IBM

Program Directory for

IBM WebSphere MQ

Advanced Message Security

for z/OS

V8.0.0

Program Number 5655-AMS

HAMS800

for use with
z/OS

Document Date: June 2014

GI13-3329-00

Note

Before using this information and the product it supports, be sure to read the general information under Appendix B, "Notices" on page 33.

Contents

Figures

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 WebSphere MQ Advanced Message Security for z/OS. This publication refers to IBM WebSphere MQ Advanced Message Security for z/OS as MQ AMS.

The Program Directory contains the following sections:

- 2.0, "Program Materials" on page 3 identifies the basic program materials and documentation for MQ AMS.

- 3.0, "Program Support" on page 5 describes the IBM support available for MQ AMS.

- 4.0, "Program and Service Level Information" on page 7 lists the APARs (program level) and PTFs (service level) that have been incorporated into MQ AMS.

- 5.0, "Installation Requirements and Considerations" on page 9 identifies the resources and considerations that are required for installing and using MQ AMS.

- 6.0, "Installation Instructions" on page 15 provides detailed installation instructions for MQ AMS. It also describes the procedures for activating the functions of MQ AMS, or refers to appropriate publications.

Before installing MQ AMS, read the *CBPDO Memo To Users* and the *CBPDO Memo To Users Extension* that are supplied with this program in softcopy format and this Program Directory; then keep them for future reference. Section 3.2, "Preventive Service Planning" on page 5 tells you how to find any updates to the information and procedures in this Program Directory.

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

Do not use this Program Directory if you install MQ AMS 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 MQ AMS Description

IBM WebSphere MQ Advanced Message Security for z/OS V8.0 expands the security services available in WebSphere MQ to provide you with end-to-end data protection at the messaging and application level.

1.2 MQ AMS FMIDs

MQ AMS consists of the following FMID:

HAMS800

2.0 Program Materials

An IBM program is identified by a program number. The program number for MQ AMS is 5655-AMS.

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

The program announcement material describes the features supported by MQ AMS. 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 15 for more information about how to install the program.

You can find information about the physical media for the basic machine-readable materials for MQ AMS in the *CBPDO Memo To Users Extension*.

Figure 1. Basic Material: Program Tape				
Medium	**Feature Number**	**Physical Volume**	**External Label**	**VOLSER**
3590 Tape	AMS8000	1	IBM WebSphere MQ Advanced Message Security for z/OS V8.0	MQAMS

2.2 Optional Machine-Readable Material

No optional machine-readable materials are provided for MQ AMS.

2.3 Program Publications

The following sections identify the basic publications for MQ AMS.

Figure 2 on page 4 identifies the basic unlicensed publications for MQ AMS. Publications can be accessed at the IBM Publications Center website at http://www.ibm.com/shop/publications/order/

Figure 2. Basic Material: Unlicensed		
Publication Title	**Form Number**	**Media Format**
MQ AMS License Information CD	GC34-2959	CD-ROM
MQ AMS Program Directory	GI13-3329	IBM Publications Center

No optional publications are provided for MQ AMS.

2.4 Program Source Materials

No program source materials or viewable program listings are provided for MQ AMS.

2.5 Publications Useful During Installation

Publications can be accessed at the IBM Publications Center website at http://www.ibm.com/shop/publications/order/. Additionally IBM WebSphere MQ V8.0 documentation is published in IBM Knowledge Center, which can be viewed from a web browser with Internet access at http://www.ibm.com/support/knowledgecenter/SSFKSJ_8.0.0/welcome/WelcomePagev8r0.

Figure 3. Publications Useful During Installation		
Publication Title	**Form Number**	**Media Format**
IBM SMP/E for z/OS User's Guide	SA22-7773	Softcopy
IBM SMP/E for z/OS Commands	SA22-7771	Softcopy
IBM SMP/E for z/OS Reference	SA22-7772	Softcopy
IBM SMP/E for z/OS Messages, Codes, and Diagnosis	GA22-7770	Softcopy

3.0 Program Support

This section describes the IBM support available for MQ AMS.

3.1 Program Services

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

3.2 Preventive Service Planning

Before you install MQ AMS, make sure that you have reviewed the current Preventive Service Planning (PSP) information. The PSP Buckets maintain current lists (which have been identified since the package was created) of any recommended or required service for the installation of this package. This service includes software PSP information that contains HIPER and required PTFs against the base release.

If you obtained MQ AMS as part of a CBPDO, HOLDDATA is included.

If the CBPDO for MQ AMS is older than two weeks old by the time you install the product materials, you should contact the IBM Support Center or use S/390 Software Xcel to obtain the latest PSP Bucket information. You can also obtain the latest PSP Bucket information by going to the following Web site: https://techsupport.services.ibm.com/server/390.psp390

For program support, access the Software Support Web site at http://www-01.ibm.com/software/support/.

PSP Buckets are identified by UPGRADEs, which specify product levels; and SUBSETs, which specify the FMIDs for a product level. The UPGRADE and SUBSET values for MQ AMS are shown as follows:

Figure 4. PSP Upgrade and Subset ID		
UPGRADE	**SUBSET**	**Description**
MQMAMS	HAMS800	MQ AMS

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 identifies the component IDs (COMPID) for MQ AMS.

Figure 5. Component IDs			
FMID	**COMPID**	**Component Name**	**RETAIN Release**
HAMS800	5655AMS00	WebSphere MQ Advanced Message Security for z/OS	800

4.0 Program and Service Level Information

This section identifies the program and relevant service levels of MQ AMS. 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

No APARs have been incorporated into MQ AMS.

4.2 Service Level Information

No PTFs against this release of MQ AMS have been incorporated into the product package.

It is highly recommended that you frequently check the MQ AMS PSP Bucket for HIPER and SPECIAL Attention PTFs against all FMIDs that you must install.

It is highly recommended that you frequently check the MQ AMS 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 MQ AMS. 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 MQ AMS.

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. Driving System Software Requirements				
Program Number	**Product Name**	**Minimum VRM**	**Minimum Service Level will satisfy these APARs**	**Included in the shipped product?**
Any **one** of the following:				
5694-A01	z/OS	V1.13.0	N/A	No
5650-ZOS	z/OS	V2.1.0	N/A	No
5655-G44	IBM SMP/E for z/OS	V3.4.0	N/A	No

Note: Installation might require migration to new z/OS releases to be service supported.

See http://www.ibm.com/systems/z/os/zos/support/zos_eos_dates.html.

5.2 Target System Requirements

This section describes the environment of the target system that is required to install and use MQ AMS.

MQ AMS 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 by and *must* be present on the system or products that are not required by 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 (Page 1 of 2). Target System Mandatory Installation Requisites				
Program Number	**Product Name**	**Minimum VRM**	**Minimum Service Level will satisfy these APARs**	**Included in the shipped product?**
Any **one** of the following:				

Figure 7 (Page 2 of 2). Target System Mandatory Installation Requisites				
Program Number	Product Name	Minimum VRM	Minimum Service Level will satisfy these APARs	Included in the shipped product?
5694-A01	z/OS	V1.13.0 or higher	N/A	No
5650-ZOS	z/OS	V2.1.0 or higher	N/A	No

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.

MQ AMS has no conditional installation requisites.

5.2.2.2 Operational Requisites:

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

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

Figure 8. Target System Mandatory Operational Requisites	
Program Number	Product Name and Minimum VRM/Service Level
5655-W97	IBM WebSphere MQ for z/OS V8.0.0
Any **one** of the following:	
5694-A01	z/OS with RACF and Cryptographic Services System SSL (FMID HCPT380) V1.13 or higher
5650-ZOS	z/OS with RACF and Cryptographic Services System SSL (FMID HCPT410) V2.1 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.

Please refer to the following web page for the latest operational requisite product information for MQ AMS.

http://publib.boulder.ibm.com/infocenter/prodguid/v1r0/clarity/index.jsp

MQ AMS has no conditional operational requisites.

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.

MQ AMS 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.

MQ AMS has no negative requisites.

5.2.3 DASD Storage Requirements

MQ AMS libraries can reside on all supported DASD types.

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

Library Type	Total Space Required in 3390 Trks	Description
Figure 9. Total DASD Space Required by MQ AMS		
Target	20	
Distribution	20	

Notes:

1. For non-RECFM U data sets, IBM recommends using system-determined block sizes for efficient DASD utilization. For RECFM U data sets, IBM recommends using a block size of 32760, which is most efficient from the performance and DASD utilization perspective.

2. Abbreviations used for data set types are shown as follows.

   U   Unique data set, allocated by this product and used by only this product. This table provides all the required information to determine the correct storage for this data set. You do not need to refer to other tables or program directories for the data set size.

   S   Shared data set, allocated by this product and used by this product and other products. To determine the correct storage needed for this data set, add the storage size given in this table to those given in other tables (perhaps in other program directories). If the data set already exists, it must have enough free space to accommodate the storage size given in this table.

   E   Existing shared data set, used by this product and other products. This data set is *not* allocated by this product. To determine the correct storage for this data set, add the storage size given in this table to those given in other tables (perhaps in other program directories). If the data set already exists, it must have enough free space to accommodate the storage size given in this table.

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

For more information about the names and sizes of the required data sets, see 6.1.9, "Allocate SMP/E Target and Distribution Libraries" on page 24.

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

N   New path, created by this product.
X   Path created by this product, but might already exist from a previous release.
P   Previously existing path, created by another product.

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

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

5. All target libraries listed have the following attributes:

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

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

- The SDRQLOAD data set can be in the LPA, but is not required to be in the LPA.
- The SDRQLINK data set is required to be in the LPA.
- These data sets can be in the LNKLST.
- The SDRQLOAD and SDRQLINK data sets are required to be APF-authorized.

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

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

Figure 10. Storage Requirements for MQ AMS 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
SDRQAUTH	LMOD	ANY	U	PDSE	U	0	10	5
SDRQINST	SAMP	ANY	U	PDSE	FB	80	10	N/A

Figure 11. Storage Requirements for MQ AMS 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
ADRQMOD	U	PDSE	U	0	10	N/A
ADRQINST	U	PDSE	FB	80	10	N/A

5.3 FMIDs Deleted

Installing MQ AMS 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 MQ AMS 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, see the SMP/E manuals for instructions.

5.4 Special Considerations

MQ AMS has no special considerations for the target system.

5.4.1 SMP/E Considerations

IBM recommends that you install MQ AMS into a new set of SMP/E zones, including SMPCSI, target and distribution, to allow independent maintenance of MQ AMS, z/OS, and other subsystems. This Program Directory provides sample jobs and instructions to create such an SMP/E environment.

6.0 Installation Instructions

This chapter describes the installation method and the step-by-step procedures to install and to activate the functions of MQ AMS.

Please note the following points:

- If you want to install MQ AMS 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.

- 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 MQ AMS

You are recommended to read the whole of this section before you start to install MQ AMS.

6.1.1 SMP/E Considerations for Installing MQ AMS

Use the SMP/E RECEIVE, APPLY, and ACCEPT commands to install this release of MQ AMS.

6.1.2 SMP/E Options Subentry Values

The recommended values for certain SMP/E CSI subentries are shown in Figure 12. 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.

Subentry	Value	Comment
Figure 12. SMP/E Options Subentry Values		
DSSPACE	(100,100,80)	These are the minimum required values.
PEMAX	SMP/E Default	IBM recommends using the SMP/E default for PEMAX.

6.1.3 Installation summary for MQ AMS

The steps you have to perform to install MQ AMS are summarized below. Sample JCL is provided for all these steps except 1, 2, and 3.

1. Obtain the latest Preventive Service Planning (PSP) information, which contains the list of required actions and service and apply any relevant service. See 3.0, "Program Support" on page 5 for details.

2. Before installing MQ AMS, you must choose names and values for a number of parameters. These names and values depend on the standards that apply to your enterprise. You also need to decide whether you want to install any of the optional features.

3. Read the sample installation JCL and REXX from tape and customize it.

   6.1.8, "Prepare the installation environment" on page 23 leads you through choosing values suitable for your environment. 6.1.7, "Customize the sample installation JCL" on page 21 describes how to update the global customization job with the values you have chosen. The updated job is then run to customize all of the other jobs required in the installation.

4. Set up an SMP/E environment. This environment must be tailored for MQ AMS.

5. Allocate the target and distribution libraries.

6. Add DDDEF statements to the SMP/E environment to define the target and distribution libraries to SMP/E.

7. Run the SMP/E RECEIVE jobs to unload the required features from the base product tape.

8. Run the SMP/E APPLY job to install the features into the target libraries.

9. Run the SMP/E ACCEPT job to install the features into the distribution libraries.

When MQ AMS has been installed, use SMP/E to install preventative or corrective service if required.

6.1.4 Prepare to install MQ AMS

Before you install MQ AMS, you must make the following decisions and preparations. The decisions that you make here affect the customization of the sample JCL provided with MQ AMS. You should write down the appropriate values as you work through this section. Where applicable, space has been provided in Figure 13 on page 17, Figure 14 on page 18, and Figure 15 on page 19 to note the values assigned.

1. Ensure that you have the correct pre-requisite products installed. For information about pre-requisite products, and the levels of these products required to install and use MQ AMS, see 5.1.2, "Programming Requirements" on page 9.

2. Plan the environment that you are going to install MQ AMS into. You need to decide:

   - The space requirements (see Figure 15 on page 19)

   - The high-level qualifiers to use (see Figure 13 on page 17)

   - Disk volume and unit names (Figure 14 on page 18)

- The SMP/E environment, for which you need to decide whether to install into a new SMP/E environment or into an existing SMP/E environment (see 6.1.4.3, "SMP/E environment" on page 18).

6.1.4.1 High-level qualifiers: Use Figure 13 to plan the high-level qualifiers for the MQ AMS data sets.

Parameter name in the sample JCL provided	Default value	Assigned value	Description
Figure 13. High-level qualifiers for data set names			
MOUTPUT	THQ.TCUEINST		PDS name of modified Installation scripts.
MINPUT	DHQ.UCUEINST		PDS name of unmodified Installation scripts.
DHLQUAL	AMS.DLIB		High-level qualifiers for the MQ AMS distribution data sets.
DHQ	DHQ		High-level qualifiers for the UDRQINST data set into which the installation JCL will be loaded from tape.
SHLQUAL	AMS.SMPE		High-level qualifiers for the new SMP/E data sets that you are going to use to install MQ AMS. If you are going to install into existing data sets, this name is already defined.
THLQUAL	AMS.TLIB		High-level qualifiers for the MQ AMS target data sets.
THQ	THQ		High-level qualifiers for the TDRQINST data set into which the customized installation JCL will be placed.
Note: If required, DHQ can be the same as DHLQUAL and THQ can be the same as THLQUAL.			

If these high-level qualifiers do not already exist, you must define them to RACF, or any other security product you are using, and have ALIAS definitions in the master catalog.

The TSO user ID used to install or service MQ AMS requires RACF ALTER access to these high-level qualifiers. See the *MQ AMS Administration Guide* for details of the security authorization required for running MQ AMS.

If you are going to use the Spool Display and Search Facility (SDSF) to look at the output from the installation jobs, you must have authorization to use the prefix DRQ8 to view them, or you must customize the names of the jobs to use a prefix to which you are authorized. This can be done using the JCPREF option in DRQ8ASYJ as described in 6.1.7, "Customize the sample installation JCL" on page 21.

6.1.4.2 Volume and unit names:
Plan the volume and unit names shown in Figure 14. These are used by the supplied sample JCL during the installation of MQ AMS. You must decide where you are going to install the product, taking into account the space requirements (see Figure 11 on page 14 and Figure 10 on page 13) and how frequently the data sets are going to be accessed.

Parameter Name in the Sample Jobs	Values Required	Value Specified	Description
SMPVOL	VOLSER and unit type		SMP/E data set volume if installing into new SMP/E data sets. Also used for temporary libraries.
TARVOL	VOLSER		MQ AMS target data set volume.
DISVOL	VOLSER		MQ AMS distribution data set volume.
DISKUNIT	Unit type		The default of SYSALLDA is sufficient for most installations.
SMPUNIT	Unit type		The default of SYSALLDA is sufficient for most installations.
TAPEUNIT	Tape unit type		Unit type of the tape drive used to read the MQ AMS tapes.

Figure 14. Volume and unit names

Notes:

1. By default, all target and distribution libraries are allocated to a unit type of SYSALLDA.
2. You can let the system choose the volume used by the allocation by substituting a period (.) for the VOLSER of TARVOL and DISVOL. See the customization step in section 6.1.7, "Customize the sample installation JCL" on page 21.

6.1.4.3 SMP/E environment:
You must decide whether to install MQ AMS into a new or an existing SMP/E environment. Remember that installing a new release of MQ AMS into the same SMP/E zones as an existing release will cause the earlier level to be deleted from both the SMP/E zones and the existing release data sets.

If you are going to install into the same SMP/E zones, then to preserve your current release while you install and test the new release you should copy the existing release data sets into data sets with different names. Do not rename or delete the current data sets because they need to be available to SMP/E for delete processing during the installation of the new release. If they are not available, the APPLY and ACCEPT steps will fail with a return code of 12. After running a successful ACCEPT of the MQ AMS products, the previous release data sets are no longer required and can be deleted when testing of the new release has been completed.

If you use existing SMP/E data sets, you need to know the names of your target zone and distribution zone, and the data set name of your global CSI.

You must decide upon the names for the SMP/E zones.

Parameter Name in the Sample Jobs	Default Value	Assigned Value	Description
DZNAME	DZONE		The name of your distribution zone
GZONECSI	NEW		The data set name of your global zone CSI
TZNAME	TZONE		The name of your target zone

Figure 15. Target and distribution zone names

6.1.5 Sample Jobs

The following sample installation jobs are provided as part of the product to help you install MQ AMS:

The sample installation jobs are sorted by name into an order in which to run them in sequence (after editing) to install MQ AMS. The exact order in which to run the jobs is not absolutely critical. Running the jobs in either the sequence they are listed in the list below or in the text of this chapter is acceptable.

Job Name	Job Type	Description	RELFILE
DRQ8ASYJ	CUSTOMIZE	Sample job to customize the sample JCL	IBM.HAMS800.F2
DRQ8BGZN	GLOBAL ZONE	Sample job to create an SMP/E Global Zone	IBM.HAMS800.F2
DRQ8CTZN	TARGET ZONE	Sample job to create an SMP/E Target Zone	IBM.HAMS800.F2
DRQ8DDZN	DIST ZONE	Sample job to create an SMP/E Distribution Zone	IBM.HAMS800.F2
DRQ8EALO	ALLOCATE	Sample job to allocate target and distribution libraries	IBM.HAMS800.F2
DRQ8FDDF	DDDEF	Sample job to define MQ AMS DD DEFs	IBM.HAMS800.F2
DRQ8GREC	RECEIVE	Sample RECEIVE job	IBM.HAMS800.F2
DRQ8HAPL	APPLY	Sample APPLY job	IBM.HAMS800.F2
DRQ8IACP	ACCEPT	Sample ACCEPT job	IBM.HAMS800.F2

Figure 16. Sample Installation Jobs

You can access the sample installation jobs by performing an SMP/E RECEIVE (refer to 6.1.12, "SMP/E RECEIVE" on page 25) then copy the jobs from the RELFILES to a work data set for editing and submission. See Figure 16 to find the appropriate relfile data set.

6.1.6 Create the installation JCL

This section takes you through loading the sample installation JCL from the tape and customizing it ready for your use.

6.1.6.1 Read in the sample installation JCL: Read the sample installation JCL from tape.

(Alternatively, you can also access the sample installation jobs by performing an SMP/E RECEIVE and then copying the jobs from the SMPTLIBs to a work data set for editing and submission. See Figure 16 on page 19 to find the appropriate SMPTLIB data set.)

1. Type in the following JCL as `DHQ.XDRQINST` as a sequential data set, substituting the values you have chosen for **dhq**, **disvol** and **tapeunit** into the JCL, and adding job statement information if required:

```
//OFFTAPE JOB
//TALLOC   EXEC PGM=IEBCOPY,REGION=1024K
//SYSPRINT DD SYSOUT=*
//IN       DD DSN=IBM.HAMS800.F2,
//           LABEL=(3,SL),
//           UNIT=tapeunit,
//           VOL=SER=WMQAMS,
//           DISP=OLD
//OUT      DD DSN=dhq.UDRQINST,
//           DCB=(LRECL=80,RECFM=FB,BLKSIZE=8800),
//           SPACE=(CYL,(1,1,20)),
//           VOL=SER=disvol,UNIT=SYSALLDA,
//           DISP=(NEW,CATLG)
//SYSUT3   DD SPACE=(TRK,(5)),UNIT=SYSALLDA
//SYSUT4   DD SPACE=(TRK,(5)),UNIT=SYSALLDA
//SYSIN    DD *
  COPY INDD=IN,OUTDD=OUT
/*
//
```

2. Mount the tape.

3. Run the above job to load the samples. The job should finish with a return code of 0.

   If the return code is not 0, check the job output carefully to ensure that the sample jobs have been copied correctly. If the sample jobs have not been copied correctly, correct any errors found, and re-submit the job.

You have now read all the sample jobs into the data set `DHQ.UDRQINST`. To confirm that you have the correct set of jobs, check the list of members in `DHQ.UDRQINST` against the list in Appendix A, "Customizing the sample installation manually" on page 31. The next step is to customize the sample jobs for your system.

6.1.7 Customize the sample installation JCL

To customize the sample installation JCL use the customization job (DRQ8ASYJ) provided with MQ AMS. If you do not want to use this job and would rather customize the sample installation jobs manually, see Appendix A, "Customizing the sample installation manually" on page 31.

If you use DRQ8ASYJ, you can customize the sample jobs by adding the names you chose in section 6.1.4, "Prepare to install MQ AMS" on page 16 to DRQ8ASYJ in `DHQ.UDRQINST` and running this job.

We recommend that you customize all the installation jobs together, although you might not need some of them until later.

DRQ8ASYJ calls a REXX exec to copy and edit the sample jobs from `DHQ.UDRQINST` to `THQ.TDRQINST`. If `THQ.TDRQINST` does not exist, it is created by DRQ8ASYJ. Full instructions for modifying DRQ8ASYJ are included in its comments. Where selections are to be made, this is usually done by removing the leading asterisk.

The following rules apply when updating DRQ8ASYJ:

- Enter values in the correct case (uppercase).
- The keywords in the JCL can appear in any order and starting in any column as long as they are the first nonblank characters on a line and are within columns 1 through 72.
- If you place a nonblank character before a keyword, the line is treated as a comment. Use an asterisk as the nonblank character to avoid accidentally forming a valid keyword.
- Do not delete lines in DRQ8ASYJ, because you might need them in the future. If they do not apply, comment them out by placing an asterisk at the beginning of the unwanted lines.

Use your usual editor to update DRQ8ASYJ in `DHQ.UDRQINST` as follows:

1. Change the job statement at the top of DRQ8ASYJ to match the requirements of your enterprise. If you need to code a 'TIME=' parameter on your JCL, a value of 10 minutes' CPU time is enough to run DRQ8ASYJ.

2. Customize the JCL statements in Section 2 of DRQ8ASYJ with the names you have chosen for DHQ and THQ. Replace the variable DHQ for the SYSPROC and MINPUT lines, and the variable THQ for the MOUTPUT line.

3. Choose which sample jobs you want to customize. DRQ8ASYJ is supplied with all jobs selected; this will customize all jobs. This is correct for a new installation requiring all features to be installed.

   You can change this default behavior, if required, by 'commenting out' the select statements with an asterisk in column 1.

4. Type job statement information for the sample jobs. You must leave the characters

```
 JOB  //xxxxxxxx  JOB
```

intact and insert your parameters after the second 'JOB' on this line. If your enterprise does not require any additional information on the job statement you must still leave this line intact. You can also add lines such as /*ROUTE or /*JOBPARM by using the JOB keyword.

You can enter more than one line for your JOB statement. Begin each line with the keyword JOB followed by at least one blank, and type the text as you would expect to see it in the resulting JCL, including all punctuation such as start of line '//' and end of line commas.

If your enterprise needs a 'TIME=' parameter, you must specify a value large enough to run the SMP/E apply step. This can take up to 120 minutes for MQ AMS.

Below is an example of a JOB statement with some additional information:

```
JOB //XXXXXXXX JOB (ACCOUNT),CLASS=A,MSGLEVEL=(1,1)
```

Whilst the following lines show a case where there is so much information added that a continuation statement has been created:

```
JOB //XXXXXXXX JOB (ACCOUNT),CLASS=A,MSGLEVEL=(1,1),
JOB // USER=USERID,NOTIFY=USERID
```

5. You can change the default value of the prefix, 'DRQ8', next to the 'JCPREF' keyword. If you change it to a value that is one to four characters long, the prefix will be concatenated with the last four characters of the JCL member name to form the job name. If you change the prefix to a value that is five to eight characters long, the prefix alone will form the job name.

6. Type the values you have chosen for the MQ AMS product high-level qualifiers, where they are different from the defaults.

7. Type the values you have chosen for your system high-level qualifiers, where they are different from the defaults.

8. Type the values you have chosen for your volume serial numbers and unit types, where they are different from the defaults.

   To let the system choose the volumes for the target and distribution libraries (TARVOL and DISVOL) change 'VOLSER' to a '.'. (Quotes should not be used in the JCL). The SMP/E volume and unit type must be changed to an existing volume name and its actual unit type.

9. Type the SMP/E zone names you have chosen if they are different from the defaults. If you use your existing SMP/E data sets, you must customize the names of your target zone, distribution zone, and global CSI data set.

   If you intend to let MQ AMS create a new SMP/E environment, leave the SMP/E information as it is.

   Specifying NEW for GZONECSI means that the customization step will add the name SHLQUAL.GLOBAL.CSI for the global zone CSI. If you wish to use a different global zone CSI you must specify the fully qualified name for GZONECSI.

10. Run DRQ8ASYJ. It should finish with a return code of 0.

   If the return code is not 0, inspect the output to discover what caused the problem. DRQ8ASYJ can be run again when the error has been corrected, but running it many times might cause the output data set `THQ.TDRQINST` to need compressing.

Now carry out the installation steps in the following sections, using the customized versions of the sample jobs from the `THQ.TDRQINST` data set.

6.1.8 Prepare the installation environment

You must create the environment in which to run SMP/E to install MQ AMS.

Note: The job output listings produced by the following jobs might be split into a number of separate data sets.

6.1.8.1 High-level assembler consideration: If you create a new global zone, the default utility for ASM (assembler) will be used for the SMP/E environment. If your site uses the high-level assembler, you might need to do the following:

1. Add an SMP/E UTILITY for this assembler to your global zone, by adding a UTILITY definition to DRQ8BGZN, for example:

```
ADD UTILITY(ASMA90) NAME(ASMA90) PRINT(SYSPRINT) RC(4) .
```

2. Update the OPTIONS(TZNOPTN) defined in DRQ8BGZN (global zone) to reference your utility, for example:

```
ADD OPTIONS(TZNOPTN) ASM(ASMA90) .
```

3. Change the ADD DLIBZONE statement in the DRQ8DDZN (distribution zone) job so that it references an OPTIONS entry (via OPTIONS()) which in turn references this different assembler utility entry, for example:

```
ADD DLIBZONE(DZONE) OPTIONS(TZNOPTN) ...
```

6.1.8.2 Global zone

- If you are installing into an existing global zone, check that:
    - The PEMAX option entry is set to 9999, or left to default.
    - The DSSPACE options entry specifies at least 800 directory blocks.

- If you are installing into a new global zone, run DRQ8BGZN from THQ.TDRQINST;.

    Expected Return Codes and Messages: DRQ8BGZN has a number of steps, all of which should complete with a return code of 0.

    Note: If you are running under JES3, you must edit it to remove the comment asterisks for the whole of step DUMMYCSI. This is to avoid the problem of defining and using VSAM data sets in the same jobstream under JES3.

    If any of the return codes is not 0, inspect the job output to determine what caused the problem and correct it, then rerun the job from the step that failed.

6.1.8.3 Target and distribution zones: If you need to create new target and distribution zones, run the following jobs:

- DRQ8CTZN to create a target zone
- DRQ8DDZN to create a distribution zone

Expected Return Codes and Messages:

Both jobs consist of a number of steps, all of which should complete with a return code of 0.

Note: If you are running DRQ8CTZN and DRQ8DDZN under JES3, you must edit them to remove the comment asterisks for the whole of step DUMMYCSI. This is to avoid the problem of defining and using VSAM data sets in the same jobstream under JES3.

If any of the return codes is not 0, inspect the job output to determine what caused the problem, correct it, and then rerun the job from the step that failed.

6.1.9 Allocate SMP/E Target and Distribution Libraries

Before using SMP/E to install MQ AMS, you must allocate two groups of data sets, the target and distribution libraries, for MQ AMS. Run the job DRQ8EALO from THQ.TDRQINST to allocate the libraries. This job has two steps, each should complete with a return code of 0.

If the return code is not 0, check the job output carefully to ensure that the data sets have been allocated correctly. If you need to rerun the job, you must delete any data sets that were created by the unsuccessful attempt. These all begin with the THLQUAL or DHLQUAL high-level qualifiers. (Be careful not to delete any SMP/E data sets.)

6.1.10 Define DDDEF Entries

SMP/E needs to know the name of the MQ AMS data sets; DRQ8FDDF is provided to add the appropriate DDDEFs to your SMP/E environment. Run the job DRQ8FDDF from `THQ.TDRQINST` to build your SMP/E DDDEF statements.

Expected Return Codes and Messages:

This job has 3 steps, and should complete with a return code of 0. If you are installing into existing zones, this job might give a return code of 8, because it attempts to add DDDEFS that might already exist.

6.1.11 Use SMP/E to install MQ AMS

SMP/E uses three steps to install each part of MQ AMS:

1. RECEIVE
2. APPLY
3. ACCEPT

The RECEIVE, APPLY and ACCEPT jobs will have been customized when you ran the DRQ8ASYJ job above.

6.1.12 SMP/E RECEIVE

Perform an SMP/E RECEIVE for MQ AMS.

Having obtained MQ AMS as part of a CBPDO, use the RCVPDO job found in the CBPDO RIMLIB data set to RECEIVE the MQ AMS FMIDs as well as any service, HOLDDATA, or preventive service planning (PSP) information included on the CBPDO tape. For more information, refer to the documentation included with the CBPDO.

You can also choose to edit and submit sample job DRQ8GREC to perform the SMP/E RECEIVE for MQ AMS. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages

The RECEIVE job should complete with a return code of 0, and the following messages should appear in the SMPLOG. The example below is from DRQ8GREC.

```
 GIM22701I RECEIVE PROCESSING WAS SUCCESSFUL FOR SYSMOD HAMS800
```

If the return code is not 0, check the job output listing to find out why the job failed, correct the error, and then rerun the job.

6.1.13 Perform SMP/E APPLY

Edit and submit the sample job DRQ8HAPL from data set `THQ.TDRQINST` to apply HAMS800. This job can take a long time to run, depending on the capacity of your system, and on what other jobs are running.

To receive the full benefit of the SMP/E Causer SYSMOD Summary Report, do *not* bypass the following on the APPLY CHECK: PRE, ID, REQ, and IFREQ. This is because the SMP/E root cause analysis identifies the cause only of **ERRORS** and not of **WARNINGS** (SYSMODs that are bypassed are treated as warnings, not errors, by SMP/E).

Enhanced HOLDDATA introduces ERROR HOLDs against FMIDs for HIPER APARs. Prior to installing, you should ensure you have the latest Enhanced HOLDDATA (available at url http://service.software.ibm.com/holdata/390holddata.html). The FMID(s) should be installed regardless of the status of unresolved HIPERs, however, the software should not be deployed until the unresolved HIPERs have been analyzed to determine applicability.

There are two methods to complete an FMID installation where ++HOLDs for HIPERs exist for the FMID(s) being installed:

1. To ensure that all recommended and critical service is installed with the FMID(s), add the SOURCEIDs of PRP, HIPER, and RSU* to the APPLY command. There may be PE or HIPER APARs that do not have resolving PTFs available yet. You need to analyze the symptom flags to determine if you want to BYPASS the specific ERROR HOLDs and continue the FMID installation.

   ```
   APPLY S(fmid,fmid,...)
   FORFMID(fmid,fmid,...)
   SOURCEID(PRP,HIPER,RSU*,...)
   GROUPEXTEND .
   ```

   This method requires more initial research, but will provide resolution for all HIPERs that have fixes available and are not in a PE chain. There may still be unresolved PEs or HIPERs that will require the use of BYPASS.

2. To install the FMID(s) as it would have been installed prior to Enhanced HOLDDATA, you can add a BYPASS(HOLDCLASS(HIPER)) operand to the APPLY command. This will allow the FMID to be installed even though there are HIPER ERROR HOLDs against it. Note that not all ERROR HOLDs were bypassed, only the HIPER ERROR HOLDs. After the FMID(s) are installed, the SMP/E REPORT maintenance.

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

   This method is the quicker of the two, but requires subsequent review of the REPORT ERRSYSMODS to investigate any HIPERs.

If you bypass any HOLDs during the installation of the FMID(s) because fixing PTFs were not yet available you can use the APAR Status Tracking (AST) function of ServiceLink or the APAR Tracking function of ResourceLink to be notified when the fixing PTF is available.

After you have taken any actions 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 apply all requisite SYSMODs. The requisite SYSMODS might be applicable to other functions.

Expected Return Codes and Messages from APPLY CHECK: 0

The job must be rerun without the CHECK operand to update the libraries.

Expected Return Codes and Messages from APPLY: 0

Products successfully applied result in the following messages in the output listing of DRQ8HAPL, depending which features you have decided to install:

```
GIM22701I APPLY PROCESSING WAS SUCCESSFUL FOR SYSMOD HAMS800
```

The job can be rerun, but if one of the FMIDs was successfully applied, you must first delete the lines from DRQ8HAPL that refer to this product FMID.

6.1.14 Perform SMP/E ACCEPT

Edit and submit the sample job DRQ8IACP from data set `THQ.TDRQINST` to accept all the products selected when you customized the JCL. This job takes a few minutes to run, depending on the capacity of your system, and on what other jobs are running. 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 following on the ACCEPT CHECK: PRE, ID, REQ, and IFREQ. This is because the SMP/E root cause analysis identifies the cause only of **ERRORS** and not of **WARNINGS** (SYSMODs that are bypassed are treated as warnings, not errors by SMP/E).

Before using SMP/E to load new distribution libraries, it is recommended that you set the ACCJCLIN indicator in the distribution zone. This will cause entries produced from JCLIN to be saved in the distribution zone whenever a SYSMOD containing inline JCLIN is ACCEPTed. For more information on the ACCJCLIN indicator, see the description of inline JCLIN in the SMP/E manuals.

Once you have taken any actions 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 accept all requisite SYSMODs. The requisite SYSMODS might be applicable to other functions.

Expected Return Codes and Messages from ACCEPT CHECK: 0

The job must be rerun without the CHECK operand to update the libraries.

Expected Return Codes and Messages from ACCEPT: 0

If PTFs containing replacement modules are being ACCEPTed, SMP/E ACCEPT processing will linkedit/bind the modules into the distribution libraries. During this processing, the Linkage Editor or Binder may issue messages documenting unresolved external references, resulting in a return code of 4 from the ACCEPT step. These messages can be ignored, because the distribution libraries are not executable and the unresolved external references will not affect the executable system libraries.

If the return code is not 0, check the job output listing to find out why the job failed and correct the error.

The job can be rerun, but if one of the FMIDs was successfully accepted, you must first delete the line from DRQ8IACP that refers to this FMID. Products successfully accepted result in the following messages in the output listing of DRQ8IACP depending which features you have decided to install:

```
GIM22701I ACCEPT PROCESSING WAS SUCCESSFUL FOR SYSMOD HAMS800
```

6.1.15 Run REPORT CROSSZONE

The SMP/E REPORT CROSSZONE command will identify requisites defined for products that have been installed in separate zones. This command will also create APPLY and ACCEPT commands in the SMPPUNCH data set that you can use to install those cross-zone requisites it identifies.

After you have installed MQ AMS, 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 describing all the target and distribution libraries to be reported on.

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

6.1.16 Cleaning Up Obsolete Data Sets, Paths, and DDDEFs

The following file system path, created and used by previous releases of this product, is no longer used in this release. You may choose to delete this obsolete path after you delete the previous release from your system.

- /usr/lpp/mqmese/v701

6.1.17 Enabling automatic relinking after service is applied

During SMP/E APPLY processing, modules from other products were linkedited into the MQ AMS target libraries. It is possible that future maintenance on these other products will update the parts that MQ AMS uses.

Two separate mechanisms are available for updating the MQ AMS target libraries after applying maintenance to other products:

1. The first uses SMP/E LINK LMODS processing to relink the MQ AMS target libraries after maintenance has been applied on the other products.

   This has the advantage that MQ AMS libraries are only updated when definite action is taken on them.

   If you choose to use this mechanism, no further action is needed at this stage.

2. The second uses SMP/E cross zone linking.

   SMP/E provides a facility to update the SMP/E information for products installed in other SMP/E zones, so that when maintenance is applied to them, MQ AMS target libraries are automatically updated.

6.2 Activating MQ AMS

Publications can be accessed at the IBM Publications Center website at http://www.ibm.com/shop/publications/order/. Additionally IBM WebSphere MQ V8.0 documentation is published in IBM Knowledge Center, which can be viewed from a web browser with Internet access at http://www.ibm.com/support/knowledgecenter/SSFKSJ_8.0.0/com.ibm.mq.ins.doc/q119080_.htm

Appendix A. Customizing the sample installation manually

You can customize the sample jobs manually using your preferred editor. (Alternatively, you can use DRQ8ASYJ to customize the jobs.) If you choose to customize the sample jobs manually, you will find that comments are provided in the JCL to help you and, additionally, you will need to add a job card to meet your site's requirements before submitting them. However, you should read the rest of 6.0, "Installation Instructions" on page 15 before you start.

If you want to customize the sample installation jobs manually, these are the jobs that you must customize:

DRQ8BGZN   Sets up an SMP/E global zone.

DRQ8CTZN   Sets up an SMP/E target zone.

DRQ8DDZN   Sets up an SMP/E distribution zone.

DRQ8EALO   Allocates the MQ AMS target and distribution libraries.

DRQ8FDDF   Defines MQ AMS target and distribution libraries to SMP/E.

DRQ8GREC   Runs the SMP/E RECEIVE step for MQ AMS. When customizing this job you must ensure the list of FMIDs you want to install is complete. Look at the comments in the job for details.

DRQ8HAPL   Runs the SMP/E APPLY step for MQ AMS. When customizing this job you must ensure the list of FMIDs you want to install is complete. Look at the comments in the job for details.

DRQ8IACP   Runs the SMP/E ACCEPT step for MQ AMS. When customizing this job you must ensure the list of FMIDs you want to install is complete. Look at the comments in the job for details.

There are a number of other members that may be in `DHQ.UDRQINST`. You do not need to customize them manually. They are:

DRQ8ASYJ

DRQ8ZSYR

Appendix B. Notices

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