IBM

Program Directory for

MQSeries for OS/390

Version 5 Release 2, Modification Level 0

Program Number 5655-F10

FMID HMS5200

for Use with
OS/390

Document Date: November 2000

GI10-2532-00

> **Note!**
>
> Before using this information and the product it supports, be sure to read the general information under "Notices" on page vii.

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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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1.0 Introduction

This program directory is intended for the system programmer responsible for program installation and maintenance. It contains information concerning the material and procedures associated with the installation of MQSeries for OS/390. This publication refers to MQSeries for OS/390 as MQSeries for OS/390. You should read all of this program directory before installing the program and then keep it for future reference.

The program directory contains the following sections:

- 2.0, "Program materials" on page 3 identifies the basic and optional program materials and documentation for MQSeries for OS/390.

- 3.0, "Program support" on page 9 describes the IBM support available for MQSeries for OS/390.

- 4.0, "Program and service level information" on page 11 lists the APARs (program level) and PTFs (service level) incorporated into MQSeries for OS/390.

- 5.0, "Installation requirements and considerations" on page 14 identifies the resources and considerations for installing and using MQSeries for OS/390.

- 6.0, "Installation instructions" on page 24 provides detailed installation instructions for MQSeries for OS/390. It also describes the procedures for activating the functions of MQSeries for OS/390, or refers to appropriate publications.

- Appendix A, "MQSeries for OS/390 install logic" on page 48 provides the install logic for MQSeries for OS/390.

- Appendix B, "Customizing the sample installation manually" on page 49 describes what you must do if you wish to customize the sample installation jobs manually.

- Appendix C, "Enabling automatic relinking after service is applied" on page 51 describes how to use an SMP/E option to perform automatic cross-zone link-editing after service has been applied.

- Appendix D, "Migration considerations" on page 53 describes what you must do when migrating from an earlier release of MQSeries for OS/390 or MQSeries for MVS/ESA.

- Appendix E, "Getting started with the Internet Gateway" on page 60 describes how to set up the Internet Gateway feature.

Before installing MQSeries for OS/390, read 3.2, "Preventive service planning" on page 9. This section tells you how to find any updates to the information and procedures in this program directory.

Do not use this program directory if you are installing MQSeries for OS/390 with a SystemPac or ServerPac. When using these offerings, use the jobs and documentation supplied with the offering. This documentation may point you to specific sections of the program directory as required.

If you are installing MQSeries for OS/390 using the MVS Custom-Built Product Delivery Offering (CBPDO, 5751-CS3), a softcopy program directory is provided on the CBPDO tape which is identical to the printed copy shipped with your order. Your CBPDO contains a softcopy preventive service planning (PSP)

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upgrade for this product. All service and HOLDDATA for MQSeries for OS/390 are included on the CBPDO tape.

1.1 MQSeries for OS/390 description

MQSeries for OS/390 enables OS/390 applications to use message queuing to participate in message-driven processing. With message-driven processing, applications can communicate across different platforms by using the appropriate MQSeries products. All MQSeries products implement a common application programming interface whatever platform the applications run on. The calls made by the applications and the messages they exchange are common.

1.2 MQSeries for OS/390 FMIDs

MQSeries for OS/390 consists of the following FMIDs:

> HMS5200
> JMS5201
> JMS5202
> JMS5203
> JMS5204
> JMS5205
> JMS5206
> JMS5207

2.0 Program materials

An IBM program is identified by a program number and a feature number. The program number for MQSeries for OS/390 is 5655-F10.

Basic Machine-Readable Materials are materials that are supplied under the base license and feature code, and are required for the use of the product. Optional Machine-Readable Materials are orderable under separate feature codes, and are not required for the product to function.

The program announcement material describes the features supported by MQSeries for OS/390. 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 9-track magnetic tape (written at 6250 BPI), 3480 cartridge, or 4mm cartridge. The tape or cartridge contains all the programs and data needed for installation. It is installed using SMP/E, and is in SMP/E RELFILE format. See 6.0, "Installation instructions" on page 24 for more information about how to install the program.

Figure 1 describes the tape or cartridge. Figure 2 on page 4 describes the file content of the program tape or cartridge.

Notes:

1. The data set attributes in these tables should be used in the JCL of jobs accessing the tape, but since the data sets on the tape are in IEBCOPY unloaded format, their actual attributes may be different.

2. If you are installing MQSeries for OS/390 using the MVS Custom-Built Product Delivery Offering (CBPDO) (5751-CS3), some of the information in these figures may not be valid. Consult the CBPDO documentation for actual values.

3. If any RELFILEs are identified as PDSEs, ensure that SMPTLIB data sets are allocated as PDSEs.

Figure 1. Basic material: program tape				
Medium	**Feature Number**	**Physical Volume**	**External Label Identification**	**VOLSER**
6250 tape	5811	1	MQ FOR OS/390 V5.2	MS5200
3480 cart.	5812	1	MQ FOR OS/390 V5.2	MS5200
4mm cart.	6147	1	MQ FOR OS/390 V5.2	MS5200
6250 tape	5821	1	MQ CLIENT FEATURE	MS5207
3480 cart.	5822	1	MQ CLIENT FEATURE	MS5207
4mm cart.	6149	1	MQ CLIENT FEATURE	MS5207

Program materials

VOLSER	File	Name	Dist Library	ORG	RECFM	LRECL	BLK SIZE
MS5200	1	SMPMCS	n/a	SEQ	FB	80	8800
	2	IBM.HMS5200.F1	n/a	PDS	FB	80	27920
	3	IBM.HMS5200.F2	ACSQINST	PDS	FB	80	8800
	4	IBM.HMS5200.F3	ACSQASMS	PDS	FB	80	8800
	5	IBM.HMS5200.F4	ACSQCLST	PDS	FB	80	8800
	6	IBM.HMS5200.F5	ACSQCOBC	PDS	FB	80	8800
	7	IBM.HMS5200.F6	ACSQCOBS	PDS	FB	80	8800
	8	IBM.HMS5200.F7	ACSQCPPS	PDS	FB	80	8800
	9	IBM.HMS5200.F8	ACSQC37S	PDS	FB	80	8800
	10	IBM.HMS5200.F9	ACSQC370	PDS	FB	80	8800
	11	IBM.HMS5200.F10	ACSQDEFS	PDS	FB	80	8800
	12	IBM.HMS5200.F11	ACSQEXEC	PDS	FB	80	8800
	13	IBM.HMS5200.F12	ACSQHPPS	PDS	FB	80	8800
	14	IBM.HMS5200.F13	ACSQMACS	PDS	FB	80	8800
	15	IBM.HMS5200.F14	ACSQMAPS	PDS	FB	80	8800
	16	IBM.HMS5200.F15	ACSQMOD	PDS	U	0	6144
	17	IBM.HMS5200.F16	ACSQPLIC	PDS	FB	80	8800
	18	IBM.HMS5200.F17	ACSQPLIS	PDS	FB	80	8800
	19	IBM.HMS5200.F18	ACSQPNLA	PDS	FB	80	8800
	20	IBM.HMS5200.F19	ACSQPROC	PDS	FB	80	8800
	21	IBM.HMS5200.F20	ACSQSKL	PDS	FB	80	8800
	22	IBM.JMS5201.F1	n/a	PDS	FB	80	27920
	23	IBM.JMS5201.F2	ACSQMOD	PDS	U	0	6144
	24	IBM.JMS5201.F3	ACSQMSGE	PDS	FB	80	8800
	25	IBM.JMS5201.F4	ACSQPNLE	PDS	FB	80	8800
	26	IBM.JMS5201.F5	ACSQTBLE	PDS	FB	80	8800
	27	IBM.JMS5202.F1	n/a	PDS	FB	80	27920
	28	IBM.JMS5202.F2	ACSQMOD	PDS	U	0	6144
	29	IBM.JMS5202.F3	ACSQMSGK	PDS	FB	80	8800

Figure 2 (Page 1 of 2). Program tapes: file content

VOLSER	File	Name	Dist Library	ORG	RECFM	LRECL	BLK SIZE
	30	IBM.JMS5202.F4	ACSQPNLK	PDS	FB	80	8800
	31	IBM.JMS5202.F5	ACSQTBLK	PDS	FB	80	8800
	32	IBM.JMS5203.F1	n/a	PDS	FB	80	27920
	33	IBM.JMS5203.F2	ACSQMOD	PDS	U	0	6144
	34	IBM.JMS5203.F3	ACSQMSGC	PDS	FB	80	8800
	35	IBM.JMS5203.F4	ACSQPNLC	PDS	FB	80	8800
	36	IBM.JMS5203.F5	ACSQTBLC	PDS	FB	80	8800
	37	IBM.JMS5204.F1	n/a	PDS	FB	80	27920
	38	IBM.JMS5204.F2	ACSQMOD	PDS	U	0	6144
	39	IBM.JMS5204.F3	ACSQMSGU	PDS	FB	80	8800
	40	IBM.JMS5204.F4	ACSQPNLU	PDS	FB	80	8800
	41	IBM.JMS5204.F5	ACSQTBLU	PDS	FB	80	8800
	42	IBM.JMS5205.F1	n/a	PDS	FB	80	27920
	43	IBM.JMS5205.F2	ACSQMOD	PDS	U	0	6144
	44	IBM.JMS5206.F1	n/a	PDS	FB	80	27920
	45	IBM.JMS5206.F2	ACSQMOD	PDS	U	0	6144
	46	IBM.JMS5206.F3	ACSQOBIN	PDS	VB	32000	32004
	47	IBM.JMS5206.F4	ACSQODOC	PDS	VB	32000	32004
	48	IBM.JMS5206.F5	ACSQODOE	PDS	VB	32000	32004
	49	IBM.JMS5206.F6	ACSQODOK	PDS	VB	32000	32004
	50	IBM.JMS5206.F7	ACSQODOU	PDS	VB	32000	32004
	51	IBM.JMS5206.F8	ACSQONLC	PDS	VB	32000	32004
	52	IBM.JMS5206.F9	ACSQONLE	PDS	VB	32000	32004
	53	IBM.JMS5206.F10	ACSQONLK	PDS	VB	32000	32004
	54	IBM.JMS5206.F11	ACSQONLU	PDS	VB	32000	32004
	55	IBM.JMS5206.F12	ACSQOSMP	PDS	VB	130	27998
MS5207	1	SMPMCS	n/a	SEQ	FB	80	8800
	2	IBM.JMS5207.F1	n/a	PDS	FB	80	27920
	3	IBM.JMS5207.F2	ACSQMOD	PDS	U	0	6144

Figure 2 (Page 2 of 2). Program tapes: file content

2.2 Optional machine-readable material

The distribution medium for this program is 9-track magnetic tape (written at 6250 BPI), 3480 cartridge, or 4mm cartridge.

Figure 3 on page 6 describes the tape or cartridge. Figure 2 on page 4 describes the file content of the tape or cartridge.

Use SMP/E to load the optional materials from the tape.

Medium	Feature Number	Physical Volume	External Label Identification	VOLSER
Figure 3. Optional material: Japanese language feature				
6250 tape	5801	1	MQ FOR OS/390 V5.2	MS5200
3480 cart.	5802	1	MQ FOR OS/390 V5.2	MS5200
4mm cart.	6148	1	MQ FOR OS/390 V5.2	MS5200

2.3 Program publications

The following sections identify the basic and optional publications for MQSeries for OS/390.

2.3.1 Basic program publications

Figure 4 identifies the basic unlicensed program publications for MQSeries for OS/390. One copy of each of these publications is included when you order the basic materials for MQSeries for OS/390. For additional copies, contact your IBM representative.

Publication Title	Form Number
Figure 4 (Page 1 of 2). Basic material: unlicensed publications	
MQSeries Application Programming Guide	SC33-0807
MQSeries MQSC Command Reference	SC33-1369
MQSeries Application Programming Reference	SC33-1673
MQSeries Intercommunication	SC33-1872
MQSeries Using C++	SC33-1877
MQSeries Programming Interfaces Reference Summary	SX33-6095
MQSeries Queue Manager Clusters	SC34-5349
MQSeries for OS/390 Messages and Codes	GC34-5891

Figure 4 (Page 2 of 2). Basic material: unlicensed publications	
Publication Title	**Form Number**
MQSeries for OS/390 Problem Determination Guide	GC34-5892
MQSeries Using Java	SC34-5456
MQSeries Application Messaging Interface	SC34-5604
MQSeries for OS/390 Concepts and Planning Guide	GC34-5650
MQSeries for OS/390 System Setup Guide	SC34-5651
MQSeries for OS/390 System Administration Guide	SC34-5652
MQSeries Event Monitoring	SC34-5760
MQSeries Family: Product Summaries	GC34-5780

2.3.2 Optional program publications

No optional publications are provided for MQSeries for OS/390.

2.4 Program source materials

No program source materials or viewable program listings are provided for MQSeries for OS/390.

2.5 Publications useful during installation

The publications listed in Figure 5 may be useful during the installation of MQSeries for OS/390. To order copies, contact your IBM representative.

Figure 5 (Page 1 of 2). Publications useful during installation	
Publication Title	**Form Number**
OS/390 MVS Initialization and Tuning Reference	SC28-1752
OS/390 MVS JCL Reference	GC28-1757
OS/390 SMP/E Commands	SC28-1805
OS/390 SMP/E Messages and Codes	SC28-1738
OS/390 SMP/E Reference	SC28-1806
OS/390 SMP/E User's Guide	SC28-1740
OS/390 UNIX System Services Assembler Callable Services	SC28-1899
OS/390 UNIX System Services Planning	SC28-1890

Program materials

Figure 5 (Page 2 of 2). Publications useful during installation	
Publication Title	**Form Number**
OS/390 UNIX System Services User's Guide	SC28-1891

3.0 Program support

This section describes the IBM support available for MQSeries for OS/390.

3.1 Program services

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

3.2 Preventive service planning

Before installing MQSeries for OS/390, you should review the current Preventive Service Planning (PSP) information. If you obtained MQSeries for OS/390 as part of a CBPDO, there is HOLDDATA and PSP information included on the CBPDO tape.

If you obtained MQSeries for OS/390 on a product tape, or if the CBPDO is more than two weeks old when you install it, you should contact the IBM Support Center or use S/390 SoftwareXcel to obtain the current "PSP Bucket".

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 MQSeries for OS/390 are:

Figure 6. PSP upgrade and subset ID		
UPGRADE	**SUBSET**	**Description**
MQMESA	HMS5200	MQSeries for OS/390 base program
MQMESA	JMS5201	U.S. English language feature
MQMESA	JMS5202	Japanese language feature
MQMESA	JMS5203	Simplified Chinese language feature
MQMESA	JMS5204	U.S. English (uppercase) language feature
MQMESA	JMS5205	CICS Mover feature
MQMESA	JMS5206	Internet Gateway feature
MQMESA	JMS5207	Client Attachment feature

3.3 Statement of support procedures

Report any difficulties you have using this program to your IBM Support Center. If an APAR is required, the Support Center will provide the address to which any needed documentation can be sent.

Figure 7 identifies the component IDs (COMPID) for MQSeries for OS/390.

Program support

			RETAIN
FMID	**COMPID**	**Component Name**	**Release**
HMS5200	5655F1000	MQSeries for OS/390 base program	200
JMS5201	5655F1000	U.S. English language feature	201
JMS5202	5655F1000	Japanese language feature	202
JMS5203	5655F1000	Simplified Chinese language feature	203
JMS5204	5655F1000	U.S. English (uppercase) language feature	204
JMS5205	5655F1000	CICS Mover feature	205
JMS5206	5655F1000	Internet Gateway feature	206
JMS5207	5655F1000	Client Attachment feature	207

Figure 7. Component IDs

4.0 Program and service level information

This section identifies the program and any relevant service levels of MQSeries for OS/390. The program level refers to the APAR fixes incorporated into the program. The service level refers to the PTFs integrated. Information about the cumulative service tape is also provided.

4.1 Program level information

The following APAR fixes against previous releases of MQSeries for OS/390 have been incorporated into this release.

• PQ23753	• PQ24996	• PQ27865	• PQ31404
• PQ23908	• PQ25045	• PQ28083	• PQ31478
• PQ23961	• PQ25058	• PQ28093	• PQ31923
• PQ24102	• PQ25103	• PQ28097	• PQ32562
• PQ24249	• PQ25509	• PQ28656	• PQ32916
• PQ24563	• PQ25715	• PQ28658	• PQ32990
• PQ24762	• PQ25870	• PQ28809	• PQ33000
• PQ24815	• PQ25977	• PQ28835	• PQ33064
• PQ24822	• PQ26242	• PQ28919	• PQ33145
• PQ24889	• PQ26256	• PQ29288	• PQ33173
• PQ24911	• PQ26260	• PQ30172	• PQ33221
• PQ24913	• PQ26511	• PQ30441	• PQ33439
• PQ24943	• PQ26840	• PQ30471	• PQ33989
• PQ24944	• PQ26877	• PQ30592	• PQ34040
• PQ24946	• PQ27443	• PQ30593	• PQ34054
• PQ24975	• PQ27650	• PQ30602	• PQ34067
• PQ24979	• PQ27661	• PQ30683	• PQ34074
• PQ24984	• PQ27685	• PQ30889	• PQ34108
• PQ24985	• PQ27692	• PQ30963	• PQ34133
• PQ24991	• PQ27752	• PQ30967	• PQ34162
• PQ24992	• PQ27761	• PQ31265	• PQ34165
• PQ24994	• PQ27824	• PQ31397	• PQ34173

Program and service level information

- PQ34240
- PQ34251
- PQ34271
- PQ34281
- PQ34328
- PQ34355
- PQ34392
- PQ34428
- PQ34429
- PQ34433
- PQ34537
- PQ34556
- PQ34606
- PQ34808
- PQ34913
- PQ35168
- PQ35415
- PQ35501
- PQ35774
- PQ35786
- PQ35868
- PQ36134
- PQ36139
- PQ36229
- PQ36267
- PQ36485
- PQ36497
- PQ36518
- PQ36569
- PQ36578
- PQ36590
- PQ36626
- PQ36747
- PQ36860
- PQ36904
- PQ36941
- PQ36946
- PQ37037
- PQ37221
- PQ37333
- PQ37451
- PQ37594
- PQ37603
- PQ37701
- PQ37846
- PQ37956
- PQ38002
- PQ38028
- PQ38133
- PQ38162
- PQ38203
- PQ38227
- PQ38340
- PQ38400
- PQ38401
- PQ38404
- PQ38405
- PQ38411
- PQ38438
- PQ38480
- PQ38484
- PQ38634
- PQ38640
- PQ38645
- PQ38797
- PQ38818
- PQ38984
- PQ39103
- PQ39177
- PQ39541
- PQ40071
- PQ40084
- PQ40254
- PQ40433
- PQ40517
- PQ40659
- PQ40672
- PQ40749
- PQ41248
- PQ41396
- PQ41731

4.2 Service level information

No PTFs against this release of MQSeries for OS/390 have been incorporated into the product tape.

4.3 Cumulative service tape

A cumulative service tape, containing PTFs not incorporated into this release, might be included with this program. Installation instructions for cumulative service tapes can be found in the SMP/E publications. It is recommended that you RECEIVE, APPLY, and ACCEPT the base product and any features before you apply any service.

If you received this product as part of a CBPDO or a ProductPac, PTFs not incorporated into this release are provided on the tape, and a separate cumulative service tape will not be provided.

5.0 Installation requirements and considerations

The following sections identify the system requirements for installing and activating MQSeries for OS/390. The following terminology is used:

- *Driving system*: the system used to install the program.

- *Target system*: the system on which the program is installed.

In many cases, the same system can be used as both a driving system and a target system. However, you may want to set up a clone of your system to use as a target system by making a separate IPL-able copy of the running system. The clone should 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.

Some cases where two systems should be used include the following:

- When installing a new level of a product that is already installed, the new product will delete the old one. By installing onto a separate target system, you can test the new product while still keeping the old one in production.

- When installing a product that shares libraries or load modules with other products, the installation can disrupt the other products. Installing onto a test system or clone will allow you to 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 MQSeries for OS/390.

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 8. Driving system software requirements	
Program Number	**Product Name and Minimum VRM/Service Level**
5647-A01	OS/390 Version 2 Release 6 with PTF UR51068, or higher

5.2 Target system requirements

This section describes the environment of the target system required to install and use MQSeries for OS/390.

MQSeries for OS/390 installs in the MVS (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 Mandatory requisites

A mandatory requisite is defined as a product that is required without exception; this product either **will not install** or **will not function** unless this requisite is met. This includes products that are specified as REQs or PREs.

Figure 9. Mandatory requisites	
Program Number	**Product Name and Minimum VRM/Service Level**
5647-A01	OS/390 Version 2 Release 6 with PTF UR51068, or higher

5.2.2.2 Functional requisites

A functional requisite is defined as a product that is **not** required for the successful installation of this product or for the basic function of the product, but **is** needed at run time for a specific function of this product to work. This includes products that are specified as IF REQs.

Figure 10 (Page 1 of 2). Functional requisites		
Program Number	**Product Name and Minimum VRM/Service Level**	**Function**
5696-234	High Level Assembler Version 1.2 or higher	Assembler applications
5647-A01	IBM OS/390 C/C++	C and C++ applications
5647-A01	ISPF Version 4.2.1 or higher	Operations and control panels
5655-176	IMS Version 5.1 or higher	IMS applications
5647-A01	OS/390 Version 2.6 or higher	Workload manager
5655-A96	MQSeries WorkFlow Version 3.1 or higher	Workload manager
5655-DB2	IBM DB2 UDB Server for OS/390 Version 5 or higher	Shared-queue access

Program Number	Product Name and Minimum VRM/Service Level	Function
Figure 10 (Page 2 of 2). Functional requisites		
	SOLVE:TCPACCESS Version 4.1 or higher	Interlink TCP/IP
Any **one** of the following:		
5688-235	IBM PL/I for MVS and VM Version 1.1 or higher	PL/I applications
5688-235	IBM SAA AD/Cycle PL/I MVS & VM	PL/I applications
Any **one** of the following:		
5655-018	CICS for MVS/ESA Version 4.1 or higher	CICS applications
5655-147	CICS Transaction Server for OS/390 (any version)	CICS applications
Any **one** of the following:		
5688-197	IBM SAA AD/Cycle COBOL/370	COBOL applications
5688-197	IBM COBOL for OS/390 and VM	COBOL applications
5688-197	IBM COBOL for MVS and VM	COBOL applications

5.2.2.3 Toleration/coexistence requisites

A toleration/coexistence requisite is defined as a product which must be present on a sharing system. 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 at different time intervals.

MQSeries for OS/390 has no toleration/coexistence requisites.

5.2.2.4 Incompatibility (negative) requisites

A negative requisite identifies products which must *not* be installed on the same system as this product.

MQSeries for OS/390 has no negative requisites.

5.2.3 DASD storage requirements

MQSeries for OS/390 libraries can reside on any type of DASD.

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

Figure 11. Total DASD space required by MQSeries for OS/390	
Library Type	**Total Space Required**
Target	1396 tracks
Distribution	1519 tracks
HFS	2 MB

Notes:

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

2. Abbreviations used for the data set type are:

   U   Unique data set, allocated by this product and used only by this product. In order to determine the correct storage needed for this data set, this table provides all required information; no other tables (or program directories) need to be referenced for the data set size.

   S   Shared data set, allocated by this product and used by this product and others. In order to determine the correct storage needed for this data set, the storage size given in this table needs to be added to 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 others. This data set is NOT allocated by this product. In order to determine the correct storage needed for this data set, the storage size given in this table needs to be added to other tables (perhaps in other program directories). This existing data set 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 one and reclaim the space used by the old release and any service that had been installed. You can determine whether or not 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.

Figure 12 (Page 1 of 2). Storage requirements for SMP/E work data sets						
Library DDNAME	**TYPE**	**ORG**	**RECFM**	**LRECL**	**No. of 3390 Trks**	**No. of DIR Blks**
SMPWRK1	S	PDS	FB	80	26	111
SMPWRK2	S	PDS	FB	80	26	111

Installation requirements and considerations

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
Figure 12 (Page 2 of 2). Storage requirements for SMP/E work data sets						
SMPWRK3	S	PDS	FB	80	36	111
SMPWRK4	S	PDS	FB	80	36	111
SMPWRK6	S	PDS	FB	80	26	111
SYSUT1	U	SEQ	--	--	26	0
SYSUT2	U	SEQ	--	--	26	0
SYSUT3	U	SEQ	--	--	26	0
SYSUT4	U	SEQ	--	--	26	0

The following table provides an estimate of the storage needed in the SMP/E data sets for MQSeries for OS/390. The estimates must be added to those of any other programs and service being installed to determine the total additional storage requirements.

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
Figure 13. Storage requirements for SMP/E data sets						
SMPLTS	S	PDS	U	0	142	50
SMPMTS	S	PDS	FB	80	14	100
SMPPTS	S	PDS	FB	80	61	100
SMPSCDS	S	PDS	FB	80	28	100
SMPSTS	S	PDS	FB	80	14	100

The following figures describe the target and distribution libraries and HFS paths required to install MQSeries for OS/390. The storage requirements of MQSeries for OS/390 must be added to the storage required by other programs having data in the same library or path.

Note: The data in these tables should be used when determining 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 (Page 1 of 2). Storage requirements for MQSeries for OS/390 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
SCSQANLC	LMOD	ANY	U	PO	U	0	13	10
SCSQANLE	LMOD	ANY	U	PO	U	0	11	8
SCSQANLK	LMOD	ANY	U	PO	U	0	14	10
SCSQANLU	LMOD	ANY	U	PO	U	0	11	8
SCSQASMS	Sample	ANY	U	PO	FB	80	8	1
SCSQAUTH	LMOD	ANY	U	PO	U	0	649	430
SCSQCICS	LMOD	ANY	U	PO	U	0	28	9
SCSQCLST	CLIST	ANY	U	PO	FB	80	1	1
SCSQCOBC	Macro	ANY	U	PO	FB	80	14	4
SCSQCOBS	Sample	ANY	U	PO	FB	80	51	2
SCSQCPPS	Sample	ANY	U	PO	FB	80	1	1
SCSQC37S	Sample	ANY	U	PO	FB	80	47	3
SCSQC370	Macro	ANY	U	PO	FB	80	12	1
SCSQDEFS	Data	ANY	U	PO	FB	80	7	1
SCSQEXEC	EXEC	ANY	U	PO	FB	80	12	1
SCSQHPPS	Macro	ANY	U	PO	FB	80	5	2
SCSQINST	Procedure	ANY	U	PO	FB	80	11	2
SCSQLINK	LMOD	ANY	U	PO	U	0	2	1
SCSQLOAD	LMOD	ANY	U	PO	U	0	163	12
SCSQMACS	Macro	ANY	U	PO	FB	80	17	4
SCSQMAPS	Panel	ANY	U	PO	FB	80	2	1
SCSQMSGC	Message	ANY	U	PO	FB	80	3	2
SCSQMSGE	Message	ANY	U	PO	FB	80	3	2
SCSQMSGK	Message	ANY	U	PO	FB	80	3	2
SCSQMSGU	Message	ANY	U	PO	FB	80	3	2
SCSQMVR1	LMOD	ANY	U	PO	U	0	69	2
SCSQMVR2	LMOD	ANY	U	PO	U	0	52	4
SCSQPLIC	Macro	ANY	U	PO	FB	80	9	1
SCSQPLIS	Sample	ANY	U	PO	FB	80	2	1

Installation requirements and considerations

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
SCSQPNLA	Panel	ANY	U	PO	FB	80	3	4
SCSQPNLC	Panel	ANY	U	PO	FB	80	32	90
SCSQPNLE	Panel	ANY	U	PO	FB	80	36	100
SCSQPNLK	Panel	ANY	U	PO	FB	80	37	102
SCSQPNLU	Panel	ANY	U	PO	FB	80	36	100
SCSQPROC	Procedure	ANY	U	PO	FB	80	17	4
SCSQSKL	Skeleton	ANY	U	PO	FB	80	4	1
SCSQSNLC	LMOD	ANY	U	PO	U	0	1	1
SCSQSNLE	LMOD	ANY	U	PO	U	0	1	1
SCSQSNLK	LMOD	ANY	U	PO	U	0	1	1
SCSQSNLU	LMOD	ANY	U	PO	U	0	1	1
SCSQTBLC	Table	ANY	U	PO	FB	80	1	1
SCSQTBLE	Table	ANY	U	PO	FB	80	1	1
SCSQTBLK	Table	ANY	U	PO	FB	80	1	1
SCSQTBLU	Table	ANY	U	PO	FB	80	1	1

Figure 14 (Page 2 of 2). Storage requirements for MQSeries for OS/390 target libraries

DDNAME	Path Name
SCSQOBIN	/usr/lpp/internet/server_root/csq/bin/IBM/
SCSQODOC	/usr/lpp/internet/server_root/csq/doc/IBM/
SCSQODOE	/usr/lpp/internet/server_root/csq/doe/IBM/
SCSQODOK	/usr/lpp/internet/server_root/csq/dok/IBM/
SCSQODOU	/usr/lpp/internet/server_root/csq/dou/IBM/
SCSQONLC	/usr/lpp/internet/server_root/csq/nlc/IBM/
SCSQONLE	/usr/lpp/internet/server_root/csq/nle/IBM/
SCSQONLK	/usr/lpp/internet/server_root/csq/nlk/IBM/
SCSQONLU	/usr/lpp/internet/server_root/csq/nlu/IBM/
SCSQOSMP	/usr/lpp/internet/server_root/csq/smp/IBM/

Figure 15. MQSeries for OS/390 HFS paths

			R E C F M	L R E C L	No. of 3390 Trks	No. of DIR Blks
Library DDNAME	**T Y P E**	**O R G**				
ACSQASMS	U	PO	FB	80	8	1
ACSQCLST	U	PO	FB	80	1	1
ACSQCOBC	U	PO	FB	80	14	4
ACSQCOBS	U	PO	FB	80	51	2
ACSQCPPS	U	PO	FB	80	1	1
ACSQC37S	U	PO	FB	80	47	3
ACSQC370	U	PO	FB	80	12	1
ACSQDEFS	U	PO	FB	80	7	1
ACSQEXEC	U	PO	FB	80	12	1
ACSQHPPS	U	PO	FB	80	5	2
ACSQINST	U	PO	FB	80	11	2
ACSQMACS	U	PO	FB	80	27	4
ACSQMAPS	U	PO	FB	80	2	1
ACSQMOD	U	PO	U	0	1105	695
ACSQMSGC	U	PO	FB	80	3	2
ACSQMSGE	U	PO	FB	80	3	2
ACSQMSGK	U	PO	FB	80	3	2
ACSQMSGU	U	PO	FB	80	3	2
ACSQOBIN	U	PO	VB	32000	1	1
ACSQODOC	U	PO	VB	32000	4	2
ACSQODOE	U	PO	VB	32000	4	2
ACSQODOK	U	PO	VB	32000	5	2
ACSQODOU	U	PO	VB	32000	4	2
ACSQONLC	U	PO	VB	32000	1	1
ACSQONLE	U	PO	VB	32000	1	1
ACSQONLK	U	PO	VB	32000	1	1
ACSQONLU	U	PO	VB	32000	1	1
ACSQOSMP	U	PO	VB	130	2	1
ACSQPLIC	U	PO	FB	80	9	1

Figure 16 (Page 1 of 2). Storage requirements for MQSeries for OS/390 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
ACSQPLIS	U	PO	FB	80	2	1
ACSQPNLA	U	PO	FB	80	3	4
ACSQPNLC	U	PO	FB	80	32	90
ACSQPNLE	U	PO	FB	80	36	100
ACSQPNLK	U	PO	FB	80	37	102
ACSQPNLU	U	PO	FB	80	36	100
ACSQPROC	U	PO	FB	80	17	4
ACSQSKL	U	PO	FB	80	4	1
ACSQTBLC	U	PO	FB	80	1	1
ACSQTBLE	U	PO	FB	80	1	1
ACSQTBLK	U	PO	FB	80	1	1
ACSQTBLU	U	PO	FB	80	1	1

Figure 16 (Page 2 of 2). Storage requirements for MQSeries for OS/390 distribution libraries

The following figures list data sets that are not used by SMP/E, but are required for MQSeries for OS/390 to execute.

Data Set Name	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
UCSQINST	U	PO	FB	80	15	20

Figure 17. Storage requirements for MQSeries for OS/390 non-SMP/E data sets

5.3 FMIDs deleted

Installing MQSeries for OS/390 may result in the deletion of other FMIDs. To see what FMIDs will be deleted, examine the ++VER statement in the product's SMPMCS. See Appendix A, "MQSeries for OS/390 install logic" on page 48 for more information on how to do this.

If you do not wish to delete these FMIDs at this time, you must install MQSeries for OS/390 into separate SMP/E target and distribution zones.

Note: These FMIDs will not automatically be deleted from the Global Zone. Consult the SMP/E manuals for instructions on how to do this.

5.4 Special considerations

MQSeries for OS/390 has no special considerations for the target system.

6.0 Installation instructions

This chapter describes the installation method and step-by-step procedures to install MQSeries for OS/390. The *MQSeries for OS/390 System Setup Guide* describes the further step-by-step procedures to customize the functions of MQSeries for OS/390.

MQSeries for OS/390 can be installed using any of the following methods:

- As part of a system package, such as SystemPac or CustomPac
- As part of a product/service package, such as CBPDO
- Stand-alone using SMP/E

If you are installing MQSeries for OS/390 using the MVS Custom-Built Product Delivery Offering (CBPDO) (5751-CS3), use the softcopy program directory provided on the CBPDO tape. Your CBPDO contains a softcopy preventive service planning (PSP) upgrade for this product. All service and HOLDDATA for MQSeries for OS/390 are included on the CBPDO tape. Follow the instructions supplied with the CBPDO package to RECEIVE MQSeries for OS/390 onto your system. Follow the steps in this program directory to complete the installation, substituting the names you have used to RECEIVE MQSeries for OS/390 where appropriate, and omitting the RECEIVE step as shown in 6.3.6.1, "SMP/E RECEIVE" on page 39 of this program directory.

If you are installing MQSeries for OS/390 as part of a CustomPac, refer to the documentation supplied with the package for instructions.

When you have installed MQSeries for OS/390, refer to 6.4.1, "Library contents after installation" on page 44 for information on where MQSeries for OS/390 resides, and the *MQSeries for OS/390 System Setup Guide* for information on testing and activating MQSeries for OS/390.

If you are installing MQSeries for OS/390 stand-alone, follow the instructions in 6.3, "Installing MQSeries for OS/390" on page 25.

If you are migrating from a previous version of MQSeries for OS/390, please read Appendix D, "Migration considerations" on page 53 before you start.

Automatic relinking

The installation process uses CALLLIBS. You can choose to perform an extra step when you install MQSeries for OS/390 to take advantage of automatic relinking when service is applied to certain corequisite products. The optional LINK job is described in Appendix C, "Enabling automatic relinking after service is applied" on page 51

6.1 The components of MQSeries for OS/390

MQSeries for OS/390 has several components, and optional features. These are explained here:

Required features:

- BASE

   This comprises all the basic function for MQSeries and includes the MQSeries-CICS bridge and the distributed queuing facility (supporting both TCP/IP and LU 6.2 communications)

- U.S. English (mixed case) language support

Optional features

- Language support features

   – Japanese language support
   – Simplified Chinese language support
   – U.S. English (uppercase) support

- CICS Mover feature

   Select this feature if you want to use CICS ISC for distributed queuing instead of the distributed queuing facility that is supplied with the base feature.

- Internet Gateway feature

   Select this feature if you want to use the Internet Gateway.

- Client Attachment feature

   Select this feature if you want to connect MQSeries clients to MQSeries for OS/390.

6.2 MQSeries for OS/390 libraries

All MQSeries for OS/390 supplied load modules in the following libraries are reentrant and can be placed in the LPA if desired:

- SCSQAUTH
- SCSQANLC
- SCSQANLE
- SCSQANLK
- SCSQANLU
- SCSQMVR1
- SCSQMVR2

6.3 Installing MQSeries for OS/390

The installation process for MQSeries for OS/390 uses the SMP/E RECEIVE, APPLY, and ACCEPT commands to read the installation tape and place MQSeries for OS/390 into the appropriate system libraries. If you need more information than is given in this document, refer to a full description of SMP/E in the *SMP/E User's Guide* and *SMP/E Reference* books.

Installation instructions

SMP/E is also used to apply preventive or corrective service after MQSeries for OS/390 has been installed.

If you are migrating from a previous version of MQSeries for OS/390, please read Appendix D, "Migration considerations" on page 53 before you start.

This section covers the following topics. You are recommended to read all these sections **before** you start to install MQSeries for OS/390.

- 6.3.1, "Installation summary for MQSeries for OS/390"
- 6.3.2, "Prepare to install MQSeries for OS/390" on page 27
- 6.3.4, "Create the installation JCL" on page 31
- 6.3.5, "Prepare the installation environment" on page 36
- 6.3.6, "Use SMP/E to install MQSeries for OS/390" on page 39

When you have installed and customized MQSeries for OS/390, you need to perform an IPL of OS/390 to activate changes made to the early code.

6.3.1 Installation summary for MQSeries for OS/390

The steps you have to perform to install MQSeries for OS/390 are summarized below. Sample JCL is provided for all these steps except 1, 2, and 3.

1. Obtain the latest Preventive Service Planning (PSP) information, which contains the list of required actions and service and apply any relevant service. See Section 3.0, "Program support" on page 9 for details.

2. If you are migrating from a previous version of MQSeries for OS/390, please read Appendix D, "Migration considerations" on page 53 before you start.

3. Before installing MQSeries for OS/390, you must choose names and values for a number of parameters. These names and values depend on the standards that apply to your enterprise. You also need to decide whether you want to install any of the optional features.

4. Read the sample installation JCL and CLIST from tape and customize it. The names and values you have chosen above are used to modify the required JCL, as shown in 6.3.4, "Create the installation JCL" on page 31.

5. Set up an SMP/E environment. This environment must be tailored for MQSeries for OS/390.

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

7. Allocate the target and distribution libraries.

8. Run the SMP/E RECEIVE job to unload the required features from the base product tape.

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

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

11. Run the SMP/E LINK job if you want to enable automatic relinking after service is applied. This job is optional; if you want to use it, read Appendix C, "Enabling automatic relinking after service is applied" on page 51 before you go any further with installing MQSeries for OS/390 in order to understand the additional things you need to do when performing the other installation tasks.

12. If required, install the Client Attachment feature using the procedure described in 6.3.7, "Installing the Client Attachment feature" on page 42.

When MQSeries for OS/390 has been installed, use SMP/E to install preventative or corrective service if required.

6.3.2 Prepare to install MQSeries for OS/390

Before you install MQSeries for OS/390, you must make the following decisions and preparations. The decisions that you make here effect the customization of the sample JCL provided with MQSeries for OS/390. You should write down the appropriate values as you work through this section. Where applicable, space has been provided in Figure 18, Figure 19 on page 29, and Figure 20 on page 30 to note the values assigned.

1. Decide which parts of MQSeries for OS/390 you wish to install; the parts available are described in 6.1, "The components of MQSeries for OS/390" on page 24.

2. Ensure that you have the correct pre-requisite products installed. For information about pre-requisite products, and the levels of these products required to install and use MQSeries for OS/390, see 5.1.2, "Programming requirements" on page 14.

3. Plan the environment that you are going to install MQSeries for OS/390 in to. You need to decide:

   - The space requirements (see 5.2.3, "DASD storage requirements" on page 16)

   - The high-level qualifiers to use (see 6.3.2.1, "High-level qualifiers")

   - Disk volume and unit names (see 6.3.2.2, "Volume and unit names" on page 29)

   - The SMP/E environment, for which you need to decide whether to install into a new SMP/E environment or into an existing SMP/E environment (see 6.3.2.3, "SMP/E environment" on page 29).

6.3.2.1 High-level qualifiers

Use Figure 18 to plan the high-level qualifiers for the MQSeries for OS/390 data sets.

Installation instructions

Parameter name in the sample JCL provided	Default value	Assigned value	Description
Figure 18. High-level qualifiers for data set names			
CSSQUAL	SYS1		High-level qualifiers for the OS/390 callable service library CSSLIB.
DHLQUAL	MQSERIES.DLIB		High-level qualifiers for the MQSeries for OS/390 distribution data sets.
DHQ	DHQ		High-level qualifiers for the UCSQINST data set into which the installation JCL will be loaded from tape.
LEQUAL	PP.ADLE370		High-level qualifiers for the Language Environment target libraries.
SHLQUAL	MQSERIES.SMPE		High-level qualifiers for the new SMP/E data sets that you are going to use to install MQSeries for OS/390. If you are going to install into existing data sets, this name is already defined.
TCPQUAL	PP.TCPIP		High-level qualifiers for the IBM TCP/IP target libraries. This is required, even if you use SOLVE:TCPACCESS.
THFSPATH	/usr/lpp/internet/ server_root		Install path for the Internet Gateway feature.
THLQUAL	MQSERIES.TLIB		High-level qualifiers for the MQSeries for OS/390 target data sets.
THQ	THQ		High-level qualifiers for the TCSQINST data set into which the customized installation JCL will be placed.
Note: If required, DHQ can be the same as DHLQUAL and THQ can be the same as THLQUAL.			

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

The TSO user ID used to install or service MQSeries for OS/390 requires RACF ALTER access to these high-level qualifiers. See the *MQSeries for OS/390 System Setup Guide* for details of the security authorization required for running MQSeries for OS/390.

If you are going to use the Spool Display and Search Facility (SDSF) to look at the output from the installation jobs, you must have authorization to use the prefix CSQ8* to view them, or you must customize the names of the jobs to use a prefix to which you are authorized. This can be done using the JCPREF option in CSQ8SYSJ as described in 6.3.4.2, "Customize the sample installation JCL" on page 33.

6.3.2.2 Volume and unit names

Plan the volume and unit names shown in Figure 19. These are used by the supplied sample JCL during the installation of MQSeries for OS/390. You must decide where you are going to install the product, taking into account the space requirements (see Figure 16 on page 21 and Figure 14 on page 18) and how frequently the data sets are going to be accessed.

Figure 19. Volume and unit names			
Parameter Name in the Sample Jobs	**Values Required**	**Value Specified**	**Description**
SMPVOL	VOLSER and unit type		SMP/E data set volume if installing into new SMP/E data sets. Also used for temporary libraries.
TARVOL	VOLSER		MQSeries for OS/390 target data set volume.
DISVOL	VOLSER		MQSeries for OS/390 distribution data set volume.
DISKUNIT	Unit type		Type of disk unit for target and distribution data set volumes.
TAPEUNIT	Tape unit type		Unit type of the tape drive used to read the MQSeries for OS/390 tapes.

Notes:

1. You can use esoteric values such as SYSDA or SYSALLDA for the unit type of TARVOL and DISVOL by substituting a period (.) for the VOLSER in the customization step in section 6.3.4.2, "Customize the sample installation JCL" on page 33.
2. SMPVOL must have both the VOLSER and the unit type specified.

6.3.2.3 SMP/E environment

You must decide whether to install MQSeries for OS/390 into a new or an existing SMP/E environment. Remember that installing a new release of MQSeries for OS/390 into the same SMP/E zones as an existing release will cause the earlier level to be deleted from both the SMP/E zones and the existing release data sets.

If you are migrating from a previous version of MQSeries for OS/390, please read Appendix D, "Migration considerations" on page 53 before you start.

Installation instructions

If you have decided to use the optional LINK job to enable automatic cross-zone link editing, you will need to read Appendix C, "Enabling automatic relinking after service is applied" on page 51 before you can proceed with this section.

If you are going to install into the same SMP/E zones, then to preserve your current release while you install and test the new release you should copy the existing release data sets into data sets with different names. Do not rename or delete the current data sets because they need to be available to SMP/E for delete processing during the installation of the new release. If they are not available, the APPLY and ACCEPT steps will fail with a return code of 12. After running a successful ACCEPT of the MQSeries for OS/390 products, the previous release data sets are no longer required and can be deleted when testing of the new release has been completed.

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

Note: If you are installing into existing zones:

- The PEMAX options entry must be at least 4500 or left to default.
- The DSSPACE options entry must specify at least 500 directory blocks.

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

Figure 20. Target and distribution zone names			
Parameter Name in the Sample Jobs	**Default Value**	**Assigned Value**	**Description**
DZNAME	DZONE		The name of your distribution zone
GZONECSI	NEW		The data set name of your global zone CSI
LETZN	LETZN		The name of the target zone in which Language Environment is installed (only required if you are going to use the optional LINK jobs, see Appendix C, "Enabling automatic relinking after service is applied" on page 51).
OS390TZN	OS390TZN		The name of the target zone in which OS/390 callable services are installed (only required if you are going to use the optional LINK jobs, see Appendix C, "Enabling automatic relinking after service is applied" on page 51).
TCPTZN	TCPTZN		The name of the target zone in which IBM TCP/IP is installed, even if you use SOLVE:TCPACCESS (only required if you are going to use the optional LINK jobs, see Appendix C, "Enabling automatic relinking after service is applied" on page 51).
TZNAME	TZONE		The name of your target zone
Note: If you are using the LINK command, and Language Environment, IBM TCP/IP, and OS/390 callable services are installed in the same SMP/E target zone, LETZN, TCPTZN, and OS390TZN must **all** be set to the same value.			

6.3.3 HFS

Almost all of the Internet Gateway feature is installed into the HFS in UNIX System Services. Therefore, you need to determine where in the HFS the root of the Internet Gateway feature tree should go. The following is recommended:

- The root subdirectory should be called **csq** (this is the default used by the installation).

- **csq** should be a subdirectory of the Web Server's root directory, for example **/usr/lpp/internet/server_root/csq**.

- **csq** should be in a filesystem of its own. This means that the Internet Gateway feature is not deleted if the Web Server is replaced by replacing the filesystem on which it is installed.

Figure 21. Path to csq		
Default value	**Assigned Value**	**Description**
/usr/lpp/internet/ server_root		The path to the **csq** subdirectory

6.3.4 Create the installation JCL

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

The following sample installation jobs are provided on the distribution tape to help you install MQSeries for OS/390:

Figure 22 (Page 1 of 2). Sample Installation Jobs			
Job Name	**Job Type**	**Description**	**RELFILE**
CSQ8ACPL	ACCEPT	Sample ACCEPT job for MQSeries for OS/390 Client Attachment feature	IBM.HMS5200.F2
CSQ8ACPT	ACCEPT	Sample ACCEPT job for MQSeries for OS/390	IBM.HMS5200.F2
CSQ8ALOC	ALLOCATE	Sample job to allocate MQSeries for OS/390 simplified Chinese language target and distribution libraries	IBM.HMS5200.F2
CSQ8ALOE	ALLOCATE	Sample job to allocate MQSeries for OS/390 base target and distribution libraries	IBM.HMS5200.F2
CSQ8ALOI	ALLOCATE	Sample job to allocate Internet Gateway distribution libraries	IBM.HMS5200.F2
CSQ8ALOK	ALLOCATE	Sample job to allocate MQSeries for OS/390 Japanese language target and distribution libraries	IBM.HMS5200.F2
CSQ8ALOU	ALLOCATE	Sample job to allocate MQSeries for OS/390 U.S. English (uppercase) language target and distribution libraries	IBM.HMS5200.F2

Figure 22 (Page 2 of 2). Sample Installation Jobs			
Job Name	**Job Type**	**Description**	**RELFILE**
CSQ8APLL	APPLY	Sample APPLY job for MQSeries for OS/390 Client Attachment feature	IBM.HMS5200.F2
CSQ8APLY	APPLY	Sample APPLY job for MQSeries for OS/390	IBM.HMS5200.F2
CSQ8DDDF	DDDEF	Sample job to define MQSeries for OS/390 target and distribution libraries to SMP/E	IBM.HMS5200.F2
CSQ8DZON	DZONE	Sample job to set up an SMP/E distribution zone	IBM.HMS5200.F2
CSQ8ERLY	USERMOD	User modification that moves the CSQ3ECMX load module into the SCSQLINK data set	IBM.HMS5200.F2
CSQ8GZON	GZONE	Sample job to set up an SMP/E global zone	IBM.HMS5200.F2
CSQ8LDQM	LINK	Optional link job	IBM.HMS5200.F2
CSQ8LNKI	LINK	Optional link job for the Internet Gateway	IBM.HMS5200.F2
CSQ8MKDJ	MKDIR	Sample job to create the Internet Gateway HFS target paths	IBM.HMS5200.F2
CSQ8RECL	RECEIVE	Sample RECEIVE job for MQSeries for OS/390 Client Attachment feature	IBM.HMS5200.F2
CSQ8RECV	RECEIVE	Sample RECEIVE job for MQSeries for OS/390	IBM.HMS5200.F2
CSQ8TZON	TZONE	Sample job to set up an SMP/E target zone	IBM.HMS5200.F2
CSQ8UBPX	USERMOD	User modification that moves the MQSeries for OS/390 exit program into the SYS1.SIFALIB data set	IBM.HMS5200.F2

6.3.4.1 Read in the sample installation JCL

Read the sample installation JCL from tape. (Alternatively, you can use SMP/E RECEIVE to load the jobs into temporary libraries, copy them into private data sets, and modify and run the jobs from these data sets.)

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

```
//OFFTAPE JOB
//TALLOC   EXEC PGM=IEBCOPY,REGION=1024K
//SYSPRINT DD SYSOUT=*
//IN       DD DSN=IBM.HMS5200.F2,
//         LABEL=(3,SL),
//         UNIT=tapeunit,
//         VOL=SER=MS5200,
//         DISP=OLD
//OUT      DD DSN=dhq.UCSQINST,
//         DCB=(LRECL=80,RECFM=FB,BLKSIZE=8800),
//         SPACE=(CYL,(1,1,20)),
//         UNIT=SYSDA,
//         DISP=(MOD,CATLG)
//SYSUT3   DD SPACE=(TRK,(5)),UNIT=SYSDA
//SYSUT4   DD SPACE=(TRK,(5)),UNIT=SYSDA
//SYSIN    DD *
  COPY INDD=IN,OUTDD=OUT
/*
//
```

2. Mount the tape.

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

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

You have now read all the sample jobs into the data set `DHQ.UCSQINST`. To confirm that you have the correct set of jobs, check the list of members in `DHQ.UCSQINST` against the list in Appendix B, "Customizing the sample installation manually" on page 49. Members CSQ8MKDR, CSQ8SYSC, and CSQ8SYSJ should also be present. The next step is to customize the sample jobs for your system.

6.3.4.2 Customize the sample installation JCL

To customize the sample installation JCL use the customization job (CSQ8SYSJ) provided with MQSeries for OS/390. If you don't want to use this job and would rather customize the sample installation jobs manually, see Appendix B, "Customizing the sample installation manually" on page 49.

If you use CSQ8SYSJ, you can customize the sample jobs by adding the names you chose in section 6.3.2, "Prepare to install MQSeries for OS/390" on page 27 to CSQ8SYSJ in `DHQ.UCSQINST` and running this job.

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

Installation instructions

CSQ8SYSJ calls a CLIST to copy and edit the sample jobs from `DHQ.UCSQINST` to `THQ.TCSQINST`. If `THQ.TCSQINST` does not exist, it is created by CSQ8SYSJ. Full instructions for modifying CSQ8SYSJ are included in its comments. Where selections are to be made, this is usually done by removing the leading asterisk.

The following rules apply when updating CSQ8SYSJ:

- Enter values in the correct case (uppercase for everything except THFSPATH, which can contain lowercase letters).

- The keywords in the JCL can appear in any order and starting in any column as long as they are the first nonblank characters on a line and are within columns 1 through 72.

- If you place a nonblank character before a keyword, the line is treated as a comment. Use an asterisk as the nonblank character to avoid accidentally forming a valid keyword.

- Do not delete lines in CSQ8SYSJ, because you might need them in the future. If they do not apply, comment them out by placing an asterisk at the beginning of the unwanted lines.

Use your usual editor to update CSQ8SYSJ in `DHQ.UCSQINST` as follows:

1. Change the job statement at the top of CSQ8SYSJ to match the requirements of your enterprise. If you need to code a 'TIME=' parameter on your JCL, a value of 10 minutes CPU time is enough to run CSQ8SYSJ.

2. Customize the JCL statements in Section 2 of CSQ8SYSJ with the names you have chosen for DHQ and THQ. Replace the variable DHQ for the SYSPROC and MINPUT lines, and the variable THQ for the MOUTPUT line.

3. Select the features you want (none of the features are mutually exclusive):

   a. By default, both the base and U.S. English (mixed case) FMIDs are selected for installation; do **not** change this.
   b. If you want to install any of the optional features, remove the leading asterisks

   The following tokens are used in CSQ8SYSJ:

   MQM
   > Base product

   MQMNL US ENGLISH
   > U.S. English (mixed case) language feature.

   MQMNL JAPANESE
   > Optional Japanese language feature.

   MQMNL SIMPLIFIED CHINESE
   > Optional simplified Chinese language feature.

   MQMNL UPPERCASE ENGLISH
   > Optional U.S. English (uppercase) language feature.

   CICM
   > Optional CICS Mover feature.

INTG Internet Gateway
> Internet Gateway feature

CQM is used as the token in CSQ8SYSJ for the optional Client Attachment feature. If you want to install this feature, customize the JCL now, but do not install it until you have accepted the other features.

4. Choose which sample jobs you want to customize. CSQ8SYSJ is supplied with no jobs selected; this will customize all jobs. This is correct for a new installation requiring all features to be installed. If, however, you do not require all options, you can select specific jobs by overtyping the asterisk at the beginning of the appropriate lines with a blank before running CSQ8SYSJ.

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

```
 JOB  //xxxxxxxx  JOB
```

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

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

If your enterprise needs a 'TIME=' parameter, you must specify a value large enough to run the SMP/E apply step. This can take up to 120 minutes for MQSeries for OS/390.

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

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

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

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

6. You can change the default value of the prefix, 'CSQ8', next to the 'JCPREF' keyword. If you change it to a value that is one to four characters long, the prefix will be concatenated with the last four characters of the JCL member name to form the job name. If you change the prefix to a value that is five to eight characters long, the prefix alone will form the job name.

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

8. Type the values you have chosen for your system high-level qualifiers, where they are different from the defaults. You must include the IBM TCP/IP high-level qualifier even if you use SOLVE:TCPACCESS.

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

   The volumes for the target and distribution libraries (TARVOL and DISVOL) can have esoteric values specified. This can be done by changing 'VOLSER' to a '.' and changing 'UNITTYPE' to the esoteric value, for example 'SYSDA'. (Quotes should not be used in the JCL). The SMP/E volume and unit type must be changed to an existing volume name and its actual unit type.

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

    If you intend to let MQSeries for OS/390 create a new SMP/E environment, leave the SMP/E information as it is. If you are going to use the optional LINK job (see Appendix C, "Enabling automatic relinking after service is applied" on page 51) you must customize the name of the target zones in which Language Environment, IBM TCP/IP, and OS/390 callable services are installed.

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

11. Type the HFS install path for the Internet Gateway, if it is different from the default.

12. Run CSQ8SYSJ. It should finish with a return code of 0.

    If the return code is not 0, inspect the output to discover what caused the problem. CSQ8SYSJ can be run again when the error has been corrected, but running it many times might cause the output data set `THQ.TCSQINST` to need compressing.

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

6.3.5 Prepare the installation environment

You must create the environment in which to run SMP/E to install MQSeries for OS/390.

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

6.3.5.1 SMP/E environment

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

1. Add an SMP/E UTILITY for this assembler to your global zone, by adding a UTILITY definition to CSQ8GZON, for example:

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

2. Update the OPTIONS(TZNOPTN) defined in CSQ8GZON (global zone) to reference your utility, for example:

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

3. Change the ADD DLIBZONE statement in the CSQ8DZON (distribution zone) job so that it references an OPTIONS entry (via OPTIONS()) which in turn references this different assembler utility entry, for example:

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

6.3.5.1.2 Global zone

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

- If you are installing into a new global zone, run CSQ8GZON from THQ.TCSQINST; this has a number of steps, all of which should complete with a return code of 0.

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

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

6.3.5.1.3 Target and distribution zones: If you are using the optional LINK job, see Appendix C, "Enabling automatic relinking after service is applied" on page 51.

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

- CSQ8TZON to create a target zone
- CSQ8DZON to create a distribution zone

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

Note: If you are running CSQ8TZON and CSQ8DZON under JES3, you must edit them to remove the comment asterisks for the whole of step DUMMYCSI. This is to avoid the problem of defining and using VSAM data sets in the same jobstream under JES3.

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

6.3.5.2 Allocate distribution and target libraries for MQSeries for OS/390

Before using SMP/E to install MQSeries for OS/390, you must allocate two groups of data sets, the target and distribution libraries, for MQSeries for OS/390. Run the job **CSQ8ALOE** from `THQ.TCSQINST` to allocate the libraries. This job has two steps; each should complete with a return code of 0.

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

If you have chosen to install an additional feature, you must also run the appropriate job from the following list, in the same way that you ran CSQ8ALOE:

Feature	Data set allocation job
Japanese	CSQ8ALOK
Simplified Chinese	CSQ8ALOC
U.S. English (uppercase)	CSQ8ALOU
Internet Gateway	CSQ8ALOI, CSQ8MKDJ

It is recommended that the Internet Gateway feature is installed in its own UNIX System Services filesystem, which should be defined in the `BPXPRMxx` member of SYS1.PARMLIB, for example:

```
MOUNT FILESYSTEM('os390.dsname')
  MOUNTPOINT('/usr/lpp/internet/server_root/csq')
  TYPE(HFS) MODE(RDWR)
```

Where `'os390.dsname'` is a the name of an OS/390 data set allocated to hold the HFS.

All the steps in these jobs should complete with a return code of 0.

6.3.5.3 Update SMP/E DDDEF information

SMP/E needs to know the name of the MQSeries for OS/390 data sets; **CSQ8DDDF** is provided to add the appropriate DDDEFs to your SMP/E environment. Run the job CSQ8DDDF from `THQ.TCSQINST` to build your SMP/E DDDEF statements. This job has 3 steps, and should complete with a return code of 0. If you are installing into existing zones, this job might give a return code of 8, because it attempts to add DDDEFS that might already exist.

If the return code is not 0, and you are not installing into existing data sets, check the job output carefully to ensure that the DDDEFs have been allocated correctly. CSQ8DDDF can be re-run if required, but you need to replace the ADD commands with REP.

6.3.6 Use SMP/E to install MQSeries for OS/390

SMP/E uses three steps to install each part of MQSeries for OS/390:

1. RECEIVE
2. APPLY
3. ACCEPT

It is recommended that you RECEIVE, APPLY, and ACCEPT all of the components apart from the Client Attachment feature at the same time.

If you are using the optional LINK job, see Appendix C, "Enabling automatic relinking after service is applied" on page 51.

6.3.6.1 SMP/E RECEIVE

Receive MQSeries for OS/390 using SMP/E by mounting the tape and running the sample job **CSQ8RECV** from `THQ.TCSQINST`.

The RECEIVE job should complete with a return code of 0, and the following messages should appear in the SMPLOG, depending on which features you have decided to install:

```
GIM22701I RECEIVE PROCESSING WAS SUCCESSFUL FOR SYSMOD HMS5200
GIM22701I RECEIVE PROCESSING WAS SUCCESSFUL FOR SYSMOD JMS5201
GIM22701I RECEIVE PROCESSING WAS SUCCESSFUL FOR SYSMOD JMS5202
GIM22701I RECEIVE PROCESSING WAS SUCCESSFUL FOR SYSMOD JMS5203
GIM22701I RECEIVE PROCESSING WAS SUCCESSFUL FOR SYSMOD JMS5204
GIM22701I RECEIVE PROCESSING WAS SUCCESSFUL FOR SYSMOD JMS5205
GIM22701I RECEIVE PROCESSING WAS SUCCESSFUL FOR SYSMOD JMS5206
```

If you are using Release 2.6 of OS/390 and have decided to install the Internet Gateway feature, the return code will be 4, and you will receive the following message:

```
GIM50050W RECEIVE PROCESSING FOR SYSMOD JMS5206 ENCOUNTERED THE
DESCRIPTION OPERAND ON THE HEADER MCS.  THIS OPERAND IS IGNORED
SINCE IT IS SUPPORTED ONLY BY OS/390 RELEASE 7 SMP/E, OR HIGHER
```

You can ignore this message.

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

Installation instructions

6.3.6.2 SMP/E APPLY

Run the sample job **CSQ8APLY** from data set `THQ.TCSQINST` to apply the FMIDs selected when you customized the JCL. This job can take a long time to run, depending on the capacity of your system, and on what other jobs are running.

The APPLY step should finish with a return code of 0.

The job can be rerun, but if one of the FMIDs was successfully applied, you must first delete the lines from CSQ8APLY that refer to this product FMID. Products successfully applied result in the following messages in the output listing of CSQ8APLY, depending which features you have decided to install:

```
GIM22701I APPLY PROCESSING WAS SUCCESSFUL FOR SYSMOD HMS5200
GIM22701I APPLY PROCESSING WAS SUCCESSFUL FOR SYSMOD JMS5201
GIM22701I APPLY PROCESSING WAS SUCCESSFUL FOR SYSMOD JMS5202
GIM22701I APPLY PROCESSING WAS SUCCESSFUL FOR SYSMOD JMS5203
GIM22701I APPLY PROCESSING WAS SUCCESSFUL FOR SYSMOD JMS5204
GIM22701I APPLY PROCESSING WAS SUCCESSFUL FOR SYSMOD JMS5205
GIM22701I APPLY PROCESSING WAS SUCCESSFUL FOR SYSMOD JMS5206
```

If you are using Release 2.6 of OS/390 and have decided to install the Internet Gateway feature, the return code will be 4, and you will receive the following message:

```
GIM50050W APPLY PROCESSING FOR SYSMOD JMS5206 ENCOUNTERED THE
DESCRIPTION OPERAND ON THE HEADER MCS.  THIS OPERAND IS IGNORED
SINCE IT IS SUPPORTED ONLY BY OS/390 RELEASE 7 SMP/E, OR HIGHER
```

You can ignore this message.

If you want, the APPLY step can be run initially with the 'CHECK' operand added to the APPLY command in the CSQ8APLY job. If this is done the job will not update any libraries, instead it will test for any errors other than those that could occur when the libraries are updated. (For instance, the APPLY CHECK will not generate an error if there is insufficient disk space available).

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

6.3.6.3 SMP/E ACCEPT

Run the sample job **CSQ8ACPT** from data set `THQ.TCSQINST` to accept all the products selected when you customized the JCL. This job takes a few minutes to run, depending on the capacity of your system, and on what other jobs are running.

The ACCEPT step should complete with a return code of 0.

If the return code is not 0, check the job output listing to find out why the job failed and correct the error. The job can be rerun, but if one of the FMIDs was successfully accepted, you must first delete the line from CSQ8ACPT that refers to this FMID. Products successfully accepted result in the following messages in the output listing of CSQ8ACPT depending which features you have decided to install:

```
GIM22701I ACCEPT PROCESSING WAS SUCCESSFUL FOR SYSMOD HMS5200
GIM22701I ACCEPT PROCESSING WAS SUCCESSFUL FOR SYSMOD JMS5201
GIM22701I ACCEPT PROCESSING WAS SUCCESSFUL FOR SYSMOD JMS5202
GIM22701I ACCEPT PROCESSING WAS SUCCESSFUL FOR SYSMOD JMS5203
GIM22701I ACCEPT PROCESSING WAS SUCCESSFUL FOR SYSMOD JMS5204
GIM22701I ACCEPT PROCESSING WAS SUCCESSFUL FOR SYSMOD JMS5205
GIM22701I ACCEPT PROCESSING WAS SUCCESSFUL FOR SYSMOD JMS5206
```

If you are using Release 2.6 of OS/390 and have decided to install the Internet Gateway feature, the return code will be 4, and you will receive the following message:

```
GIM50050W ACCEPT PROCESSING FOR SYSMOD JMS5206 ENCOUNTERED THE
DESCRIPTION OPERAND ON THE HEADER MCS.  THIS OPERAND IS IGNORED
SINCE IT IS SUPPORTED ONLY BY OS/390 RELEASE 7 SMP/E, OR HIGHER
```

You can ignore this message.

If you want, the ACCEPT step can be run initially with the 'CHECK' operand added to the ACCEPT command in the CSQ8ACPT job. If this is done the job will not update any libraries, instead it will test for any errors other than those that could occur when the libraries are updated. (For instance, the ACCEPT CHECK will not generate an error if there is insufficient disk space available.)

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

6.3.6.4 Enabling automatic relinking after service is applied

SMP/E provides a facility to perform automatic cross zone link-editing when service has been applied to the following corequisite products:

- Language Environment
- TCP/IP (DSPREFIX)
- OS/390 callable services (which includes APPC and RRS)

If you do want to use this facility, see C.2, "SMP/E LINK" on page 52.

6.3.7 Installing the Client Attachment feature

Notes:

1. This is a separately orderable feature, and so comes on a different tape. The following steps only apply if you have a copy of the feature tape. See the *MQSeries Clients* manual for information about obtaining and installing the client code to work with this feature.

2. When you have completed the SMP/E APPLY step for this feature, you cannot use SMP/E to de-install it. This is because some of the base code is modified during the installation process. To remove the Client Attachment feature, you will have to reinstall the base product.

6.3.7.1 SMP/E RECEIVE for the Client Attachment feature

Receive the MQSeries for OS/390 Client Attachment feature by mounting the feature tape and running sample job **CSQ8RECL** from THQ.TCSQINST.

Note: If you are installing the Client Attachment feature as part of CBPDO, you do not need to run this step. Instead, follow the instructions supplied with the CBPDO package to receive this feature.

The RECEIVE job should complete with a return code of 0, and the following message should appear in the SMPLOG:

```
 GIM22701I RECEIVE PROCESSING WAS SUCCESSFUL FOR SYSMOD JMS5207
```

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

When the RECEIVE step has been completed successfully, the tape is no longer required.

6.3.7.2 SMP/E APPLY for the Client Attachment feature

Run the sample job **CSQ8APLL** from data set THQ.TCSQINST to apply the Client Attachment feature.

This job should complete with a return code of 0, and the following message should appear in the SMPLOG:

```
 GIM22701I APPLY PROCESSING WAS SUCCESSFUL FOR SYSMOD JMS5207
```

If you want, the APPLY step can be run initially with the 'CHECK' operand added to the APPLY command in the CSQ8APLL job. If this is done the job will not update any libraries, instead it will test for any errors other than those that could occur when the libraries are updated. (For instance, the APPLY CHECK will not generate an error if there is insufficient disk space available.)

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

6.3.7.3 SMP/E ACCEPT for the Client Attachment feature

Run the sample job **CSQ8ACPL** from data set THQ.TCSQINST to accept the Client Attachment feature.

This job should complete with a return code of 0 or 4, and the following message should appear in the SMPLOG:

```
GIM22701I ACCEPT PROCESSING WAS SUCCESSFUL FOR SYSMOD JMS5207
```

The return code of 4 should be accompanied by the following message:

```
GIM61903W LMOD CSQXJCL WAS NOT DELETED BY SYSMOD JMS5207 BECAUSE
CSQXJCL IS NOT IN THE dist ZONE
```

where `dist` is the name you allocated for the distribution zone.

If you want, the ACCEPT step can be run initially with the 'CHECK' operand added to the ACCEPT command in the CSQ8ACPL job. If this is done the job will not update any libraries, instead it will test for any errors other than those that could occur when the libraries are updated. (For instance, the ACCEPT CHECK will not generate an error if there is insufficient disk space available.)

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

6.3.8 Enabling measured usage license charges

If you want to enable measured usage license charges, run job CSQ8UBPX from data set `THQ.TCSQINST`. This job has two steps, the first step should complete with return code zero, and the second step should complete with return code 4. On successful completion, this job will have copied the measured usage license charge exit program into the SIFALIB data set.

The return code of 4 should be accompanied by the following message:

```
GIM61901W LMOD CSQ8UBEX WAS NOT MOVED BY SYSMOD CSQ8UBX BECAUSE
CSQ8UBEX IS NOT IN THE dist ZONE
```

Where `dist` is the name you allocated for the distribution zone.

The IBM zSeries 900 (z900) requires the IBM License Use Management (LUM) tool for the Workload License Charge. A PTF will be made available to implement the LUM tool.

6.3.9 Preparing link list data sets

By default, two MQSeries for OS/390 data sets have to be added to the link list SCSQLINK, and one of the following:

- SCSQSNLE
- SCSQSNLC
- SCSQSNLK
- SCSQSNLU

A user modification is provided in CSQ8ERLY in data set THQ.TCSQINST that moves the contents of the SCSQSNLx data set into SCSQLINK so that only one data set needs to be added to the link list. Customize job CSQ8ERLY and run it; it should complete with return code 4.

The return code of 4 should be accompanied by the following message:

```
GIM61901W LMOD CSQNL28x WAS NOT MOVED BY SYSMOD CSQ8RLY BECAUSE
CSQNL28x IS NOT IN THE dist ZONE
```

Where `dist` is the name you allocated for the distribution zone and `x` is the language suffix used in customizing the job.

6.4 What SMP/E has done

You have now taken the information off the distribution tape that IBM supplied and installed it onto your system.

6.4.1 Library contents after installation

After the successful completion of SMP/E processing, your libraries have the names and contents shown in Figure 23.

Figure 23 (Page 1 of 3). Library contents after installation		
Target library	**Distribution library**	**Description**
SCSQANLC		Load modules - MQSeries for OS/390 product code and utilities (Simplified Chinese)
SCSQANLE		Load modules - MQSeries for OS/390 product code and utilities (U.S. English mixed case)
SCSQANLK		Load modules - MQSeries for OS/390 product code and utilities (Japanese)

Figure 23 (Page 2 of 3). Library contents after installation		
Target library	**Distribution library**	**Description**
SCSQANLU		Load modules - MQSeries for OS/390 product code and utilities (U.S. English uppercase)
SCSQASMS	ACSQASMS	Assembler sample source
SCSQAUTH		Load modules - MQSeries for OS/390 product code and utilities
SCSQCICS		Load modules required by CICS DFHRPL
SCSQCLST	ACSQCLST	Sample CLISTS
SCSQCOBC	ACSQCOBC	COBOL Copybooks (sample and product copybooks)
SCSQCOBS	ACSQCOBS	COBOL Sample source
SCSQCPPS	ACSQCPPS	C++ Sample source
SCSQC37S	ACSQC37S	C/370 Sample source
SCSQC370	ACSQC370	C/370 Headers (sample and product headers)
SCSQDEFS	ACSQDEFS	Side definitions for C++ and the DB2 DBRMs for shared queuing
SCSQEXEC	ACSQEXEC	Exec files
SCSQHPPS	ACSQHPPS	Headers for C++
SCSQINST	ACSQINST	Install jobs JCL
SCSQLINK		Load modules - early code (must be in link list)
SCSQLOAD		Load modules - non APF authorized samples, user exits, IVPs, stubs, utilities
SCSQMACS	ACSQMACS	Sample, product, and ZPARM macros
SCSQMAPS	ACSQMAPS	Sample MAPS
	ACSQMOD	Object code library
SCSQMSGC	ACSQMSGC	Simplified Chinese messages to be included in ISPMLIB concatenation
SCSQMSGE	ACSQMSGE	U.S. English (mixed case) messages to be included in ISPMLIB concatenation
SCSQMSGK	ACSQMSGK	Japanese messages to be included in ISPMLIB concatenation
SCSQMSGU	ACSQMSGU	U.S. English (uppercase) messages to be included in ISPMLIB concatenation
SCSQMVR1		Load modules required for the non-CICS mover when using TCP/IP with the UNIX System Services sockets or IUCV interface, or LU 6.2
SCSQMVR2		Load modules required for the non-CICS mover when using TCP/IP with the SOLVE:TCPACCESS interface, or LU 6.2
SCSQOBIN	ACSQOBIN	Internet Gateway load modules for HFS and ini files
SCSQODOC	ACSQODOC	Internet Gateway documentation files for Simplified Chinese

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Target library	Distribution library	Description
		Figure 23 (Page 3 of 3). Library contents after installation
SCSQODOE	ACSQODOE	Internet Gateway documentation files for U.S. English (mixed case)
SCSQODOK	ACSQODOK	Internet Gateway documentation files for Japanese
SCSQODOU	ACSQODOU	Internet Gateway documentation files for U.S. English (uppercase)
SCSQONLC	ACSQONLC	Internet Gateway message catalog for Simplified Chinese
SCSQONLE	ACSQONLE	Internet Gateway message catalog for U.S. English (mixed case)
SCSQONLK	ACSQONLK	Internet Gateway message catalog for Japanese
SCSQONLU	ACSQONLU	Internet Gateway message catalog for U.S. English (uppercase)
SCSQOSMP	ACSQOSMP	Internet Gateway sample source and executables
SCSQPLIC	ACSQPLIC	PL/I Headers
SCSQPLIS	ACSQPLIS	PL/I Sample source
SCSQPNLA	ACSQPNLA	Sample panels
SCSQPNLC	ACSQPNLC	Simplified Chinese panels to be included in ISPPLIB concatenation
SCSQPNLE	ACSQPNLE	U.S. English (mixed case) panels to be included in ISPPLIB concatenation
SCSQPNLK	ACSQPNLK	Japanese panels to be included in ISPPLIB concatenation
SCSQPNLU	ACSQPNLU	U.S. English (uppercase) panels to be included in ISPPLIB concatenation
SCSQPROC	ACSQPROC	Sample JCL
SCSQSKL	ACSQSKL	Skeletons to be included in the ISPSLIB concatenation
SCSQSNLC		Load modules required for specialized function (simplified Chinese)
SCSQSNLE		Load modules required for specialized function (U.S. English mixed case)
SCSQSNLK		Load modules required for specialized function (Japanese)
SCSQSNLU		Load modules required for specialized function (U.S. English uppercase)
SCSQTBLC	ACSQTBLC	Simplified Chinese tables to be included in ISPTLIB concatenation
SCSQTBLE	ACSQTBLE	U.S. English (mixed case) tables to be included in ISPTLIB concatenation
SCSQTBLK	ACSQTBLK	Japanese tables to be included in ISPTLIB concatenation
SCSQTBLU	ACSQTBLU	U.S. English (uppercase) tables to be included in ISPTLIB concatenation

6.4.2 Directory contents after installation

After the successful completion of SMP/E processing for the Internet Gateway feature, your directories will have the names and contents shown in Figure 24 on page 47.

Figure 24. Directory contents after installation		
Directory	**File**	**Contents**
BIN	dmq.ini	Default Internet Gateway keywords file
BIN		Executables
DOC	xxx.htm, xxx.gif	Documentation files for Simplified Chinese
DOE	xxx.htm, xxx.gif	Documentation files for U.S. English (mixed case)
DOK	xxx.htm, xxx.gif	Documentation files for Japanese
DOU	xxx.htm, xxx.gif	Documentation files for U.S. English (uppercase)
NLC	xxx.cat	Simplified Chinese message catalog file
NLE	xxx.cat	U.S. English (mixed case) message catalog file
NLK	xxx.cat	Japanese message catalog file
NLU	xxx.cat	U.S. English (uppercase) message catalog file
SMP	xxx.c	Sample source files, sample executables

6.5 What to do next

You have now installed MQSeries for OS/390. Before you can start to use MQSeries, it must be customized. This is described in the *MQSeries for OS/390 System Setup Guide*.

The customization steps require changes to SYS1.PARMLIB and an IPL to activate the changes. We recommend that you check the preventative service planning information and apply any APAR fixes that also require an IPL before doing this.

If you are migrating from a previous version of MQSeries for OS/390, you do not need to perform all the customization tasks. To find out what you need to do, read the chapter in the *MQSeries for OS/390 System Guide* about migrating from previous versions.

Installation verification programs are provided with MQSeries for OS/390. These cannot be run until MQSeries for OS/390 has been customized and an MQSeries for OS/390 subsystem activated.

6.5.1 What to do if you apply service

If you apply service to APPC, TCP/IP, or Language Environment, see the *MQSeries for OS/390 System Setup Guide* for information about what to do.

Appendix A. MQSeries for OS/390 install logic

A.1 SMP/E Modification control statements

The SMP/E Modification Control Statements (SMPMCS) for MQSeries for OS/390 are contained in the SMPMCS file on the installation tape. The SMPMCS for each FMID in the product will be loaded to the SMPPTS data set, with a member name matching the FMID, when the FMID is SMP/E RECEIVEd. You may browse or print these members using TSO/E, ISPF, or IEBGENER (or IEBPTPCH).

A.2 SMP/E JCLIN

The JCLIN for MQSeries for OS/390 is contained in the RELFILEs on the installation tape. These files will be loaded to disk by SMP/E when the product is SMP/E RECEIVEd. You may browse or print these files using TSO/E, ISPF, or IEBGENER (or IEBPTPCH).

The files containing JCLIN are:

        FMID HMS5200: 'high-level-qualifier'.HMS5200.F1(HMS5200)
        FMID JMS5201: 'high-level-qualifier'.JMS5201.F1(JMS5201)
        FMID JMS5202: 'high-level-qualifier'.JMS5202.F1(JMS5202)
        FMID JMS5203: 'high-level-qualifier'.JMS5203.F1(JMS5203)
        FMID JMS5204: 'high-level-qualifier'.JMS5204.F1(JMS5204)
        FMID JMS5205: 'high-level-qualifier'.JMS5205.F1(JMS5205)
        FMID JMS5206: 'high-level-qualifier'.JMS5206.F1(JMS5206)
        FMID JMS5207: 'high-level-qualifier'.JMS5207.F1(JMS5207)

Note: The high-level qualifier is the qualifier specified as the DSPREFIX in the SMP/E OPTIONS.

Appendix B. Customizing the sample installation manually

You can customize the sample jobs manually using your preferred editor. (Alternatively, you can use CSQ8SYSJ to customize the jobs.) If you choose to customize the sample jobs manually, you will find that comments are provided in the JCL to help you. However, you should read the rest of 6.0, "Installation instructions" on page 24 before you start.

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

CSQ8GZON   Sets up an SMP/E global zone.

CSQ8TZON   Sets up an SMP/E target zone.

CSQ8DZON   Sets up an SMP/E distribution zone.

CSQ8ALOE   Allocates the MQSeries for OS/390 base product and U.S. English (mixed case) language target and distribution libraries.

CSQ8DDDF   Defines MQSeries for OS/390 target and distribution libraries to SMP/E.

CSQ8RECV   Runs the SMP/E RECEIVE step for MQSeries for OS/390. When customizing this job you must add the list of FMIDs you want to install. Look at the comments in the job for details.

CSQ8RECL   Runs the SMP/E RECEIVE step for the MQSeries for OS/390 Client Attachment feature.

CSQ8APLY   Runs the SMP/E APPLY step for MQSeries for OS/390. When customizing this job you must add the list of FMIDs you want to install. Look at the comments in the job for details.

CSQ8APLL   Runs the SMP/E APPLY step for the MQSeries for OS/390 Client Attachment feature.

CSQ8ACPT   Runs the SMP/E ACCEPT step for MQSeries for OS/390. When customizing this job you must add the list of FMIDs you want to install. Look at the comments in the job for details.

CSQ8ACPL   Runs the SMP/E ACCEPT step for the MQSeries for OS/390 Client Attachment feature.

If you are going to use the optional LINK job (described in Appendix C, "Enabling automatic relinking after service is applied" on page 51) you must also customize:

CSQ8LKBJ   Customizes the CSQ8LDQM SMP/E link statement for your system.

CSQ8LKIJ   Customizes the CSQ8LNKI SMP/E link statement for your system.

CSQ8LDQM   SMP/E link for the base product.

CSQ8LNKI   SMP/E link for the Internet Gateway feature.

In addition, if you are intending to install support for one of the optional national languages, you must customize:

CSQ8ALOK   Allocates the MQSeries for OS/390 Japanese language target and distribution libraries.

Customizing the sample installation manually

CSQ8ALOC   Allocates the MQSeries for OS/390 simplified Chinese language target and distribution libraries.

CSQ8ALOU   Allocates the MQSeries for OS/390 U.S. English (uppercase) language target and distribution libraries.

If you intend to install support for the Internet Gateway feature, you must customize:

CSQ8ALOI   Allocates the distribution libraries for the Internet Gateway.

CSQ8MKDJ   Creates the HFS target paths for the Internet Gateway.

If you want to reduce the number of MQSeries for OS/390 target libraries that need to be added to the link list, you must customize the following job:

CSQ8ERLY   A user modification that moves the CSQ3ECMX load module into the SCSQLINK data set, from the specified language data set.

Finally, if you want to enable the measured usage license charge (MULC) feature, you must customize the following job:

CSQ8UBPX   A user modification that moves the MQSeries for OS/390 exit program into the SYS1.SIFALIB data set.

Note: The order in which these jobs should be run is described in the following sections:

- 6.3.5, "Prepare the installation environment" on page 36
- 6.3.6, "Use SMP/E to install MQSeries for OS/390" on page 39
- 6.3.8, "Enabling measured usage license charges" on page 43

You do not need to customize jobs CSQ8SYSC and CSQ8SYSJ if you are customizing the sample installation manually.

Appendix C. Enabling automatic relinking after service is applied

SMP/E provides a facility to perform automatic cross zone link-editing when service has been applied to the following corequisite products:

- Language Environment
- TCP/IP (DSPREFIX)
- OS/390 callable services (APPC and RRS)

If you choose to use this option, the following must apply:

- MQSeries for OS/390 must be installed in a separate target zone from these other products.

- You must set up ZONEINDEXs between MQSeries and the other zones.

- If you are using an existing target zone, you must make sure that the XZLINK subentry for your target zone is set to AUTOMATIC.

This is performed as part of the SMP/E APPLY step.

C.1 Cross zone preparation

1. Create a ZONEINDEX in the MQSeries for OS/390 global zone for the Language Environment target and distribution zones.

2. Create a ZONEINDEX in the Language Environment global zone for the MQSeries for OS/390 target and distribution zones.

3. Create a ZONEINDEX in the MQSeries for OS/390 global zone for the IBM TCP/IP target and distribution zones.

4. Create a ZONEINDEX in the IBM TCP/IP global zone for the MQSeries for OS/390 target and distribution zones.

5. Create a ZONEINDEX in the MQSeries for OS/390 global zone for the OS/390 callable services target and distribution zones.

6. Create a ZONEINDEX in the OS/390 callable services global zone for the MQSeries for OS/390 target and distribution zones.

An example of adding a ZONEINDEX entry using UCLIN:

Enabling automatic relinking after service is applied

```
 SET BOUNDARY(GZNAME) .
  UCLIN .
   ADD GLOBALZONE
       ZONEINDEX((TZNAME,HLQS.TZNAME.CSI,TARGET)
                 (DZNAME,HLQS.DZNAME.CSI,DLIB)) .
  ENDUCL .

 Where:
  GZNAME - The name of the global zone
  TZNAME - The name of the target zone
  DZNAME - The name of the distribution zone
  HLQS   - The high-level qualifiers for the target and
           distribution zones
```

The names of the target and distribution zones must be the same in each of the global zones in which ZONEINDEXs are defined. For example if the MQSeries target zone name is MQTZON in the MQSeries global zone ZONEINDEX, then it must also be MQTZON in the Language Environment global zone ZONEINDEX, and the IBM TCP/IP global zone ZONEINDEX if IBM TCP/IP is being used.

C.2 SMP/E LINK

Run the following jobs in the order shown:

1. CSQ8LKBJ

2. CSQ8LDQM

3. CSQ8LKIJ

4. CSQ8LNKI

The CSQ8LKBJ and CSQ8LDQM jobs are for the base product and the CSQ8LKIJ and CSQ8LNKI jobs are for the Internet Gateway feature.

The CSQ8LKBJ and CSQ8LKIJ jobs should complete with a return code of 0. The CSQ8LDQM and CSQ8LNKI jobs should complete with a return code of 4.

DDDEFs for SCEESPC and SCEELKED are required in the Language Environment target zone. DDDEFs are required in the IBM TCP/IP target zone for SEZACMTX, even if you use SOLVE:TCPACCESS, and in the OS/390 callable services zone for CSSLIB. It is assumed these DDDEF entries were made during the installation of TCP/IP, Language Environment, and OS/390.

Appendix D. Migration considerations

This Appendix covers the following topics:

- D.1, "Migrating from MQSeries for OS/390 Version 2.1"
- D.2, "Migrating from MQSeries for MVS/ESA Version 1.2" on page 55
- D.3, "Migrating from MQSeries for MVS/ESA Version 1.1.4" on page 57

These notes apply only if you are installing over the top of a previous release of this product, that is, you are installing into the same SMP/E zone and target and distribution libraries as used by the previous release.

D.1 Migrating from MQSeries for OS/390 Version 2.1

If you are installing MQSeries for OS/390 Version 5.2 over MQSeries for OS/390 Version 2.1, you need to make the changes described below to cater for the differences between the two releases, particularly the increase in size of the product. If you do not make these changes, you will experience problems, particularly during the APPLY phase.

D.1.1 SMP/E environment preparation

Increase the setting for DSSPACE to (100,100,800). For example, UCLIN to make this change:

```
 SET BOUNDARY(GLOBAL)  .
  UCLIN .
   REP  OPTIONS(TZNOPTN) ASM(IEV90) AMS(IDCAMS)
        COMP(IEBCOPY) COPY(IEBCOPY) UPDATE(IEBUPDTE)
        ZAP(IMASPZAP) LKED(IEWL) DSPREFIX(PP.MQSERIES.V520)
        DSSPACE(100,100,800) NOPURGE NOREJECT
        NUCID(9) PAGELEN(60) RETRYDDN(ALL) .
  ENDUCL .
```

D.1.2 Target and distribution library preparation

You need to perform the tasks described in the following sections to prepare your target and distribution libraries.

D.1.2.1 Create new libraries and define them to SMP/E

If you are installing the US English (mixed case) feature, edit job CSQ8ALOE, after you have tailored it, and globally change `'NEW,CATLG'` to `'MOD,CATLG'`. Run the job, and it will create libraries that are new for MQSeries for OS/390 Version 5.2 only.

If you are installing the Japanese language feature, edit job CSQ8ALOK, after you have tailored it, and globally change `'NEW,CATLG'` to `'MOD,CATLG'`. Run the job, and it will create libraries that are new for MQSeries for OS/390 Version 5.2 only.

If you are installing the Simplified Chinese language feature, edit job CSQ8ALOC, after you have tailored it, and globally change `'NEW,CATLG'` to `'MOD,CATLG'`. Run the job, and it will create libraries that are new for MQSeries for OS/390 Version 5.2 only.

If you are installing the US English (uppercase) feature, edit job CSQ8ALOU, after you have tailored it, and globally change `'NEW,CATLG'` to `'MOD,CATLG'`. Run the job, and it will create libraries that are new for MQSeries for OS/390 Version 5.2 only.

You will need to run job CSQ8DDDF to define the new libraries to SMP/E. The job will complete with a return code of 8 because some of the DDDEFs will already be defined to SMP/E. This is acceptable.

D.1.2.2 Increase the size of existing libraries

The following libraries need to be increased in size, in order to cater for the increase in size of the product:

Library	2.1 space allocation	5.2 space allocation
ACSQCOBC & SCSQCOBC	SPACE=(TRK,(19,3,3))	SPACE=(TRK,(21,3,4))
ACSQMACS & SCSQMACS	SPACE=(TRK,(33,5,3))	SPACE=(TRK,(36,6,4))
ACSQPNLA & SCSQPNLA	SPACE=(TRK,(8,1,3))	SPACE=(TRK,(8,1,4))
ACSQPNLC & SCSQPNLC	SPACE=(TRK,(43,7,32))	SPACE=(TRK,(40,6,108))
ACSQPNLE & SCSQPNLE	SPACE=(TRK,(45,7,34))	SPACE=(TRK,(45,7,120))
ACSQPNLK & SCSQPNLK	SPACE=(TRK,(46,7,34))	SPACE=(TRK,(46,7,122))
ACSQPNLU & SCSQPNLU	SPACE=(TRK,(45,7,33))	SPACE=(TRK,(45,7,120))
SCSQAUTH	SPACE=(TRK,(435,72,302))	SPACE=(TRK,(787,131,518))
SCSQLOAD	SPACE=(TRK,(37,6,13))	SPACE=(TRK,(201,33,14))

Library	2.1 space allocation	5.2 space allocation
ACSQMOD	SPACE=(TRK,(613,142,588))	SPACE=(TRK,(1304,217,848)) Also, change the blksize from 6144 to 32760.

D.1.2.3 Storage for the APPLY step

The APPLY job supplied with MQSeries (CSQ8APLY) specifies a region size of 7168 K. This might not be large enough for SMP/E in this scenario. If you receive message `GIM20201 SMP/E could not obtain enough storage for processing`, change the region size to be as large as you are allowed.

D.2 Migrating from MQSeries for MVS/ESA Version 1.2

If you are installing MQSeries for OS/390 Version 5.2 over MQSeries for MVS/ESA Version 1.2, you need to make changes described below, to cater for the differences between the two releases, particularly the increase in size of the product. If you do not make these changes, you will experience problems, particularly during the APPLY phase.

D.2.1 SMP/E environment preparation

Increase the setting for DSSPACE to (100,100,800). For example, UCLIN to make this change:

```
SET BOUNDARY(GLOBAL)  .
 UCLIN .
  REP  OPTIONS(TZNOPTN) ASM(IEV90) AMS(IDCAMS)
       COMP(IEBCOPY) COPY(IEBCOPY) UPDATE(IEBUPDTE)
       ZAP(IMASPZAP) LKED(IEWL) DSPREFIX(PP.MQSERIES.V520)
       DSSPACE(100,100,800) NOPURGE NOREJECT
       NUCID(9) PAGELEN(60) RETRYDDN(ALL) .
 ENDUCL .
```

You need to allocate and define to SMP/E an SMPLTS library, using the following as an example, first to create the library:

```
//SMPLTS    DD  DSN=PP.MQSERIES.SMPLTS,
//          UNIT=SYSDA,DISP=(NEW,CATLG),
//          DCB=(LRECL=0,BLKSIZE=32760,RECFM=U),
//          SPACE=(TRK,(170,50,50))
```

and then to define it to SMP/E:

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```
//SMPCNTL  DD *
  SET BOUNDARY(TZONE) .
   UCLIN .
    ADD DDDEF(SMPLTS)
        DA(PP.MQSERIES.SMPLTS) SHR .
   ENDUCL .
 /*
```

D.2.2 Target and distribution library preparation

You need to perform the tasks described in the following sections to prepare your target and distribution libraries.

D.2.2.1 Create new libraries and define them to SMP/E

If you are installing the US English (mixed case) feature, edit job CSQ8ALOE after you have tailored it, and globally change `'NEW,CATLG'` to `'MOD,CATLG'`. Run the job, and it will create libraries that are new for MQSeries for OS/390 Version 5.2 only.

If you are installing the Japanese language feature, edit job CSQ8ALOK after you have tailored it, and globally change `'NEW,CATLG'` to `'MOD,CATLG'`. Run the job, and it will create libraries that are new for MQSeries for OS/390 Version 5.2 only.

If you are installing the Simplified Chinese language feature, edit job CSQ8ALOC, after you have tailored it, and globally change `'NEW,CATLG'` to `'MOD,CATLG'`. Run the job, and it will create libraries that are new for MQSeries for OS/390 Version 5.2 only.

If you are installing the US English (uppercase) feature, edit job CSQ8ALOU after you have tailored it, and globally change `'NEW,CATLG'` to `'MOD,CATLG'`. Run the job, and it will create libraries that are new for MQSeries for OS/390 Version 5.2 only.

You need to run CSQ8DDDF to define the new libraries to SMP/E. The job will complete with a return code of 8 because some of the DDDEFs will already be defined to SMP/E. This is acceptable.

D.2.2.2 Increase the size of existing libraries

The following libraries need to be increased in size, in order to cater for the increase in size of the product:

Library	1.2 space allocation	5.2 space allocation
ACSQMACS & SCSQMACS	SPACE=(TRK,(28,4,3))	SPACE=(TRK,(36,6,4))

Library	1.2 space allocation	5.2 space allocation
ACSQPNLC & SCSQPNLC	SPACE=(TRK,(36,6,88))	SPACE=(TRK,(40,6,108))
ACSQPNLE & SCSQPNLE	SPACE=(TRK,(37,6,88))	SPACE=(TRK,(45,7,120))
ACSQPNLK & SCSQPNLK	SPACE=(TRK,(38,6,90))	SPACE=(TRK,(46,7,122))
ACSQPNLU & SCSQPNLU	SPACE=(TRK,(37,6,87))	SPACE=(TRK,(45,7,120))
SCSQAUTH	SPACE=(TRK,(340,56,256))	SPACE=(TRK,(787,131,518))
SCSQMVR2	SPACE=(TRK,(45,7,3))	SPACE=(TRK,(61,10,4))
SCSQLOAD	SPACE=(TRK,(9,1,10))	SPACE=(TRK,(201,33,14))
ACSQMOD	SPACE=(TRK,(582,97,486))	SPACE=(TRK,(1304,217,848)) Also, change the blksize from 6144 to 32760.

D.2.2.3 Storage for the APPLY step

The APPLY job supplied with MQSeries (CSQ8APLY) specifies a region size of 7168 K. This might not be large enough for SMP/E in this scenario. If you receive message `GIM20201 SMP/E could not obtain enough storage for processing`, change the region size to be as large as you are allowed.

D.3 Migrating from MQSeries for MVS/ESA Version 1.1.4

If you are installing MQSeries for OS/390 Version 5.2 over MQSeries for MVS/ESA Version 1.1.4, you will need to make changes described below to cater for the differences between the two releases, particularly the increase in size of the product. If you do not make these changes, you will experience problems, particularly during the APPLY phase.

D.3.1 SMP/E environment preparation

You will need to make the following changes:

- Increase the setting for DSSPACE to `(100,100,800)`.
- Increase the setting for PEMAX to 9999.

For example, UCLIN to make the above changes:

```
SET BOUNDARY(GLOBAL) .
 UCLIN .
  REP  OPTIONS(TZNOPTN) ASM(IEV90) AMS(IDCAMS)
       COMP(IEBCOPY) COPY(IEBCOPY) UPDATE(IEBUPDTE)
       ZAP(IMASPZAP) LKED(IEWL) DSPREFIX(PP.MQSERIES.V520)
       DSSPACE(100,100,800) NOPURGE NOREJECT
       NUCID(9) PAGELEN(60) PEMAX(9999) RETRYDDN(ALL) .
 ENDUCL .
```

D.3.2 Target and distribution library preparation

You need to perform the tasks described in the following sections to prepare your target and distribution libraries.

D.3.2.1 Create new libraries and define them to SMP/E

If you are installing US English (mixed case) feature, edit job CSQ8ALOE after you have tailored it, and globally change 'NEW,CATLG' to 'MOD,CATLG'. Run the job, and it will create libraries that are new for MQSeries for OS/390 Version 5.2 only.

If you are installing the Japanese language feature, edit job CSQ8ALOK after you have tailored it and globally change 'NEW,CATLG' to 'MOD,CATLG'. Run the job, and it will create libraries that are new for MQSeries for OS/390 Version 5.2 only.

If you are installing the Simplified Chinese language feature, edit job CSQ8ALOC after you have tailored it, and globally change 'NEW,CATLG' to 'MOD,CATLG'. Run the job, and it will create libraries that are new for MQSeries for OS/390 Version 5.2 only.

If you are installing the US English (uppercase) feature, edit job CSQ8ALOU after you have tailored it, and globally change 'NEW,CATLG' to 'MOD,CATLG'. Run the job, and it will create libraries that are new for MQSeries for OS/390 Version 5.2 only

You will need to run job CSQ8DDDF to define the new libraries to SMP/E. The job will complete with a return code of 8 because some of the DDDEFs will already be defined to SMP/E. This is acceptable.

D.3.2.2 Increase the size of existing libraries

The following libraries need to be increased in size, in order to cater for the increase in size of the product:

Library	1.1.4 space allocation	5.2 space allocation
ACSQMACS & SCSQMACS	SPACE=(TRK,(27,4,3))	SPACE=(TRK,(36,6,4))

Library	1.1.4 space allocation	5.2 space allocation
ACSQPNLC & SCSQPNLC	SPACE=(TRK,(37,6,88))	SPACE=(TRK,(40,6,108))
ACSQPNLE & SCSQPNLE	SPACE=(TRK,(37,6,93))	SPACE=(TRK,(45,7,120))
ACSQPNLK & SCSQPNLK	SPACE=(TRK,(39,6,93))	SPACE=(TRK,(46,7,122))
ACSQPNLU & SCSQPNLU	SPACE=(TRK,(38,6,91))	SPACE=(TRK,(45,7,120))
SCSQAUTH	SPACE=(TRK,(265,63,262))	SPACE=(TRK,(787,131,518))
SCSQLOAD	SPACE=(TRK,(9,1,10))	SPACE=(TRK,(201,33,14))
ACSQMOD	SPACE=(TRK,(802,133,452))	SPACE=(TRK,(1304,217,848)) Also, change the blksize from 6144 to 32760.

D.3.2.3 Storage for the APPLY step

The APPLY job supplied with MQSeries (CSQ8APLY) specifies a region size of 7168 K. This might not be large enough for SMP/E in this scenario. If you receive message `GIM20201 SMP/E could not obtain enough storage for processing` change the region size to be as large as you are allowed.

Appendix E. Getting started with the Internet Gateway

This section describes how to configure your Web Server so that you can view the online documentation and finalize the configuration of the Internet Gateway feature. It also describes the format of Internet Gateway messages.

E.1 Update your Web Server JCL

Add the following libraries to your Web Server JCL STEPLIB:

1. THLQUAL.SCSQANL*x*, where *x* is your national language identifier:

   C   Simplified Chinese
   E   U.S. English (mixed case)
   K   Japanese
   U   U.S. English (uppercase)

2. THLQUAL.SCSQAUTH

For example:

```
//STEPLIB  DD DSN=PP.IMW.OS39026.SIMWMOD1,DISP=SHR
//         DD DSN=MQ.V520.SCSQANLU,DISP=SHR
//         DD DSN=MQ.V520.SCSQAUTH,DISP=SHR
//         DD DSN=PP.CBC.OS39026.SCLBDLL,DISP=SHR
```

E.2 Update the Web Server environment variables

The environment variables for the Web Server can be found in a file called **httpd.envvars**, which is usually found in the **/etc** directory. Check the _CEE_ENVFILE parameter in the Web Server JCL for the location of the **httpd.envvars** file.

Append the following directories to the PATH and NLSPATH statements:

PATH   *server_root*/csq/bin:*server_root*/csq/do*
NLSPATH   *server_root*/csq/nl*/%N

Where:

- *server_root* is the path to the **csq** directory, as specified in Section 11 of DHQ.UCSQINST(CSQ8SYSJ)
- * is the appropriate language letter (that is, c, e, k or u)

E.3 Add the Internet Gateway to the Web Server configuration

You need to add directives to the **httpd.conf** file being used by your Web Server so that it can find the appropriate Internet Gateway feature files or programs when requested. There are various types of directive defined in the **httpd.conf** file, you should add your directives to the file at the top of the appropriate group, for example if you are adding a Service directive, you should insert it at the top of the list of Service directives in the file.

The Internet Gateway supports two interfaces, CGI and ICAPI. You should only add the directive for one of these to the **httpd.conf** file, so you need to decide which interface is most appropriate for your needs.

Add the following directives, where *server_root* is the path to the **csq** subdirectory.

CGI Interface
>   Exec /dmq-bin/*.mqf *server_root*/csq/bin/dmqcgi

ICAPI Interface
>   Service /dmq-bin/*.mqf *server_root*/csq/bin/dmqicapi:DMQICAPI

Configuration files
>   Exec /dmq-bin/dmqcnf* *server_root*/csq/bin/dmqcnf

Documents

>   **U.S. English (mixed case)**
>>   Pass /dmq/* *server_root*/csq/doe/*
>   **Japanese**
>>   Pass /dmq/* *server_root*/csq/dok/*
>   **Simplified Chinese**
>>   Pass /dmq/* *server_root*/csq/doc/*
>   **U.S. English (uppercase)**
>>   Pass /dmq/* *server_root*/csq/dou/*

E.4 Enabling the Internet Gateway ICAPI interface

If you intend to use the ICAPI interface, and have defined the appropriate directive in the **httpd.conf** file, you need to do the following:

1. Issue the following command in UNIX System Services to create an external link in the HFS to the DMQICAPI load module in the THLQUAL.SCSQAUTH load library:

```
ln -e DMQICAPI server_root/csq/bin/dmqicapi
```

   Where *server_root* is the path to the **csq** directory.

2. Program protect DMQICAPI. If you are using RACF, use TSO to issue a RACF command similar to the following example:

```
ralter program * addmem('THLQUAL.SCSQAUTH'/volser/nopadchk)
```

where *volser* is the volume on which THLQUAL.SCSQAUTH resides.

E.5 Providing access to the Internet Gateway files

Use the UNIX System Services **chmod** command to provide the appropriate access to the Internet Gateway feature files and programs. The following file permissions have been set.

- Read and execute access (`-rwx r-x r-x`) to:

  ```
  csq/bin/IBM/dmqcnf
  csq/bin/IBM/dmqcgi
  csq/bin/IBM/dmqicapi
  csq/smp/IBM/dmqsmp1
  csq/smp/IBM/dmqsmp2
  ```

- Read access (`-rw- r-- r--`) to:

  ```
  csq/do*/IBM/*.htm files
  csq/do*/IBM/*.gif files
  csq/nl*/IBM/*.cat files
  ```

- Restricted read access (`-rw- --- ---`) to:

  ```
  csq/bin/dmq.ini
  ```

Permissions for the following directories have been set to `drwx r-x r-x` (755):

```
csq/bin/IBM
csq/doe/IBM
csq/dok/IBM
csq/doc/IBM
csq/dou/IBM
csq/nle/IBM
csq/nlk/IBM
csq/nlc/IBM
csq/nlu/IBM
csq/smp/IBM
```

E.6 Starting the Web Server

The changes you have made in the previous sections are activated only by restarting the Web Server. You need to do this in order to proceed further with the verification and customization of the Internet Gateway feature installation.

E.7 Accessing the online documentation

When the Web Server is started, you can access the online documentation from a Web browser by opening this location:

```
http://your.system.name/dmq/index.htm
```

You should attempt to use at least one of the provided sample applications described in the online documentation to verify the installation of the Internet Gateway feature.

E.8 Format of MQSeries Internet Gateway messages

The MQSeries Internet Gateway places a message on a queue for each HTTP POST request passed to it by the Web Server. The gateway then waits for a reply message on a different queue, which it forwards to the Web Server. The formats of these messages are illustrated by the sample applications **dmqsmp1** and **dmqsmp2**. Refer to the online documentation for information about using these applications.

The body of these messages match the input and output streams of a CGI application; data from the browser is encoded as a series of pairs in the following form:

```
    variable_name=user_data
```

Each pair is separated by an ampersand (&) character.

The response generated by the user application can contain any data. However, this data must be preceded by a line of text giving the MIME type of the data. A blank line should separate the MIME type from the body of the data. For example, if the application returns an HTML page to be displayed by the browser, the message should start with the following line:

```
    Content-type: text/html
```

This line should be followed by a blank line, and then the HTML data to be displayed.

Getting started with the Internet Gateway

For more information about the CGI specification, see the NCSA's repository of CGI information at `http://hoohoo.ncsa.uiuc.edu/cgi/`.

Reader's comments

Program Directory for MQSeries for OS/390

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│
└──────────────────────────────────────────────────────────────────────────
```

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Printed in U.S.A.