



**Program Directory for
IBM Db2 Query Management Facility for z/OS**

V12.02.00

Program Number 5697-QM2

for Use with
z/OS

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GI13-4645-01

Note

Before using this information and the product it supports, be sure to read the general information under 7.0, "Notices" on page 36.

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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 Db2 Query Management Facility for z/OS. This publication refers to IBM Db2 Query Management Facility for z/OS as QMF for z/OS.

The Program Directory contains the following sections:

- 2.0, “Program Materials” on page 5 identifies the basic program materials and documentation for QMF for z/OS.
- 3.0, “Program Support” on page 11 describes the IBM support available for QMF for z/OS.
- 4.0, “Program and Service Level Information” on page 13 lists the APARs (program level) and PTFs (service level) that have been incorporated into QMF for z/OS.
- 5.0, “Installation Requirements and Considerations” on page 14 identifies the resources and considerations that are required for installing and using QMF for z/OS.
- 6.0, “Installation Instructions” on page 26 provides detailed installation instructions for QMF for z/OS. It also describes the procedures for activating the functions of QMF for z/OS, or refers to appropriate publications.

Before installing QMF for z/OS, read the *CBPDO Memo To Users* and the *CBPDO Memo To Users Extension* that are supplied with this program in softcopy format and this program directory; then keep them for future reference. Section 3.2, “Preventive Service Planning” on page 11 tells you how to find any updates to the information and procedures in this program directory.

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

Do not use this program directory if you install QMF for 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 QMF for z/OS Description

IBM Db2 Query Management Facility (QMF) for z/OS, V12.2 offers significant performance improvements:

- The new QMF Server interconnects objects created across all QMF clients, making any QMF object accessible from any QMF client, regardless of which client created the object. It also improves cost-effectiveness, as the processing of the queries are zIIP eligible, including TSO and batch queries. The new QMF Server runs on IBM z/OS, Linux, or Microsoft Windows.
- The new QMF Z Client delivers significant usability and productivity additions to give TSO users a user experience that has a more modern look and feel. Users can open multiple queries and toggle seamlessly between them. A redesigned QMF Home Panel is also provided.
- The self-service BI capabilities are enhanced with augmented analytics and visualization that help users discover, analyze, and make decisions on data in a collaborative and intuitive environment.

See the QMF Z Client Program Directory (GI13-5004) for installation details for the QMF Z Client.

Existing QMF components from Db2 Query Management Facility for z/OS, V12.1 carried forward in to V12.2:

IBM Db2 Query Management Facility for z/OS, V12.1 is a comprehensive business analytics solution that provides interactive dashboards, graphical reports, self-service BI, batch reports, and analytics through web, workstation, and mobile interfaces. It supports most structured and unstructured data sources, and is optimized for IBM z Systems sources such as IBM Db2 for z/OS and VSAM.

In the V12.1 release:

- QMF continues to expand the data sources it supports and is enabled to be a data source to other applications.
 - QMF brings its comprehensive support of data sources to its QMF TSO/CICS client. In addition to Db2 for z/OS and IMS, the QMF TSO/CICS client can now access IBM z/OS data sources such as VSAM, ADABAS, flat files, and log data. The support also enables access to non-z/OS data sources, including relational and nonrelational data sources.
 - QMF TSO and CICS clients add significant performance and storage improvements in V12.1 through an additional database thread employed for user activities. QMF users also now have the ability to control the fetch buffer size, which could reduce storage requirements and boost fetch performance.
 - QMF adds folder-based data sources and IBM Cognos 10 BI content to its supported data sources.
 - QMF objects can now be used as data sources in QMF or external applications.

Db2 Query Management Facility for z/OS, V12.1 expands the data sources it supports and adds this comprehensive access to its QMF TSO and CICS client. The QMF TSO and CICS clients now have the ability to access most z/OS data plus most structured and unstructured mainframe data, enabling users to do "in-place" analytics.

QMF TSO and CICS clients add significant performance and storage improvements in V12.1 through an additional database thread employed for user activities. QMF users also now have the ability to control the fetch buffer size, which could reduce storage requirements and boost fetch performance.

QMF users can also now leverage Cognos 10 BI content, including queries and PowerCubes. This enables users to include Cognos content when creating QMF dashboards and objects.

QMF also now supports folder-based data sources, which will be represented to the user as a table. Supported file types are: xls, xlsx,txt, and csv. Excel files are represented as schemas, and tabs within the files will become tables.

A QMF web API has been added that enables access to QMF through RESTful Web Service. Additionally, QMF objects can now be used as virtual tables in its data virtualization service. Both of these enhancements enable QMF to now be a data source to external applications.

QMF continues its close synergy with the IBM Db2 Analytics Accelerator and provides the following enhancements in this release:

- The QMF web and workstation clients have enhanced support for the IBM Analytics Accelerator:
 - QMF data can now be saved directly to 'Accelerator-only' tables or Accelerator Shadow tables. This enables QMF queries to take advantage of the speed of executing to Accelerator Only tables and Accelerator Shadow tables.
 - Administrative and usability enhancements allow for better control of the Analytics Accelerator and QMF usage, plus better information of the available accelerators to the QMF clients.

The QMF Vision interface is enhanced to work directly with data files and is now integrated with IBM Connections for enhanced collaboration.

1.2 QMF for z/OS FMIDs

QMF for z/OS consists of the following FMIDs:

- HSQCC10 (QMF TSO/CICS Base)
- HPCC10 (QMF HPO)
- HQDCC10 (QMF Data Service)
- JYQCC10 (QMF applications)
- JSQCC1Q (QMF for z/OS OTC)

Notes:

- To install the QMF for TSO and CICS product, install FMIDs HSQCC10 (QMF TSO/CICS Base) and JSQCC1Q (QMF for z/OS OTC).
- To install the features QMF Analytics for TSO and the QMF Enhanced Editor for QMF for TSO and CICS, install FMID JYQCC10 (QMF applications). QMF for TSO and CICS FMID HSQCC10 is a prerequisite.
- To install QMF HPO, install the FMID HHPCC10 (QMF HPO).
- To install QMF Data Service, install the FMID HQDCC10 (QMF Data Service).
- To install the QMF distributed components, read the Memo to Users document on the LCD4-8602 CD provided with this product, to access the IBM Web Membership (IWM) site, to download the distributed components.

2.0 Program Materials

An IBM program is identified by a program number. The program number for QMF for z/OS is 5697-QM2.

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 QMF for 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 QMF for z/OS in the *CBPDO Memo To Users Extension*.

Figure 1 describes the program file content for QMF for z/OS. You can refer to the *CBPDO Memo To Users Extension* to see where the files reside on the tape.

Notes:

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

Figure 1 (Page 1 of 2). Program File Content for QMF TSO/CICS Base

Name	O R G	R E C F M	L R E C L	BLK SIZE
SMPMCS	SEQ	FB	80	6400
IBM.HSQCC10.F1	PDS	FB	80	8800
IBM.HSQCC10.F2	PDS	FB	80	8800
IBM.HSQCC10.F3	PDS	F	400	400
IBM.HSQCC10.F4	PDS	FB	80	8800
IBM.HSQCC10.F5	PDS	FB	80	8800
IBM.HSQCC10.F6	PDS	FB	80	8800

Figure 1 (Page 2 of 2). Program File Content for QMF TSO/CICS Base

Name	O R G	R E C F M	L R E C L	BLK SIZE
IBM.HSQCC10.F7	PDS	F	400	400
IBM.HSQCC10.F8	PDS	FB	80	8800
IBM.HSQCC10.F9	PDS	U	0	6144
IBM.HSQCC10.F10	PDS	FB	80	8800
IBM.HSQCC10.F11	PDS	VB	32622	32626
IBM.HSQCC10.F12	PDS	FB	80	8800
IBM.HSQCC10.F13	PDS	FB	80	8800
IBM.HSQCC10.F14	PDS	FB	80	8800

Figure 2. Program File Content for QMF HPO

Name	O R G	R E C F M	L R E C L	BLK SIZE
SMPMCS	SEQ	FB	80	6400
IBM.HHPCC10.F1	PDS	FB	80	8800
IBM.HHPCC10.F2	PDS	FB	80	8800
IBM.HHPCC10.F3	PDS	FB	80	8800
IBM.HHPCC10.F4	PDS	FB	80	8800
IBM.HHPCC10.F5	PDS	FB	80	8800
IBM.HHPCC10.F6	PDS	FB	80	8800
IBM.HHPCC10.F7	PDS	U	0	6144
IBM.HHPCC10.F8	PDS	FB	80	8800
IBM.HHPCC10.F9	PDS	FB	80	8800

Figure 3. Program File Content for QMF Data Service

Name	O R G	R E C F M	L R E C L	BLK SIZE
SMPMCS	SEQ	FB	80	6400
IBM.HQDCC10.F1	PDS	FB	80	8800
IBM.HQDCC10.F2	PDS	FB	80	8800
IBM.HQDCC10.F3	PDS	FB	80	8800
IBM.HQDCC10.F4	PDS	FB	80	8800
IBM.HQDCC10.F5	PDS	FB	80	8800
IBM.HQDCC10.F6	PDSE	U	0	6144
IBM.HQDCC10.F7	PDS	FB	2048	18432
IBM.HQDCC10.F8	PDS	FB	80	8800
IBM.HQDCC10.F9	PDS	FB	80	8800
IBM.HQDCC10.F10	PDS	FB	80	8800
IBM.HQDCC10.F11	PDSE	U	0	6144
IBM.HQDCC10.F12	PDS	FB	80	8800
IBM.HQDCC10.F13	PDS	FB	80	8800
IBM.HQDCC10.F14	PDS	FB	2048	18432
IBM.HQDCC10.F15	PDS	FB	80	8800
IBM.HQDCC10.F16	PDS	FB	80	8800
IBM.HQDCC10.F17	PDS	FB	80	8800
IBM.HQDCC10.F18	PDS	FB	80	8800
IBM.HQDCC10.F19	PDS	FB	80	8800
IBM.HQDCC10.F20	PDS	FB	80	8800
IBM.HQDCC10.F21	PDS	FB	80	8800

Figure 4 (Page 1 of 2). Program File Content for QMF applications

Name	O R G	R E C F M	L R E C L	BLK SIZE
SMPMCS	SEQ	FB	80	6400
IBM.JYQCC10.F1	PDS	FB	80	8800

Figure 4 (Page 2 of 2). Program File Content for QMF applications

Name	O R G	R E C F M	L R E C L	BLK SIZE
IBM.JYQCC10.F2	PDS	FB	80	8800
IBM.JYQCC10.F3	PDS	FB	80	8800
IBM.JYQCC10.F4	PDS	U	0	6144
IBM.JYQCC10.F5	PDS	FB	80	8800
IBM.JYQCC10.F6	PDS	U	0	6144
IBM.JYQCC10.F7	PDS	FB	80	8800
IBM.JYQCC10.F8	PDS	FB	80	8800

Figure 5. Program File Content for QMF for z/OS OTC

Name	O R G	R E C F M	L R E C L	BLK SIZE
SMPMCS	SEQ	FB	80	6400
IBM.JSQCC1Q.F1	PDS	U	0	6144

2.2 Optional Machine-Readable Material

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

2.3 Program Publications

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

Figure 6 identifies the basic unlicensed publications for QMF for z/OS. Those publications that are in softcopy format can be obtained from the IBM Knowledge Center website at:

http://www.ibm.com/support/knowledgecenter/SS9UMF_12.2.0/

<i>Figure 6. Basic Material: Unlicensed</i>		
Publication Title	Form Number	Media Format
Db2 QMF License Information	GC27-9105	Internet
Introducing Db2 QMF	GC27-8876	Internet
Installing and Managing Db2 QMF for TSO and CICS	GC27-8877	Internet
Developing Db2 QMF applications	SC27-8878	Internet
Using Db2 QMF	SC27-8879	Internet
Db2 QMF Reference	SC27-8880	Internet
Db2 QMF Messages and Codes	GC27-8881	Internet
DB2 QMF High Performance Option User's Guide for TSO and CICS	SC27-8882	Internet
Installing and Managing Db2 QMF for Workstation and Db2 QMF for WebSphere	GC27-8883	Internet
Getting Started with Db2 QMF for Workstation and Db2 QMF for WebSphere	SC27-8884	Internet
Db2 QMF Data Service Studio Getting Started Guide	GC27-8885	Internet
Db2 QMF Data Service Studio User's Guide	SC27-8886	Internet
Db2 QMF Data Service Solutions Guide	GC27-8887	Internet
Db2 QMF Data Service Customization Guide	GC27-8888	Internet
Getting Started with Db2 IBM QMF Vision	GC27-8889	Internet
Getting Started with QMF Z Client	GC27-9133	Internet
Installing and Managing Db2 QMF Server	GC27-9134	Internet

2.3.1 Optional Program Publications

No optional publications are provided for QMF for z/OS.

2.4 Program Source Materials

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

2.5 Publications Useful During Installation

You might want to use the publications listed in Figure 7 during the installation of QMF for z/OS.

Figure 7. Publications Useful During Installation

Publication Title	Form Number	Media Format
<i>IBM SMP/E for z/OS User's Guide</i>	SA23-2277	http://www.ibm.com/shop/publications/order/
<i>IBM SMP/E for z/OS Commands</i>	SA23-2275	http://www.ibm.com/shop/publications/order/
<i>IBM SMP/E for z/OS Reference</i>	SA23-2276	http://www.ibm.com/shop/publications/order/
<i>IBM SMP/E for z/OS Messages, Codes, and Diagnosis</i>	GA32-0883	http://www.ibm.com/shop/publications/order/

3.0 Program Support

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

3.1 Program Services

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

3.2 Preventive Service Planning

Before you install QMF for 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 6.1.10, "Perform SMP/E APPLY" on page 31 for a sample APPLY command.

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

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

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

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

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

PSP Buckets are identified by UPGRADEs, which specify product levels; and SUBSETs, which specify the FMIDs for a product level. The UPGRADE and SUBSET values for QMF for z/OS are included in Figure 8 on page 12.

Figure 8. PSP Upgrade and Subset ID

UPGRADE	SUBSET	Description
QMFC10	HSQCC10	QMF TSO/CICS Base
	HHPCC10	QMF HPO
	HQDCC10	QMF Data Service
	JYQCC10	QMF applications
	JSQCC1Q	QMF for z/OS OTC

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 9 identifies the component IDs (COMPID) for QMF for z/OS.

Figure 9. Component IDs

FMID	COMPID	Component Name	RETAIN Release
HSQCC10	566872101	QMF TSO/CICS Base	C10
HHPCC10	5668HPO00	QMF HPO	C10
HQDCC10	566872103	QMF Data Service	C10
JYQCC10	5668QCA00	QMF applications	C10
JSQCC1Q	566872101	QMF for z/OS OTC	C1Q

4.0 Program and Service Level Information

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

4.1 Program Level Information

All PTFs for previous releases of QMF for z/OS that were closed on or before August 15, 2016 are incorporated into QMF for z/OS V12.

4.2 Service Level Information

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

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

5.0 Installation Requirements and Considerations

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

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

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

Use separate driving and target systems in the following situations:

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

5.1 Driving System Requirements

This section describes the environment of the driving system required to install QMF for 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 10. Driving System Software Requirements				
Program Number	Product Name	Minimum VRM	Minimum Service Level will satisfy these APARs	Included in the shipped product?
5650-ZOS	z/OS	V02.01.00	N/A	No

Note: SMP/E is a requirement for Installation and is an element of z/OS but can also be ordered as a separate product, 5655-G44, minimally V03.06.00.

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.

5.2 Target System Requirements

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

QMF for z/OS installs in the DBS (P115) 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.

Figure 11 (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?
5650-ZOS	z/OS	02.01.00	N/A	No
Any one of the following:				
5605-DB2	DB2 for z/OS	10.01.00	N/A	No

Figure 11 (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?
5697-P31	DB2 for z/OS VUE	10.01.00	N/A	No
5615-DB2	Db2 for z/OS	11.01.00	N/A	No
5697-P43	Db2 for z/OS VUE	11.01.00	N/A	No
5650-DB2	Db2 for z/OS	12.01.00	N/A	No
5770-AF3	Db2 for z/OS VUE	12.01.00	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.

QMF for 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 12 (Page 1 of 2). Target System Mandatory Operational Requisites

Program Number	Product Name and Minimum VRM/Service Level
Any one of the following:	
5605-DB2	DB2 for z/OS V10.01.00 (all modes except CM8, CM8*, ENFM8, ENFM8*) with APARs PM50434 and PM72274
5697-P31	DB2 for z/OS VUE V10.01.00 (all modes except CM8, CM8*, ENFM8, ENFM8*) with APARs PM50434 and PM72274
5615-DB2	Db2 for z/OS V11.01.00
5697-P43	Db2 for z/OS VUE V11.01.00
5650-DB2	Db2 for z/OS V12.01.00
5770-AF3	Db2 for z/OS VUE V12.01.00
Any one of the following (for QMF under CICS only):	
5655-M15	CICS Transaction Server for z/OS V03.01.00
5655-M15	CICS Transaction Server for z/OS V03.02.00

Figure 12 (Page 2 of 2). Target System Mandatory Operational Requisites

Program Number	Product Name and Minimum VRM/Service Level
5655-S97	CICS Transaction Server for z/OS V04.01.00
5655-S97	CICS Transaction Server for z/OS V04.02.00
5655-Y04	CICS Transaction Server for z/OS V05.01.00
5655-Y04	CICS Transaction Server for z/OS V05.02.00

Note:

- APAR PM50434 add CURRENT QUERY ACCELERATION special register support.
- APAR PM72274 adds CURRENT GET_ACCEL_ARCHIVE special register support.
- For the Db2 QMF applications component, GDDM-PGF, a component in z/OS, is required for advanced graphical capabilities on TSO.
- When you use VSAM data access with Data Service, you need to add the following PTF:
 - RLS OA44111:
 - z/OS V02.01.00 UA75046

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.

QMF for z/OS 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.

QMF for 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.

QMF for z/OS has no negative requisites.

5.2.3 DASD Storage Requirements

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

The following tables list the total space required for each type of library.

Figure 13. Total DASD Space Required by Db2 QMF for z/OS

Library Type	Total Space Required in 3390 Trks
Target	7336
Distribution	6488

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 6.1.8, “Allocate SMP/E Target and Distribution Libraries” on page 30.

3. 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.
4. 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.

5. 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.
- These data sets are not required to be APF-authorized.

The following figures describe the target and distribution libraries required to install QMF for z/OS. The storage requirements of QMF for z/OS must be added to the storage required by other programs that have data in the same library.

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

Figure 14. Storage Requirements for QMF for TSO/CICS 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
SDSQBASE	SAMP	Any	U	PDS	FB	80	9	5
SDSQCHRT	DATA	Any	U	PDS	FB	400	2	5
SDSQCLTE	CLIST	Any	U	PDS	FB	80	34	5
SDSQDBRM	MAC	Any	U	PDS	FB	80	10	5
SDSQEXCE	EXEC	Any	U	PDS	FB	80	21	5
SDSQEXIT	LMOD	Any	U	PDS	U	0	4	5
SDSQLOAD	LMOD	Any	U	PDS	U	0	1626	30
SDSQMAPE	DATA	Any	U	PDS	FB	400	5	5
SDSQMLBE	MSGENU	Any	U	PDS	FB	80	6	5
SDSQPLBE	PNLENU	Any	U	PDS	FB	80	22	10
SDSQPVRE	DATA	Any	U	PDS	V	32622	200	5
SDSQSAPE	MAC	Any	U	PDS	FB	80	51	15
SDSQSLBE	MAC	Any	U	PDS	FB	80	6	5
SDSQTLBE	TBL	Any	U	PDS	FB	80	17	5
SDSQUSRE	MAC	Any	U	PDS	FB	80	26	5

Figure 15. Storage Requirements for QMF HPO 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
SRAACLST	CLIST	Any	U	PDS	FB	80	20	5
SRAADBRM	MAC	Any	U	PDS	FB	80	40	5
SRAAEXEC	EXEC	Any	U	PDS	FB	80	5	5
SRAAISPM	MSGENU	Any	U	PDS	FB	80	25	20
SRAAISPP	PNLENU	Any	U	PDS	FB	80	160	30
SRAALOAD	MOD	Any	U	PDS	U	0	400	25
SRAASAMP	SAMP	Any	U	PDS	FB	80	30	10
SRAASKEL	DATA	Any	U	PDS	FB	80	120	5

Figure 16. Storage Requirements for QMF applications 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
SDYQCFG	DATA	Any	U	PDS	FB	80	5	5

Figure 17 (Page 1 of 2). Storage Requirements for QMF Data Service 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
SCQDBASE	SAMP	Any	U	PDS	FB	80	15	5
SCQDCLOD	MOD	Any	U	PDSE	U	0	10	n/a
SCQDCNTL	DATA	Any	U	PDS	FB	80	30	10
SCQDDBRM	MAC	Any	U	PDS	FB	80	50	5
SCQDEXEC	EXEC	Any	U	PDS	FB	80	60	5
SCQDLOAD	MOD	Any	U	PDSE	U	0	3000	n/a
SCQDMAP	DATA	Any	U	PDS	FB	2048	20	10
SCQDMENU	MSGENU	Any	U	PDS	FB	80	10	5
SCQDOBJX	DATA	Any	U	PDS	FB	80	35	5

Figure 17 (Page 2 of 2). Storage Requirements for QMF Data Service 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
SCQDPENU	PNLENU	Any	U	PDS	FB	80	50	25
SCQDRPC	MOD	Any	U	PDSE	U	0	60	n/a
SCQDSAMP	DATA	Any	U	PDS	FB	80	30	15
SCQDSLIB	SKL	Any	U	PDS	FB	80	5	5
SCQDSMAP	DATA	Any	U	PDS	FB	2048	1050	30
SCQDTENU	TBL	Any	U	PDS	FB	80	5	5
SCQDXATH	DATA	Any	U	PDS	FB	80	15	10
SCQDXCMD	DATA	Any	U	PDS	FB	80	10	5
SCQDXEXC	DATA	Any	U	PDS	FB	80	12	5
SCQDXSQL	DATA	Any	U	PDS	FB	80	15	5
SCQDXTOD	DATA	Any	U	PDS	FB	80	5	5
SCQDXVTB	DATA	Any	U	PDS	FB	80	5	5

Figure 18 (Page 1 of 2). Storage Requirements for QMF for TSO/CICS 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
ADSQBASE	U	PDS	FB	80	9	5
ADSQCHRT	U	PDS	FB	400	2	5
ADSQCLTE	U	PDS	FB	80	34	5
ADSQDBRM	U	PDS	FB	80	10	5
ADSQEXCE	U	PDS	FB	80	14	5
ADSQLOAD	U	PDS	U	0	7	5
ADSQMAPE	U	PDS	FB	400	5	5
ADSQMLBE	U	PDS	FB	80	6	5
ADSQOBJ	U	PDS	U	0	1005	200
ADSQPLBE	U	PDS	FB	80	19	10
ADSQPVRE	U	PDS	V	32622	150	5
ADSQSAPE	U	PDS	FB	80	51	15

Figure 18 (Page 2 of 2). Storage Requirements for QMF for TSO/CICS 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
ADSQSLBE	U	PDS	FB	80	6	5
ADSQTLBE	U	PDS	FB	80	17	5
ADSQUSRE	U	PDS	FB	80	26	5

Figure 19. Storage Requirements for QMF HPO 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
ARAACLST	U	PDS	FB	80	20	5
ARAADBRM	U	PDS	FB	80	40	5
ARAAEXEC	U	PDS	FB	80	5	5
ARAAISPM	U	PDS	FB	80	25	20
ARAAISPP	U	PDS	FB	80	160	30
ARAALOAD	U	PDS	U	0	250	15
ARAASAMP	U	PDS	FB	80	20	10
ARAASKEL	U	PDS	FB	80	120	5

Figure 20. Storage Requirements for QMF applications 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
ADYQCFG	U	PDS	FB	80	5	5

Figure 21. Storage Requirements for QMF Data Service 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
ACQDBASE	U	PDS	FB	80	15	5
ACQDCNTL	U	PDS	FB	80	30	10
ACQDDBRM	U	PDS	FB	80	50	5
ACQDEXEC	U	PDS	FB	80	60	5
ACQDLOAD	U	PDSE	U	0	3000	N/A
ACQDMAP	U	PDS	FB	2048	20	10
ACQDMENU	U	PDS	FB	80	10	5
ACQDOBJX	U	PDS	FB	80	35	5
ACQDPENU	U	PDS	FB	80	50	25
ACQDRPC	U	PDSE	U	0	60	N/A
ACQDSAMP	U	PDS	FB	80	30	15
ACQDSLIB	U	PDS	FB	80	5	5
ACQDSMAP	U	PDS	FB	2048	1050	30
ACQDTENU	U	PDS	FB	80	5	5
ACQDXATH	U	PDS	FB	80	15	10
ACQDXCMD	U	PDS	FB	80	10	5
ACQDXEXC	U	PDS	FB	80	12	5
ACQDXSQL	U	PDS	FB	80	15	5
ACQDXTOD	U	PDS	FB	80	5	5
ACQDXVTB	U	PDS	FB	80	5	5

Figure 22. Storage Requirements for QMF for z/OS Non-SMP/E Data Sets

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
DSQPNLE	U	VSAM	VS	32756	135	n/a

5.3 FMIDs Deleted

Installing QMF for 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 QMF for z/OS into separate SMP/E target and distribution zones.

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

5.4 Special Considerations

- Db2 QMF TSO and CICS Clients' Special Requirements:
 - Operates on any z Systems hardware configuration that supports the required software.
 - Runs on any processor that is supported by the operating system. Some operations, however, will not work with columns that contain decimal floating point data if the processor on which QMF is running does not support decimal floating point instructions.
 - Accesses all of the DASD devices that are supported by z/OS and Db2 for z/OS, as well as all display devices supported by Graphical Data Display Manager (GDDM).
 - To implement a national language feature that uses a double-byte character set (DBCS), you need a workstation that supports DBCS. Ensure that this device is supported by GDDM.
 - For the amount of storage required to copy the QMF V12.1 libraries from the distribution media using SMP/E, see the QMF program directory that is appropriate for your QMF edition and national language.
 - When you plan your region size, consider the storage required to load modules during initialization and the virtual storage requirements for report operations.
 - Restriction: For TSO only, consider the amount of space required to run applications other than Db2 QMF.
- Db2 QMF Data Service Special Requirements:
 - Operates on any z Systems hardware configuration that supports the required software
 - Runs on any processor that is supported by the operating system
- Db2 QMF Data Service Studio Special Requirements:
 - Any hardware configuration that supports the required Microsoft software
 - Approximately 1 GB of disk space (single language installation)
 - Minimum of 1 GB of RAM
 - Network connectivity

6.0 Installation Instructions

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

Please note the following points:

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

6.1 Installing QMF for z/OS

6.1.1 SMP/E Considerations for Installing QMF for z/OS

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

6.1.2 SMP/E Options Subentry Values

The recommended values for certain SMP/E CSI subentries are shown in Figure 23. 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 23. SMP/E Options Subentry Values

Subentry	Value	Comment
DSSPACE	(500,500,500)	3390 DASD tracks
PEMAX	SMP/E Default	IBM recommends using the SMP/E default for PEMAX.

6.1.3 SMP/E CALLLIBS and SIDE DECK PROCESSING

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

- CSSLIB
- SADMMOD
- SCCNOBJ

- SCEELKED
- SCEESPC
- SCSQLOAD
- SDFHLOAD
- SISPLOAD

QMF for z/OS also uses Side Deck processing during link-edits. When QMF for z/OS is installed, ensure that the DDDEFs exist for the following libraries:

- SDSNLOAD

6.1.4 Sample Jobs

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

<i>Figure 24 (Page 1 of 2). Sample Installation Jobs</i>			
Job Name	Job Type	Description	RELFILE
DSQALA	SMP/E	Sample job to allocate and initialize a new SMP/E CSI data set (Optional)	IBM.HSQCC10.F2
DSQALB	SMP/E	Sample job to allocate SMP/E data sets (Optional)	IBM.HSQCC10.F2
DSQRECV1	RECEIVE	Sample RECEIVE job for QMF TSO/CICS Base	IBM.HSQCC10.F2
DSQRECV2	RECEIVE	Sample RECEIVE job for QMF HPO	IBM.HSQCC10.F2
DSQRECV3	RECEIVE	Sample RECEIVE job for QMF applications	IBM.HSQCC10.F2
CQDRECV4	RECEIVE	Sample RECEIVE job for QMF Data Service	IBM.HQDCC10.F2
DSQRECVQ	RECEIVE	Sample RECEIVE job for QMF for z/OS OTC	IBM.HSQCC10.F2
DSQALLOC	ALLOCATE	Sample job to allocate target and distribution libraries for QMF (TSO/CICS, OTC, HPO and QMF applications)	IBM.HSQCC10.F2
CQDALOC4	ALLOCATE	Sample job to allocate target and distribution libraries for QMF Data Service	IBM.HQDCC10.F2
DSQDDEF	DDDEF	Sample job to define SMP/E DDDEFs for QMF (TSO/CICS, OTC, HPO and QMF applications)	IBM.HSQCC10.F2
CQDDDEF4	DDDEF	Sample job to define SMP/E DDDEFs for QMF Data Service	IBM.HQDCC10.F2
DSQAPPLY	APPLY	Sample APPLY job for QMF (TSO/CICS, HPO and QMF applications)	IBM.HSQCC10.F2
CQDAPLY4	APPLY	Sample APPLY job for QMF Data Service	IBM.HQDCC10.F2
DSQAPLYQ	APPLY	Sample APPLY job for QMF (OTC)	IBM.HSQCC10.F2

Figure 24 (Page 2 of 2). Sample Installation Jobs

Job Name	Job Type	Description	RELFILE
DSQACCEP	ACCEPT	Sample ACCEPT job for QMF (TSO/CICS, HPO and QMF applications)	IBM.HSQCC10.F2
CQDACCE4	ACCEPT	Sample ACCEPT job for QMF Data Service	IBM.HQDCC10.F2
DSQACCEQ	ACCEPT	Sample ACCEPT job for QMF (OTC)	IBM.HSQCC10.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 30) then copy the jobs from the RELFILES to a work data set for editing and submission. See Figure 24 on page 27 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=*
//*****
/* Make the //TAPEIN DD statement below active if you install*
/* from a CBPDO tape by uncommenting the DD statement below. *
//*****
/*TAPEIN DD DSN=IBM.HSQCC10.F2,UNIT=tunit,
/* VOL=SER=volser,LABEL=(x,SL),
/* DISP=(OLD,KEEP)
/*TAPEIN2 DD DSN=IBM.HQDCC10.F2,UNIT=tunit,
/* VOL=SER=volser,LABEL=(x,SL),
/* DISP=(OLD,KEEP)
//*****
/* Make the //TAPEIN DD statement below active if you install*
/* from a product tape received outside the CBPDO process *
/* (using the optional SMP/E RECEIVE job) by uncommenting *
/* the DD statement below. *
//*****
/*TAPEIN DD DSN=IBM.HSQCC10.F2,UNIT=tunit,
/* VOL=SER=SQCC10,LABEL=(3,SL),
/* DISP=(OLD,KEEP)
/*TAPEIN2 DD DSN=IBM.HQDCC10.F2.,UNIT=tunit,
/* VOL=SER=QDCC10,LABEL=(3,SL),
/* DISP=(OLD,KEEP)
//*****
/* Make the //FILEIN DD statement below active for *
/* downloaded DASD files. *
//*****
/*FILEIN DD DSN=IBM.HSQCC10.F2,UNIT=SYSALLDA,DISP=SHR,
/* VOL=SER=filevol
```



```

//*FILEIN2 DD DSN=IBM.HQDCC10.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,(20,10,5))
//SYSUT3   DD UNIT=SYSALLDA,SPACE=(CYL,(1,1))
//SYSIN    DD *
          COPY INDD=xxxxIN,OUTDD=OUT
          COPY INDD=yyyyIN,OUTDD=OUT
/*

```

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

TAPEIN/TAPEIN2:

tunit is the unit value that matches the product package.

volser is the volume serial that matches the product package.

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.HSQCC10.F2 and IBM.HQDCC10.F2 on the tape.

FILEIN/FILEIN2:

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.

yyyyIN is either TAPEIN2 or FILEIN2 depending on your input DD statement.

6.1.5 Allocate SMP/E CSI (Optional)

If you are using an existing CSI, do not execute this job.

If you are allocating a new SMP/E data set for this install, edit and submit sample job DSQALA to allocate the SMP/E data set for QMF for z/OS. 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.

6.1.6 Initialize CSI zones (Optional)

If you are using an existing CSI, do not execute this job.

Edit and submit sample job DSQALB to initialize SMP/E zones for QMF for z/OS. 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 QMF for z/OS as part of a CBPDO, use the RCVPDO job in the CBPDO RIMLIB data set to receive the QMF for 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 sample job DSQRECV1 to perform the SMP/E RECEIVE for QMF TSO/CICS Base. 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.

- You can also choose to edit and submit sample job DSQRECV2 to perform the SMP/E RECEIVE for QMF HPO. 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.

- You can also choose to edit and submit sample job DSQRECV3 to perform the SMP/E RECEIVE for QMF applications. 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.

- You can also choose to edit and submit sample job CQDRECV4 to perform the SMP/E RECEIVE for QMF Data Service. 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.

- You can also choose to edit and submit sample job DSQRECVQ to perform the SMP/E RECEIVE for QMF for z/OS OTC. 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 Allocate SMP/E Target and Distribution Libraries

Edit and submit sample job DSQALLOC to allocate the SMP/E target and distribution libraries for QMF for z/OS. 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.

Edit and submit sample job CQDALOC4 to allocate the SMP/E target and distribution libraries for QMF Data Service. 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.

6.1.9 Create DDDEF Entries

Edit and submit sample job DSQDDEF to create DDDEF entries for the SMP/E target and distribution libraries for QMF for z/OS. 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.

Edit and submit sample job CQDDDEF4 to create DDDEF entries for the SMP/E target and distribution libraries for QMF Data Service. 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.

6.1.10 Perform SMP/E APPLY

1. Ensure that you have the latest HOLDDATA; then edit and submit sample job DSQAPPLY to perform an SMP/E APPLY CHECK for QMF TSO/CICS Base, HPO and QMF applications. 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:

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

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

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

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

- b. To install the FMIDs without regard for unresolved HIPER APARs, you can add the BYPASS(HOLDCLASS(HIPER)) operand to the APPLY CHECK command. This will allow you to

install FMIDs even though one or more unresolved HIPER APARs exist. After the FMIDs are installed, use the SMP/E REPORT ERRSYSMODS command to identify unresolved HIPER APARs and any fixing PTFs.

```
APPLY S(fmid,fmid,...) CHECK
FORFMID(fmid,fmid,...)
SOURCEID(RSU*)
FIXCAT(IBM.ProductInstall-RequiredService)
GROUPEXTEND
BYPASS(HOLDCLASS(HIPER),HOLDFIXCAT) .
..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: You will receive a return code of 0 or 4 if this job runs correctly.

You may receive any of the following messages which do not affect product installation: GIM23903I, GIM23903W, GIM23913W, IEW2454W.

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: You will receive a return code of 0 or 4 if this job runs correctly.

You may receive any of the following messages which do not affect product installation: GIM23903I, GIM23903W, GIM23913W, IEW2454W.

3. You can also choose to edit and submit sample job CQDAPLY4 to perform the SMP/E APPLY CHECK for QMF Data Service. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages: You will receive a return code of 0 or 4 if this job runs correctly. You may also receive the following message for DFHE11 in the CQDHLI module which does not affect product installation: IEW2456E. This means CICS is not setup for this installation.

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

Expected Return Codes and Messages: You will receive a return code of 0 or 4 if this job runs correctly. You may also receive the following message for DFHE11 in the CQDHLI module which does not affect product installation: IEW2456E. This means CICS is not setup for this installation.

4. You can also choose to edit and submit sample job DSQAPLYQ to perform the SMP/E APPLY CHECK for QMF for z/OS OTC. 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.

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

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

6.1.11 Perform SMP/E ACCEPT

Edit and submit sample job DSQACCEP to perform an SMP/E ACCEPT CHECK for QMF TSO/CICS Base, HPO and QMF applications. Consult the instructions in the sample job for more information.

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

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

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

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

Expected Return Codes and Messages from ACCEPT CHECK: You will receive a return code of 0 or 4 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 or 4 if this job runs correctly.

You can also choose to edit and submit sample job CQDACCE4 to perform the SMP/E ACCEPT CHECK for QMF Data Service. Consult the instructions in the sample job for more information.

Expected Return Codes and Messages: You will receive a return code of 0 or 4 if this job runs correctly. You may receive the following message for DFHEI1 in the CQDHLI module which does not affect product installation: IEW2456E. This means CICS is not setup for this installation.

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

Expected Return Codes and Messages: You will receive a return code of 0 or 4 if this job runs correctly. You may receive the following message for DFHEI1 in the CQDHLI module which does not affect product installation: IEW2456E. This means CICS is not setup for this installation.

You can also choose to edit and submit sample job DSQACCEQ to perform the SMP/E ACCEPT CHECK for QMF for z/OS OTC. 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.

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

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

6.1.12 Run REPORT CROSSZONE

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

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

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

6.2 Activating QMF for z/OS

Once the SMP/E installation is completed for QMF for z/OS, the QMF VSAM panel library, DSQPNLE, must be populated. The VSAM data set DSQPNLE was created when QMF SMP/E job, DSQALLOC (allocate QMF target and distribution libraries), was run in section 6.1.8 "Allocate SMP/E Target and Distribution Libraries" of this Program Directory.

Edit the job SDSQSAPE(DSQ1EPNL). Modify the job card and the variable QMFTPRES to the QMF target library prefix. Submit the job and verify that it runs successfully. This job will copy member DSQPNLE from the SDSQPVRE target library to the VSAM panel data set.

6.2.1 Product Customization

The publication *Installing and Managing Db2 QMF for TSO and CICS*, GC27-8877, contains the step-by-step procedures to customize and use QMF for TSO/CICS and QMF applications.

The publication *Db2 High Performance Option User's Guide for TSO and CICS*, SC27-8882, contains the necessary information to customize and use QMF HPO.

The publication *IBM Db2 QMF Data Service Customization Guide*, GC27-8888, contains the necessary information to customize and use QMF Data Service.

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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Program Directory for IBM Db2 Query Management Facility for z/OS, June 2018

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