Channel-to-Channel (CTC) Channel

When a CTC channel is defined to one system image, or host, it can communicate with a CNC channel defined on another host so that the two system images can communicate with each other for *intersystem communication.* The CTC channel views each CNC channel with which it communicates as a pseudo control unit, and vice versa.

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 Parallel Channel

I/O operations can display information about parallel channels that operate in either byte (BY) or block (BL) mode. I/O operations can also change connectivity to a parallel channel operating in block mode.

Coupling Facility Channels

I/O operations can display and return data about a Coupling Facility Receiver (CFR) channel and a Coupling Facility Sender (CFS) channel. However, I/O operations 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 operations 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 operations 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 SA z/OS. For example, the local console of IBM ESCON 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 ESCON Director, use the ESCON Director's ACTIVE=SAVED setting
- From a fixed IPL file, regardless of what was most recently active on the ESCON Director, you can set the ESCON Director to use that file

But note that your use of SA z/OS varies accordingly. Changes that you make through SA z/OS are only automatically restored after events like power failures if the ESCON Directors are set to ACTIVE=SAVED; if they are not, consider using SA z/OS functions to update each ESCON Director's IPL file in accordance with your updates directly to the active configuration.

ESCON resources are self-defining. The relevant data is contained in a node descriptor (ND) of a port or an ESCON channel and in a node element descriptor (NED) of a switch device. I/O operations uses this data to ensure system integrity in its commands. It can also use the serial number of an ESCON 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 operations' 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 operations forces the completion of a switching connectivity command under two conditions:

- If any of I/O operations's relevant vary path requests fail.
- If I/O operations 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 operations 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 operations is secured by RACF® or an equivalent program.

NOCheck: instructs I/O operations 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 operations 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 operations 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 operations is secured by RACF or equivalent.

Backout|Nobackout Option Set

By choosing between BAckout and NOBackout, you can determine whether I/O operations 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 operations 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 operations 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 operations 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 operations 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.

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 operations at which you issued the command (the issuing I/O operations) 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 operations informs you the command completed successfully. (If it completed unsuccessfully, you can enter the DISPLAY RESULTS command to obtain more data.)

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 operations 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 operations 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 operations reports such a dual assignment as a configuration mismatch.
CVCU	A CV converter and a control unit are assigned to this port. I/O operations reports such a dual assignment as a configuration mismatch.
ISL	An Inter-Switch-Link is connected to this port.

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.

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 operations as part of a matrix of a switch configuration. The program displays switch matrixes in its sample I/O

operations ISPF (ESCM ISPF) dialog and at a graphic workstation. See examples in *IBM Tivoli System Automation for z/OS User's Guide*.

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 operations.
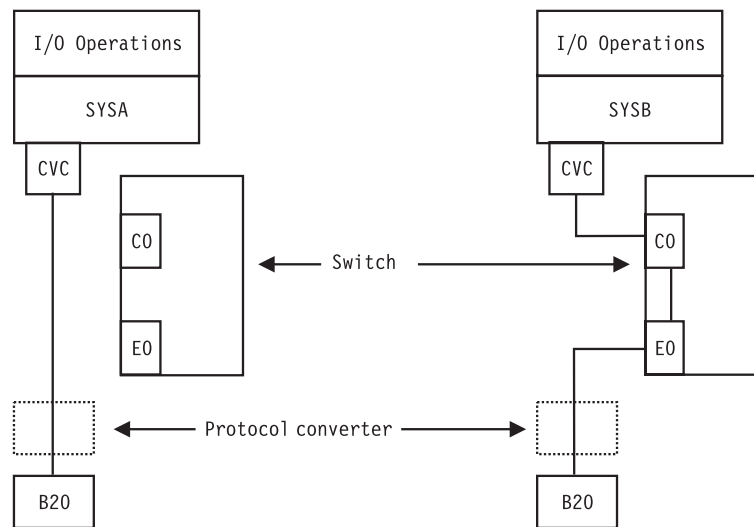
Figure 162. ESCON-in-Converted-Mode Sample

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. A ND is a 32-byte field that describes a node interface of an I/O resource. A ND identifies a physical CHPID. When a physical token is input, the first 4 bytes are not used for comparison.

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 operations (primary host) in the command. To facilitate the connectivity management of these switchable paths, I/O operations 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.

Switch Port Hardware Status on a Display Command

On the output of DISPLAY commands, I/O operations displays the hardware status for a port.

```
Port Status
H  S  C  P
│  │  │  └──── P - Port is prohibited from being dynamically connected with
│  │  │            at least one other port
│  │  └─────── X'xx' - address of the port with which this port is statically
│  │               connected
│  └────────── B - Port is blocked from all communication
│              + - port is DCM eligible and allowed for DCM activities
│              - - port is DCM eligible and not allowed for DCM activities
│                - (blank) port is DCM ineligible
└───────────── Cx- Port is 1 of 3 ports in a chain (C is displayed to
                   the left of another state)
               A - Attachment of port is not valid
               D - Bridge port degraded
               I - Bridge port offline (inactive)
               L - Link failure detected
               M - Port is in maintenance mode
               N - Not installed
               O - Port is offline
               S - Service is required for this port
               _ - (underscore) Port is online
```

Figure 163. Switch Port Hardware Status Format

For further information, refer to 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*.

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 operations 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 operations 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 operations then sends the command "SET OFFLINE"t o 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.

Port Switching Commands

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.
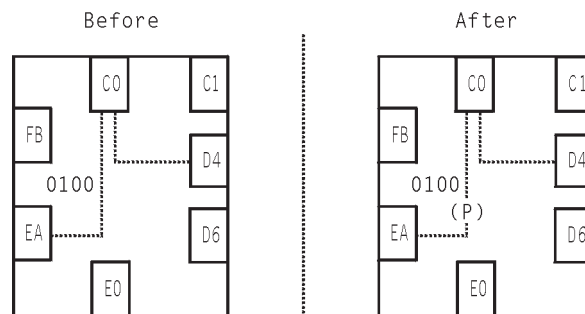
Figure 164. PROHIBIT Command Example

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.
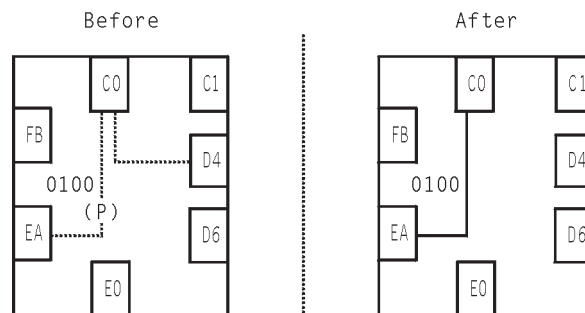
Figure 165. CONNECT Command Example

BLOCK

Example   `b (C0) 0100`

Explanation   Blocks all data transfer through C0, regardless of its other connectivity. Data cannot be transferred between C0 and either D4 or EA.
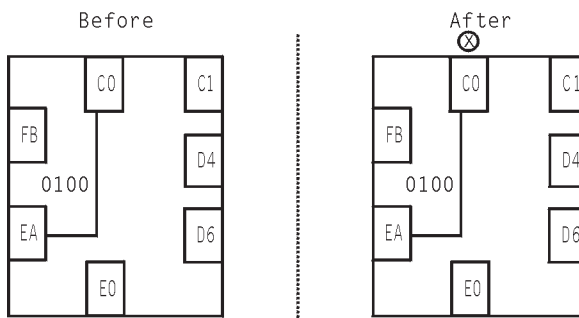
Figure 166. BLOCK Command Example

UNBLOCK

Example   u (C0) 0100

Explanation   Unblocks C0, so that the static connection is again in effect.
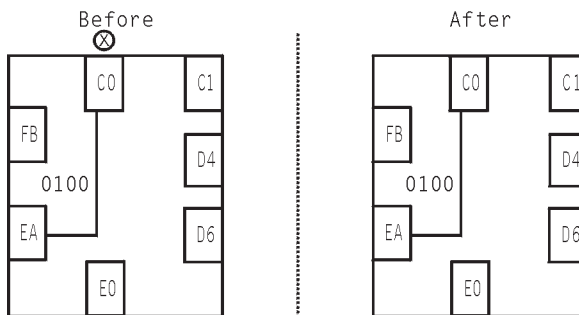
Figure 167. UNBLOCK Command Example

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.
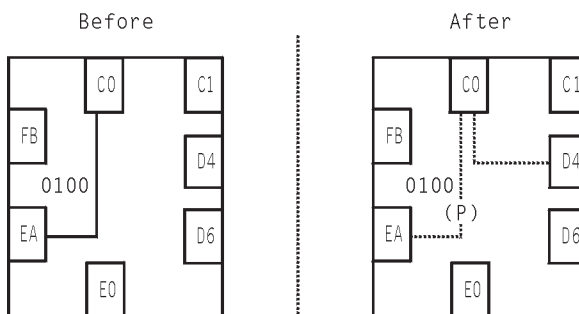
Figure 168. DISCONNECT Command Example

ALLOW

Example   a (C0) (EA) 0100

Explanation   Allows data to be transferred dynamically between C0 and EA.
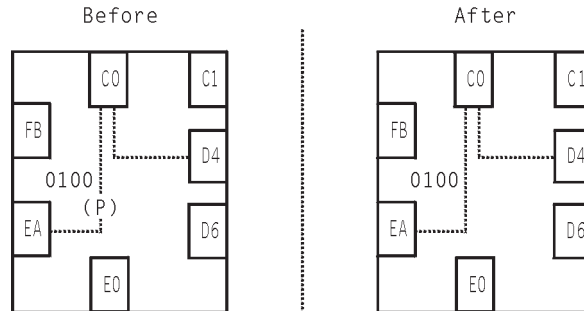
Figure 169. ALLOW Command Example

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 operations.
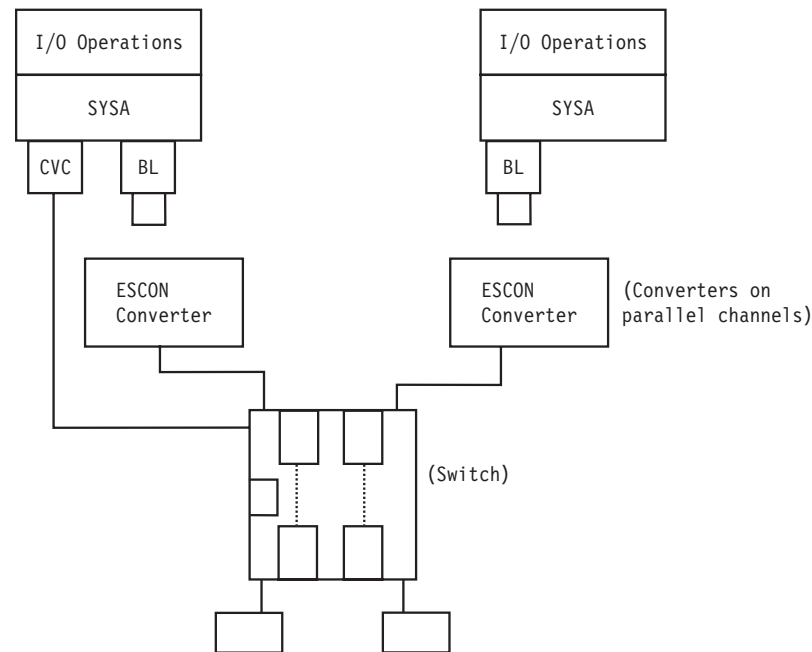
Figure 170. Parallel Channel in Block Mode Sample.

Switching Commands

The members of a group (domain) must be either:

- The issuing I/O operations, which is the base program (primary host) at which you enter, or to which you send, the command.
- An I/O operations base program that shares access to at least one dynamic switch in common with the issuing I/O operations.

If the switching command contains Vary (path) as an implicit or explicit option, the issuing I/O operations 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 operations within a preset time interval. After the results are in or when the time interval expires, the issuing I/O operations determines whether it and the voters have reached the consensus that all the vary path requests completed successfully. If so, the issuing I/O operations proceeds with command processing.

Notes:

1. Because an issuing I/O operations is also called the primary host, or the primary I/O operations host, a voter is also called a secondary host, or a secondary I/O operations 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 operations, 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.

A Simple Way to Modify a Switch Matrix

When a switch matrix is displayed, you can make changes on it; you do not have to enter commands on the command line. In fact, you can invoke the DISPLAY RESULTS command, which is described more fully on page 267. Refer to *IBM Tivoli System Automation for z/OS User's Guide* for information about a switch matrix.

Port Addresses

A port address is a two-digit hexadecimal number that identifies an addressable port on a switch.

Switch Unique Identifier

You can use the DISPLAY SWITCH command to display the 26-character switch unique identifier. The format is:

```
009032002IBM26000001234567
```

```
                              12-character sequence number
                              (IBM serial number 1234567 with leading 0s)
                              2-character plant of manufacture
                              3-character manufacturer (IBM)
                              3-character model number (002 is Model 2)
                              6-character machine type
                              (9032 is IBM Director Model 2 with leading 0s)
```
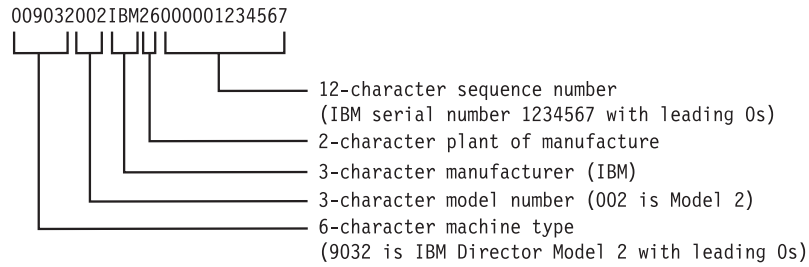
Figure 171. Switch Unique Identifier Format.

Processing a Vary Path Request

When you have chosen Vary as a connectivity option, the issuing I/O operations 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 operations 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 operations 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 "Port Switching Commands" on page 429 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 operations 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 operations 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 operations base programs, I/O operations 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, refer to the I/O operations 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 operations (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 operations base programs, I/O operations 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, refer to "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 operations what stack it has to use. For details on how to specify the PARM parameter refer to "Step 33: Customizing I/O operations" 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 refer to *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*. 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 operations (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

Table 5 lists the I/O operations commands in alphabetical order with a cross-reference that shows where they can be used and the access authorization levels they require.

Notes:

1. Access authorization is not required, although it is very advisable.
2. Authorization level is not checked for I/O operations commands that are entered at the system console. The control level of authorization is assumed.
3. RACF profiles are defined in class FACILITY.
4. The cross-references in the following table are described below:

   C   Control authorization level is required.

   G   Function is generated implicitly, but RACF, or equivalent, authorization is required if I/O operations is used in conjunction with a security program.

   I   Command function is generated implicitly as part of a G function. RACF, or equivalent, authorization does not apply.

   R   Read authorization level is required.

   U   Update authorization level is required.

   UC Update authorization level is required for the NOForce|NOCheck options. Control level is required for the Force option.

   Y   Command must be entered explicitly. RACF authorization is required.

   -   The command is not available, neither explicitly nor implicitly.

Table 5. Commands, Their Availability and Access Authorization Levels

RACF Profile Name	RACF Authorization Level						Command Name
		Application Program Interface (API)	Switch Configuration Matrix (SA z/OS Workstation and I/O Operations ISPF Dialog)	I/O Operations ISPF Dialog Command	Graphic View Window	System Console	
Not Applicable	-	-	-	-	-	Y	System Commands to Start/Stop
IHV.ALLOW	UC	Y	I	Y	Y	Y	ALLOW
IHV.BLOCK	UC	Y	I	Y	Y	Y	BLOCK
IHV.CHAIN	UC	Y	-	Y	-	Y	CHAIN
IHV.CONNECT	UC	Y	I	Y	Y	Y	CONNECT
IHV.DELETE.FILE	C	Y	G	-	G	-	
IHV.DISCONNECT	UC	Y	I	Y	Y	Y	DISCONNECT
IHV.CHP	R	Y	-	Y	I	Y	DISPLAY CHP
IHV.DEV	R	Y	-	Y	I	Y	DISPLAY DEV

Table 5. Commands, Their Availability and Access Authorization Levels (continued)

RACF Profile Name	RACF Authorization Level	Application Program Interface (API)	Switch Configuration Matrix (SA z/OS Workstation and I/O Operations ISPF Dialog)	I/O Operations ISPF Dialog Command	Graphic View Window	System Console	Command Name
IHV.HOST	R	Y	-	Y	I	Y	DISPLAY HOST
IHV.NAME	R	Y	I	Y	I	Y	DISPLAY NAME
IHV.PORT	R	Y	I	Y	I	Y	DISPLAY PORT
IHV.RESULTS	R	Y	-	Y	-	Y	DISPLAY RESULTS
IHV.SWITCH	R	Y	I	Y	I	Y	DISPLAY SWITCH
IHV.TIMEOUT	R	Y	-	Y	-	Y	DISPLAY TIMEOUT
IHV.VARY	R	Y	-	Y	-	Y	DISPLAY VARY
IHV.GETLOCK	C	Y	-	Y	G	Y	"GETLOCK I/O operations"
IHV.LOGREC	C	Y	-	Y	-	Y	"LOGREC I/O operations"
IHV.PROHIBIT	UC	Y	I	Y	Y	Y	"PROHIBIT I/O operations"
IHV.QUERY.ENTITY	R	Y	-	-	G	-	"QUERY ENTITY HOST I/O operations"
IHV.QUERY.FILE	R	Y	G	-	G	-	"QUERY FILE I/O operations"
IHV.QUERY.INTERFACE	R	Y	-	-	G	-	"QUERY INTERFACE CNTLUNIT"
IHV.QUERY.RELATION	R	Y	-	-	G	-	"QUERY RELATION HOST"
IHV.QUERY.SWITCH	R	Y	G	-	G	-	"QUERY SWITCH I/O operations"
IHV.REMOVE.CHP	UC	Y	-	Y	Y	Y	"REMOVE CHP I/O operations"
IHV.REMOVE.DEV	UC	Y	-	Y	G	-	"REMOVE and RESTORE DEV" .br "REMOVE and RESTORE DEV (API)"
IHV.REMOVE.SWITCH	UC	Y	-	Y	-	Y	"REMOVE SWITCH I/O operations"
IHV.RESET.HOST	C	Y	-	Y	Y	Y	"RESET HOST I/O operations"
IHV.RESET.SWITCH	C	Y	-	Y	Y	Y	"RESET SWITCH I/O operations"
IHV.RESET.TIMEOUT	C	Y	-	Y	-	Y	"RESET TIMEOUT I/O operations"
IHV.RESTORE.CHP	U	Y	-	Y	Y	Y	"RESTORE CHP I/O operations"
IHV.RESTORE.DEV	UC	Y	-	Y	G	-	"REMOVE and RESTORE DEV" "REMOVE and RESTORE DEV (API)"
IHV.RESTORE.SWITCH	UC	Y	-	Y	-	Y	"RESTORE SWITCH I/O operations"
IHV.SYNC.SWITCH	C	Y	-	Y	Y	Y	"SYNCH SWITCH I/O operations"
IHV.UNBLOCK	UC	Y	I	Y	Y	Y	"UNBLOCK I/O operations"
IHV.UNCHAIN	UC	Y	-	Y	-	Y	"UNCHAIN I/O operations"
IHV.UNLOCK	UC	Y	-	Y	G	Y	"UNLOCK I/O operations"
IHV.WRITE	C	Y	I	Y	G	Y	"WRITE I/O operations"
IHV.WRITEFILE	C	Y	G	-	G	-	"WRITEFILE I/O operations"
IHV.WRITEPORT	UC	Y	-	-	-	-	"WRITEPORT I/O operations"
IHV.WRITESWCH	UC	Y	G	-	G	-	"WRITESWCH I/O operations"

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. Release 3 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. For Release 3, host application names will be checked for validity. Valid names follow MVS member name rules.

   Note: This only applies to Query commands.

   ```
   Info like xxxx(n  and
   xxxx(n) is interpreted as Release 2 only when "xxxx"
   is not a defined object type
   For Release 3, xxxx can be HOST, RNUM, PTOK, LTOK, and so on.

   "HOST()" and "XSYS()" are interpreted as an error (no name is
   included between the begining and ending parenthesis)
   ```

4. Release 2 EXECs and programs should function with Release 3 as long as the EXEC or program is using the returned HDR_SIZE and ROW_SIZE (or Format_id) to parse through the output structure, with the following exceptions:

   a. A summary ROW for each host will be returned as the FIRST row for each responder host that is returning data (does not have a command start failure). This ROW is marked by RCODE='5100FFFF'x and contains (currently) status bits.

   b. 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 multihost 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).

5. For Release 3 table input, the responder must be the same as the host targeted to return the response.

6. For Query Interface commands (only), when the interface is not found on the entity1 switch/cu, row rcode='5100 0016'x.

7. 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.

8. 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 2 entities but not complete details (paths) on the relation because the command did not ask for complete pathing.

4. **Multiple rows**

   A single array entry could generate more than 1 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 operations) will be marked INCOMPLETE because data bases are not shared among participating I/O operations.

   e. When no host is named in a command, the primary host (issuing I/O operations) 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 operations 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 operations 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'51xxyyyy' indicates that I/O operations 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 operations 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.

Glossary

This glossary includes terms and definitions from:

- The *IBM Dictionary of Computing* New York: McGraw-Hill, 1994.

- The *American National Standard Dictionary for Information Systems* , ANSI X3.172-1990, copyright 1990 by the American National Standards Institute (ANSI). Copies can be purchased from the American National Standards Institute, 1430 Broadway, New York, New York 10018. Definitions are identified by the symbol (A) after the definition.

- The *Information Technology Vocabulary* developed by Subcommittee 1, Joint Technical Committee 1, of the International Organization for Standardization and the International Electrotechnical Commission (ISO/IEC JTC1/SC1). Definitions of published parts of this vocabulary are identified by the symbol (I) after the definition; definitions taken from draft international standards, committee drafts, and working papers being developed by ISO/IEC JTC1/SC1 are identified by the symbol (T) after the definition, indicating that final agreement has not yet been reached among the participating National Bodies of SC1.

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. Automation control 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, 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.

Address Space Workflow. In RMF, a measure of how a job uses system resources and the speed at which the job moves through the system. A low workflow indicates that a job has few of the resources it needs and is contending with other jobs for system resources. A high workflow indicates that a job has all the resources it needs to execute.

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 entry for NPDA focal-point system under *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) Automation Manager Configuration (2) The Auto Msg Classes entry type

APF.   Authorized program facility.

API.   Application programming interface.

APPC.   Advanced program-to-program communications.

application.   An z/OS subsystem or job monitored by SA z/OS.

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.

ApplicationGroup entry.   A construct, created with the customization dialogs, used to represent and contain policy for an application group.

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.

ARM.   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 (American National Standard Code for Information Interchange).   The standard code, using a coded character set consisting of 7-bit coded characters (8-bit including parity check), for information interchange among data processing systems, data communication systems, and associated equipment. The ASCII set consists of control characters and graphic characters. (A)

ASF.   Automation status file.

authorized program facility (APF).   A facility that permits identification of programs that are authorized to use restricted functions.

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.

automated console operations (ACO).   The concept (versus a product) of using computers to perform a large subset of tasks ordinarily performed by operators, or assisting operators in performing these tasks.

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 data set that consists of:

- the automation control file (ACF)
- the automation manager configuration file (AMC)
- the NetView automation table (AT)
- 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 on which SA z/OS is installed. 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.

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 status file. 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

basic mode. A central processor mode that does not use logical partitioning. Contrast with *logically partitioned (LPAR) mode*.

BCP Internal Interface. Processor function of CMOS-390, zSeries processor families. It allows the 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.

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.

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.

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*.

CI. Console integration.

CICS/VS. Customer Information Control System for Virtual Storage.

CLIST. 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 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 routine. One of several SA z/OS programs that perform frequently used automation functions. Common routines can be used to create new automation procedures.

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.

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. Central processor.

CPC. 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. Command processor control block; an I/O operations internal control block that contains information about the command being processed.

CPU. Central processing unit. Deprecated term for *processor*.

cross-system coupling facility (XCF). XCF is 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. 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.

D

DASD. 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. Double-byte character set.

DCCF. Disabled console communication facility.

DCF. 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.

Devices. You can see information about all devices (such as printers, tape or disk drives, displays, or

communications controllers) 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 in which the access time is effectively independent of the location of the data; for example, a disk.

disabled console communication facility (DCCF).   A z/OS component that provides limited-function console communication during system recovery situations.

display.   (1) To present information for viewing, usually on the screen of a workstation or on a hardcopy device. (2) Deprecated term for *panel*.

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).

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.

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 by means of 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.   Extended binary-coded decimal interchange code. A coded character set consisting of 8-bit coded characters.

ECB.   Event control block. A control block used to represent the status of an event.

EMCS.   Extended multiple console support.

enterprise.   An organization, such as a business or a school, that uses data processing.

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.

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.   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 zSeries 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, in a way that if all events of a trigger condition have occurred, a *STARTUP* or *SHUTDOWN* of an application is performed.

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 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.

focus host. A processor with the role in the context of a unified system image

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.

generic 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.

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. A console used by the operator to monitor and control a System/390 microprocessor cluster.

Hardware Management Console Application (HWMCA). A direct-manipulation object-oriented graphical user interface that provides single point of control and single system image for hardware elements. HWMCA provides customer 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 customer 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 does not reflect the structure of any particular computer or operating system. For the NetView program, the high-level languages are PL/I and C.

HLL.   High-level language.

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.

host (primary processor).   The processor at which you enter a command (also known as the *issuing processor*).

HWMCA.   Hardware Management Console Application. Application for the graphic hardware management console that monitors and controls a central processor complex. It is attached to a target processor (a system 390 microprocessor cluster) as a dedicated system console. This microprocessor uses OCF to process commands.

I

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/VS.   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/Virtual Storage (IMS/VS).   A database/data communication (DB/DC) system that can manage complex databases and networks. Synonymous with IMS.

INGEIO PROC.   The I/O operations default procedure name; part of the SYS1.PROCLIB.

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 file and that prerequisite applications are functional.

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.

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.   I/O configuration data set. The data set that describes the I/O configuration.

I/O Ops.   I/O operations.

IOSP.   Input/Output Support Processor.

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 resource number.   Combination of channel path identifier (CHPID), device number, etc. See internal token.

IPL.   Initial program load.

ISA.   Industry Standard Architecture.

ISPF.   Interactive System Productivity Facility.

ISPF console.   From this 3270-type console you are logged onto ISPF to use the runtime panels for I/O operations and SA z/OS customization panels.

issuing host. See *primary host*; the base program at which you enter a command for processing.

J

JCL. Job control language.

JES. Job entry subsystem.

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). A facility for spooling, job queuing, and managing I/O. In SA z/OS publications, JES refers to JES2 or JES3, unless distinguished as being either one or the other.

K

Kanji. An ideographic character set used in Japanese. See also *double-byte character set*.

L

LAN. 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). (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 for zSeries and S/390. 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 in which communications are limited to a moderately-sized geographic area such as a single office building, warehouse, or campus, and that do not generally extend across public rights-of-way.

logical partition (LP). A subset of the processor hardware that is defined to support an operating system. See also *logically partitioned (LPAR) 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 (PU)* and *system services control point (SSCP)*.

logical unit (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) a peer relationship between session partners, (b) efficient use of a session for multiple transactions, (c) comprehensive end-to-end error processing, and (d) a generic application program interface (API) consisting of structured verbs that are mapped into a product implementation. Synonym for advanced program-to-program communications (APPC).

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. Logical partition.

LPAR. Logically partitioned (mode).

LU. Logical unit.

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.

LU 6.2. 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 APPCMD macro.

M

MAT. Deprecated term for NetView Automation Table.

MCA. Micro Channel* architecture.

MCS. Multiple console support.

member. A specific function (one or more modules/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. Message processing facility.

MPFLSTSA. The MPFLST member that is built by SA z/OS.

Multiple Virtual Storage (MVS). An IBM licensed program. MVS, which is the predecessor of OS/390, is an operating system that controls the running of programs on a System/390 or System/370 processor. MVS includes an appropriate level of the Data Facility Product (DFP) and Multiple Virtual Storage/Enterprise Systems Architecture System Product Version 5 (MVS/ESA SP5).

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 z/OS images reside in one or more processors, and programs on one image can communication with programs on the other images.

MVS. Multiple Virtual Storage, predecessor of z/OS.

MVS image. A single occurrence of the MVS/ESA operating system that has the ability to process work.

MVS/JES2. Multiple Virtual Storage/Job Entry System 2. A z/OS 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.

MVS/ESA. Multiple Virtual Storage/Enterprise Systems Architecture.

N

NAU. (1) Network accessible unit. (2) Network addressable unit.

NCCF. Network Communications Control Facility.

NCP. (1) Network Control Program (IBM licensed program). Its full name is Advanced Communications Function for the Network Control Program. Synonymous with *ACF/NCP*. (2) Network control program (general term).

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.

network accessible unit (NAU). 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*.

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 (NCCF) console. A 3270-type console for NetView commands and runtime panels for system operations and processor operations.

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 in which NetView records events pertaining to NetView and SA z/OS activities.

NetView message table. See *NetView automation table*.

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-NetView task (NNT). The task under which a cross-domain NetView operator session runs. 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.

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.

network. (1) An interconnected group of nodes. (2) In data processing, a user application network. See *SNA network*.

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.

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.

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.

NGMF. Deprecated term for NetView Management Console.

NGMF focal-point system. Deprecated term for NMC focal point system.

NIP. 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. 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. Network Problem Determination Application.

NPDA focal-point system. See *focal-point system*.

NTRI. 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. 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. Operations Planning and Control/Advanced.

OPC/ESA. Operations Planning and Control/Enterprise Systems Architecture.

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/ESA (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.

OS. Operating system.

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.

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.

OST. 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, namely 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, 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. Processor controller. Also known as the "support processor" or "service processor" in some processor families.

PDB. Policy Database

PDS. 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 (SI) configuration*.

POI. 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 database where the automation policy is recorded. Also known as the PDB.

POR. Power-on reset.

port. (1) System hardware to which the I/O devices are attached. (2) On 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 through

which data can enter or leave a data network. (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. (6) power-on reset (POR) (7) 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.

PP. Physically partitioned (configuration).

PPT. Primary POI task.

primary host. The base program at which you enter a command for processing.

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 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 operations control file. Named by your system programmer, this file contains configuration and customization information. The programmer records the name of this control file in the processor operations file generation panel ISQDPG01.

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 *LPAR*.

ProcOps. 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. ProOps 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 DB2, CICS, IMS, OPC (formerly called *features*).

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.

PR/SM. Processor Resource/Systems Manager.

PSM. ProcOps Service Machine.

PU. Physical unit.

R

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 requester is a workstation software, which enables users to log on to a domain, that is, to the server(s) belonging to this domain, and use the resources in this domain. After the log on to a domain, users can access the shared resources and use the processing capability of the server(s). Because the bigger part of shared resources is on the server(s), users can reduce 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 Monitoring Facility (RMF) Monitor III. A program that measures and reports on the availability and activity of system hardware and software resources, such as processors, devices, storage, and address spaces. RMF can issue online reports about system performance problems as they occur.

Resource Object Data Manager (RODM). A data cache manager designed to support process control and automation applications. RODM provides an in-memory data 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. SA z/OS-provided automation 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 control file.

Restructured Extended Executor (REXX). An interpretive language used to write command lists.

return code. A code returned from a program used to influence the issuing of subsequent instructions.

REXX. Restructured Extended Executor.

REXX procedure. A command list written with the Restructured Extended Executor (REXX), which is an interpretive language.

RMF. Resource Measurement Facility.

RODM. Resource Object Data Manager.

S

SAF. Security Authorization Facility.

SA IOM. System Automation for Integrated Operations Management

SA z/OS. 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 display 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. Status Display Facility.

SDLC. Synchronous data link control.

SDSF. 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.

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 processor (SVP). The name given to a processor controller on smaller System/370 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 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). An IP based industry standard protocol to monitor and control resources in an IP network.

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-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. Service language command.

SMP/E. System Modification Program Extended.

SNA. 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. Simple Network Management Protocol (a TCP/IP protocol). A protocol that allows network management by elements, such as gateways, routers, and hosts. This protocol provides a means of communication between network elements regarding network resources.

solicited message. An SA z/OS message that directly responds to a command. Contrast with *unsolicited message*.

SSCP. System services control point.

SSI. 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 at which a subsystem or application is started.

status. The measure of the condition or availability of the resource.

status focal-point system. See *focal-point system*.

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.

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. See cache structure, list structure, and lock structure.

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. Situations where the physical sysplex has been divided into subentities, for example, a test sysplex and a production sysplex. This may be done to isolate the test environment from the production environment.

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. 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. Service processor.

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.

switch identifier. The switch device number (swchdevn), the logical switch number (LSN) and the switch name

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. 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.

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.

System/390 microprocessor cluster. A configuration that consists of central processor complexes (CPCs) and may have one or more integrated coupling facilities.

T

TAF. 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 *communications task*, *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.

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. 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. 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. TSO Extensions.

U

UCB. The unit control block; an MVS/ESA data area that represents a device 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. Contrast with *solicited message*.

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. See also *Workflow*.

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 Storage Extended (VSE). An IBM licensed program whose full name is Virtual Storage Extended/Advanced Function. It is an operating system that controls the execution of programs.

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/ESA. Virtual Machine/Enterprise Systems Architecture.

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.

volume. A direct access storage device (DASD) volume or a tape volume that serves a system in an SA z/OS enterprise.

volume entry. A construct, created with the customization dialogs, used to represent and contain policy for a volume.

volume group. A named set of volumes. A volume group is part of a system definition and is used for monitoring purposes.

volume group entry. A construct, created with the customization dialogs, used to represent and contain policy for a volume group.

Volume Workflow. The SA z/OS Volume Workflow variable is derived from the RMF Resource Workflow definition, and is used to measure the performance of volumes. SA z/OS calculates Volume Workflow using:

```
                    accumulated
                       Using
Volume     = ------------------------ * 100
Workflow %    accumulated + accumulated
                 Using        Delay
```

The definition of **Using** is the percentage of time when a job has had a request accepted by a channel for the volume, but the request is not yet complete.

The definition of **Delay** is the delay that waiting jobs experience because of contention for the volume. See also *Address Space Workflow*.

VSE. Virtual Storage Extended.

VTAM. 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*.

workflow. See *Address Space Workflow* and *Volume Workflow*.

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. Write-to-Operator.

WTOR. 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. 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. Extended recovery facility.

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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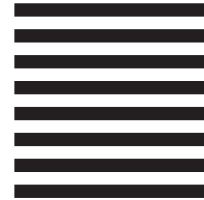
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