



# **Program Directory for IBM Z System Automation**

V4.3.0

Program Number 5698-SA4

FMIDs HWRE430, JWRE43F, JWRE43C, JWRE43I, JWRE431

for Use with  
z/OS Version 2 Release 3 or higher

Document Date: March 2022

GI13-4184-04

**Note**

Before using this information and the product it supports, be sure to read the general information under 7.0, "Notices" on page 25.

---

# Contents

<b>1.0 Introduction</b>	1
1.1 SA z/OS Description	1
1.1.1 System Operations	2
1.1.2 Processor Operations	2
1.1.3 IBM Service Management Unite Automation	2
1.2 What is New in IBM Z System Automation V4.3.0	2
1.3 SA z/OS FMIDs	3
<b>2.0 Program Materials</b>	4
2.1 Basic Machine-Readable Material	4
2.2 Program Publications	5
2.3 Program Source Materials	6
2.4 Publications Useful During Installation	6
<b>3.0 Program Support</b>	7
3.1 Program Services	7
3.2 Preventive Service Planning	7
3.3 Statement of Support Procedures	8
<b>4.0 Program and Service Level Information</b>	9
4.1 Program Level Information	9
4.2 Service Level Information	9
<b>5.0 Installation Requirements and Considerations</b>	10
5.1 Driving System Requirements	10
5.1.1 Machine Requirements	10
5.1.2 Programming Requirements	10
5.2 Target System Requirements	11
5.2.1 Machine Requirements	11
5.2.2 Programming Requirements	11
5.2.2.1 Installation Requisites	11
5.2.2.2 Operational Requisites	12
5.2.2.3 Toleration/Coexistence Requisites	13
5.2.2.4 Incompatibility (Negative) Requisites	13
5.2.3 DASD Storage Requirements	13
5.3 FMIDs Deleted	17
5.4 Special Considerations	17
<b>6.0 Installation Instructions</b>	18
6.1 Installing SA z/OS	18
6.1.1 SMP/E Considerations for Installing SA z/OS	18
6.1.2 SMP/E Options Subentry Values	18
6.1.3 SMP/E CALLLIBS Processing	18
6.1.4 Sample Jobs	19
6.1.5 Perform SMP/E RECEIVE	20
6.1.6 Allocate SMP/E Target and Distribution Libraries	21
6.1.7 Allocate File System Paths	21

6.1.8 Create DDDEF Entries	21
6.1.9 Perform SMP/E APPLY	22
6.1.10 Perform SMP/E ACCEPT	23
6.1.11 Run REPORT CROSSZONE	24
6.2 Activating SA z/OS	24
6.2.1 File System Execution	24
6.3 Product Customization	24
<b>7.0 Notices</b>	<b>25</b>
7.1 Trademarks	25
<b>Reader's Comments</b>	<b>26</b>

## Figures

1. Program File Content	4
2. Basic Material: Unlicensed Publications	5
3. Publications Useful During Installation	6
4. PSP Upgrade and Subset ID	7
5. Component IDs	8
6. Driving System Software Requirements	10
7. Target System Mandatory Installation Requisites	11
8. Target System Conditional Installation Requisites	12
9. Target System Mandatory Operational Requisites	12
10. Target System Conditional Operational Requisites	12
11. Total DASD Space Required by SA z/OS	13
12. Storage Requirements for SA z/OS Target Libraries	14
13. SA z/OS File System Paths	15
14. Storage Requirements for SA z/OS Distribution Libraries	16
15. SMP/E Options Subentry Values	18
16. Sample Installation Jobs	19

---

## 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 Z System Automation. This publication refers to IBM Z System Automation as SA z/OS.

The Program Directory contains the following sections:

- 2.0, “Program Materials” on page 4 identifies the basic program materials and documentation for SA z/OS.
- 3.0, “Program Support” on page 7 describes the IBM support available for SA z/OS.
- 4.0, “Program and Service Level Information” on page 9 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 10 identifies the resources and considerations that are required for installing and using SA z/OS.
- 6.0, “Installation Instructions” on page 18 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; after which, keep the documents for your reference. Section 3.2, “Preventive Service Planning” on page 7 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 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.

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.

---

## 1.1 SA z/OS Description

IBM Z System Automation (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 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, ACF/VTAM, Db2, CICS, IMS, OMEGAMON, Tivoli Business Service Manager, and IBM Z Workload Scheduler. 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 health status information that is displayed on the Tivoli Enterprise Portal (TEP) via the IBM Monitoring infrastructure and on the Service Management Unite Automation dashboards.

### 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 IBM Service Management Unite Automation

IBM Service Management Unite is a customizable dashboard user interface that is available with SA z/OS V4.3.0. Service Management Unite provides system programmers, operators, and administrators with a transparent view of system health status and allows for easy problem identification. The dashboard enables operators to see both monitoring and automation exception events together so they can identify critical problems. Operators can quickly and confidently analyze, isolate and diagnose problems by providing all relevant data in a single place. Service Management Unite also enables operators to interact directly with the system by issuing commands and viewing results without going to a different console.

---

## 1.2 What is New in IBM Z System Automation V4.3.0

This section highlights the capabilities that come with IBM Z System Automation in this new release.

The new release provides enhancements that are focused on an improved user experience for automation administrators and operators. This offering minimizes user's efforts to reduce the costs of IT operation, lower risks, and improve system and application availability. Refer to the IBM Z System Automation Planning & Installation (SC34-2716) or to the IBM Z System Automation V4.3.0 IBM Documentation website at

<https://www.ibm.com/docs/en/z-system-automation/4.3.0?topic=whats-new-in-v430>

for further details about the new capabilities provided with IBM Z System Automation V4.3.0

---

## 1.3 SA z/OS FMIDs

SA z/OS consists of the following FMIDs:

HWRE430  
JWRE43F  
JWRE43C  
JWRE43I  
JWRE431

## 2.0 Program Materials

An IBM program is identified by a program number. The program number for SA z/OS is 5698-SA4.

Basic Machine-Readable Materials are materials that are supplied under the base license and are required for the use of the product.

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.

### 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 18 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 (Page 1 of 2). Program File Content*

Name	O R G	R E C M	L R E C L	BLK SIZE
SMPMCS	SEQ	FB	80	27920
<b>Base Automation:</b>				
IBM.HWRE430.F1	PDS	FB	80	27920
IBM.HWRE430.F2	PDS	FB	80	27920
IBM.HWRE430.F3	PDS	U	0	6144
IBM.HWRE430.F4	PDSE	U	0	6144
IBM.HWRE430.F5	PDS	VB	1024	27998
<b>Extended Automation:</b>				
IBM.JWRE43F.F1	PDS	FB	80	27920
IBM.JWRE43F.F2	PDS	FB	80	27920
IBM.JWRE43F.F3	PDS	U	0	6144
IBM.JWRE43F.F4	PDS	VB	1024	27998
<b>CICS Automation:</b>				
IBM.JWRE43C.F1	PDS	FB	80	27920
IBM.JWRE43C.F2	PDS	FB	80	27920
IBM.JWRE43C.F3	PDS	U	0	6144
<b>IMS Automation:</b>				
IBM.JWRE43I.F1	PDS	FB	80	27920



<i>Figure 1 (Page 2 of 2). Program File Content</i>				
<b>Name</b>	<b>O R G</b>	<b>R E C F M</b>	<b>L R E C L</b>	<b>BLK SIZE</b>
IBM.JWRE431.F2	PDS	U	0	6144
<b>Base Automation JPN:</b>				
IBM.JWRE431.F1	PDS	FB	80	27920

## 2.2 Program Publications

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

Figure 2 identifies the basic unlicensed publications for SA z/OS. The softcopy publications of SA z/OS V4.3.0 can be obtained from the IBM Documentation website at <https://www.ibm.com/docs/en/z-system-automation/4.3.0?topic=downloadable-pdf-files>

<i>Figure 2 (Page 1 of 2). Basic Material: Unlicensed Publications</i>		
<b>Publication Title</b>	<b>Form Number</b>	<b>Media Format</b>
IBM Z System Automation Program Directory	GI13-4184	IBM Documentation (see link below)
IBM Z System Automation Licence Information	GI13-4185	IBM Documentation (see link below)
IBM Z System Automation Customizing and Programming	SC34-2715	IBM Documentation (see link below)
IBM Z System Automation Defining Automation Policy	SC34-2717	IBM Documentation (see link below)
IBM Z System Automation End-to-End Automation	SC34-2750	IBM Documentation (see link below)
IBM Z System Automation Messages and Codes	SC34-2719	IBM Documentation (see link below)
IBM Z System Automation Operator's Commands	SC34-2720	IBM Documentation (see link below)
IBM Z System Automation Planning and Installation	SC34-2716	IBM Documentation (see link below)
IBM Z System Automation Product Automation Programmer's Reference and Operator's Guide	SC34-2714	IBM Documentation (see link below)
IBM Z System Automation Programmer's Reference	SC34-2748	IBM Documentation (see link below)
IBM Z System Automation Workload Scheduler Automation Programmer's Reference and Operator's Guide	SC34-2749	IBM Documentation (see link below)

<i>Figure 2 (Page 2 of 2). Basic Material: Unlicensed Publications</i>		
<b>Publication Title</b>	<b>Form Number</b>	<b>Media Format</b>
IBM Z System Automation User's Guide	SC34-2718	IBM Documentation (see link below)
IBM Z System Automation Get Started Guide	SC27-9532	IBM Documentation (see link below)
IBM Z System Automation Service Management Unite Automation Installation and Configuration Guide	SC27-8747	IBM Documentation (see link below)
Accessing IBM Z System Automation Service Management Unite CD	LCD8-2753	IBM Documentation (see link below)

You can also access documentation for the SA z/OS V4.3.0 from the IBM Documentation website:  
<https://www.ibm.com/docs/en/z-system-automation/4.3.0>

IBM Service Management Unite can be downloaded from the IBM Service Management Unite Automation customer access portal website at <http://ibm.biz/smu-auto-download>

**Note:** The Accessing IBM Z System Automation Service Management Unite CD supplies information for the IBM Service Management Unite Automation customer access portal, as well as the key to access the software download link.

---

## 2.3 Program Source Materials

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

---

## 2.4 Publications Useful During Installation

You might want to use the publications listed in Figure 3 during the installation of SA z/OS.

<i>Figure 3. Publications Useful During Installation</i>		
<b>Publication Title</b>	<b>Form Number</b>	<b>Media Format</b>
<i>IBM SMP/E for z/OS User's Guide</i>	SA23-2277	
<i>IBM SMP/E for z/OS Commands</i>	SA23-2275	
<i>IBM SMP/E for z/OS Reference</i>	SA23-2276	
<i>IBM SMP/E for z/OS Messages, Codes, and Diagnosis</i>	GA32-0883	

**Note:** IBM Publications Center <https://www.ibm.com/resources/publications>  
 IBM Documentation <https://www.ibm.com/docs/en>

---

## 3.0 Program Support

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

---

### 3.1 Program Services

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

To report issues or defects related to the use of the IBM Z Distribution for Zowe™ 1.0 or higher functionality use the IBM Z System Automation 5698-SA4 program number and or related component IDs.

---

### 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 22 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.ibm.com/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 4.

*Figure 4. PSP Upgrade and Subset ID*

UPGRADE	SUBSET	Description
HWRE430	HWRE430	SA z/OS Base
HWRE430	JWRE43F	SA z/OS Extended
HWRE430	JWRE43C	SA z/OS CICS Automation
HWRE430	JWRE43I	SA z/OS IMS Automation
HWRE430	JWRE431	SA z/OS Kanji Support

---

### 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 5 on page 8 identifies the component IDs (COMPID) for SA z/OS.

<i>Figure 5. Component IDs</i>			
<b>FMID</b>	<b>COMPID</b>	<b>Component Name</b>	<b>RETAIN Release</b>
HWRE430	5698SA300	SA z/OS Base Automation	430
JWRE43F	5698SA300	SA z/OS Extension	43F
JWRE43C	5698SA300	SA z/OS CICS Automation	43C
JWRE43I	5698SA300	SA z/OS IMS Automation	43I
JWRE431	5698SA300	SA z/OS Base Automation JPN	431

---

## 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.

---

### 4.1 Program Level Information

All APAR fixes against previous releases of SA z/OS closed until January 2022 have been incorporated into this release.

---

### 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-RequiredService)** operand on your **APPLY CHECK** command. This will allow you to review the recommended and critical service that should be installed with your FMIDs.

---

## 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 6 (Page 1 of 2). Driving System Software Requirements*

Program Number	Product Name	Minimum VRM	Minimum Service Level will satisfy these APARs	Included in the shipped product?
5650-ZOS	z/OS	V02.03.00	N/A	No
5650-ZOS	z/OS	V02.04.00	N/A	No

Figure 6 (Page 2 of 2). Driving System Software Requirements

Program Number	Product Name	Minimum VRM	Minimum Service Level will satisfy these APARs	Included in the shipped product?
5650-ZOS	z/OS	V02.05.00	N/A	No

**Note:** SMP/E is a requirement for Installation and is an element of z/OS.

**Note:** Installation might require migration to new z/OS releases to be service supported. See <https://www.ibm.com/support/lifecycle/>

## 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 7. Target System Mandatory Installation Requisites

Program Number	Product Name	Minimum VRM	Minimum Service Level will satisfy these APARs	Included in the shipped product?
5650-ZOS	z/OS	V02.03.00 or higher	N/A	No
5697-NV6	IBM Z NetView	V6.3.0 or higher	N/A	No

**Note:** Installation might require migration to new releases to obtain support. See <https://www.ibm.com/support/lifecycle/>

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.

<i>Figure 8. Target System Conditional Installation Requisites</i>					
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-A06	IBM IMS	V15.1 or higher	N/A	IMS Automation	No
5655-Y04	IBM CICS Transaction Server	V5.4 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.

<i>Figure 9. Target System Mandatory Operational Requisites</i>	
Program Number	Product Name and Minimum VRM/Service Level
5650-ZOS	z/OS V02.03.00 or higher
5697-NV6	IBM Z NetView V6.3.0 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.

<i>Figure 10. Target System Conditional Operational Requisites</i>		
Program Number	Product Name and Minimum VRM/Service Level	Function
5741-A09	zVM V7.1 or higher	ProcOps VM Second Level Systems Support
5698-ZWE	IBM Z Distribution for Zowe™ 1.0 or higher	Zowe™ exploitation in IBM Service Management Unite Automation

**Note:** If you compile the SA z/OS V4.3.0 REXX command lists, the IBM Compiler for SAA REXX/370 R4 (or higher) is needed.

**Note:** Zowe™ is required if you want to use the IBM Service Management Unite integration with Zowe™. Integrated with Zowe™, IBM Service Management Unite offers extended functions to allow you



to interact with z/OS resources, such as managing JES and MVS details in the IBM Service Management Unite dashboards.

### 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.

### 5.2.2.4 Incompatibility (Negative) Requisites

Negative requisites identify products that must *not* be installed on the same system as this product.

## 5.2.3 DASD Storage Requirements

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

Figure 11 lists the total space that is required for each type of library.

<i>Figure 11. Total DASD Space Required by SA z/OS</i>		
<b>Library Type</b>	<b>Total Space Required in 3390 Trks</b>	<b>Description</b>
Target	3038 (3990 tracks)	
Distribution	5036 (3990 tracks)	
File System(s)	130 MBytes	zFS

#### Notes:

- 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.
- 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 21.

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, with some exceptions. If the value in the "ORG" column specifies "PDS", the data set must be a PDS. If the value in "DIR Blks" column specifies "N/A", the data set must be 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 not be in the LPA, with some exceptions. If the data set should be placed in the LPA, see the Special Considerations section below.
- These data sets can be in the LNKLIST. If so, see the Special Considerations section below.
- These data sets are not required to be APF-authorized, with some exceptions. If the data set must be APF-authorized, see the Special Considerations section below.

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.

<i>Figure 12 (Page 1 of 2). Storage Requirements for SA z/OS Target Libraries</i>								
Library DDNAME	Member Type	Target Volume	T Y P E	O R G	R E C O R D I N G	L R E C O R D I N G	No. of 3390 Trks	No. of DIR Blks
SINGDMAP	Data	ANY	U	PDS	VB	1024	4	2
SINGINST	SAMP	ANY	U	PDS	FB	80	7	2
SINGLINK	LMOD	ANY	U	PDS	U	0	29	8
SINGLOAD	LMOD	ANY	U	PDS	U	0	1565	48

Figure 12 (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
SINGLODE	LMOD	ANY	U	PDSE	U	0	30	N/A
SINGLPA	LMOD	ANY	U	PDS	U	0	5	2
SINGMENU	MSG	ANY	U	PDS	FB	80	41	19
SINGMENV	MSG	ANY	U	PDS	FB	80	2	2
SINGMJPN	MSG	ANY	U	PDS	FB	80	7	2
SINGOBJV	OBJ	ANY	U	PDS	FB	80	2	2
SINGPARAM	Data	ANY	U	PDS	FB	80	44	5
SINGPDB	Data	ANY	U	PDS	FB	80	170	2
SINGPENU	PNL	ANY	U	PDS	FB	80	569	85
SINGPJPN	PNL	ANY	U	PDS	FB	80	338	33
SINGPRF	Data	ANY	U	PDS	FB	80	2	2
SINGREXV	EXEC	ANY	U	PDS	FB	80	10	2
SINGREXX	EXEC	ANY	U	PDS	FB	80	1580	51
SINGSAMP	SAMP	ANY	U	PDS	FB	80	111	15
SINGSENU	SKEL	ANY	U	PDS	FB	80	12	6
SINGTENU	Table	ANY	U	PDS	FB	80	23	2
SINGTREX	EXEC	ANY	U	PDS	FB	80	308	19

Figure 13 (Page 1 of 2). SA z/OS File System Paths

DDNAME	T Y P E	Path Name
SINGASCR	N	/usr/lpp/ing/adapter/IBM/
SINGACFG	N	/usr/lpp/ing/adapter/config/IBM/
SINGALIB	X	/usr/lpp/ing/adapter/lib/IBM/
SINGDSCR	N	/usr/lpp/ing/datastore/IBM/
SINGDBIN	X	/usr/lpp/ing/datastore/bin/IBM/
SINGDCFS	N	/usr/lpp/ing/datastore/config/IBM/
SINGDLIB	X	/usr/lpp/ing/datastore/lib/IBM/
SINGDICR	N	/usr/lpp/ing/dist/IBM/
SINGOSCR	N	/usr/lpp/ing/dist/OMNibus/IBM/
SINGICFG	N	/usr/lpp/ing/dist/TDI/IBM/
SINGDCFG	N	/usr/lpp/ing/dist/TEC/IBM/
SINGZCFG	N	/usr/lpp/ing/dist/ZOWE/IBM/

<i>Figure 13 (Page 2 of 2). SA z/OS File System Paths</i>		
<b>DDNAME</b>	<b>T Y P E</b>	<b>Path Name</b>
SINGBSCR	N	/usr/lpp/ing/infobroker/IBM/
SINGBBIN	X	/usr/lpp/ing/infobroker/bin/IBM/
SINGBCFS	X	/usr/lpp/ing/infobroker/config/IBM/
SINGBLIB	X	/usr/lpp/ing/infobroker/lib/IBM/
SINGPSCR	N	/usr/lpp/ing/policyservices/IBM/
SINGPCFS	N	/usr/lpp/ing/policyservices/config/IBM/
SINGPLIB	X	/usr/lpp/ing/policyservices/lib/IBM/
SINGRSCR	N	/usr/lpp/ing/restsrvr/IBM/
SINGRBIN	X	/usr/lpp/ing/restsrvr/bin/IBM/
SINGRCFS	N	/usr/lpp/ing/restsrvr/config/IBM/
SINGRLIB	X	/usr/lpp/ing/restsrvr/lib/IBM/
SINGRSAM	X	/usr/lpp/ing/restsrvr/samples/IBM/
SINGSCFG	X	/usr/lpp/ing/SAP/IBM/
SINGUSCR	X	/usr/lpp/ing/ussauto/IBM/
SINGULIB	X	/usr/lpp/ing/ussauto/lib/IBM/

<i>Figure 14 (Page 1 of 2). Storage Requirements for SA z/OS Distribution Libraries</i>						
<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>
AINGDMAP	U	PDS	VB	1024	4	2
AINGHFS	U	PDS	VB	1024	3657	5
AINGINST	U	PDS	FB	80	7	2
AINGMENU	U	PDS	FB	80	41	19
AINGMENV	U	PDS	FB	80	2	2
AINGMJPN	U	PDS	FB	80	7	2
AINGMOD	U	PDS	U	80	297	113
AINGOBJV	U	PDS	FB	80	2	2
AINGPARM	U	PDS	FB	80	44	5
AINGPDB	U	PDS	FB	80	170	2
AINGPENU	U	PDS	FB	80	569	85
AINGPGM	U	PDS	U	0	834	2
AINGPGME	U	PDSE	U	0	30	N/A
AINGPJPN	U	PDS	FB	80	338	33

Figure 14 (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
AINGPRF	U	PDS	FB	80	2	2
AINGREXV	U	PDS	FB	80	10	2
AINGREXX	U	PDS	FB	80	1580	51
AINGSAMP	U	PDS	FB	80	111	15
AINGSENU	U	PDS	FB	80	12	6
AINGTENU	U	PDS	FB	80	23	2
AINGTREX	U	PDS	FB	80	308	19

**Note:** Data sets AINGJMSG and AINGJPNL are for Japanese data only and remain empty if JWRE431 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

To report issues or defects related to the use of the IBM Z Distribution for Zowe™ 1.0 or higher functionality use the IBM Z System Automation 5698-SA4 program number and or related component IDs.

---

## 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 15. 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.

<i>Figure 15. SMP/E Options Subentry Values</i>		
Subentry	Value	Comment
DSSPACE	2400,800,1500	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 LE Libraries for PL/I, C and C++

- SCEECPP

- SCEELIB
- SCEELKED
- SCEELKEX
- SCEEOBJ
- SIBMDCALL

For CICS V5.4 or higher

- SDFHLOAD

For IMS V15.1 or higher

- 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:

<i>Figure 16. Sample Installation Jobs</i>			
Job Name	Job Type	Description	SMPTLIB Data Set
INGALLOC	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.HWRE430.F2
INGZFS	ALLOMZFS	Sample job to allocate and mount the zFS file system	IBM.HWRE430.F2
INGISMKD	MKDIR	Sample job to invoke the supplied INGMKDIR EXEC to allocate file system paths	IBM.HWRE430.F2
INGDDDEF	DDDEF	Sample job to define SMP/E DDDEFs	IBM.HWRE430.F2
INGDDDCL	DDDEF	Sample job to define prerequisite product DDDEFs	IBM.HWRE430.F2
INGAPPLY	APPLY	Sample APPLY job	IBM.HWRE430.F2
INGACCP	ACCEPT	Sample ACCEPT job	IBM.HWRE430.F2

You can access the sample installation jobs by performing an SMP/E RECEIVE (refer to 6.1.5, “Perform SMP/E RECEIVE” on page 20) then copy the jobs from the RELFILES to a work data set for editing and submission. See Figure 16 to find the appropriate refile data set.

You can also copy the sample installation jobs from the product files by submitting the following job. 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=*
//IN DD DSN=IBM.HWRE430.F2,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=IN,OUTDD=OUT
SELECT MEMBER=(INGALLOC,INGIZFS,INGISMKD,INGDDDEF)
SELECT MEMBER=(INGDDDCL,INGAPPLY,INGACCPT)
/*
```

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

IN:

**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.

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

## 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. sample job to perform the SMP/E RECEIVE for SA z/OS.

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

```
//JOB1 JOB ...
//RECVSAL EXEC PGM=GIMSMP,REGION=4096K
//SMPCSI DD DSN=smpe.global.csi,DISP=SHR
//SMPPTFFIN DD DSN=IBM.HWRE430.SMPMCS,DISP=SHR,
// VOL=SER=dasdvol,
// UNIT=DASD
// DD DSN=IBM.JWRE43F.SMPMCS,DISP=SHR,
// VOL=SER=dasdvol,
// UNIT=DASD
// DD DSN=IBM.JWRE43C.SMPMCS,DISP=SHR,
// VOL=SER=dasdvol,
// UNIT=DASD
// DD DSN=IBM.JWRE43I.SMPMCS,DISP=SHR,
// VOL=SER=dasdvol,
// UNIT=DASD
// DD DSN=IBM.JWRE431.SMPMCS,DISP=SHR,
// VOL=SER=dasdvol,
// UNIT=DASD
//SMPHOLD DD DUMMY
//SMPCNTL DD *
SET BOUNDARY(GLOBAL) .
RECEIVE S(HWRE430,JWRE43F,JWRE43C,JWRE43I,JWRE431) .
/*
```

SMPCSI:

**smpe.global.csi** is the DSN value for the CSI.

SMPPTFFIN:

**dasdvol** is the volume serial of the DASD device where the product package is located.

**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.

## 6.1.7 Allocate File System Paths

The target system zFS data set must be mounted on the driving system when running the sample INGISMKD job since the job will create paths in the zFS.

Before running the sample job to create the paths in the file system, you must ensure that OMVS is active on the driving system and that the target system's zFS file system is mounted to the driving system. zFS must be active on the driving system if you are installing SA z/OS into a file system that is zFS.

If you plan to install SA z/OS into a new zFS file system, you must create the mountpoint and mount the new file system to the driving system for SA z/OS.

The recommended mountpoint is `/usr/lpp/ing`.

1. To allocate and mount the new file system data set of the target system on the driving system, use sample job INGIZFS:

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

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

2. To allocate the zFS paths for SA z/OS, use sample job INGISMKD:

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

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.

**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 INGDDCL 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.

## 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.

The latest HOLDDATA is available through several different portals, including <http://service.software.ibm.com/holdata/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 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 HOLDS 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.

2. 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):** You will receive a return code of 0 if this job runs correctly.

### 6.1.10 Perform SMP/E ACCEPT

Edit and submit sample job INGACPT 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 *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 (INGACPT):** You will receive a return code of 0 if this job runs correctly.

### 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 SMPPUNCH 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.

---

## 6.2 Activating SA z/OS

### 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.

---

## 6.3 Product Customization

SA z/OS must be customized after the SMP/E installation is completed. See publication *IBM Z System Automation Planning & Installation, SC34-2716*, for a description of how to set up SA z/OS. Once the customization is complete you can start using the SA z/OS customization dialog to define the policy. The publication *IBM Z System Automation Customizing and Programming, SC34-2715*, contains information about how to adapt the installation to your environment. The publication *IBM Z System Automation Defining Automation Policy, SC34-2717*, contains information about how to define the automation policy.

The publication *IBM Z System Automation End-to-end Automation, SC34-2750*, contains the step-by-step instructions to set up the end-to-end adapter for communicating with the System Automation Application Manager, the IBM Service Management Unite Automation and for cross-sysplex operations.

---

## 7.0 Notices

This information was developed for products and services offered in the U.S.A. IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

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".

IBM may have patents or pending patent applications covering subject matter in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to the

IBM Director of Licensing  
IBM Corporation  
North Castle Drive  
Armonk, New York 10504-1785  
USA

For license inquiries regarding double-byte (DBCS) information, contact the IBM Intellectual Property Department in your country or send inquiries, in writing, to:

Intellectual Property Licensing  
Legal and Intellectual Property Law  
IBM Japan, Ltd.  
19-21, Nihonbashi-Hakozakicho, Chuo-ku  
Tokyo 103-8510, Japan

---

## 7.1 Trademarks

IBM, the IBM logo, and other IBM trademark listed on the IBM Trademarks List are trademarks or registered trademarks of International Business Machines Corporation, in the United States and/or other countries. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on [ibm.com/trademark](http://ibm.com/trademark).

---

## Reader's Comments

**Program Directory for IBM Z System Automation, March 2022** We appreciate your input on this publication. Feel free to comment on the clarity, accuracy, and completeness of the information or give us any other feedback that you might have.

Send your comments by emailing us at [ibmdocs@us.ibm.com](mailto:ibmdocs@us.ibm.com), and include the following information:

Your name and address  
Your email address  
Your telephone or fax number  
The publication title and order number  
The topic and page number related to your comment  
The text of your comment

When you send information to IBM, you grant IBM a nonexclusive right to use or distribute the information in any way it believes appropriate without incurring any obligation to you.

IBM or any other organizations will only use the personal information that you supply to contact you about the issues that you submit.

Thank you for your participation.





Printed in USA

GI13-4184-04

