



**Program Directory for  
IBM Tivoli System Automation for z/OS**

V3.4.0

Program Number 5698-SA3

FMIDs HWRE340, JWRE34C, JWRE34I, JWRE341, HKAH34T

for Use with  
z/OS Version 1 Release 11 or later

Document Date: April 2012

GI11-2718-00

**Note**

Before using this information and the product it supports, be sure to read the general information under 7.0, "Notices" on page 34.

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## 1.0 Introduction

This program directory is intended for system programmers who are responsible for program installation and maintenance. It contains information about the material and procedures associated with the installation of IBM Tivoli System Automation for z/OS. This publication refers to IBM Tivoli System Automation for z/OS as SA z/OS.

The Program Directory contains the following sections:

- 2.0, “Program Materials” on page 6 identifies the basic and optional program materials and documentation for SA z/OS.
- 3.0, “Program Support” on page 10 describes the IBM support available for SA z/OS.
- 4.0, “Program and Service Level Information” on page 12 lists the APARs (program level) and PTFs (service level) that have been incorporated into SA z/OS.
- 5.0, “Installation Requirements and Considerations” on page 15 identifies the resources and considerations that are required for installing and using SA z/OS.
- 6.0, “Installation Instructions” on page 24 provides detailed installation instructions for SA z/OS. It also describes the procedures for activating the functions of SA z/OS, or refers to appropriate publications.

Before installing SA z/OS, read the *CBPDO Memo To Users* and the *CBPDO Memo To Users Extension* that are supplied with this program in softcopy format and this Program Directory; then keep them for future reference. Section 3.2, “Preventive Service Planning” on page 10 tells you how to find any updates to the information and procedures in this Program Directory.

SA z/OS is supplied in a Custom-Built Product Delivery Offering (CBPDO, 5751-CS3). The Program Directory that is provided in softcopy format on the CBPDO tape is identical to the hardcopy format if one was included with your order. All service and HOLDDATA for SA z/OS are included on the CBPDO tape.

Do not use this program directory if you install SA z/OS with a SystemPac or ServerPac. When you use one of those offerings, use the jobs and documentation supplied with the offering. The offering will point you to specific sections of this program directory as needed.

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### 1.1 SA z/OS Description

IBM Tivoli System Automation for z/OS (SA z/OS) is a NetView-based application designed to provide a single point of control for a full range of systems management functions. SA z/OS plays a key role in supplying high-end automation solutions. SA z/OS functions include monitoring, controlling and automating a large range of system elements spanning both the hardware and software resources of your enterprise. It is designed to automate I/O, processor, and system operations.

SA z/OS software enables high availability for critical business applications through policy-based self-healing capabilities. It helps customers with single z/OS systems and Parallel Sysplex clusters to:

- Reduce the frequency and duration of incidents that impact IT availability
- Improve productivity with reduced scripting requirements
- Address high availability shortcomings with policy modules based on best practices
- Ease management of complex infrastructures with a single point of control for multi-site enterprises
- Move the IT organization from reactive error correction to preemptive service protection
- Free operators from low-level tasks so they can focus on higher value activities

### **1.1.1 System Operations**

System operations monitors and controls system operations applications and subsystems such as NetView, SDSF, JES, RMF, TSO, RODM, ACF/VTAM, DB2, CICS, IMS, OMEGAMON, TBSM, and TWS. With system operations, you can automate Parallel Sysplex applications. SA z/OS can automate applications distributed over a sysplex by virtually removing system boundaries for automation through its automation manager/automation agent design. SA z/OS reduces the complexity of managing a Parallel Sysplex through its goal driven automation and its concepts, such as grouping and powerful dependency support, which enable you to model your configuration. Single systems are also fully supported; the automation scope is then just one system. 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), and update the health status information that is displayed on the Tivoli Enterprise Portal (TEP) via the IBM Tivoli Monitoring infrastructure.

### **1.1.2 Processor Operations**

Processor operations monitors and controls processor hardware operations. It provides a connection from a focal point processor to a target processor. With NetView on the focal point system, processor operations automates operator and system consoles for monitoring and recovering target processors. Processor operations allows you to power on and off multiple target processors and reset them, perform IPLs, set the time of day clocks, respond to messages, monitor status, and detect and resolve wait states.

### **1.1.3 I/O-Operations**

I/O operations provides a single point of control for managing connectivity in your active I/O configurations. It takes an active role in detecting unusual I/O conditions and lets you view and change paths between a processor and an input/output device, which can involve using dynamic switching: the enterprise systems connection (ESCON) or fiber channel connection (FICON) switch. I/O operations changes paths by letting you control channels, ports, switches, control units, and input/output devices. You can do this through an operator console or API.

---

## 1.2 What is New in SA z/OS V3.4

### **zEnterprise**

A new command called ISQECMD has been introduced that allows the operator or automation script to manipulate ZBX objects such as Blade Centers, Blades, Virtual Hosts, Virtual Servers and so on. The command can be used to activate/deactivate Blades and Virtual Servers or to query the settings of the various objects.

### **Runmodes**

The concept of runmodes has been introduced that enables a staged IPL or system shutdown where only a subset of the resources are started or stopped. The concept can also be used to switch from one environment to another for example from a normal mode into a disaster recovery mode. A new command named INGRUN is introduced enabling a to switch from one runmode into another.

### **Joblog Monitoring**

Messages produced by an application and written to the Joblog or a spooled dataset but not WTOed to syslog can be made available for automation. A new attribute for the APL policy object is added that defines whether joblog monitoring should be done and the filter criteria for such a message. Only messages matching the filter criteria are forwarded to automation.

### **TEP Topology View**

A new workplace has been introduced in the Tivoli Enterprise Portal (TEP) showing the dependencies a given resource has to other resources including their status. Helps the operator to notice odd behavior or to spot mis-configurations previously done in the customization dialog.

### **Rolling Recycle**

The INGGROUP command has been enhanced enabling the recycle of multiple members of a server group in parallel.

### **Concurrent Batch Command Receiver**

The Batch command receiver has been enhanced to enable concurrent usage of the command receiver. This allows parallel processing of the commands submitted from batch jobs.

### **Extended Status Commands**

New policy controls are introduced to take actions when the resource reaches the 'up' state based on the state (up or down) of another resource. This is useful for resources that are dependent on each other.

### **Garbage Collector**

The INGCLEAN command has been introduced to remove policy objects that became obsolete from the runtime data model. The command can be used by the installation when required, usually after refreshing the configuration.

### **SDF Enhancements**

The dynamic panel generation function has been enhanced to compose a panel showing different aspects of system for example subsystem data, exceptional message and WTORs. This is done by supporting multiple BODY sections in a panel.

A new exit AOFEXX05 has been introduced that allows the installation to replace user variables defined in the SDF tree/panel definitions based on the system for which the tree/panels are generated.

Proc-Ops managed resources such as processors, LPARs and ensembles are stored in SDF.

### **Customization Dialog Enhancements**

The visualization of the minor resource automation flag and thresholds are changed to show whether the settings are inherited from the class definitions.

### **Relational Data Services**

A new command INGRDS has been introduced that provides a simple relational data management facility for automation scripts running within NetView/SA. The INGRDS command provides basic access methods for relational data tables. It is close to the concept of relation data framework but without the full SQL language parser.

### **Autodiscovery Utility**

A discovery utility has been introduced that creates the SA z/OS policy database from the installation environment. The utility extracts the automation relevant data from the active address spaces, and correlates the discovered data with the SA z/OS samples policies to build up the policy and make it ready for use. The primary usage of the discovery tool is for installing and setting up SA z/OS the first time.

### **Command Enhancements**

- The Sys-Ops commands are changed to exploit all of the 3270 supported screen sizes (24/32/43\*80, 27\*132, 62\*160).
- The AOFCPMSG has been enhanced to enable the delete of one or more messages that became obsolete while capturing a new message.
- The DISPGW command has been introduced showing additional information for the remote systems such as primary/backup focal point, sysplex name, system name, SMFid, and so on.
- The INGCFG command has been introduced to allow the deletion of the history data associated with a resource.
- The INGDATA command has been enhanced to support additional filter criteria similar to the filter parameters of the INGLIST command.
- The INGEXEC command has been enhanced to support the resource description as filter criteria as well as enhanced wildcarding for the SUBTYPE parameter.
- The TERMMSG and CORRWAIT parameter are added to better control the command submission.
- The INGIMS command has been enhanced to display the IMS dependent regions of the control region as well as the TCO information associated with the control region.
- The INGLIST command has been enhanced to support additional filter criteria such as jobname, runtoken, description, and so on. etc
- The INGMMSGS command has been enhanced to enable the deletion of previously captured messages based on several criteria such as message id and/or age.



- The INGSET command has been enhanced by introducing the EXPIRED option that allows the cancellation of start/stop requests when exceeding a certain age.
- The INGTHRES command has been enhanced to allow the deletion of the threshold definitions in linemode
- The MDFYSHUT has been enhanced so it can be called from the Netview Automation Table to shorten/enlarge the shutdown interval or to abort the shutdown process.

---

### 1.3 SA z/OS FMIDs

SA z/OS consists of the following FMIDs:

HWRE340  
JWRE34C  
JWRE34I  
JWRE341  
HKAH34T

**Note:** HKAH34T can be installed in a CSI different from where the other SA z/OS V3.4 FMIDs are installed.

---

## 2.0 Program Materials

An IBM program is identified by a program number. The program number for SA z/OS is 5698-SA3.

Basic Machine-Readable Materials are materials that are supplied under the base license and feature numbers, and are required for the use of the product. Optional Machine-Readable Materials are orderable under separate feature numbers, and are not required for the product to function.

The program announcement material describes the features supported by SA z/OS. Ask your IBM representative for this information if you have not already received a copy.

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### 2.1 Basic Machine-Readable Material

The distribution medium for this program is physical media or downloadable files. This program is in SMP/E RELFILE format and is installed by using SMP/E. See 6.0, "Installation Instructions" on page 24 for more information about how to install the program.

You can find information about the physical media for the basic machine-readable materials for SA z/OS in the *CBPDO Memo To Users Extension*.

*Figure 1. Basic Material: Program Tape*

Medium	Feature Number	Physical Volume	External Label	VOLSER
3590 cart	5803	1	SA z/OS V3.4	WRE340
3590 cart	5813	1	SA z/OS V3.4 JPN	WRE340

#### Notes:

1. The data set attributes in this table must be used in the JCL of jobs that read the data sets. However, because the data sets are in IEBCOPY unloaded format, their actual attributes might be different.
2. If any RELFILEs are identified as PDSEs, ensure that SMPTLIB data sets are allocated as PDSEs.

Figure 2. Program File Content

Name	O R G	R E C F M	L R E C L	BLK SIZE
SMPMCS	SEQ	FB	80	6400
<b>Base Automation:</b>				
IBM.HWRE340.F1	PDS	FB	80	8800
IBM.HWRE340.F2	PDS	FB	80	8800
IBM.HWRE340.F3	PDS	FB	80	8800
IBM.HWRE340.F4	PDS	U	0	6144
IBM.HWRE340.F5	PDS	VB	1024	27998
<b>CICS Automation:</b>				
IBM.JWRE34C.F1	PDS	FB	80	8800
IBM.JWRE34C.F2	PDS	U	0	6144
IBM.JWRE34C.F3	PDS	FB	80	8800
<b>IMS Automation:</b>				
IBM.JWRE34I.F1	PDS	FB	80	8800
IBM.JWRE34I.F2	PDS	U	0	6144
IBM.JWRE34I.F3	PDS	FB	80	8800
<b>Base Automation JPN:</b>				
IBM.JWRE341.F1	PDS	FB	80	8800
<b>TEP Support:</b>				
IBM.HKAH34T.F1	PDS	FB	80	8800
IBM.HKAH34T.F2	PDS	U	0	6144
IBM.HKAH34T.F3	PDS	VB	6160	27998

## 2.2 Optional Machine-Readable Material

No optional machine-readable materials are provided for SA z/OS.

## 2.3 Program Publications

The following sections identify the basic and optional publications for SA z/OS.

## 2.3.1 Basic Program Publications

Figure 3 on page 8 identifies the basic unlicensed program publications for SA z/OS. One copy of each of these publications is included when you order the basic materials for SA z/OS. Additional copies can be obtained from the IBM Publications Website at URL: <http://www.ibm.com/shop/publications/order/> Contact your IBM representative for further assistance.

<i>Figure 3. Basic Material: Unlicensed Publications</i>	
<b>Publication Title</b>	<b>Form Number</b>
IBM Tivoli System Automation for z/OS Program Directory	GI11-2718
IBM Tivoli System Automation for z/OS Licence Information	GI11-9705

Figure 4 identifies the basic unlicensed publications that are not available in hardcopy format, but are available through the internet or other media for SA z/OS.

<i>Figure 4 (Page 1 of 2). Basic Material: Other Unlicensed Publications</i>		
<b>Publication Title</b>	<b>Form Number</b>	<b>Media Format</b>
IBM Tivoli System Automation for z/OS Product Automation	SC34-2643	PDF on DVD
IBM Tivoli System Automation for z/OS Customizing and Programming	SC34-2644	PDF on DVD
IBM Tivoli System Automation for z/OS Planning & Installation	SC34-2645	PDF on DVD
IBM Tivoli System Automation for z/OS Defining Automation Policy	SC34-2646	PDF on DVD
IBM Tivoli System Automation for z/OS User's Guide	SC34-2647	PDF on DVD
IBM Tivoli System Automation for z/OS Messages and Codes	SC34-2648	PDF on DVD
IBM Tivoli System Automation for z/OS Operator's Commands	SC34-2649	PDF on DVD
IBM Tivoli System Automation for z/OS Programmer's Reference	SC34-2650	PDF on DVD
IBM Tivoli System Automation for z/OS TWS Automation Programmer's Reference	SC34-2651	PDF on DVD
IBM Tivoli System Automation for z/OS End-to-End Automation Adapter	SC34-2652	PDF on DVD
IBM Tivoli System Automation for z/OS Monitoring Agent Configuration & User's Guide	SC34-2653	PDF on DVD

Figure 4 (Page 2 of 2). Basic Material: Other Unlicensed Publications

Publication Title	Form Number	Media Format
IBM Tivoli System Automation for z/OS Program Directory	GI11-2718	PDF on DVD

## 2.3.2 Optional Program Publications

No optional publications are provided for SA z/OS.

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## 2.4 Program Source Materials

No program source materials or viewable program listings are provided for SA z/OS.

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## 2.5 Publications Useful During Installation

You might want to use the publications listed in Figure 5 during the installation of SA z/OS. To order copies, contact your IBM representative or visit the IBM Publications Center at:  
<http://www.ibm.com/shop/publications/order/>

Figure 5. Publications Useful During Installation

Publication Title	Form Number
<i>IBM SMP/E for z/OS User's Guide</i>	SA22-7773
<i>IBM SMP/E for z/OS Commands</i>	SA22-7771
<i>IBM SMP/E for z/OS Reference</i>	SA22-7772
<i>IBM SMP/E for z/OS Messages, Codes, and Diagnosis</i>	GA22-7770

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## 3.0 Program Support

This section describes the IBM support available for SA z/OS.

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### 3.1 Program Services

Contact your IBM representative for specific information about available program services.

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### 3.2 Preventive Service Planning

Before you install SA z/OS, make sure that you have reviewed the current Preventive Service Planning (PSP) information. Review the PSP Bucket for General Information, Installation Documentation, and the Cross Product Dependencies sections. For the Recommended Service section, instead of reviewing the PSP Bucket, it is recommended you use the IBM.ProductInstall-RequiredService fix category in SMP/E to ensure you have all the recommended service installed. Use the **FIXCAT(IBM.ProductInstall-RequiredService)** operand on the **APPLY CHECK** command. See 6.1.9, "Perform SMP/E APPLY" on page 29 for a sample APPLY command

If you obtained SA z/OS as part of a CBPDO, HOLDDATA is included.

If the CBPDO for SA z/OS is older than two weeks by the time you install the product materials, you can obtain the latest PSP Bucket information by going to the following website:

<http://www14.software.ibm.com/webapp/set2/psearch/search?domain=psp>

You can also use S/390 SoftwareXcel or contact the IBM Support Center to obtain the latest PSP Bucket information.

For program support, access the Software Support Website at <http://www-01.ibm.com/software/support/>.

PSP Buckets are identified by UPGRADEs, which specify product levels; and SUBSETs, which specify the FMIDs for a product level. The UPGRADE and SUBSET values for SA z/OS are included in Figure 6

*Figure 6. PSP Upgrade and Subset ID*

UPGRADE	SUBSET	Description
HWRE340	HWRE340	SA z/OS
HWRE340	JWRE341	Japanese SA z/OS
HWRE340	JWRE34C	SA z/OS CICS Automation
HWRE340	JWRE34I	SA z/OS IMS Automation
HKAH34T	HKAH34T	SA z/OS TEP Support

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### 3.3 Statement of Support Procedures

Report any problems which you feel might be an error in the product materials to your IBM Support Center. You may be asked to gather and submit additional diagnostics to assist the IBM Support Center in their analysis.

Figure 7 on page 11 identifies the component IDs (COMPID) for SA z/OS.

<i>Figure 7. Component IDs</i>			
<b>FMID</b>	<b>COMPID</b>	<b>Component Name</b>	<b>RETAIN Release</b>
HWRE340	5698SA300	SA z/OS Base Automation	340
JWRE34C	5698SA300	SA z/OS CICS Automation	34C
JWRE34I	5698SA300	SA z/OS IMS Automation	34I
JWRE341	5698SA300	SA z/OS Base Automation JPN	341
HKAH34T	5698SA300	SA z/OS TEP Support	340

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## 4.0 Program and Service Level Information

This section identifies the program and relevant service levels of SA z/OS. The program level refers to the APAR fixes that have been incorporated into the program. The service level refers to the PTFs that have been incorporated into the program.

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### 4.1 Program Level Information

The following APAR fixes against previous releases of SA z/OS have been incorporated into this release. They are listed by FMID.

- FIN APARs against previous releases

OA37745  
OA38765

- FMID HWRE340

OA32337	OA33612	OA34186	OA34858	OA35233
OA32347	OA33630	OA34263	OA34873	OA35238
OA32606	OA33639	OA34264	OA34881	OA35242
OA32697	OA33643	OA34279	OA34887	OA35329
OA32698	OA33650	OA34301	OA34901	OA35334
OA32767	OA33659	OA34364	OA34932	OA35343
OA32782	OA33724	OA34381	OA34979	OA35355
OA32986	OA33737	OA34398	OA34996	OA35366
OA32987	OA33839	OA34475	OA34998	OA35386
OA32991	OA33840	OA34478	OA34999	OA35401
OA32995	OA33844	OA34481	OA35008	OA35408
OA33059	OA33847	OA34533	OA35011	OA35420
OA33128	OA33884	OA34570	OA35013	OA35447
OA33242	OA33907	OA34598	OA35128	OA35484
OA33252	OA33926	OA34627	OA35129	OA35501
OA33370	OA33933	OA34657	OA35133	OA35502
OA33390	OA33934	OA34686	OA35152	OA35555
OA33391	OA33944	OA34708	OA35156	OA35613
OA33392	OA33972	OA34766	OA35193	OA35628
OA33411	OA33983	OA34798	OA35203	OA35633
OA33440	OA34003	OA34799	OA35218	OA35634
OA33445	OA34018	OA34808	OA35221	OA35712
OA33589	OA34056	OA34826	OA35222	OA35718
OA33611	OA34057	OA34853	OA35224	OA35720



OA35731	OA36269	OA36778	OA37599	OA38062
OA35751	OA36324	OA37048	OA37618	OA38069
OA35785	OA36332	OA37054	OA37633	OA38095
OA35793	OA36333	OA37065	OA37689	OA38104
OA35807	OA36334	OA37069	OA37699	OA38134
OA35900	OA36347	OA37075	OA37700	OA38137
OA35981	OA36349	OA37076	OA37729	OA38174
OA36009	OA36372	OA37094	OA37737	OA38192
OA36010	OA36392	OA37125	OA37778	OA38219
OA36049	OA36394	OA37146	OA37804	OA38281
OA36077	OA36395	OA37169	OA37829	OA38309
OA36078	OA36397	OA37240	OA37833	OA38313
OA36093	OA36408	OA37285	OA37838	OA38356
OA36143	OA36476	OA37289	OA37873	OA38389
OA36147	OA36499	OA37294	OA37897	OA38448
OA36173	OA36538	OA37357	OA37925	OA38486
OA36176	OA36656	OA37376	OA37929	OA38523
OA36185	OA36675	OA37431	OA37955	OA38552
OA36186	OA36724	OA37451	OA37962	OA38557
OA36189	OA36725	OA37491	OA38013	OA38597
OA36239	OA36727	OA37508	OA38027	OA38609
OA36240	OA36728	OA37565	OA38038	OA38611
				OA38792

- FMID JWRE34C

OA32337	OA34177	OA34186
OA33252		OA36374

- FMID JWRE34I

OA33252	OA34999	OA36176
OA34177		OA37979

- FMID JWRE341

OA32337	OA33639	OA34798	OA35633	OA36395
OA32606	OA33659	OA34808	OA35720	OA36476
OA32782	OA33972	OA34873	OA35981	OA36538
OA32991	OA34398	OA34999	OA36176	OA36727
OA32995	OA34478	OA35447	OA36269	OA37240
OA33440	OA34533	OA35502	OA36347	OA37376

OA37689  
OA37897

OA38027  
OA38095

OA38219  
OA38281

- FMID HKAH34T  
OA34716

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## 4.2 Service Level Information

No PTFs against this release of SA z/OS have been incorporated into the product package.

Frequently check the SA z/OS PSP Bucket for HIPER and SPECIAL attention PTFs against all FMIDs that you must install. You can also receive the latest HOLDDATA, then add the **FIXCAT(IBM.PRODUCTINSTALL-REQUIRESERVICE)** operand on your APPLY CHECK command. This will allow you to review the recommended and critical service that should be installed with your FMIDs.

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## 5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating SA z/OS. The following terminology is used:

- *Driving system*: the system on which SMP/E is executed to install the program.  
The program might have specific operating system or product level requirements for using processes, such as binder or assembly utilities during the installation.
- *Target system*: the system on which the program is configured and run.  
The program might have specific product level requirements, such as needing access to the library of another product for link-edits. These requirements, either mandatory or optional, might directly affect the element during the installation or in its basic or enhanced operation.

In many cases, you can use a system as both a driving system and a target system. However, you can make a separate IPL-able clone of the running system to use as a target system. The clone must include copies of all system libraries that SMP/E updates, copies of the SMP/E CSI data sets that describe the system libraries, and your PARMLIB and PROCLIB.

Use separate driving and target systems in the following situations:

- When you install a new level of a product that is already installed, the new level of the product will replace the old one. By installing the new level onto a separate target system, you can test the new level and keep the old one in production at the same time.
- When you install a product that shares libraries or load modules with other products, the installation can disrupt the other products. By installing the product onto a separate target system, you can assess these impacts without disrupting your production system.

---

### 5.1 Driving System Requirements

This section describes the environment of the driving system required to install SA z/OS.

#### 5.1.1 Machine Requirements

The driving system can run in any hardware environment that supports the required software.

## 5.1.2 Programming Requirements

Figure 8. Driving System Software Requirements

Program Number	Product Name	Minimum VRM	Minimum Service Level will satisfy these APARs	Included in the shipped product?
Any <b>one</b> of the following:				
5694-A01	z/OS	V01.11.00	N/A	No
5655-G44	IBM SMP/E for z/OS	V03.05.00	N/A	No

**Note:** Installation might require migration to new z/OS releases to be service supported. See [http://www-03.ibm.com/systems/z/os/zos/support/zos\\_eos\\_dates.html](http://www-03.ibm.com/systems/z/os/zos/support/zos_eos_dates.html).

SA z/OS is partially installed into a file system, either HFS or zFS. Before installing SA z/OS, you must ensure that the target system file system data sets are available for processing on the driving system. OMVS must be active on the driving system and the target system file system data sets must be mounted on the driving system.

If you plan to install SA z/OS in a zFS file system, this requires that zFS be active on the driving system. Information on activating and using zFS can be found in z/OS Distributed File Service zSeries File System Administration, SC24-5989.

---

## 5.2 Target System Requirements

This section describes the environment of the target system required to install and use SA z/OS.

SA z/OS installs in the z/OS (Z038) SREL.

### 5.2.1 Machine Requirements

The target system can run in any hardware environment that supports the required software.

## 5.2.2 Programming Requirements

**5.2.2.1 Installation Requisites:** Installation requisites identify products that are required and *must* be present on the system or products that are not required but *should* be present on the system for the successful installation of this product.

Mandatory installation requisites identify products that are required on the system for the successful installation of this product. These products are specified as PREs or REQs.

*Figure 9. Target System Mandatory Installation Requisites*

Program Number	Product Name	Minimum VRM	Minimum Service Level will satisfy these APARs	Included in the shipped product?
5694-A01	z/OS	V01.11.00 or higher	N/A	No
5697-ENV	Tivoli NetView for z/OS	V5.3 or higher	N/A	No

**Note:** Installation might require migration to new z/OS releases to be service supported. See [http://www-03.ibm.com/systems/z/os/zos/support/zos\\_eos\\_dates.html](http://www-03.ibm.com/systems/z/os/zos/support/zos_eos_dates.html).

Conditional installation requisites identify products that are *not* required for successful installation of this product but can resolve such things as certain warning messages at installation time. These products are specified as IF REQs.

*Figure 10. Target System Conditional Installation Requisites*

Program Number	Product Name	Minimum VRM	Minimum Svc Lvl to satisfy these APARs	Function for which this is a Req't	Included in the shipped product?
5635-A01	IBM IMS	V10.1 or higher	N/A	IMS Automation	No
5655-M15	IBM CICS Transaction Server	V3.1 or higher	N/A	CICS Automation	No

**5.2.2.2 Operational Requisites:** Operational requisites are products that are required and *must* be present on the system or products that are not required but *should* be present on the system for this product to operate all or part of its functions.

Mandatory operational requisites identify products that are required for this product to operate its basic functions. These products are specified as PREs or REQs.

*Figure 11. Target System Mandatory Operational Requisites*

Program Number	Product Name and Minimum VRM/Service Level
5694-A01	z/OS V01.11.00 or higher
5697-ENV	Tivoli NetView for z/OS V5.3 or higher

Conditional operational requisites identify products that are *not* required for this product to operate its basic functions but are required at run time for this product to operate specific functions. These products are specified as IF REQs.

*Figure 12. Target System Conditional Operational Requisites*

Program Number	Product Name and Minimum VRM/Service Level	Function
5739-A05	zVM V5.4 or later	ProcOps VM Second Level Systems Support
5698-A79	IBM Tivoli Monitoring Services V6.2.3	Tivoli Enterprise Portal Support

**Notes:**

1. If you compile the SA z/OS V3.4 REXX command lists, the IBM Compiler for SAA REXX/370 R4 (or later) is needed.

**5.2.2.3 Toleration/Coexistence Requisites:** Toleration/coexistence requisites identify products that must be present on sharing systems. These systems can be other systems in a multisystem environment (not necessarily sysplex), a shared DASD environment (such as test and production), or systems that reuse the same DASD environment at different time intervals.

SA z/OS V3.4 has no toleration/coexistence requisites.

**5.2.2.4 Incompatibility (Negative) Requisites:** Negative requisites identify products that must *not* be installed on the same system as this product.

SA z/OS V3.4 has no negative requisites.

## 5.2.3 DASD Storage Requirements

SA z/OS V3.4 libraries can reside on all supported DASD types.

Figure 13 on page 19 lists the total space that is required for each type of library.

<i>Figure 13. Total DASD Space Required by SA z/OS</i>	
<b>Library Type</b>	<b>Total Space Required in 3390 Trks</b>
Target	2950 (3390 tracks)
Distribution	2850 (3390 tracks)
File System	12 MB

### Notes:

1. For non-RECFM U data sets, IBM recommends using system-determined block sizes for efficient DASD utilization. For RECFM U data sets, IBM recommends using a block size of 32760, which is most efficient from the performance and DASD utilization perspective.
2. Abbreviations used for data set types are shown as follows.

- U** Unique data set, allocated by this product and used by only this product. This table provides all the required information to determine the correct storage for this data set. You do not need to refer to other tables or program directories for the data set size.
- S** Shared data set, allocated by this product and used by this product and other products. To determine the correct storage needed for this data set, add the storage size given in this table to those given in other tables (perhaps in other program directories). If the data set already exists, it must have enough free space to accommodate the storage size given in this table.
- E** Existing shared data set, used by this product and other products. This data set is *not* allocated by this product. To determine the correct storage for this data set, add the storage size given in this table to those given in other tables (perhaps in other program directories). If the data set already exists, it must have enough free space to accommodate the storage size given in this table.

If you currently have a previous release of this product installed in these libraries, the installation of this release will delete the old release and reclaim the space that was used by the old release and any service that had been installed. You can determine whether these libraries have enough space by deleting the old release with a dummy function, compressing the libraries, and comparing the space requirements with the free space in the libraries.

For more information about the names and sizes of the required data sets, see 6.1.6, "Allocate SMP/E Target and Distribution Libraries" on page 28.

3. Abbreviations used for the file system path type are as follows.

- N** New path, created by this product.
- X** Path created by this product, but might already exist from a previous release.

**P** Previously existing path, created by another product.

4. All target and distribution libraries listed have the following attributes:

- The default name of the data set can be changed.
- The default block size of the data set can be changed.
- The data set can be merged with another data set that has equivalent characteristics.
- The data set can be either a PDS or a PDSE.

5. All target libraries listed have the following attributes:

- These data sets can be SMS-managed, but they are not required to be SMS-managed.
- These data sets are not required to reside on the IPL volume.
- The values in the "Member Type" column are not necessarily the actual SMP/E element types that are identified in the SMPMCS.

6. All target libraries that are listed and contain load modules have the following attributes:

- These data sets can be in the LPA, but they are not required to be in the LPA.
- These data sets can be in the LNKLST.
- These data sets are not required to be APF-authorized.

The following figures describe the target and distribution libraries and file system paths required to install SA z/OS. The storage requirements of SA z/OS must be added to the storage required by other programs that have data in the same library or path.

**Note:** Use the data in these tables to determine which libraries can be merged into common data sets. In addition, since some ALIAS names may not be unique, ensure that no naming conflicts will be introduced before merging libraries.

Figure 14 (Page 1 of 2). Storage Requirements for SA z/OS Target Libraries

Library DDNAME	Member Type	Target Volume	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
SINGIMAP	Data	ANY	U	PDS	VB	1024	3	5
SINGIMSG	MSG	ANY	U	PDS	FB	80	15	6
SINGINST	SAMP	ANY	U	PDS	FB	80	7	2
SINGIPDB	Data	ANY	U	PDS	FB	80	250	2
SINGIPNL	PNL	ANY	U	PDS	FB	80	230	70
SINGIREX	EXEC	ANY	U	PDS	FB	80	300	25
SINGISKL	SKEL	ANY	U	PDS	FB	80	10	12
SINGITBL	Table	ANY	U	PDS	FB	80	25	4
SINGJMSG	MSG	ANY	U	PDS	FB	80	8	21
SINGJPNL	PNL	ANY	U	PDS	FB	80	255	48



Figure 14 (Page 2 of 2). Storage Requirements for SA z/OS Target Libraries

Library DDNAME	Member Type	Target Volume	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
SINGJPWS	Data	ANY	U	PDS	FB	80	20	2
SINGMOD1	LMOD	ANY	U	PDS	U	0	1700	70
SINGMOD2	LMOD	ANY	U	PDS	U	0	45	10
SINGMOD3	LMOD	ANY	U	PDS	U	0	12	5
SINGMSGV	MSG	ANY	U	PDS	FB	80	2	2
SINGNMSG	MSG	ANY	U	PDS	FB	80	25	25
SINGNPNL	PNL	ANY	U	PDS	FB	80	300	50
SINGNPRF	Data	ANY	U	PDS	FB	80	2	2
SINGNPRM	Data	ANY	U	PDS	FB	80	27	6
SINGNREX	EXEC	ANY	U	PDS	FB	80	1250	70
SINGTREX	EXEC	ANY	U	PDS	FB	80	10	2
SINGOBJV	OBJ	ANY	U	PDS	FB	80	2	2
SINGPWS1	Data	ANY	U	PDS	FB	80	20	2
SINGREXV	EXEC	ANY	U	PDS	FB	80	10	2
SINGSAMP	SAMP	ANY	U	PDS	FB	80	70	12
TKANCUS	Data	ANY	S	PDS	FB	80	2000	1000
TKANDATV	Data	ANY	S	PDS	VB	6160	300	50
TKANMODL	LMOD	ANY	S	PDS	U	0	3300	400
TKANPAR	Data	ANY	S	PDS	FB	80	30	50
TKANPKGI	Data	ANY	S	PDS	FB	80	200	40

Figure 15 (Page 1 of 2). SA z/OS File System Paths

DDNAME	T Y P E	Path Name
SINGACFG	X	/usr/lpp/ing/adapter/config/IBM/
SINGADAT	X	/usr/lpp/ing/adapter/data/IBM/
SINGALIB	X	/usr/lpp/ing/adapter/lib/IBM/
SINGASCR	X	/usr/lpp/ing/adapter/IBM/

Figure 15 (Page 2 of 2). SA z/OS File System Paths

<b>DDNAME</b>	<b>T Y P E</b>	<b>Path Name</b>
SINGASSL	X	/usr/lpp/ing/adapter/ssl/IBM/
SINGDCFG	N	/usr/lpp/ing/dist/TEC/IBM/
SINGDPOL	X	/usr/lpp/ing/doc/policies/IBM/
SINGDSCR	X	/usr/lpp/ing/doc/IBM/
SINGICFG	N	/usr/lpp/ing/dist/TDI/IBM/
SINGOSCR	N	/usr/lpp/ing/dist/OMNibus/IBM/
SINGSCFG	X	/usr/lpp/ing/SAP/IBM/
SINGULIB	X	/usr/lpp/ing/ussauto/lib/IBM/
SINGUSCR	X	/usr/lpp/ing/ussauto/IBM/

Figure 16 (Page 1 of 2). Storage Requirements for SA z/OS Distribution Libraries

<b>Library DDNAME</b>	<b>T Y P E</b>	<b>O R G</b>	<b>R E C F M</b>	<b>L R E C L</b>	<b>No. of 3390 Trks</b>	<b>No. of DIR Blks</b>
AINGHFSV	U	PDS	VB	1024	310	10
AINGIMAP	U	PDS	VB	1024	3	5
AINGIMSG	U	PDS	FB	80	15	6
AINGINST	U	PDS	FB	80	7	2
AINGIPDB	U	PDS	FB	80	250	2
AINGIPNL	U	PDS	FB	80	230	70
AINGIREX	U	PDS	FB	80	300	25
AINGISKL	U	PDS	FB	80	10	12
AINGITBL	U	PDS	FB	80	25	4
AINGJMSG	U	PDS	FB	80	8	21
AINGJPNL	U	PDS	FB	80	260	48
AINGJPWS	U	PDS	FB	80	20	2
AINGMOD1	U	PDS	U	0	950	210
AINGMSGV	U	PDS	FB	80	2	2
AINGNMSG	U	PDS	FB	80	25	25

Figure 16 (Page 2 of 2). Storage Requirements for SA z/OS Distribution Libraries

Library DDNAME	T Y P E	O R G	R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
AINGNPNL	U	PDS	FB	80	310	50
AINGNPRF	U	PDS	FB	80	2	2
AINGNPRM	U	PDS	FB	80	27	6
AINGNREX	U	PDS	FB	80	1250	68
AINGTREX	U	PDS	FB	80	10	2
AINGOBJV	U	PDS	FB	80	2	2
AINGPWS1	U	PDS	FB	80	20	2
AINGREXV	U	PDS	FB	80	10	2
AINGSAMP	U	PDS	FB	80	70	12
DKANCUS	S	PDS	FB	80	2000	1000
DKANDATV	S	PDS	VB	6160	300	50
DKANMODL	S	PDS	U	0	3300	400
DKANPAR	S	PDS	FB	80	30	50
DKANPKGI	S	PDS	FB	80	200	40

**Note:** Data sets AINGJMSG, AINGJPNL and AINGJPWS are for Japanese data only and remain empty if JWRE341 is not installed.

### 5.3 FMIDs Deleted

Installing SA z/OS might result in the deletion of other FMIDs. To see which FMIDs will be deleted, examine the ++VER statement in the SMPMCS of the product.

If you do not want to delete these FMIDs at this time, install SA z/OS into separate SMP/E target and distribution zones.

**Note:** These FMIDs are not automatically deleted from the Global Zone. If you want to delete these FMIDs from the Global Zone, use the SMP/E REJECT NOFMID DELETEFMID command. See the SMP/E Commands book for details.

### 5.4 Special Considerations

SA z/OS has no special considerations for the target system.

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## 6.0 Installation Instructions

This chapter describes the installation method and the step-by-step procedures to install and to activate the functions of SA z/OS.

Please note the following points:

- If you want to install SA z/OS into its own SMP/E environment, consult the SMP/E manuals for instructions on creating and initializing the SMP/CSI and the SMP/E control data sets.
- You can use the sample jobs that are provided to perform part or all of the installation tasks. The SMP/E jobs assume that all DDDEF entries that are required for SMP/E execution have been defined in appropriate zones.
- You can use the SMP/E dialogs instead of the sample jobs to accomplish the SMP/E installation steps.

---

### 6.1 Installing SA z/OS

#### 6.1.1 SMP/E Considerations for Installing SA z/OS

Use the SMP/E RECEIVE, APPLY, and ACCEPT commands to install this release of SA z/OS.

#### 6.1.2 SMP/E Options Subentry Values

The recommended values for certain SMP/E CSI subentries are shown in Figure 17. Using values lower than the recommended values can result in failures in the installation. DSSPACE is a subentry in the GLOBAL options entry. PEMAX is a subentry of the GENERAL entry in the GLOBAL options entry. See the SMP/E manuals for instructions on updating the global zone.

*Figure 17. SMP/E Options Subentry Values*

Subentry	Value	Comment
DSSPACE	1200,1200,500	Size of largest file.
PEMAX	SMP/E Default	IBM recommends using the SMP/E default for PEMAX.

#### 6.1.3 SMP/E CALLLIBS Processing

SA z/OS uses the CALLLIBS function provided in SMP/E to resolve external references during installation. When SA z/OS is installed, ensure that DDDEFs exist for the following libraries:

- CSSLIB

For NetView

- CNMLINK
- NVULIB

For ISPF, shipped with z/OS

- SISpload

For LE Libraries for PL/I, C and C++

- SCEECPP
- SCEELIB
- SCEELKED
- SCEELKEX
- SCEEOBJ
- SIBMCALL

For CICS V3.1 or later

- SDFHLOAD

For IMS V10.1 or later

- SDFSRESL

**Note:** CALLLIBS uses the previous DDDEFs only to resolve the link-edit for SA z/OS. These data sets are not updated during the installation of SA z/OS.

## 6.1.4 Sample Jobs

The following sample installation jobs are provided as part of the product to help you install SA z/OS:

<b>Job Name</b>	<b>Job Type</b>	<b>Description</b>	<b>RELFILE</b>
INGALLOC	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.HWRE340.F3
KAHALLOC	ALLOCATE	Sample job to allocate target and distribution libraries for TEP support	IBM.HKAH34T.F1
INGISFS	ALLOCATE	Sample job to allocate and mount the zFS file system	IBM.HWRE340.F3
INGISMKD	MKDIR	Sample job to allocate HFS or zFS paths	IBM.HWRE340.F3
INGDDDEF	DDDEF	Sample job to define SMP/E DDDEFs	IBM.HWRE340.F3
KAHDDDEF	DDDEF	Sample job to define SMP/E DDDEFs for TEP support	IBM.HKAH34T.F1

Figure 18 (Page 2 of 2). Sample Installation Jobs

Job Name	Job Type	Description	RELFILE
INGDDDCL	DDDEF	Sample job to define prerequisite product DDDEFs	IBM.HWRE340.F3
INGAPPLY	APPLY	Sample APPLY job	IBM.HWRE340.F3
KAHAPPLY	APPLY	Sample APPLY job for TEP support	IBM.HKAH34T.F1
INGACCPY	ACCEPT	Sample ACCEPT job	IBM.HWRE340.F3
KAHACCPY	ACCEPT	Sample ACCEPT job for TEP support	IBM.HKAH34T.F1

You can access the sample installation jobs by performing an SMP/E RECEIVE (refer to 6.1.5, “Perform SMP/E RECEIVE” on page 27) then copy the jobs from the RELFILES to a work data set for editing and submission. See Figure 18 on page 25 to find the appropriate relfile data set.

You can also copy the sample installation jobs from the tape or product files by submitting the following job. Depending on your distribution medium, use either the //TAPEIN or the //FILEIN DD statement and comment out or delete the other statement. Before you submit the job, add a job card and change the lowercase parameters to uppercase values to meet the requirements of your site.

```
//STEP1 EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//TAPEIN DD DSN=IBM.HWRE340.F3,
// UNIT=tunit,VOL=SER=WRE340,
// LABEL=(4,SL),DISP=(OLD,KEEP)
//FILEIN DD DSN=IBM.HWRE340.F3,UNIT=SYSALLDA,DISP=SHR,
// VOL=SER=filevol
//OUT DD DSNAME=jcl-library-name,
// DISP=(NEW,CATLG,DELETE),
// VOL=SER=dasdvol,UNIT=SYSALLDA,
// SPACE=(TRK,(5,2,2))
//SYSUT3 DD UNIT=SYSALLDA,SPACE=(CYL,(1,1))
//SYSIN DD *
COPY INDD=xxxxIN,OUTDD=OUT
SELECT MEMBER=(INGALLOC,INGISFS,INGISMKD,INGDDDEF)
SELECT MEMBER=(INGDDDCL,INGAPPLY,INGACCPY)
/*
```

Respectively for the TEP Support:

```
//STEP2 EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//TAPEIN DD DSN=IBM.HKAH34T.F1,
// UNIT=tunit,VOL=SER=WRE340,
// LABEL=(14,SL),DISP=(OLD,KEEP)
//FILEIN DD DSN=IBM.HKAH34T.F1,UNIT=SYSALLDA,DISP=SHR,
// VOL=SER=filevol
//OUT DD DSNAME=jcl-library-name-tep,
```

```
//          DISP=(NEW,CATLG,DELETE),
//          VOL=SER=dasdvol,UNIT=SYSALLDA,
//          SPACE=(TRK,(5,2,2))
//SYSUT3   DD UNIT=SYSALLDA,SPACE=(CYL,(1,1))
//SYSIN    DD *
          COPY INDD=xxxxIN,OUTDD=OUT
          SELECT MEMBER=(KAHALLOC,KAHDDDEF,KAHAPPLY,KAHACPT)
/*
```

See the following information to update the statements in the previous sample:

**TAPEIN:**

**tunit** is the unit value that matches the product package.

See the documentation that is provided by CBPDO for the location of IBM.fmid.Fy on the tape.

**FILEIN:**

**filevol** is the volume serial of the DASD device where the downloaded files reside.

**OUT:**

**jcl-library-name** is the name of the output data set where the sample jobs are stored.

**jcl-library-name-tep** is the name of the output data set where the sample jobs are stored.

**dasdvol** is the volume serial of the DASD device where the output data set resides.

**SYSIN:**

**xxxxIN** is either TAPEIN or FILEIN depending on your input DD statement.

## 6.1.5 Perform SMP/E RECEIVE

If you have obtained SA z/OS as part of a CBPDO, use the RCVPDO job in the CBPDO RIMLIB data set to receive the SA z/OS FMIDs, service, and HOLDDATA that are included on the CBPDO package. For more information, see the documentation that is included in the CBPDO.

You can also choose to edit and submit the following sample job to perform the SMP/E RECEIVE for SA z/OS.

Replace *smpe.global.csi* and *tape* below with a value appropriate for your system. Add job card as necessary and update SMPCSI with the appropriate data set.

```
//JOB1     JOB ...
//RECEIVE  EXEC PGM=GIMSMP,REGION=4096K
//SMPCSI   DD DSN=smpe.global.csi,DISP=SHR
//SMPPTFIN DD DSN=SMPMCS,DISP=(OLD,KEEP),
//          VOL=SER=WRE340,LABEL=(1,SL),
//          UNIT=(tunit,,DEFER)
//SMPHOLD  DD DUMMY
//SMPCTL   DD *
          SET BOUNDARY(GLOBAL) .
          RECEIVE S(HWRE340,JWRE34C,JWRE34I,JWRE341) .
/*
```

Respectively for the TEP Support:

It is recommended to install the SA z/OS TEP support (FMID HKAH34T) into the CSI of the TEP installation.

```
//JOB2      JOB ...
//RECEIVE   EXEC PGM=GIMSMP,REGION=4096K
//SMPCSI    DD DSN=smpe.itm.csi,DISP=SHR
//SMPPTFIN  DD DSN=SMPMCS,DISP=(OLD,KEEP),
//          VOL=SER=WRE340,LABEL=(1,SL),
//          UNIT=(tunit,,DEFER)
//SMPHOLD   DD DUMMY
//SMPCNTL   DD *
            SET BOUNDARY(GLOBAL) .
            RECEIVE S(HKAH34T) .
/*
```

**Expected Return Codes and Messages:** You will receive a return code of 0 if this job runs correctly.

## 6.1.6 Allocate SMP/E Target and Distribution Libraries

1. Edit and submit sample job INGALLOC to allocate the SMP/E target and distribution libraries for SA z/OS. Consult the instructions in the sample job for more information.

**Expected Return Codes and Messages:** The INGALLOC job is considered successful if you receive a return code of 0.

2. Edit and submit sample job KAHALLOC to allocate the SMP/E target and distribution libraries for SA z/OS TEP support. Consult the instructions in the sample job for more information.

**Expected Return Codes and Messages:** The KAHALLOC job is considered successful if you receive a return code of 0.

## 6.1.7 Allocate File system Paths

1. Allocate and mount the file system data set of the target system on the driving system by running sample job INGISFS.

If you plan to install SA z/OS into a new file system, create the mountpoint and mount the new file system to the driving system. For SA z/OS, the recommended mountpoint is /usr/lpp/ing.

Before you run the sample job to create the paths in the file system, ensure that OMVS is active on the driving system and that the file system of the target system is mounted to the driving system. If you install SA z/OS into a zSeries file system (zFS), zFS must be active on the driving system.

If you create a new file system for this product, consider updating the BPXPRMxx PARMLIB member to mount the new file system at IPL time. This action can be helpful if an IPL occurs before the installation is completed.

Edit and submit sample job INGISFS. Consult the instructions in the sample job for more information.

**Expected Return Codes and Messages:** The INGISFS job is considered successful if you receive a return code of 0.



2. Create the paths required for SA z/OS by running sample job INGISMKD.

Edit and submit sample job INGISMKD. Consult the instructions in the sample job for more information.

**Expected Return Codes and Messages:** The INGISMKD job is considered successful if you receive a return code of 0.

## 6.1.8 Create DDDEF Entries

1. Edit and submit sample job INGDDDEF to create DDDEF entries for the SMP/E target and distribution libraries for SA z/OS. Consult the instructions in the sample job for more information.

**Expected Return Codes and Messages:** The INGDDDEF job is considered successful if you receive a return code of 0. However, if some or all of these DDDEF entries already exist, then the job will complete with a return code of 8. You will have to examine the output and determine whether or not the existing entries should be replaced. You can change the 'ADD' to 'REP' in this job to replace existing entries.

2. Job INGDDDCL defines the DDDEFs, for the SA z/OS prerequisite product libraries, to SMP/E. These DDDEFs are used by the SMP/E CALLLIB function during installation.

Edit sample job INGDDDCL. Consult the instructions in the sample job for more information and submit sample job INGDDDCL.

If the prerequisite products are installed in the same SMP/E CSI zones as SA z/OS, the DDDEFs may already be defined. Edit the job to comment out the libraries that are already defined.

**Expected Return Codes and Messages:** INGDDDCL will complete with message GIM35601E and a return code of 8 if a DDDEF entry already exists. Otherwise, INGDDDCL should complete with a return code of 0.

3. Edit and submit sample job KAHDDDEF to create DDDEF entries for the SMP/E target and distribution libraries for SA z/OS TEP Support. Consult the instructions in the sample job for more information.

**Expected Return Codes and Messages:** The KAHDDDEF job is considered successful if you receive a return code of 0.

## 6.1.9 Perform SMP/E APPLY

1. Ensure that you have the latest HOLDDATA; then edit and submit sample job INGAPPLY to perform an SMP/E APPLY CHECK for SA z/OS. Consult the instructions in the sample job for more information.

At this point you must decide which format of SA z/OS I/O Operations operator console messages you want to use.

Mixed-case US English is included in the base. No action is required for this selection.

Japanese is supplied for installations which must use Japanese NLS. It is installed by doing an APPLY of the dependent feature JWRE341.

The latest HOLDDATA is available through several different portals, including <http://service.software.ibm.com/holddata/390holddata.html>. The latest HOLDDATA may identify HIPER

and FIXCAT APARs for the FMIDs you will be installing. An APPLY CHECK will help you determine if any HIPER or FIXCAT APARs are applicable to the FMIDs you are installing. If there are any applicable HIPER or FIXCAT APARs, the APPLY CHECK will also identify fixing PTFs that will resolve the APARs, if a fixing PTF is available.

You should install the FMIDs regardless of the status of unresolved HIPER or FIXCAT APARs. However, do not deploy the software until the unresolved HIPER and FIXCAT APARs have been analyzed to determine their applicability. That is, before deploying the software either ensure fixing PTFs are applied to resolve all HIPER or FIXCAT APARs, or ensure the problems reported by all HIPER or FIXCAT APARs are not applicable to your environment.

To receive the full benefit of the SMP/E Causer SYSMOD Summary Report, do *not* bypass the PRE, ID, REQ, and IFREQ on the APPLY CHECK. The SMP/E root cause analysis identifies the cause only of *errors* and not of *warnings* (SMP/E treats bypassed PRE, ID, REQ, and IFREQ conditions as warnings, instead of errors).

Here are sample APPLY commands:

- a. To ensure that all recommended and critical service is installed with the FMIDs, receive the latest HOLDDATA and use the APPLY CHECK command as follows

```
APPLY S(fmid,fmid,...) CHECK
FORFMID(fmid,fmid,...)
SOURCEID(RSU*)
FIXCAT(IBM.ProductInstall-RequiredService)
GROUPEXTEND .
```

Some HIPER APARs might not have fixing PTFs available yet. You should analyze the symptom flags for the unresolved HIPER APARs to determine if the reported problem is applicable to your environment and if you should bypass the specific ERROR HOLDS in order to continue the installation of the FMIDs.

This method requires more initial research, but can provide resolution for all HIPERs that have fixing PTFs available and are not in a PE chain. Unresolved PEs or HIPERs might still exist and require the use of BYPASS.

- b. To install the FMIDs without regard for unresolved HIPER APARs, you can add the BYPASS(HOLDCLASS(HIPER)) operand to the APPLY CHECK command. This will allow you to install FMIDs even though one or more unresolved HIPER APARs exist. After the FMIDs are installed, use the SMP/E REPORT ERRSYSMODS command to identify unresolved HIPER APARs and any fixing PTFs.

```
APPLY S(fmid,fmid,...) CHECK
FORFMID(fmid,fmid,...)
SOURCEID(RSU*)
FIXCAT(IBM.ProductInstall-RequiredService)
GROUPEXTEND
BYPASS(HOLDCLASS(HIPER)) .
..any other parameters documented in the program directory
```

This method is the quicker, but requires subsequent review of the Exception SYSMOD report produced by the REPORT ERRSYSMODS command to investigate any unresolved HIPERs. If

you have received the latest HOLDDATA, you can also choose to use the REPORT MISSINGFIX command and specify Fix Category IBM.ProductInstall-RequiredService to investigate missing recommended service.

If you bypass HOLDDs during the installation of the FMIDs because fixing PTFs are not yet available, you can be notified when the fixing PTFs are available by using the APAR Status Tracking (AST) function of ServiceLink or the APAR Tracking function of ResourceLink.

After you take actions that are indicated by the APPLY CHECK, remove the CHECK operand and run the job again to perform the APPLY.

**Note:** The GROUPEXTEND operand indicates that SMP/E applies all requisite SYSMODs. The requisite SYSMODS might be applicable to other functions.

**Expected Return Codes and Messages from APPLY CHECK:** You will receive a return code of 0 if this job runs correctly.

**Expected Return Codes and Messages from APPLY (INGAPPLY):** 0 or 4.

INGAPPLY may complete with messages GIM23903W or GIM23913W (depending on system setup), IEW2646W, IEW2651W, IEW2454W, and a return code of 4.

Be aware that SA z/OS utilizes the SMP/E CALLLIB function. Basically two Link Edits are done. The first Link Edit will have UNRESOLVED REFERENCES. These REFERENCES are resolved during the second Link Edit.

**Expected Return Codes and Messages from APPLY (KAHAPPLY):** The KAHAPPLY job is considered successful if you receive a return code of 0.

## 6.1.10 Perform SMP/E ACCEPT

Edit and submit sample job INGACCT to perform an SMP/E ACCEPT CHECK for SA z/OS. Consult the instructions in the sample job for more information.

To receive the full benefit of the SMP/E Causer SYSMOD Summary Report, do *not* bypass the PRE, ID, REQ, and IFREQ on the ACCEPT CHECK. The SMP/E root cause analysis identifies the cause of only *errors* but not *warnings* (SMP/E treats bypassed PRE, ID, REQ, and IFREQ conditions as warnings rather than errors).

Before you use SMP/E to load new distribution libraries, it is recommended that you set the ACCJCLIN indicator in the distribution zone. In this way, you can save the entries that are produced from JCLIN in the distribution zone whenever a SYSMOD that contains inline JCLIN is accepted. For more information about the ACCJCLIN indicator, see the description of inline JCLIN in the SMP/E Commands book for details.

After you take actions that are indicated by the ACCEPT CHECK, remove the CHECK operand and run the job again to perform the ACCEPT.

**Note:** The GROUPEXTEND operand indicates that SMP/E accepts all requisite SYSMODs. The requisite SYSMODS might be applicable to other functions.

**Expected Return Codes and Messages from ACCEPT CHECK:** You will receive a return code of 0 if this job runs correctly.

If PTFs that contain replacement modules are accepted, SMP/E ACCEPT processing will link-edit or bind the modules into the distribution libraries. During this processing, the Linkage Editor or Binder might issue messages that indicate unresolved external references, which will result in a return code of 4 during the ACCEPT phase. You can ignore these messages, because the distribution libraries are not executable and the unresolved external references do not affect the executable system libraries.

**Expected Return Codes and Messages from ACCEPT (INGACCP):** You will receive a return code of 0 if this job runs correctly.

**Expected Return Codes and Messages from ACCEPT (KAHACCP):** The KAHACCP job is considered successful if you receive a return code of 0.

## 6.1.11 Run REPORT CROSSZONE

The SMP/E REPORT CROSSZONE command identifies requisites for products that are installed in separate zones. This command also creates APPLY and ACCEPT commands in the SMP/PUNCH data set. You can use the APPLY and ACCEPT commands to install those cross-zone requisites that the SMP/E REPORT CROSSZONE command identifies.

After you install SA z/OS, it is recommended that you run REPORT CROSSZONE against the new or updated target and distribution zones. REPORT CROSSZONE requires a global zone with ZONEINDEX entries that describe all the target and distribution libraries to be reported on.

For more information about REPORT CROSSZONE, see the SMP/E manuals.

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## 6.2 Activating SA z/OS

SA z/OS must be customized after the SMP/E installation is completed. See publication *System Automation for z/OS Planning & Installation, SC34-2645* for a description on how to setup SA z/OS. Once the customization is complete you can start using the SA z/OS customization dialog to define the policy.

The publication *System Automation for z/OS Operator's Commands, SC34-2649* describe the various commands that you can use when activating the product.

The publication *Monitoring Agent Configuration and User's Guide, SC34-2581* contains the step-by-step procedures to activate the SA z/OS Tivoli Enterprise Portal Agent.

The publication *IBM Tivoli System Automation for z/OS End-to-End Automation Adapter, SC34-2649* contains the step-by-step instructions to setup the end-to-end adapter for communicating with the System Automation Application Manager.

## 6.2.1 File System Execution

If you mount the file system in which you have installed SA z/OS in read-only mode during execution, then you do not have to take further actions to activate SA z/OS.

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## 7.0 Notices

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APAR numbers are provided in this document to assist in locating PTFs that may be required. Ongoing problem reporting may result in additional APARs being created. Therefore, the APAR lists in this document may not be complete. To obtain current service recommendations and to identify current product service requirements, always contact the IBM Customer Support Center or use S/390 SoftwareXcel to obtain the current "PSP Bucket".

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# Reader's Comments

## Program Directory for IBM Tivoli System Automation for z/OS, April 2012

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RATING SCALE						
very satisfied	<----->				very dissatisfied	not applicable
1	2	3	4	5	N	

	Satisfaction					
Ease of product installation	1	2	3	4	5	N
Contents of Program Directory	1	2	3	4	5	N
Installation Verification Programs	1	2	3	4	5	N
Time to install the product	1	2	3	4	5	N
Readability and organization of Program Directory tasks	1	2	3	4	5	N
Necessity of all installation tasks	1	2	3	4	5	N
Accuracy of the definition of the installation tasks	1	2	3	4	5	N
Technical level of the installation tasks	1	2	3	4	5	N
Ease of getting the system into production after installation	1	2	3	4	5	N

How did you order this product?

- CBPDO
- CustomPac
- ServerPac
- Independent
- Other

Is this the first time your organization has installed this product?

- Yes
- No

Were the people who did the installation experienced with the installation of z/OS products?

- Yes





IBM Deutschland Research & Development GmbH  
Tivoli System Automation Development z/OS  
Department 3160  
Schoenaicher Strasse 220  
D-71032 Boeblingen  
Germany

FAX Number: +49 (0)7031-16-3387

E-Mail: [holtz@de.ibm.com](mailto:holtz@de.ibm.com)





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