



**Program Directory for
IBM OMEGAMON for Storage on z/OS**

5.5.0

Program Number 5698-T05

for use with
z/OS

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Note

Before using this information and the product it supports, be sure to read the general information under 7.0, "Notices" on page 38.

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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 OMEGAMON for Storage on z/OS. This publication refers to IBM OMEGAMON for Storage on z/OS as OMEGAMON for Storage on z/OS.

The Program Directory contains the following sections:

- 2.0, “Program Materials” on page 4 identifies the basic program materials and documentation for OMEGAMON for Storage on z/OS.
- 3.0, “Program Support” on page 7 describes the IBM support available for OMEGAMON for Storage on 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 OMEGAMON for Storage on z/OS.
- 5.0, “Installation Requirements and Considerations” on page 10 identifies the resources and considerations that are required for installing and using OMEGAMON for Storage on z/OS.
- 6.0, “Installation Instructions” on page 26 provides detailed installation instructions for OMEGAMON for Storage on z/OS. It also describes the procedures for activating the functions of OMEGAMON for Storage on z/OS, or refers to appropriate publications.

Before installing OMEGAMON for Storage on 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.

OMEGAMON for Storage on 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 OMEGAMON for Storage on z/OS are included on the CBPDO.

Do not use this program directory if you install OMEGAMON for Storage on 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 IBM OMEGAMON for Storage on z/OS Description

IBM introduced significant updates to IBM OMEGAMON Performance Monitors for key System z environments designed to run on IBM Tivoli Monitoring V6.3.0 Fix Pack 6 or higher and deliver enhanced capabilities designed to:

- Improve problem resolution efficiency by requiring fewer steps to isolate root cause performance impact in real time, therefore providing higher availability.
- Improve visibility, control, and automation with the more comprehensive 3270-based user interface (3270UI) capable of viewing the entire enterprise-wide environment from a single 3270 screen.
- Reduce the time required for installation, configuration, and maintenance by utilizing enhanced IBM Tivoli Monitoring and PARMGEN configuration tool functions. If you previously configured and deployed this product using the ICAT Configuration Tool, you must migrate and upgrade your existing runtime environment (RTE) from ICAT to PARMGEN mode (at APAR OA52888 level, HKCI310 PTF UA91953) since the ICAT Configuration Tool support was ended starting at the OMEGAMON Family 5.3.0 releases.

OMEGAMON for Storage on z/OS is the comprehensive monitor for z/OS I/O subsystem performance and storage availability. The product combines comprehensive storage performance monitoring with a flexible, easy-to-use browser interface that helps you clearly understand storage conditions and ensure optimal performance. Specifically, you use OMEGAMON for Storage on z/OS to manage the performance and availability of mainframe attached storage (including disk, tape devices, and virtual tape devices) and the data sets that are located on them. The product also features in-depth analysis of the following three key components of IBM storage software:

- Data Facility Systems Managed Storage (DFSMS), which manages the service levels and priorities of data sets based on user created storage goals.
- Data Facility Hierarchical Storage Manager (DFSMSHsm), which manages backup of data based on usage patterns.
- Data Facility Removable Media Manager (DFSMSrmm), which manages tape volumes across multiple systems, including the data sets on the volumes.

New in OMEGAMON for Storage on z/OS V5.5.0:

- Realtime Dataset Metrics (RDM), which provide storage administrators near-realtime visibility into key space management and utilization metrics while substantially reducing the CPU resource required to collect it.
- Realtime Dataset Metrics includes a web user interface which enables storage administrators to quickly view, sort, filter and summarize data set metrics.
- Data Set Attributes High Level Qualifier Summary provides a rollup of data set attributes across all for each data set high level qualifier.

1.2 OMEGAMON for Storage on z/OS FMIDs

OMEGAMON for Storage on z/OS consists of the following FMIDs:

HKS3550
HKOB750
HKSB750
HIZD310

2.0 Program Materials

An IBM program is identified by a program number. The program number for OMEGAMON for Storage on z/OS is 5698-T05.

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 OMEGAMON for Storage on 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 26 for more information about how to install the program.

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

2.2 Program Publications

The following sections identify the basic publications for OMEGAMON for Storage on z/OS.

Figure 1 identifies the basic unlicensed publications for OMEGAMON for Storage on z/OS.

The unlicensed documentation for OMEGAMON for Storage on z/OS can be found on the IBM Knowledge Center at https://www.ibm.com/support/knowledgecenter/SS2JFP_5.5.0/.

<i>Figure 1 (Page 1 of 2). Basic Material: Unlicensed Publications</i>
Publication Title
<i>Planning and Configuration Guide</i>
<i>User's Guide</i>
<i>Tuning Guide</i>
<i>Troubleshooting Guide</i>
<i>Parameter Reference</i>
<i>IBM Tivoli Discovery Library Adapter for z/OS User's Guide & Reference</i>
OMEGAMON and Tivoli Management Services on z/OS shared documentation

<i>Figure 1 (Page 2 of 2). Basic Material: Unlicensed Publications</i>
Publication Title
<i>New in this Release</i>
<i>Overview</i>
<i>Getting started</i>
<i>Planning</i>
<i>Installing</i>
<i>Upgrading</i>
<i>Configuring</i>
<i>Scenarios and how-tos</i>
<i>Reference</i>

Prior to installing OMEGAMON for Storage on z/OS, IBM recommends you review the OMEGAMON shared documentation 6.3.0 Fix Pack 2 and above, **What's new in PARMGEN**, the Quick Start Guide, as well as the **First time deployment guide (FTU installation and tasks)**, and the Planning and Configuring topics for general planning and configuration flow. This documentation focuses on the things you will need to know for a successful installation and configuration of this product.

The **IBM OMEGAMON and Tivoli Management Services on z/OS** shared documentation, and other IBM product documentation can be found at the IBM Knowledge Center URL listed below:

<http://www.ibm.com/support/knowledgecenter/SSAUBV/>

The **First time deployment guide (FTU installation and configuration tasks)** documentation can be found on the IBM Knowledge Center at:

http://www.ibm.com/support/knowledgecenter/SSAUBV/com.ibm.omegamon_share.doc_6.3.0.2/ftu/ftu_cfg_intro.htm

Refer to the *Program Directory for IBM Tivoli Management Services on z/OS* (GI11-4105) for a complete documentation list and installation instructions for its product components.

2.3 Program Source Materials

No program source materials or viewable program listings are provided for OMEGAMON for Storage on z/OS.

2.4 Publications Useful During Installation

You might want to use the publications listed in Figure 2 during the installation of OMEGAMON for Storage on z/OS.

<i>Figure 2. Publications Useful During Installation</i>	
Publication Title	Form Number
<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/shop/publications/order>
IBM Knowledge Center <https://www.ibm.com/support/knowledgecenter>

3.0 Program Support

This section describes the IBM support available for OMEGAMON for Storage on 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 functionality use the IBM OMEGAMON for Storage on z/OS 5698-T05 program number and or related component IDs.

3.2 Preventive Service Planning

Before you install OMEGAMON for Storage on 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 32 for a sample APPLY command.

If you obtained OMEGAMON for Storage on z/OS as part of a CBPDO, HOLDDATA is included.

If the CBPDO for OMEGAMON for Storage on 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 OMEGAMON for Storage on z/OS are included in Figure 3.

This product has an installation requirement for IBM Tivoli Management Services on z/OS 6.3.0 Fix Pack 6 or higher (5698-A79), so you should review the PSP buckets for it as well. Refer to the *Program Directory for IBM Tivoli Management Services on z/OS* (GI11-4105) for those UPGRADE and SUBSET values.

Figure 3. PSP Upgrade and Subset ID

UPGRADE	SUBSET	Description
OMXES3550	HKS3550	OMEGAMON for Storage on z/OS
	HKOB750	OMNIMON Base
	HKSB750	Shared Probes
ZOSDLA	HIZD310	Tivoli Discovery Library Adapter for z/OS

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 4 identifies the component IDs (COMPID) for OMEGAMON for Storage on z/OS.

Figure 4. Component IDs

FMID	COMPID	Component Name	RETAIN Release
HKS3550	5608A1000	OMEGAMON for Storage on z/OS	550
HKOB750	5608A41OB	OMNIMON Base	750
HKSB750	5608A41SP	Shared Probes	750
HIZD310	5698A4700	z/OS DLA	310

4.0 Program and Service Level Information

This section identifies the program and relevant service levels of OMEGAMON for Storage on 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

The following APAR fixes against the previous release of components included with OMEGAMON for Storage on z/OS have been incorporated into this release. They are listed by FMID.

- FMID HKS3550

0A51412 0A51561 0A51648 0A51693 0A51694 0A51920 0A51939 0A52048
0A52204 0A52374 0A52749 0A52945 0A53327 0A53348 0A53440 0A53447
0A53493 0A53496 0A53702 0A53888 0A53984 0A53985 0A54049 0A54069
0A54163 0A54226 0A54304 0A54389 0A54547 0A54653 0A54737 0A54759

- FMID HKOB750

0A45606 0A45816 0A45821 0A45846 0A46014 0A46177 0A46354 0A46704
0A46857 0A46860 0A46861 0A46867 0A46911 0A47142 0A47263 0A47617
0A48029 0A48198 0A48295 0A48532 0A48662 0A48739 0A48917 0A49057
0A49106 0A49278 0A49686 0A49902 0A49927 0A49966 0A50243 0A50263
0A50563 0A50894 0A51033 0A51043 0A51357 0A51417 0A51556 0A51564
0A51646 0A51815 0A51908 0A52016 0A52082 0A52314 0A52323 0A52442

- FMID HKSB750

0A51458 0A51463 0A51955 0A52489 0A52553 0A53084 0A53329 0A53347
0A53431 0A53714 0A54479 0A54551 0A55263

4.2 Service Level Information

No PTFs against this release of OMEGAMON for Storage on z/OS have been incorporated into the product package.

5.0 Installation Requirements and Considerations

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

- *Driving system*: the system on which SMP/E is executed to install the program.
- *Target system*: the system on which the program is configured and run.

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 OMEGAMON for Storage on 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 5. 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	2.3 or higher	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-01.ibm.com/software/support/lifecycle/index_z.html.

5.2 Target System Requirements

This section describes the environment of the target system required to install and use OMEGAMON for Storage on z/OS.

OMEGAMON for Storage on 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 6. 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	2.3 or higher	N/A	No
5698-A79	IBM Tivoli Management Services on z/OS	6.3.0	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.

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.

OMEGAMON for Storage on z/OS has no conditional installation requisites.

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.

Figure 7. Target System Mandatory Operational Requisites

Program Number	Product Name and Minimum VRM/Service Level
5650-ZOS	z/OS 2.3 or higher
5698-A79	IBM Tivoli Management Services on z/OS 6.3.0 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 8. Target System Conditional Operational Requisites</i>	
Program Number	Product Name and Minimum VRM/Service Level
<i>One or more of the following:</i>	
5655-DKN	IBM SDK for Node.js - z/OS 8.0
5655-NJS	IBM SDK for Node.js - z/OS 12.0
5698-ZWE	IBM Z Distribution for Zowe 1.0

Note: Please refer to the Planning and Configuration Guide for additional details on installation and configuration of Node.js.

Zowe is required if you want to use the OMEGAMON for Storage integration with Zowe. Integrated with Zowe, OMEGANON for Storage offers extended functions.

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.

OMEGAMON for Storage on z/OS 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.

OMEGAMON for Storage on z/OS has no negative requisites.

5.2.3 DASD Storage Requirements

OMEGAMON for Storage on z/OS libraries can reside on all supported DASD types.

Figure 9 lists the total space that is required for each type of library.

Figure 9. Total DASD Space Required by OMEGAMON for Storage on z/OS

Library Type	Total Space Required in 3390 Trks
Target	2703
Distribution	2321

Notes:

1. If you are installing into an existing environment that has the data sets in Figure 12 on page 16 and Figure 13 on page 17 already allocated, ensure sufficient disk space and directory blocks are available to support the requirement listed. This might require you to reallocate some data sets to avoid x37 abends.
2. Use system determined block sizes for efficient DASD utilization for all non-RECFM U data sets. For RECFM U data sets, a block size of 32760 is recommended, which is the most efficient from a performance and DASD utilization perspective.
3. 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 31.

4. All target and distribution libraries listed have the following attributes:
 - The default name of the data set can not be changed.
 - The default block size of the data set can be changed.
 - The data set can not 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 value in the "Member Type" column specifies "LPA", it is advised to place the data set in the LPA.
- These data sets can be in the LNKLST except for TKANMODR and TKANMODS.

If you are installing into an existing environment, ensure the values used for the SMP/E work datasets reflect the minimum values shown in Figure 10. Check the corresponding DDDEF entries in all zones because use of values lower than these can result in failures in the installation process. Refer to the SMP/E manuals for instructions on updating DDDEF entries.

Figure 10. Storage Requirements for SMP/E Work Data Sets

Library DDNAME	T Y P E	O R G	R E C F M	L R E C L	Prim No. of 3390 Trks	Sec No. of 3390 Trks	No. of DIR Blks
SMPWRK1	E	PDS	FB	80	150	150	220
SMPWRK2	E	PDS	FB	80	150	150	220
SMPWRK3	E	PDS	FB	80	300	600	1320
SMPWRK4	E	PDS	FB	80	150	150	220
SMPWRK6	E	PDS	FB	80	300	1500	660
SYSUT1	E	SEQ	--	--	75	75	0
SYSUT2	E	SEQ	--	--	75	75	0
SYSUT3	E	SEQ	--	--	75	75	0
SYSUT4	E	SEQ	--	--	75	75	0

If you are installing into an existing environment, ensure the current SMP/E support dataset allocations reflect the minimum values shown in Figure 11. Check the space and directory block allocation and reallocate the data sets, if necessary.

Figure 11. Storage Requirements for SMP/E Data Sets

Library DDNAME	T Y P E	O R G A N I Z A T I O N	R E C O R D S	L E N G T H	Prim No. of 3390 Trks	Sec No. of 3390 Trks	No. of DIR Blks
SMPLTS	E	PDSE	U	0	15	150	N/A
SMPMTS	E	PDS	FB	80	15	150	220
SMPPTS	E	PDSE	FB	80	300	1500	N/A
SMPSCDS	E	PDS	FB	80	15	150	220
SMPSTS	E	PDS	FB	80	15	150	220

Figure 12 and Figure 13 on page 17 describe the target and distribution libraries that will be allocated by this product's install jobs or that will be required for installation. The space requirements reflect what is specified in the allocation job or the space that this product will require in existing libraries. Additional tables are provided to show the specific space required for libraries that are used by each FMID. See 5.2.4, "DASD Storage Requirements by FMID" on page 18 for more information.

The storage requirements of OMEGAMON for Storage on z/OS must be added to the storage required by other programs having data in the same library or path.

Figure 12 (Page 1 of 2). Storage Requirements for OMEGAMON for Storage on z/OS Target Libraries

Library DDNAME	Member Type	Target Volume	T Y P E	O R G A N I Z A T I O N	R E C O R D S	L E N G T H	No. of 3390 Trks	No. of DIR Blks
SIZDEXEC	CLIST	Any	U	PDS	FB	80	6	44
SIZDINST	JCL	Any	U	PDS	FB	80	2	44
SIZDLOAD	Samples	Any	U	PDS	U	0	89	44
SIZDMAPS	CLIST	Any	U	PDS	VB	1024	11	44
SIZDMESG	CLIST	Any	U	PDS	FB	80	2	44
SIZDSAMP	Samples	Any	U	PDS	FB	80	29	44
TKANCUS	CLIST	Any	E	PDS	FB	80	62	52
TKANDATR	Data	Any	S	PDS	FB	160	62	88
TKANDATV	Data	Any	E	PDS	VB	6160	717	7
TKANEXEC	EXEC	Any	S	PDS	VB	255	47	88
TKANHENU	Help	Any	E	PDS	FB	80	136	93
TKANISP	CLIST	Any	S	PDS	FB	80	2	44

Figure 12 (Page 2 of 2). Storage Requirements for OMEGAMON for Storage on 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
TKANMAC	Macro	Any	E	PDS	FB	80	8	3
TKANMOD	LMOD	Any	E	PDS	U	0	433	39
TKANMODL	LMOD	Any	E	PDS	U	0	490	57
TKANMODP	LMOD	Any	S	PDSE	U	0	379	N/A
TKANMODS	LMOD	Any	E	PDS	U	0	75	58
TKANOSRC	Data	Any	S	PDS	VB	255	6	44
TKANPAR	Parm	Any	E	PDS	FB	80	8	5
TKANPENU	Panel	Any	E	PDS	FB	80	6	5
TKANPKGI	Data	Any	E	PDS	FB	80	38	6
TKANSAM	Sample	Any	E	PDS	FB	80	16	16
TKANSQL	SQL	Any	E	PDS	FB	80	25	57
TKANWENU	Panel	Any	S	PDS	FB	80	149	176
TKOBDATF	Data	Any	S	PDS	FB	80	2	44
TKOBHELP	Help	Any	S	PDS	FB	80	19	132

Figure 13 (Page 1 of 2). Storage Requirements for OMEGAMON for Storage on 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
AIZDEXEC	U	PDS	FB	80	6	44
AIZDINST	U	PDS	FB	80	2	44
AIZDLOAD	U	PDS	U	0	89	44
AIZDMAPS	U	PDS	VB	1024	11	44
AIZDMESG	U	PDS	FB	80	2	44
AIZDSAMP	U	PDS	FB	80	29	44
DKANCUS	E	PDS	FB	80	62	52
DKANDATR	S	PDS	FB	160	62	88
DKANDATV	E	PDS	VB	6160	717	7
DKANEXEC	S	PDS	VB	255	47	88

Figure 13 (Page 2 of 2). Storage Requirements for OMEGAMON for Storage on 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
DKANHENU	E	PDS	FB	80	136	93
DKANISP	S	PDS	FB	80	2	44
DKANMAC	E	PDS	FB	80	8	3
DKANMOD	E	PDS	U	0	227	131
DKANMODL	E	PDS	U	0	497	59
DKANMODP	S	PDSE	U	0	93	N/A
DKANMODS	E	PDS	U	0	62	5
DKANOSRC	S	PDS	VB	255	6	44
DKANPAR	E	PDS	FB	80	8	5
DKANPENU	E	PDS	FB	80	6	5
DKANPKGI	E	PDS	FB	80	38	6
DKANSAM	E	PDS	FB	80	16	16
DKANSQL	E	PDS	FB	80	25	57
DKANWENU	S	PDS	FB	80	149	176
DKOBDATF	S	PDS	FB	80	2	44
DKOBHELP	S	PDS	FB	80	19	132

5.2.4 DASD Storage Requirements by FMID

The tables in this section can help determine the specific space required for components not already installed in an existing environment. There is a table for each FMID included with the product.

Figure 14 (Page 1 of 2). Storage Requirements for HKS3550 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
TKANCUS	CLIST	Any	E	PDS	FB	80	49	37
TKANDATR	Data	Any	S	PDS	FB	160	54	43
TKANDATV	Data	Any	E	PDS	VB	6160	710	3
TKANEXEC	EXEC	Any	S	PDS	VB	255	20	22

Figure 14 (Page 2 of 2). Storage Requirements for HKS3550 Libraries

Library DDNAME	Member Type	Target Volume	T Y P E	O R G	R E C O R D M	L R E C O R D L	No. of 3390 Trks	No. of DIR Blks
TKANHENU	Help	Any	E	PDS	FB	80	124	80
TKANMOD	LMOD	Any	E	PDS	U	0	190	15
TKANMODL	LMOD	Any	E	PDS	U	0	445	44
TKANMODS	LMOD	Any	E	PDS	U	0	1	2
TKANOSRC	Data	Any	S	PDS	VB	255	1	3
TKANPAR	Parm	Any	E	PDS	FB	80	7	3
TKANPENU	Panel	Any	E	PDS	FB	80	6	5
TKANPKGI	Data	Any	E	PDS	FB	80	20	2
TKANSAM	Sample	Any	E	PDS	FB	80	13	13
TKANSQL	SQL	Any	E	PDS	FB	80	25	57
TKANWENU	Panel	Any	S	PDS	FB	80	56	52
DKANCUS			E	PDS	FB	80	49	37
DKANDATR			S	PDS	FB	160	54	43
DKANDATV			E	PDS	VB	6160	710	3
DKANEXEC			S	PDS	VB	255	20	22
DKANHENU			E	PDS	FB	80	124	80
DKANMOD			E	PDS	U	0	80	30
DKANMODL			E	PDS	U	0	452	47
DKANMODS			E	PDS	U	0	1	2
DKANOSRC			S	PDS	VB	255	1	3
DKANPAR			E	PDS	FB	80	7	3
DKANPENU			E	PDS	FB	80	6	5
DKANPKGI			E	PDS	FB	80	20	2
DKANSAM			E	PDS	FB	80	13	13
DKANSQL			E	PDS	FB	80	25	57
DKANWENU			S	PDS	FB	80	56	52

Figure 15 (Page 1 of 2). Storage Requirements for HKOB750 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
TKANCUS	CLIST	Any	E	PDS	FB	80	13	15
TKANDATV	Data	Any	E	PDS	VB	6160	1	2
TKANEXEC	EXEC	Any	S	PDS	VB	255	21	15
TKANHENU	Help	Any	E	PDS	FB	80	12	13
TKANISP	CLIST	Any	S	PDS	FB	80	1	2
TKANMAC	Macro	Any	E	PDS	FB	80	8	3
TKANMOD	LMOD	Any	E	PDS	U	0	121	19
TKANMODL	LMOD	Any	E	PDS	U	0	12	2
TKANMODP	LMOD	Any	S	PDSE	U	0	330	N/A
TKANMODS	LMOD	Any	E	PDS	U	0	74	56
TKANOSRC	Data	Any	S	PDS	VB	255	5	5
TKANPAR	Parm	Any	E	PDS	FB	80	1	2
TKANPKGI	Data	Any	E	PDS	FB	80	15	2
TKANSAM	Sample	Any	E	PDS	FB	80	3	3
TKANWENU	Panel	Any	S	PDS	FB	80	74	67
TKOBDATF	Data	Any	S	PDS	FB	80	2	2
TKOBHELP	Help	Any	S	PDS	FB	80	17	66
DKANCUS			E	PDS	FB	80	13	15
DKANDATV			E	PDS	VB	6160	1	2
DKANEXEC			S	PDS	VB	255	21	15
DKANHENU			E	PDS	FB	80	12	13
DKANISP			S	PDS	FB	80	1	2
DKANMAC			E	PDS	FB	80	8	3
DKANMOD			E	PDS	U	0	125	90
DKANMODL			E	PDS	U	0	12	2
DKANMODP			S	PDSE	U	0	81	N/A
DKANMODS			E	PDS	U	0	61	3
DKANOSRC			S	PDS	VB	255	5	5
DKANPAR			E	PDS	FB	80	1	2

Figure 15 (Page 2 of 2). Storage Requirements for HKOB750 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
DKANPKGI			E	PDS	FB	80	15	2
DKANSAM			E	PDS	FB	80	3	3
DKANWENU			S	PDS	FB	80	74	67
DKOBDATF			S	PDS	FB	80	2	2
DKOBHELP			S	PDS	FB	80	17	66

Figure 16. Storage Requirements for HKSB750 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
TKANDATV	Data	Any	E	PDS	VB	6160	6	2
TKANMOD	LMOD	Any	E	PDS	U	0	122	5
TKANMODL	LMOD	Any	E	PDS	U	0	33	11
TKANPKGI	Data	Any	E	PDS	FB	80	3	2
DKANDATV			E	PDS	VB	6160	6	2
DKANMOD			E	PDS	U	0	22	11
DKANMODL			E	PDS	U	0	33	10
DKANPKGI			E	PDS	FB	80	3	2

Figure 17 (Page 1 of 2). Storage Requirements for HIZD310 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
SIZDINST	JCL	Any	U	PDS	FB	80	3	3
SIZDSAMP	Samples	Any	U	PDS	FB	80	25	3
SIZDEXEC	CLIST	Any	U	PDS	FB	80	20	3
SIZDLOAD	Samples	Any	U	PDS	U	0	65	12
SIZDMAPS	CLIST	Any	U	PDS	VB	1024	8	3

Figure 17 (Page 2 of 2). Storage Requirements for HIZD310 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
SIZDMESG	CLIST	Any	U	PDS	FB	80	3	3
AIZDINST			U	PDS	FB	80	3	3
AIZDSAMP			U	PDS	FB	80	25	3
AIZDEXEC			U	PDS	FB	80	20	3
AIZDLOAD			U	PDS	U	0	65	12
AIZDMAPS			U	PDS	VB	1024	8	3
AIZDMESG			U	PDS	FB	80	3	5

5.3 FMIDs Deleted

Installing OMEGAMON for Storage on 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 OMEGAMON for Storage on 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 documentation for details.

5.4 Special Considerations

To effectively manage a suite of products with common components, you can install products into shared zones of a consolidated software inventory (CSI). Space requirements are reduced by installing products into shared CSI zones avoiding the duplication when different target zones, distribution zones, and data sets are used. Sharing a common set of zones also allows SMP/E to automatically manage IFREQ situations that exist across product components.

If you intend to share a Tivoli Enterprise Monitoring Server on z/OS with other products, use shared CSI zones so product configuration sets up the runtime environment correctly.

The installation of OMEGAMON for Storage on z/OS requires the Tivoli Enterprise Monitoring Server on z/OS be installed in the CSI. Refer to the *Program Directory for IBM Tivoli Management Services on z/OS* (GI11-4105) for installation instructions of its product components.

To report issues or defects related to the use of the IBM Z Distribution for Zowe 1.0 functionality use the IBM OMEGAMON for Storage on z/OS 5698-T05 program number and or related component IDs.

Prior to installing OMEGAMON for Storage on z/OS, IBM recommends you review the OMEGAMON shared documentation V6.3.0 Fix Pack 2 and above, **What's new in PARMGEN**, the Quick Start Guide, as well as the **First time deployment guide (FTU installation and tasks)**, and the Planning and Configuring topics for general planning and configuration flow. This documentation focuses on the things you will need to know for a successful installation and configuration of this product package.

The **OMEGAMON and Tivoli Management Services on z/OS** shared documentation, and other Tivoli product documentation can be found at the IBM Knowledge Center URL listed below:

<http://www.ibm.com/support/knowledgecenter/SSAUBV/>

The **First time deployment guide (FTU installation and configuration tasks)** documentation can be found on the IBM Knowledge Center at:

http://www.ibm.com/support/knowledgecenter/SSAUBV/com.ibm.omegamon_share.doc_6.3.0.2/ftu/ftu_cfg_intro.htm

If you are installing into an existing CSI zone that contains the listed FMIDs, ensure the maintenance has been installed previously or it must be installed with this product package.

HKCI310 - UA94193
HKDS630 - UA79950 UA79951
HKLV630 - UA79952 UA79953
HKS3550 - UJ04274

PTF UA78769 (HIZD310 FMID), applying this ptf requires the use of the SMP/E SMPTLOAD DDDEF statement, ensure that SMPTLOAD is defined in the CSI.

The following sample job can be used to define the SMPTLOAD DDDEF, change all occurrences of the following lowercase variables to values suitable for your installation before submitting.

#globalcsi - The dsname of your global CSI.
#tzone - The name of the SMP/E target zone.
#dzone - The name of the SMP/E distribution zone.

```

//SMPTLOAD JOB 'ACCOUNT INFORMATION','SMPTLOAD',
//          CLASS=A,MSGCLASS=X,MSGLEVEL=(1,1),NOTIFY=&SYSUID
//*****
//*          D e f i n e   D D D E F   E n t r i e s   *
//*****
//SMPTLOAD EXEC PGM=GIMSMP,REGION=4096K
//SMPCSI  DD DISP=OLD,DSN=#globalcsi
//SMPCNTL DD *
           SET   BDY(GLOBAL) .
           UCLIN .
           ADD DDDEF(SMPTLOAD) CYL SPACE(2,1) DIR(10)
           UNIT(SYSALLDA) .
           ENDUCL .
           SET   BDY(#tzone) .
           UCLIN .
           ADD DDDEF(SMPTLOAD) CYL SPACE(2,1) DIR(10)
           UNIT(SYSALLDA) .
           ENDUCL .
           SET   BDY(#dzone) .
           UCLIN .
           ADD DDDEF(SMPTLOAD) CYL SPACE(2,1) DIR(10)
           UNIT(SYSALLDA) .
           ENDUCL .
/*

```

Reference the following URLs for Pre-installation requirements and instructions, and the current listing of recommended service for the OMEGAMON product Suite.

Pre-Installation Checklist: <https://www.ibm.com/support/docview.wss?uid=swg21318692&aid=1>

Recommended Maintenance Service Levels:

<http://www.ibm.com/support/docview.wss?uid=swg21290883>

Consider the following items when using shared CSI zones.

- You must specify the same high-level qualifier for the target and distribution libraries as the other products in the same zones for the configuration tool to work correctly.
- If you install a product into an existing CSI that contains a previous version of the same product, SMP/E deletes the previous version during the installation process. To maintain multiple product versions concurrently, they must be installed into separate CSI zones.
- If you install into an existing environment, you might need to remove data set references from the installation jobs to avoid errors because the data sets already exist.
- If you are installing into an existing environment that has the data sets already allocated, ensure sufficient space and directory blocks are available to support the requirement listed in the DASD tables. This might require you to reallocate some data sets to avoid x37 abends.

When OMEGAMON for Storage on z/OS is used with the IBM OMEGAMON Dashboard Edition on z/OS product, they should both be installed in the same CSI target and distribution zones. This ensures the maintenance level of the Engine and Management Server components, which are used by both products, is at the same level. If they are installed in different CSI zones, you should check to ensure the maintenance levels of the Engine and Management Server components in both zones are the same or at a compatible level. This is also true for your runtime library environments (RTE).

The PSP bucket will have the most current information and must be reviewed before installation.

6.0 Installation Instructions

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

Please note the following points:

- If you want to install OMEGAMON for Storage on z/OS into its own SMP/E environment, consult the SMP/E manuals for instructions on creating and initializing the SMPCSI and the SMP/E control data sets. Additionally, to assist you in doing this, IBM has provided samples to help you create an SMP/E environment at the following URL:

<https://www.ibm.com/support/docview.wss?rs=660&context=SSZJDU&uid=swg21066230>

- 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.

6.1 Installing OMEGAMON for Storage on z/OS

6.1.1 SMP/E Considerations for Installing OMEGAMON for Storage on z/OS

Use the SMP/E RECEIVE, APPLY, and ACCEPT commands to install this release of OMEGAMON for Storage on z/OS.

6.1.2 SMP/E Options Subentry Values

The recommended values for certain SMP/E CSI subentries are shown in Figure 18. 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 18. SMP/E Options Subentry Values

Subentry	Value	Comment
DSSPACE	300,1200,1200	Use 1200 directory blocks
PEMAX	SMP/E Default	IBM recommends using the SMP/E default for PEMAX.

6.1.3 SMP/E CALLLIBS Processing

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

- CSSLIB
- SCEEBND2
- SCEELIB
- SCEELKED
- SCEELKEX
- SCEERUN
- SCEERUN2
- SCLBSID
- SEZACMTX

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

6.1.4 Installation Job Generator Utility

A utility is available to generate the necessary installation jobs for this product and others that might be included in the product package deliverable. Be aware that not all products are supported at this time and maintenance might be required to get the latest updates for the Job Generator product selection table. It is recommended you use this job generation utility to create a set of jobs to install the product package when installing into an existing environment rather than using the sample jobs provided for each product.

The job generation utility is delivered in the z/OS Installation and Configuration Tool component of the Tivoli Management Services on z/OS product, which is a requisite of this product. This utility is enhanced through the maintenance stream so there could be an issue if it is invoked from an environment without the latest maintenance. Ensure the latest maintenance is installed for the components of this product to get the latest updates for the Job Generator product selection table.

If you are installing for the first time into a new environment and don't have an existing environment available to invoke this utility, you must use the sample jobs for the Tivoli Management Services on z/OS product and install it first. This will install the FMID containing the job generation utility and the latest maintenance. Then you can invoke the utility from the target library TKANCUS to install other products in the package.

The job generation utility can be invoked from the SMP/E target library with the low-level qualifier of TKANCUS, launch the utility by using ISPF option 6 and entering the following command.

```
ex '&gbl_target_hilev.TKANCUS'
```

Select "SMP/E-install z/OS products with Install Job Generator (JOBGEN)" from the z/OS Installation and Configuration Tool main menu.

You can use the online help available as a tutorial to become familiar with the utility and its processes.

6.1.4.1 Introduction to the Job Generator

The job generation utility creates a set of jobs to define a SMP/E environment (CSI and supporting data sets), allocate product libraries (target and distribution zone data sets and DDDEFS), and install the products (RECEIVE APPLY ACCEPT). You can use these jobs to create a totally new environment or to install the products into an existing CSI.

Processing Steps

- The jobs are generated from a series of ISPF interactive panels and ISPF file tailoring.
- The initial step is selection of the product mix. The set of products will determine any additions to the basic set of values needed to create the JCL.

Note: Install Job Generator (JOBGEN) output library: You can specify the Install Job Generator (JOBGEN) output library during the PARMGEN "KCIJPCFG Set up/Refresh PARMGEN work environment" configuration processing to reuse parameter values such as the jobcard and CSI values related to CALLLIBS and USS install directory override data.

Process Log

- One of the members of the generated job library is KCIJGLOG, which is the process log.
- This member shows the generating parameters and internal lists that were used to create the batch jobs.
- It also indicates which jobs were actually produced and need to be run. Note that the RECEIVE, APPLY, and ACCEPT jobs are always generated even if the selected products are already in the target CSI. In that case, the jobs install additional maintenance when available.

6.1.4.2 Product Selection

You can select one or more products from a table that will determine the set of FMIDs to install. You must select at least one product and you should always select the appropriate version of the IBM Tivoli Management Services on z/OS product (5698-A79) that is an installation requisite for this product offering. This will install the necessary FMIDs and maintenance for a new environment but also ensure any requisite maintenance will be processed when installing into an existing environment.

The selection table contains information about all of the supported products and might contain entries for products that you do not have or do not wish to install. Select only those products that are available in the package delivered and that you want to install.

6.1.4.3 Installing into an existing CSI

When the high-level qualifiers point to an existing environment, the job generation utility eliminates the jobs that allocate and initialize the CSI.

The job generation utility suppresses the creation of libraries that already exist in the target environment. Instead, the generator creates a job to determine whether sufficient space is available for any additional data to be installed into the libraries.

The member KCIJGANL is generated to report on the available space for each of the existing libraries that will have new data. However, KCIJGANL cannot check for the maintenance stream requirements.

The space analyzer function is very helpful in identifying data set space issues that might cause X37 abends during APPLY and ACCEPT processing.

6.1.4.4 Job Generator - Update Command

The job generation utility was enhanced to allow dynamic additions to the product table. The UPDATE routine is used to obtain additional data for products that are available but not yet included in the installation job generator table, KCIDJG00.

You must have the product RELFILES available on DASD in order to run this routine and all components of the product must be available. After a successful run, the output of this routine will replace the KCIDJG00 member of the work data set. If you make multiple changes to the data member be sure to save the original member as a backup.

Note: Not all products qualify for inclusion in the job generator process. Refer to the online help for more information about this facility.

6.1.5 Sample Jobs

If you choose not to use the installation job generator utility documented in the previous section, you can use the sample jobs that were created for OMEGAMON for Storage on z/OS. This will require you to research and tailor each of the jobs accordingly.

The sample jobs provided expect a CSI to exist already. The sample installation jobs in Figure 19 are provided as part of the product to help you install OMEGAMON for Storage on z/OS.

<i>Figure 19 (Page 1 of 2). Sample Installation Jobs</i>			
Job Name	Job Type	Description	RELFILE
KS3J3ALO	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.HKS3550.F16
KS3J4DDF	DDDEF	Sample job to define SMP/E DDDEFs	IBM.HKS3550.F16
KS3J5REC	RECEIVE	Sample RECEIVE job	IBM.HKS3550.F16

Figure 19 (Page 2 of 2). Sample Installation Jobs

Job Name	Job Type	Description	RELFILE
KS3J6APP	APPLY	Sample APPLY job	IBM.HKS3550.F16
KS3J7ACC	ACCEPT	Sample ACCEPT job	IBM.HKS3550.F16

The installation of OMEGAMON for Storage on z/OS requires the Tivoli Enterprise Monitoring Server on z/OS be installed in the CSI. Refer to the *Program Directory for IBM Tivoli Management Services on z/OS* (GI11-4105) for installation instructions of its product components.

You can access the sample installation jobs by performing an SMP/E RECEIVE (refer to 6.1.8, “Perform SMP/E RECEIVE” on page 31) then copy the jobs from the SMPTLIB data sets to a work data for editing and submission.

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,REGION=4M
//SYSPRINT DD SYSOUT=*
//FILEIN DD DSN=IBM.HKS3550.F16,UNIT=SYSALLDA,DISP=SHR,
// VOL=SER=filevol
//OUT DD DSNAME=jcl-library-name,
// DISP=(NEW,CATLG,DELETE),
// VOL=SER=dasdvol,UNIT=SYSALLDA,
// SPACE=(TRK,(10,2,5))
//SYSUT3 DD UNIT=SYSALLDA,SPACE=(CYL,(1,1))
//SYSIN DD *
COPY INDD=FILEIN,OUTDD=OUT
SELECT MEMBER=(KS3J3ALO,KS3J4DDF,KS3J5REC,KS3J6APP,KS3J7ACC)
/*
```

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

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.

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

6.1.6 Allocate SMP/E Target and Distribution Libraries

Edit and submit the generated job KCIJGALO to allocate the SMP/E target and distribution libraries for OMEGAMON for Storage on z/OS.

If you are not using the generated allocation job, select the sample job KS3J3ALO. Edit and submit it after making appropriate changes for your environment. Consult the instructions in the sample job for more information. Consider the following issues before submitting the job.

- If you are installing into an existing environment, you might have to remove lines for data sets that already exist.
- If you are installing into an existing environment that has the data sets already allocated, ensure sufficient space and directory blocks are available to support the requirement listed in the DASD tables. This might require you to reallocate some data sets to avoid x37 abends.

Expected Return Codes and Messages: 0

6.1.7 Create DDDEF Entries

Edit and submit the generated job KCIJGDDF to create DDDEF entries for the SMP/E target and distribution libraries for OMEGAMON for Storage on z/OS.

If you are not using the generated job, select the sample job KS3J4DDF. Edit and submit it after making appropriate changes for your environment. Consult the instructions in the sample job for more information. If you are installing into an existing environment, you might have to remove lines for data sets that already exist.

Expected Return Codes and Messages: 0

6.1.8 Perform SMP/E RECEIVE

If you have obtained OMEGAMON for Storage on z/OS as part of a CBPDO, use the RCVPDO job in the CBPDO RIMLIB data set to receive the OMEGAMON for Storage on 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 generated job KCIJGREC or the sample job KS3J5REC to perform the SMP/E RECEIVE for OMEGAMON for Storage on z/OS. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages: 0

6.1.9 Perform SMP/E APPLY

Ensure that you have the latest HOLDDATA, then edit and submit the generated job KCIJGAPP to perform an SMP/E APPLY CHECK for OMEGAMON for Storage on z/OS.

If you are not using the generated job, select the sample job KS3J6APP to perform an SMP/E APPLY CHECK. Edit and submit it after making appropriate changes for your environment. 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/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:

1. 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.

2. 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.

Expected Return Codes and Messages from APPLY CHECK: 0

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.

If the BYPASS operand is not included in the control statement when processing a PTF with a ++HOLD statement, the job will get a return code of 12 and the following message.

```
GIM30206E command PROCESSING FAILED FOR SYSMOD sysmod.
        HOLD REASON IDS WERE NOT RESOLVED.
```

Expected Return Codes and Messages from APPLY: 4

You can receive many of the following messages depending on your environment. These messages can be ignored, because they will not affect product execution.

```
GIM23913W LINK-EDIT PROCESSING FOR SYSMOD aaaaaaa
        WAS SUCCESSFUL FOR MODULE bbbbbbbb IN
        LMOD ccccccc IN THE dddddddd LIBRARY. THE
        RETURN CODE WAS ee. DATE yy.ddd -- TIME
        hh:mm:ss -- SEQUENCE NUMBER nnnnnn --
        SYSPRINT FILE ffffffff.
```

```
IEW2454W SYMBOL symbo1 UNRESOLVED. NO AUTOCALL (NCAL) SPECIFIED.
```

Figure 20 on page 34 contains a list of elements that might be marked as not selected during the APPLY and ACCEPT processes. This might occur because a VERSION parameter was supplied in an FMID indicating that it contained a higher level version of the same element provided by another FMID being processed at the same time. The higher version element is selected for processing and the lower version is not selected for processing. It might also occur because maintenance is being installed at the same time as the FMIDs.

<i>Figure 20 (Page 1 of 2). SMP/E Elements Not Selected</i>					
IZDCDEF	IZDCICSA	IZDCICSC	IZDCICSD	IZDCICSF	IZDCICSM
IZDCICSO	IZDCICSP	IZDCICSS	IZDCICST	IZDIRSC	IZDIRSCJ
IZDIRSCX	IZDISDBD	IZDISDPD	IZDISPRD	IZDISSD	IZDISTRD
IZDRDLA	IZDSNETS	IZDSSUBI	IZDUSTRN	KCNCFDRP	KCNCPYRM
KOBABOUT	KOBAG2	KOBBASEM	KOBCBLK\$	KOBCBLK@	KOBCBLKQ
KOBCENV\$	KOBCENV@	KOBCENVG	KOBCENVV	KOBCIOBE	KOBCIOST
KOBCLOCK	KOBCMAP\$	KOBCMAP@	KOBCMAPI	KOBCRACF	KOBCSOC\$
KOBCSOC@	KOBCSOCK	KOBCSTIO	KOBCTHR\$	KOBCTHR@	KOBCTHRD
KOBCTIME	KOBCTRAC	KOBCTREE	KOBCUA	KOBCUNIS	KOBCUXIO
KOBCVSTG	KOBCWTOL	KOBCZDIO	KOBENV#T	KOBFILTD	KOBFILTS
KOBGATW0	KOBGWCND	KOBGWCV\$	KOBGWCV#	KOBGWCV@	KOBGWCVVA
KOBGWLPA	KOBGWOBV	KOBGWRE\$	KOBGWRE@	KOBGWREG	KOBHASH1
KOBHBTPO	KOBHELP	KOBHISTC	KOBHLDIR	KOBHLRTT	KOBHTTP\$
KOBHTTP#	KOBHTTP@	KOBHTTPL	KOBHTTPS	KOBHTTPW	KOBHUBM1
KOBHUBPR	KOBHUBS	KOBH0011	KOBH0012	KOBINITM	KOBITMLG
KOBJLG0	KOBLGINI	KOBLGSND	KOBLGSRV	KOBLISTN	KOBLOFLT
KOBMEMSA	KOBOBVA\$	KOBOBVA@	KOBOBVAP	KOBODCOL	KOBODIL\$
KOBODIL@	KOBODILD	KOBODISC	KOBODTAB	KOBODUTL	KOBOMIOM
KOBO4SRV	KOBPDHST	KOBPR2TB	KOBRRUI\$	KOBRRUI@	KOBRRUIA
KOBRRWK\$	KOBRRWK@	KOBRRWKR	KOBRSMG1	KOBXRGM	KOBXRGM0
KOBXPDR	KOBXRQRY	KOBRZFNL	KOBRZGDM	KOBRZGFC	KOBRZGNV
KOBRZSNV	KOBSAFX0	KOBSEDAA	KOBSEDAB	KOBSEDAC	KOBSEDAD
KOBSEDAE	KOBSEDAF	KOBSEDAG	KOBSEDAP	KOBSEDAQ	KOBSEDAS
KOBSEDCB	KOBSEDCC	KOBSEDCN	KOBSEDCV	KOBSEDD2	KOBSEDD3
KOBSDEEA	KOBSDEEB	KOBSSEDEC	KOBSSEDED	KOBSSEDEE	KOBSSEDEF
KOBSDEEG	KOBSSEDFE	KOBSSEGGV	KOBSSEDPA	KOBSSEDPD	KOBSSEDPJ
KOBSSEDPK	KOBSSEDPPL	KOBSSEDPMP	KOBSSEDPX	KOBSSEDPZ	KOBSSEDP0
KOBSSEDP1	KOBSSEDP2	KOBSSEDP3	KOBSSEDP5	KOBSSEDP6	KOBSSEDP7

<i>Figure 20 (Page 2 of 2). SMP/E Elements Not Selected</i>					
KOBSEDP8	KOBSEDP9	KOBSEDSA	KOBSEDTA	KOBSEDTD	KOBSEDE
KOBSEDTF	KOBSEDTG	KOBSEDTN	KOBSEDTQ	KOBSEDTR	KOBSEDTU
KOBSEDTZ	KOBSEDT2	KOBSED1	KOBSED5A	KOBSED5B	KOBSED6A
KOBSED6B	KOBSED7A	KOBSED7B	KOBSED9A	KOBSED9B	KOBSHOWD
KOBSITD3	KOBSITD4	KOBSITLM	KOBSITMN	KOBSITS	KOBSIT02
KOBSS03A	KOBSTBLD	KOBSUB#M	KOBSUB1M	KOBTCBFA	KOBTCCL\$
KOBTCCLA	KOBTHRMT	KOBTHRSH	KOBUICS0	KOBUIEP0	KOBUIFD0
KOBUIGD0	KOBUIGL0	KOBUIGO0	KOBUIGP0	KOBUIGS0	KOBUIHL0
KOBUIHS0	KOBUILG0	KOBUILO0	KOBUIMC0	KOBUIMG0	KOBUIML0
KOBUIM10	KOBUIM20	KOBUIM30	KOBUIM40	KOBUIM50	KOBUIM60
KOBUIM70	KOBUIM80	KOBUIM90	KOBUINI0	KOBUINV0	KOBUIPA0
KOBUIPS0	KOBUIPT0	KOBUISC0	KOBUISD0	KOBUITK0	KOBUITR0
KOBUIVIO	KOBUIVS0	KOBUIWG0	KOBXMEMS		

After installing new function, you should perform two operations:

1. Create a backup of the updated data sets, including any SMP/E data sets affected, in case something happens to the data sets during the next phase.
2. Do some testing before putting the new function into production.

After you are satisfied that an applied SYSMOD has performed reliably in your target system, you can install it in your distribution libraries using the ACCEPT process.

Another good practice is to accept most SYSMODs, particularly FMIDs, before performing another APPLY process. This provides you the ability to use the RESTORE process of SMP/E and to support the scenario where SMP/E needs to create a new load module from the distribution libraries during the APPLY process.

6.1.10 Perform SMP/E ACCEPT

Edit and submit the generated job KCIJGACC to perform an SMP/E ACCEPT CHECK for OMEGAMON for Storage on z/OS.

If you are not using the generated job, select the sample job KS3J7ACC to perform an SMP/E ACCEPT CHECK. Edit and submit it after making appropriate changes for your environment. 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 documentation for details.

Expected Return Codes and Messages from ACCEPT CHECK: 0

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.

If the BYPASS operand is not included in the control statement when processing a PTF with a ++HOLD statement, the job will get a return code of 12 and the following message.

```
GIM30206E command PROCESSING FAILED FOR SYSMOD sysmod.  
        HOLD REASON IDS WERE NOT RESOLVED.
```

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: 4

Figure 20 on page 34 contains a list of elements that might be marked as not selected during the APPLY and ACCEPT processes. This might occur because a VERSION parameter was supplied in an FMID indicating that it contained a higher level version of the same element provided by another FMID being processed at the same time. The higher version element is selected for processing and the lower version

is not selected for processing. It might also occur because maintenance is being installed at the same time as the FMIDs.

6.2 Activating OMEGAMON for Storage on z/OS

Prior to activating OMEGAMON for Storage on z/OS, IBM recommends you review the Quick Start Guide, **First time deployment guide (FTU installation and configuration tasks)**, as well as the Planning and Configuring topics if you have not already done so. This documentation focuses on the things you will need to know for a successful installation and configuration of this product.

Note: Install Job Generator (JOBGEN) output library: You can specify the Install Job Generator (JOBGEN) output library during the PARMGEN "KCIJPCFG Set up/Refresh PARMGEN work environment" configuration processing to reuse parameter values such as the jobcard and CSI values related to CALLLIBS and USS install directory override data.

The *Planning and Configuration Guide* documentation contains the step-by-step procedures to activate the functions of OMEGAMON for Storage on z/OS.

This documentation can be found online at:

https://www.ibm.com/support/knowledgecenter/SS2JFP_5.5.0/

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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