



**Program Directory for
IBM MQ for z/OS
Value Unit Edition
Long Term Support Release**

v9.0.0

Program Number 5655-VU9

HUE9000

for use with
z/OS on zNALC

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Note

Before using this information and the product it supports, be sure to read the general information under Appendix C, "Notices" on page 27.

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1.0 Introduction

IBM MQ for z/OS Value Unit Edition Version V9.0 has two types of release; a Long Term Support Release (LTSR) and a Continuous Delivery (CD) release. The differences between these two are documented in detail at

http://www.ibm.com/support/knowledgecenter/en/SSFKSJ_9.0.0/com.ibm.mq.pla.doc/q004715_.htm. This program directory describes installation of the FMIDs associated with the Long Term Support Release.

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 MQ for z/OS Value Unit Edition. This publication refers to IBM MQ for z/OS Value Unit Edition as IBM MQ VUE.

The Program Directory contains the following sections:

- 2.0, “Program Materials” on page 3 identifies the basic program materials and documentation for IBM MQ VUE.
- 3.0, “Program Support” on page 5 describes the IBM support available for IBM MQ VUE.
- 4.0, “Program and Service Level Information” on page 7 lists the APARs (program level) and PTFs (service level) that have been incorporated into IBM MQ VUE.
- 5.0, “Installation Requirements and Considerations” on page 9 identifies the resources and considerations that are required for installing and using IBM MQ VUE.
- 6.0, “Installation Instructions” on page 15 provides detailed installation instructions for IBM MQ VUE. It also describes the procedures for activating the functions of IBM MQ VUE, or refers to appropriate publications.

Before installing IBM MQ VUE, 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.

IBM MQ VUE 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 IBM MQ VUE are included on the CBPDO tape.

Do not use this Program Directory if you install IBM MQ VUE 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 MQ VUE Description

IBM MQ for z/OS Value Unit Edition V9.0.0 provides all the function of IBM MQ for z/OS V9.0.0 but is sold with a one-time-charge (OTC) price metric for support of eligible workloads that are deployed in qualified System z New Application License Charge (zNALC) logical partitions (LPARs).

The term, Eligible Workload, is defined as new workload which is qualified and approved through the zNALC qualification process and is then supported by the MQ VUE server environment.

The OTC price metric provides an alternative pricing model for buying IBM MQ for z/OS to connect new workloads that are qualified to run on zNALC LPARs.

Support for the zNALC metric offers a reduced price for the z/OS operating system on LPARs that run a qualified application.

IBM MQ VUE v9.0 is provided as two separately installable programs. IBM MQ for z/OS v9.0, 5655-MQ9 containing the MQ capability, and IBM MQ for z/OS Value Unit Edition, 5655-VU9, which enables IBM MQ to conform with the requirements of Value Unit Edition licensing. This program directory describes installation of the IBM MQ VUE enablement program. Once installed, the code provided must be combined with that used by a pre-existing or new IBM MQ for z/OS v9.0 installation to run IBM MQ in a VUE conforming mode. Further information on this step can be found in the IBM MQ product documentation hosted in IBM Knowledge Center at http://www.ibm.com/support/knowledgecenter/SSFKSJ_9.0.0/com.ibm.mq.ins.doc/q116230_.htm.

MQ VUE V9.0.0 can connect to other supported versions of IBM MQ for z/OS (whether in zNALC or non-zNALC environments) for the purpose of workload federation and systems management.

MQ for z/OS V8 allows connections from MQ clients which run on other platforms, and this capability is available in the VUE edition.

1.2 IBM MQ VUE FMIDs

IBM MQ VUE consists of the following FMID:

HUE9000

2.0 Program Materials

An IBM program is identified by a program number. The program number for IBM MQ VUE is 5655-VU9.

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 IBM MQ VUE. 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.

Figure 1. Basic Material: Program Tape

Medium	Feature Number	Physical Volume	External Label	VOLSER
3590 Tape	HUE9000	1	IBM MQ for z/OS Value Unit Edition v9.0.0	MQVUE

2.2 Optional Machine-Readable Material

No optional machine-readable materials are provided for IBM MQ VUE.

2.3 Program Publications

The following sections identify the basic publications for IBM MQ VUE.

Figure 2 identifies the basic unlicensed publications for IBM MQ VUE. 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
IBM MQ for z/OS Value Unit Edition v9.0.0 License Information DVD	GC34-7356	DVD-ROM
IBM MQ for z/OS Value Unit Edition v9.0.0 Program Directory	G113-3387	IBM Publications Center

No optional publications are provided for IBM MQ VUE.

2.4 Program Source Materials

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

2.5 Publications Useful During Installation

You might want to use the publications listed in Figure 3 during the installation of IBM MQ VUE.

Additionally, IBM MQ for z/OS Value Unit Edition v9.0.0 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_9.0.0/com.ibm.mq.helphome.v90.doc/WelcomePagev9r0.htm.

Figure 3. Publications Useful During Installation

Publication Title	Form Number	Media Format
<i>IBM SMP/E for z/OS User's Guide</i>	SA23-2277	Softcopy
<i>IBM SMP/E for z/OS Commands</i>	SA23-2275	Softcopy
<i>IBM SMP/E for z/OS Reference</i>	SA23-2276	Softcopy
<i>IBM SMP/E for z/OS Messages, Codes, and Diagnosis</i>	GA32-0883	Softcopy

3.0 Program Support

This section describes the IBM support available for IBM MQ VUE.

3.1 Program Services

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

3.2 Preventive Service Planning

Before you install IBM MQ VUE, 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 6.1.8, “Perform SMP/E APPLY” on page 18 for a sample APPLY command.

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

If the CBPDO for IBM MQ VUE 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/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 IBM MQ VUE are included in Figure 4.

UPGRADE	SUBSET	Description
MQMESA	HUE9000	IBM MQ for z/OS VUE

3.3 Statement of Support Procedures

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

Figure 5 on page 6 identifies the component IDs (COMPID) for IBM MQ VUE.

<i>Figure 5. Component IDs</i>			
FMID	COMPID	Component Name	RETAIN Release
HUE9000	5655VU900	IBM MQ for z/OS VUE	000

4.0 Program and Service Level Information

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

4.2 Service Level Information

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

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

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

5.0 Installation Requirements and Considerations

The following sections identify the system requirements for installing and activating IBM MQ VUE. 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 IBM MQ VUE.

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?
5650-ZOS	z/OS	V2.1.0	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. Installation requires use of the z/OS Program Management Binder as some MQ VUE code requires facilities not available in the linkage editor.

5.2 Target System Requirements

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

IBM MQ VUE 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. 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	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.

IBM MQ VUE 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.

Program Number	Product Name and Minimum VRM/Service Level
5650-ZOS	z/OS V2.1.0
5655-MQ9	IBM MQ for z/OS V9.0.0 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.

Please refer to the following web page for the latest operational requisite product information for IBM MQ VUE. <http://publib.boulder.ibm.com/infocenter/prodguid/v1r0/clarity/index.jsp>.

IBM MQ VUE 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.

IBM MQ VUE 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.

IBM MQ VUE has no negative requisites.

5.2.3 DASD Storage Requirements

IBM MQ VUE libraries can reside on all supported DASD types.

Figure 9 on page 12 lists the total space that is required for each type of library.

<i>Figure 9. Total DASD Space Required by IBM MQ VUE</i>		
Library Type	Total Space Required in 3390 Trks	File System Description
Target	50	
Distribution	50	

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 6.1.5, "Allocate SMP/E Target and Distribution Libraries" on page 18.

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

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

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

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

5. All target libraries listed have the following attributes:

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

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

- These data sets can be in the LPA, but they are not required to be in the LPA.
- These data sets can be in the LNKLIST.
- The SCUEAUTH library must be APF authorized.

The following figures describe the target and distribution libraries and file system paths required to install IBM MQ VUE. The storage requirements of IBM MQ VUE 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 IBM MQ VUE 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 I N E S	No. of 3390 Trks	No. of DIR Blks
SCUEAUTH	LMOD	ANY	U	PDS	U	0	10	5
SCUEINST	PROC	ANY	U	PDSE	FB	80	10	3

Figure 11. Storage Requirements for IBM MQ VUE Distribution Libraries

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 I N E S	No. of 3390 Trks	No. of DIR Blks
ACUEMOD	U	PDSE	U	0	10	5
ACUEINST	U	PDSE	FB	80	10	3

5.3 FMIDs Deleted

Installing IBM MQ VUE 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 IBM MQ VUE 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

IBM MQ VUE has no special considerations for the target system.

5.4.1 SMP/E Considerations

IBM recommends that you install IBM MQ VUE into a new set of SMP/E zones, including SMPCSI, target, distribution, and zFS data sets, to allow independent maintenance of IBM MQ VUE, 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 IBM MQ VUE.

Please note the following points:

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

6.1 Installing IBM MQ VUE

6.1.1 SMP/E Considerations for Installing IBM MQ VUE

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

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
DSSPACE	(1000,1000,800)	These are the minimum required values.
PEMAX	SMP/E Default	IBM recommends using the SMP/E default for PEMAX.

6.1.3 Sample Jobs

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

If you wish to use the automated customization see Appendix A, “Automated install JCL customization” on page 23.

The sample installation jobs are sorted by name into an order in which to run them in sequence (after editing) to install IBM MQ VUE. 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.

<i>Figure 13. Sample Installation Jobs</i>			
Job Name	Job Type	Description	RELFILE
CUE8ASYJ	CUSTOMIZE	Sample job to customize the sample JCL	IBM.HUE9000.F2
CUE8BGZN	GLOBAL ZONE	Sample job to create an SMP/E Global Zone	IBM.HUE9000.F2
CUE8CTZN	TARGET ZONE	Sample job to create an SMP/E Target Zone	IBM.HUE9000.F2
CUE8DDZN	DIST ZONE	Sample job to create an SMP/E Distribution Zone	IBM.HUE9000.F2
CUE8EALO	ALLOCATE	Sample job to allocate target and distribution libraries (FMID HUE9000)	IBM.HUE9000.F2
CUE8FDDF	DDDEF	Sample job to define SMP/E DDDEFs (FMID HUE9000)	IBM.HUE9000.F2
CUE8GREC	RECEIVE	Sample RECEIVE job	IBM.HUE9000.F2
CUE8HAPL	APPLY	Sample APPLY job	IBM.HUE9000.F2
CUE8IACP	ACCEPT	Sample ACCEPT job	IBM.HUE9000.F2

You can access the sample installation jobs by performing an SMP/E RECEIVE (refer to 6.1.7, “Perform SMP/E RECEIVE” on page 18) then copy the jobs from the RELFILES to a work data set for editing and submission. See Figure 13 to find the appropriate relfile data set.

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

```
//STEP1 EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=*
//TAPEIN DD DSN=IBM.HUE9000.F2,UNIT=tunit,
// VOL=SER=volser,LABEL=(x,SL),
// DISP=(OLD,KEEP)
//FILEIN DD DSN=IBM.HUE9000.F2,UNIT=SYSALLDA,DISP=SHR,
// VOL=SER=filevol
//OUT DD DSNAME=jcl-library-name,
// DISP=(NEW,CATLG,DELETE),
// VOL=SER=dasdvol,UNIT=SYSALLDA,
// SPACE=(TRK,(11,41,5))
//SYSUT3 DD UNIT=SYSALLDA,SPACE=(CYL,(1,1))
//SYSIN DD *
```

```
COPY INDD=xxxxIN,OUTDD=OUT
/*
```

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

TAPEIN:

tunit is the unit value that matches the product tape.

volser is the volume serial that matches the product tape.

x is the tape file number that indicates the location of the data set name on the tape.

See the documentation that is provided by CBPDO for the location of IBM.HUE9000.F1 on the tape.

FILEIN:

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

OUT:

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

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

SYSIN:

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

6.1.4 Prepare the Installation Environment

6.1.4.1 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, edit and submit sample job CUE8BGZN to create a new SMP/E global zone for IBM MQ VUE. Ensure that the job card is valid for your system. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages:

CUE8BGZN has a number of steps, all of which should complete with a return code of 0.

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.

6.1.4.2 Target and distribution zones: If you need to create new target and distribution zones for IBM MQ VUE, edit and submit the following sample jobs:

- CUE8CTZN to create a new target zone.
- CUE8DDZN to create a new distribution zone.

Ensure in each case that the job card is valid for your system. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages:

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

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.

6.1.5 Allocate SMP/E Target and Distribution Libraries

Customize and run sample job CUE8EALO to allocate the SMP/E target and distribution libraries for IBM MQ VUE. Refer to the instructions in the sample job for more information.

Make sure the data sets are allocated on the required volumes.

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

6.1.6 Define DDDEF Entries

Customize and run the sample job CUE8FDDF to create DDDEF entries for the SMP/E target and distribution libraries for IBM MQ VUE. Consult the instructions in the sample job for more information.

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

6.1.7 Perform SMP/E RECEIVE

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

Otherwise edit and submit sample job CUE8GREC to perform the SMP/E RECEIVE for IBM MQ VUE. Consult the instructions in the sample job for more information.

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

6.1.8 Perform SMP/E APPLY

1. Ensure that you have the latest HOLDDATA; then edit and submit sample job CUE8HAPL to perform an SMP/E APPLY CHECK for IBM MQ VUE. Consult the instructions in the sample job for more information.

HOLDDATA introduces ERROR HOLDS against FMIDs for HIPER APARs. Before the installation, ensure that you have the latest HOLDDATA, which is available through several different portals, including <http://service.software.ibm.com/holdata/390holdata.html>. Install the FMIDs regardless of the status of unresolved HIPERs. However, do not deploy the software until the unresolved HIPERs are analyzed to determine applicability.

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 is a sample to install FMIDs when ++HOLDS for HIPERs exist for the FMIDs that you install:

- a. To ensure that all recommended and critical service is installed with the FMIDs, if you have received the latest HOLDDATA, add the FIXCAT operand to the APPLY command as shown below.

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

Some HIPER APARs might not have PTFs available yet. You have to analyze the symptom flags to determine if you want to bypass the specific ERROR HOLDS and continue the installation of the FMIDs.

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

- b. To install the FMIDs without regard for the HIPERs, you can add a BYPASS(HOLDCLASS(HIPER)) operand to the APPLY command. In this way, you can install FMIDs even though HIPER ERROR HOLDS against them still exist. Only the HIPER ERROR HOLDS are bypassed. After the FMIDs are installed, run the SMP/E REPORT ERRSYSMODS command to identify missing HIPER 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 have received the latest HOLDDATA, you can also choose to run REPORT MISSINGFIX for Fix Category IBM.ProductInstall-RequiredService to investigate missing recommended service.

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

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

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

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

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

6.1.9 Perform SMP/E ACCEPT

Edit and submit sample job CUE8IACP to perform an SMP/E ACCEPT CHECK for IBM MQ VUE. Consult the instructions in the sample job for more information.

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

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

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

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

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

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

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

6.2 Activating IBM MQ VUE

6.2.1 Updating the IBM MQ JCL Procedure

After installing IBM MQ VUE, the SCUEAUTH target library must be APF authorized and added to the started task JCL procedure for eligible queue managers running in the zNALC LPAR.

SCUEAUTH must be added to the STEPLIB DD concatenation above the existing SCSQAUTH library.

Appendix A. Automated install JCL customization

Automated install JCL customization makes tailoring each piece of JCL individually unnecessary, reducing the chances of making a mistake.

Edit CUE8ASYJ and follow the instructions in the job to define the values you want to use to tailor the install JCL. The figures in Appendix B, “High-level qualifiers and symbolic parameters.” on page 25 show the values you must tailor and have space for you to record your choices.

Submit CUE8ASYJ Expected return code 0, 1 or 4.

Appendix B. High-level qualifiers and symbolic parameters.

B.1 High-level qualifiers

Use Figure 14 to plan the high-level qualifiers for the IBM MQ VUE data sets.

Figure 14. High-level qualifiers for data set names

Parameter name in the sample JCL provided	Example value	Your value	Description
-SHLQUAL-	HLQ.SMPE		IBM MQ VUE SMP/E HLQ
-THLQUAL-	HLQ.TLIB		IBM MQ VUE TARGET HLQ
-DHLQUAL-	HLQ.DLIB		IBM MQ VUE DISTBN HLQ

B.2 Symbolic parameters

Use Figure 15 to plan the symbolic parameters for the IBM MQ VUE sample jobs.

Figure 15 (Page 1 of 2). Symbolic parameters

Parameter name in the sample jobs	Example value	Your value	Description
-MOUTPUT-	THQ.TCUEINST		PDS name of modified Installation scripts.
-MINPUT-	DHQ.UCUEINST		PDS name of unmodified Installation scripts.
-SMPVOL-			SMP/E VOLUME
-SMPUNIT-	3390		SMP/E UNIT
-TARVOL-	.		TARGET VOLUME

Figure 15 (Page 2 of 2). Symbolic parameters

Parameter name in the sample jobs	Example value	Your value	Description
-DISVOL-	.		DISTRIBUTION VOLUME
-DISKUNIT-			DASD unit type for target and distribution library allocation
-TAPEUNIT-	3590		Tape unit type for SMP/E receive job.
-GZONECSI-	NEW		GLOBAL ZONE CSI NAME
-TZNAME-	TZONE		TARGET ZONE NAME
-DZNAME-	DZONE		DISTBN ZONE NAME
-TAPEUNIT-	3590		Tape unit type for SMP/E receive job.

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