



**Program Directory for
MQSeries Internet Gateway
for OS/390**

Version 2 Release 1, Modification Level 0

Program Number 5655-A95

FMIDs JMQ2106

for use with
OS/390

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Note!

Before using this information and the product it supports, be sure to read the general information under “Notices” on page iv.

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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 Internet Gateway for OS/390. This publication refers to MQSeries Internet Gateway for OS/390 as MQSeries Internet Gateway 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 Internet Gateway for OS/390.
- 3.0, "Program support" on page 6 describes the IBM support available for MQSeries Internet Gateway for OS/390.
- 4.0, "Program and service level information" on page 7 lists the APARs (program level) and PTFs (service level) incorporated into MQSeries Internet Gateway for OS/390.
- 5.0, "Installation requirements and considerations" on page 8 identifies the resources and considerations for installing and using MQSeries Internet Gateway for OS/390.
- 6.0, "Installation instructions" on page 14 provides detailed installation instructions for MQSeries Internet Gateway for OS/390.
- 7.0, "Getting started with the MQSeries Internet Gateway for OS/390" on page 24 describes the procedures for activating the functions of MQSeries Internet Gateway for OS/390.
- Appendix A, "MQSeries Internet Gateway for OS/390 install logic" on page 28 provides the install logic for MQSeries Internet Gateway for OS/390.

Before installing MQSeries Internet Gateway for OS/390, read 3.2, "Preventive service planning" on page 6. 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 Internet Gateway for OS/390 with an MVS Custom-Built Installation Process Offering (CBIPO), 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 Internet Gateway 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 Internet Gateway for OS/390 are included on the CBPDO tape.

1.1 MQSeries Internet Gateway for OS/390 description

The IBM MQSeries Internet Gateway provides a bridge between the synchronous World Wide Web and asynchronous MQSeries applications.

1.2 MQSeries Internet Gateway for OS/390 FMIDs

MQSeries Internet Gateway for OS/390 consists of the following FMIDs:

JMQ2106

2.0 Program materials

An IBM program is identified by a program number and a feature number. The program number for MQSeries Internet Gateway for OS/390 is 5655-A95.

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 Internet Gateway 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 14 for more information about how to install the program.

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

Note: If you are installing MQSeries Internet Gateway 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.

<i>Figure 1. Basic material: program tape</i>				
Medium	Feature Number	Physical Volume	External Label Identification	VOLSER
6250 tape	5790	1	MQ Internet Gateway	MQ2106
3480 cart.	5791	1	MQ Internet Gateway	MQ2106
4mm cart.	5892	1	MQ Internet Gateway	MQ2106

<i>Figure 2 (Page 1 of 2). Program tape: file content</i>						
VOLSER	File	Name	Dist Library	RECFM	LRECL	BLK SIZE
MQ2106	1	SMPMCS	n/a	FB	80	3120
	2	IBM.JMQ2106.F1	n/a	FB	80	8800
	3	IBM.JMQ2106.F2	ACSQINST	FB	80	8800

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

VOLSER	File	Name	Dist Library	RECFM	LRECL	BLK SIZE
	4	IBM.JMQ2106.F3	ACSQOBIN	VB	32000	32004
	5	IBM.JMQ2106.F4	ACSQODOC	VB	32000	32004
	6	IBM.JMQ2106.F5	ACSQODOE	VB	32000	32004
	7	IBM.JMQ2106.F6	ACSQODOK	VB	32000	32004
	8	IBM.JMQ2106.F7	ACSQODOU	VB	32000	32004
	9	IBM.JMQ2106.F8	ACSQONLC	VB	32000	32004
	10	IBM.JMQ2106.F9	ACSQONLE	VB	32000	32004
	11	IBM.JMQ2106.F10	ACSQONLK	VB	32000	32004
	12	IBM.JMQ2106.F11	ACSQONLU	VB	32000	32004
	13	IBM.JMQ2106.F12	ACSQOSMP	VB	32000	32004
	14	IBM.JMQ2106.F13	ACSQMOD	U	0	6144
	15	IBM.JMQ2106.F14	ACSQPROC	FB	80	27920

2.2 Optional machine-readable material

No optional machine-readable materials are provided for MQSeries Internet Gateway for OS/390.

2.3 Program publications

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

2.3.1 Basic program publications

The documentation for this feature is available online, and is installed as part of this installation process.

2.3.2 Optional program publications

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

2.4 Program source materials

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

2.5 Publications useful during installation

The publications listed in Figure 3 on page 5 may be useful during the installation of MQSeries Internet Gateway for OS/390. To order copies, contact your IBM representative.

<i>Figure 3. Publications useful during installation</i>	
Publication Title	Form Number
<i>MVS/ESA Application Developer Reference</i>	SC23-3020
<i>SMP/E R8.1 Reference</i>	SC28-1107
<i>SMP/E R8.1 Messages and Codes</i>	SC28-1108
<i>SMP/E User's Guide</i>	SC28-1302
<i>OS/390 Initialization and Tuning Reference</i>	SC28-1752
<i>OS/390 OpenEdition Planning</i>	SC28-1890
<i>OS/390 OpenEdition MVS User's Guide</i>	SC28-1891
<i>IBM Internet Connection Secure Server Webmaster's Guide</i>	GC31-8490

3.0 Program support

This section describes the IBM support available for MQSeries Internet Gateway 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 Internet Gateway for OS/390, you should review the current Preventive Service Planning (PSP) information. If you obtained MQSeries Internet Gateway for OS/390 as part of a CBPDO, there is HOLDDATA and PSP information included on the CBPDO tape.

If you obtained MQSeries Internet Gateway 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 Internet Gateway for OS/390 are:

Figure 4. PSP upgrade and subset ID

UPGRADE	SUBSET	Description
MQMESA	JMQ2106	MQSeries Internet Gateway

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 5 identifies the component IDs (COMPID) for MQSeries Internet Gateway for OS/390.

Figure 5. Component IDs

FMID	COMPID	Component Name	RETAIN Release
JMQ2106	5655A9500	MQSeries Internet Gateway	106

4.0 Program and service level information

This section identifies the program and any relevant service levels of MQSeries Internet Gateway 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

No APARs have been incorporated into MQSeries Internet Gateway for OS/390.

4.2 Service level information

No PTFs against this release of MQSeries Internet Gateway 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.

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 Internet Gateway 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 Internet Gateway 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 6. Driving system software requirements

Program Number	Product Name and Minimum VRM/Service Level
5668-949	System Modification Program/Extended (SMP/E) Release 8.1 (if you are using Release 2.4, 2.5, or 2.6 of OS/390 you need to apply SMP/E PTF UR50598 before you install MQSeries Internet Gateway for OS/390)
5647-A01	OS/390 Release 2.4 or higher
5655-A95	MQSeries for OS/390 Version 2.1

5.2 Target system requirements

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

5.2.1 Machine requirements

The target system can run in any hardware environment that supports the required software.

5.2.2 Programming requisites

5.2.2.1 Minimum requisites: A minimum requisite is defined as one of the following:

1. *Installation Requisite:* A product that is required at installation time. i.e. this product **will not install** successfully unless this requisite is met. This includes products that are specified as REQs, PREs, or CALLLIBs.
2. *Run Time Requisite:* A product that is **not** required for the successful installation of this product, but **is** needed at run time in order for this product to work.

Figure 7. Minimum requisites

Program Number	Product Name and Minimum VRM/Service Level	Install Req?
5645-001	OS/390 Release 2.4 or higher with OpenEdition implemented	Yes
5655-156	Internet Connection Secure Server Version 2.1 with APAR PQ03274	No
5655-A95	MQSeries for OS/390 Version 2.1	Yes

5.2.2.2 Functional requisites: None.

5.2.2.3 Toleration/coexistence requisites: None.

5.2.2.4 Incompatibility (negative) requisites: None.

5.2.3 DASD storage requirements

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

Figure 8 lists the total space required for each type of library.

Figure 8. Total DASD space required by MQSeries Internet Gateway for OS/390

Library Type	Total Space Required
Target	None (uses existing base PDS)
Distribution	24 tracks of 3380 or 3390
HFS	2 MB

Notes:

1. The data set sizes specified contain 15% extra space. You may wish to revise these numbers based on your plans for adding additional function or service.
2. 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.

If you choose not to use system determined block sizes, use the block sizes and numbers of blocks specified to allocate the data sets. Data sets can be reblocked to a larger size. Please note that the maximum allowable block size will depend on the type of DASD on which the data set will reside; for example, the block size of data sets on a 3350 DASD cannot exceed 19,069.

3. Abbreviations used for the data set type are:

- U** Unique data set used by only the FMIDs listed. 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 used by more than the FMIDs listed. 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.

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 9 (Page 1 of 2). Storage requirements for SMP/E work data sets

Library DDNAME	T	D S O R E G	R E C F M	L R E C L	No. of Blks	BLK SIZE	No. of 3380/ 9345 Trks	No. of 3390 Trks	No. of DIR Blks
SMPWRK1	S	PO	FB	80	5930	6160			111
SMPWRK2	S	PO	FB	80	5930	6160			111

<i>Figure 9 (Page 2 of 2). Storage requirements for SMP/E work data sets</i>									
Library DDNAME	T Y P E	D S R G	R E C F M	L R E C L	No. of Blks	BLK SIZE	No. of 3380/ 9345 Trks	No. of 3390 Trks	No. of DIR Blks
SMPWRK3	S	PO	FB	80	6160	3120			111
SMPWRK4	S	PO	FB	80	6160	3120			111
SMPWRK6	S	PO	FB	80	5930	6160			111
SYSUT1	U	PS	--	--	11630	6160			0
SYSUT2	U	PS	--	--	11630	6160			0
SYSUT3	U	PS	--	--	11630	6160			0
SYSUT4	U	PS	--	--	11630	6160			0

The following table provides an estimate of the storage needed in the SMP/E data sets for MQSeries Internet Gateway 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.

<i>Figure 10. Storage requirements for SMP/E data sets</i>									
Library DDNAME	T Y P E	D S R G	R E C F M	L R E C L	No. of Blks	BLK SIZE	No. of 3380/ 9345 Trks	No. of 3390 Trks	No. of DIR Blks
SMPLTS	S	PO	U	0	142	32760	142	142	50
SMPMTS	S	PO	FB	80	84	8800	17	14	100
SMPPTS	S	PO	FB	80	366	8800	74	61	100
SMPSCDS	S	PO	FB	80	168	8800	34	28	100
SMPSTS	S	PO	FB	80	84	8800	17	14	100

The following figures list the target and distribution libraries (data sets) and their attributes required to install MQSeries Internet Gateway for OS/390. The storage requirements of MQSeries Internet Gateway for OS/390 must be added to the storage required by other programs having data in the same data set (library).

Figure 11. Storage requirements for MQSeries Internet Gateway for OS/390 target libraries

Library DDNAME	T Y P E	D S O R G E G	R E C O R D S M	L E N G T H	BLK SIZE	No. of 3380/ 9345 Trks	No. of 3390 Trks	No. of DIR Blks
SCSQINST	S	PO	FB	80	27920	11	11	2
SCSQPROC	S	PO	FB	80	27920	20	20	4

Figure 12. Storage requirements for MQSeries Internet Gateway for OS/390 distribution libraries

Library DDNAME	T Y P E	D S O R G E G	R E C O R D S M	L E N G T H	BLK SIZE	No. of 3380/ 9345 Trks	No. of 3390 Trks	No. of DIR Blks
ACSQINST	S	PO	FB	80	27920	11	11	2
ACSQMOD	S	PO	U	0	6144	856	856	588
ACSQOBIN	U	PO	VB	32000	32004	2	2	1
ACSQODOC	U	PO	VB	32000	32004	1	1	1
ACSQODOE	U	PO	VB	32000	32004	1	1	1
ACSQODOK	U	PO	VB	32000	32004	1	1	1
ACSQODOU	U	PO	VB	32000	32004	1	1	1
ACSQONLC	U	PO	VB	32000	32004	4	4	2
ACSQONLE	U	PO	VB	32000	32004	4	4	2
ACSQONLK	U	PO	VB	32000	32004	4	4	2
ACSQONLU	U	PO	VB	32000	32004	4	4	2
ACSQOSMP	U	PO	VB	130	8800	2	2	1
ACSQPROC	S	PO	FB	80	27920	20	20	4

<i>Figure 13. Storage requirements for the MQSeries Internet Gateway for OS/390 HFS directories</i>
HFS targets require approximately 85 tracks of a 3390
SCSQOBIN <i>server_root</i> /csq/bin/IBM/
SCSQODOC <i>server_root</i> /csq/doc/IBM/
SCSQODOE <i>server_root</i> /csq/dae/IBM/
SCSQODOK <i>server_root</i> /csq/dok/IBM/
SCSQODOU <i>server_root</i> /csq/dou/IBM/
SCSQONLC <i>server_root</i> /csq/nlc/IBM/
SCSQONLE <i>server_root</i> /csq/nle/IBM/
SCSQONLK <i>server_root</i> /csq/nlk/IBM/
SCSQONLU <i>server_root</i> /csq/nlu/IBM/
SCSQOSMP <i>server_root</i> /csq/smp/IBM/
Note: Where <i>server_root</i> is the path to the csq directory. This is discussed in 6.1, "Prepare to install MQSeries Internet Gateway for OS/390" on page 14.

5.3 FMIDs deleted

Installing MQSeries Internet Gateway for OS/390 will result in the deletion of the following FMIDs:

<i>Figure 14. FMIDs deleted</i>		
Deleted FMID	Deleting FMID	Description
JML7137	JMQ2106	MQSeries for OS/390 Internet Gateway

5.4 Special considerations

MQSeries Internet Gateway 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 and to activate the MQSeries Internet Gateway for OS/390, up to the point where you are able to read the online documentation, from which you can configure the gateway for your purposes.

6.1 Prepare to install MQSeries Internet Gateway for OS/390

The MQSeries Internet Gateway for OS/390 must be installed in the same SMP/E environment as MQSeries for OS/390; you must use the same SMP/E zones and libraries. Before you start the installation process, you must determine the certain values; these are listed in the following tables, with spaces to write the values you identify. The values must be the same as those used when the base product was installed.

6.1.1 High-level qualifiers

Figure 15. High-level qualifiers for data set names

Parameter name in the sample JCL provided	Value	Description
DHLQUAL		High-level qualifiers for the MQSeries for OS/390 distribution data sets
DHQ		High-level qualifiers for the UCSQINST data set into which the installation JCL will be loaded from tape
LEQUAL		High-level qualifiers for the Language Environment target libraries
SHLQUAL		High-level qualifiers for the MQSeries for OS/390 SMP/E data sets
THLQUAL		High-level qualifiers for the MQSeries for OS/390 target libraries
THQ		High-level qualifiers for the TCSQINST data set into which the customized installation JCL will be placed

6.1.2 Volume and unit names

<i>Figure 16. Volume and unit names</i>		
Parameter name in the sample JCL provided	Value	Description
DISVOL		MQSeries for OS/390 distribution library volume
TAPEUNIT		Unit type of the tape drive used to read the MQSeries Internet Gateway for OS/390 tape
TARVOL		MQSeries for OS/390 target library volume

6.1.3 SMP/E environment

<i>Figure 17. Target and distribution zone names</i>		
Parameter name in the sample JCL provided	Value	Description
DZNAME		The name of the distribution zone being used for MQSeries for OS/390
GZONECSI		The name of the global zone CSI being used for MQSeries for OS/390
LETZN		The name of the target zone in which Language Environment is installed
TZNAME		The name of the target zone being used for MQSeries for OS/390

6.1.4 HFS

Almost all of the MQSeries Internet Gateway for OS/390 is installed into the HFS in OpenEdition, you therefore need to determine where in the HFS the root of the MQSeries Internet Gateway for OS/390 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 MQSeries Internet Gateway for OS/390 is not deleted if the Web Server is replaced by replacing the filesystem on which it is installed.

Figure 18. Path to csq

Default value	Assigned Value	Description
/usr/lpp/internet/server_root		The path to the csq subdirectory

6.2 Prepare the installation JCL

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

6.2.1 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 to private data sets, and modify and run the jobs from these data sets.)

1. Enter the following JCL as DHQ.ICSQINST (a sequential data set), substituting the values you have identified for **tapeunit** and **dhq** into the JCL, and adding job statement information if required:

```
//LOADIG JOB
//STEP1 EXEC PGM=IEBCOPY
//SYSPRINT SYSOUT=A
//IN DD DSN=IBM.JMQ2106.F2,UNIT=tapeunit,
// VOL=SER=MQ2106,LABEL=(3,SL),DISP=OLD
//OUT DD DSN=dhq.UCSQINST,
// DCB=(LRECL=80,RECFM=FB,BKLSIZE=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 job to load the sample installation JCL; it should complete with a return code of 0. If the return code is not 0, check the job output to ensure that the sample jobs have been unloaded correctly. If they have not, correct any errors found and re-submit the job.

The samples that have been unloaded are:

- CSQ8ACPI
- CSQ8ALOI

- CSQ8APLI
- CSQ8DDDI
- CSQ8LNKI
- CSQ8MKDJ
- CSQ8MKDR
- CSQ8RECI
- CSQ8SYIC
- CSQ8SYIJ

6.3 Customize the sample installation JCL

To customize the sample installation JCL, use the customization job (CSQ8SYIJ) provided with MQSeries Internet Gateway for OS/390. If you do not want to use this job and would rather customize the sample installation jobs manually, see 6.3.1, “Customizing the sample installation manually” on page 19.

If you use CSQ8SYIJ, you can customize the samples jobs by adding the values you chose in 6.1, “Prepare to install MQSeries Internet Gateway for OS/390” on page 14 and running this job.

CSQ8SYIJ 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 CSQ8SYIJ. Full instructions for modifying CSQ8SYIJ are included as comments within the job. Where selections are to be made, this is usually done by removing the leading asterisk.

The following rules apply when updating CSQ8SYIJ:

- The keywords in the JCL can appear in any order and starting in any column, provided that 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 CSQ8SYIJ; 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 CSQ8SYIJ in DHQ.UCSQINST as follows:

1. Change the job statement at the top of the job 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 CSQ8SYIJ.
2. Customize the JCL statements in Section 2 of CSQ8SYIJ 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. Leave the INTG feature selected in Section 3.
4. In Section 4, where the sample jobs to customize are selected, leave all of them commented out, this will result in all of them being customized.

5. In Section 5, provide any additional information for the JOB statement. You must leave the characters:

```
JOB //XXXXXXXX JOB
```

intact and append your parameters after the second JOB on this line. Even if you do not require any further parameters, you must leave this line intact. You can also add lines such as /*ROUTE or /*JOBPARM 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 continuation ',').

The following example shows a JOB statement with some additional information:

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

The following example shows a case with multiple lines:

```
JOB //XXXXXXXX JOB (ACCOUNT),CLASS=A,MSGCLASS=H,  
JOB // MSGLEVEL=(1,1),NOTIFY=USERID  
JOB /*ROUTE PRINT HURVMA.USERID
```

The first four characters of the job name can be changed from 'CSQ8' to a one- to four-character prefix that should be entered in place of 'CSQ8' next to the JCPREF keyword. The last four characters of each job name will match the last four characters of the JCL member name.

6. For Section 6, enter the values you have chosen for high-level qualifiers, volume serial numbers and unit types, where they are different from the defaults. (These values will be the same as those used when the base product was installed.)

The volumes for the target and distribution libraries (TARVOL and DISVOL) can have esoteric values specified, for example 'SYSDA' (quotation marks should not be used in the JCL). This can be done by changing VOLSER to a '.' and UNITTYPE to the esoteric value.

7. In Section 7, provide the names of the SMP/E zones being used. (These values will be the same as those used when the base product was installed.)

Specifying NEW for GZONECSI means that the customization step will add the name SHLQUAL.GLOBAL.CSI for the global zone CSI. If your global zone CSI has a different name, you must replace NEW with the fully qualified name.

8. In Section 8, specify the root used by the Web Server; the default is **/usr/lpp/internet/server_root**.

9. Run CSQ8SYIJ; it should complete with a return code of 0.

If the return code is not 0, inspect the output to determine what caused the problem. CSQ8SYIJ can be run again when the error has been corrected, but running it many times might require the THQ.TCSQINST data set to be compressed.

6.3.1 Customizing the sample installation manually

You can customize the sample jobs manually using your preferred editor. (Alternatively, you can use CSQ8SYIJ 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 14 before you start.

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

CSQ8RECI	Runs the SMP/E RECEIVE step for MQSeries Internet Gateway for OS/390
CSQ8ALOI	Allocates target and distribution libraries
CSQ8MKDJ	Defines the HFS
CSQ8DDDI	Defines the SMP/E DDDEFs
CSQ8APLI	Runs the SMP/E APPLY step for MQSeries Internet Gateway for OS/390
CSQ8ACPI	Runs the SMP/E ACCEPT step for MQSeries Internet Gateway for OS/390

If you used the optional LINK job when you installed the base program (described in the *MQSeries for OS/390 Program Directory*) you will also need to customize job **CSQ8LNKI**. The order in which these jobs should be run is described in the following sections:

- 6.4, “Allocate libraries and subdirectories”
- 6.5, “Update SMP/E DDDEF information” on page 20
- 6.6, “Use SMP/E to install the MQSeries Internet Gateway for OS/390” on page 20

Note: You do not need to customize job CSQ8SYIJ if you are customizing the sample installation manually.

6.4 Allocate libraries and subdirectories

This section describes how to define the HFS and allocate the distribution libraries.

6.4.1 Defining the HFS

Create subdirectory **csq** in the *server_root* directory.

It is recommended that the MQSeries Internet Gateway for OS/390 is installed in its own OpenEdition filesystem, which should be defined in the BPXPRMxx member of SYS1.PARMLIB, for example:

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

Where 'mvs.dsname' is the name of an MVS data set allocated to hold the HFS.

Submit job THQ.TCSQINST(CSQ8MKDJ); it should complete with return code 0.

6.4.2 Allocating the distribution libraries

Submit job THQ.TCSQINST(CSQ8ALOI); it should complete with return code 0.

6.5 Update SMP/E DDDEF information

Submit job THQ.TCSQINST(CSQ8DDDI); it should complete with return code 0.

6.6 Use SMP/E to install the MQSeries Internet Gateway for OS/390

SMP/E uses three steps to install the MQSeries Internet Gateway for OS/390:

1. RECEIVE
2. APPLY
3. ACCEPT

6.6.1 SMP/E RECEIVE

Mount the tape and submit job THQ.TCSQINST(CSQ8RECI), which should complete with return code 0 or

4. You should receive the following message in the SMPLOG:

```
GIM22701I RECEIVE PROCESSING WAS SUCCESSFUL FOR SYSMOD JMQ2106
```

If you are using Release 2.4, 2.5, or 2.6 of OS/390 the return code will be 4, and you will receive the following message:

```
GIM50050W RECEIVE PROCESSING FOR SYSMOD JMQ2106 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 are using OS/390 Release 2.7 or higher, and the return code was not 0, check the job output listing to identify the problem, correct it and rerun the job.

6.6.2 SMP/E APPLY

Submit job THQ.TCSQINST(CSQ8APLI), which should complete with return code 0 or 4. You should receive the following message in the SMPLOG:

```
GIM22701I APPLY PROCESSING WAS SUCCESSFUL FOR SYSMOD JMQ2106
```

If you are using Release 2.4, 2.5, or 2.6 of OS/390 the return code will be 4, and you will receive the following message:

```
GIM50050W APPLY PROCESSING FOR SYSMOD JMQ2106 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 are using OS/390 Release 2.7 or higher, and the return code was not 0, check the job output listing to identify the problem, correct it and rerun the job.

If you want, the APPLY step can be run initially with the CHECK operand appended to the APPLY command in the CSQ8APLI job. If you do this, the job does not update any libraries; instead it tests for any errors other than those that could occur when the libraries are updated, for example it does not generate errors if there is insufficient disk space available. The job must be rerun without the CHECK operand to update the libraries.

6.6.3 SMP/E ACCEPT

Submit job THQ.TCSQINST(CSQ8ACPI), which should complete with return code 0 or 4. You should receive the following message in the SMPLOG:

```
GIM22701I ACCEPT PROCESSING WAS SUCCESSFUL FOR SYSMOD JMQ2106
```

If you are using Release 2.4, 2.5, or 2.6 of OS/390 the return code will be 4, and you will receive the following message:

```
GIM50050W ACCEPT PROCESSING FOR SYSMOD JMQ2106 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 are using OS/390 Release 2.7 or higher, and the return code was not 0, check the job output listing to identify the problem, correct it and rerun the job.

If you want, the ACCEPT step can be run initially with the CHECK operand appended to the ACCEPT command in the CSQ8ACPI job. If you do this, the job does not update any libraries, instead it tests for any errors other than those that could occur when the libraries are updated, for example, it does not generate errors if there is insufficient disk space available. The job must be rerun without the CHECK operand to update the libraries.

6.6.4 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 Language Environment. If you are using this facility for MQSeries for OS/390, you can also use it for MQSeries Internet Gateway for OS/390, as follows:

Submit job THQ.TCSQINST(CSQ8LNKI), which should complete with return code 0.

6.7 What SMP/E has done

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

6.7.1 Library contents after installation

After the successful completion of SMP/E processing, your libraries will have the names and contents shown in Figure 19.

Figure 19 (Page 1 of 2). Library contents after installation

Target library	Distribution library	Description
SCSQAUTH		Load module for OS/390
SCSQINST	ACSQINST	Sample install JCL
	ACSQMOD	Object code
SCSQOBIN	ACSQOBIN	Load modules for HFS and ini files
SCSQODOC	ACSQODOC	Documentation files for Simplified Chinese
SCSQODOE	ACSQODOE	Documentation files for U.S. English (mixed case)
SCSQODOK	ACSQODOK	Documentation files for Japanese
SCSQODOU	ACSQODOU	Documentation files for U.S. English (uppercase)
SCSQONLC	ACSQONLC	Message catalog for Simplified Chinese

Figure 19 (Page 2 of 2). Library contents after installation

Target library	Distribution library	Description
SCSQONLE	ACSQONLE	Message catalog for U.S. English (mixed case)
SCSQONLK	ACSQONLK	Message catalog for Japanese
SCSQONLU	ACSQONLU	Message catalog for U.S. English (uppercase)
SCSQOSMP	ACSQOSMP	Sample source and executables

6.7.2 Directory contents after installation

After the successful completion of SMP/E processing, your directories will have the names and contents shown in Figure 20.

Figure 20. 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

7.0 Getting started with the MQSeries Internet Gateway for OS/390

This section describes how to configure your Web Server so that you can view the online documentation and finalize the configuration of MQSeries Internet Gateway for OS/390. It also describes the format of MQSeries Internet Gateway messages.

7.1 Update your Web Server JCL

Add the following libraries to your Web Server JCL STEPLIB:

1. THLQUAL.SCSQANLx, 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.OS39025.SIMWMOD1,DISP=SHR
//          DD DSN=MQ.V210.SCSQANLU,DISP=SHR
//          DD DSN=MQ.V210.SCSQAUTH,DISP=SHR
//          DD DSN=PP.CBC.OS39025.SCLBDLL,DISP=SHR
```

7.2 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 8 of DHQ.UCSQINST(CSQ8SYIJ)
- * is the appropriate language letter (that is, c, e, k or u)

7.3 Add MQSeries Internet Gateway for OS/390 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 MQSeries Internet Gateway for OS/390 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.

MQSeries Internet Gateway for OS/390 supports two interfaces, CGI and ICAP. 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/doe/*
```

Japanese

```
Pass /dmq/* server_root/dok/*
```

Simplified Chinese

```
Pass /dmq/* server_root/doc/*
```

U.S. English (uppercase)

```
Pass /dmq/* server_root/dou/*
```

7.4 Enabling the MQSeries Internet Gateway for OS/390 ICAP interface

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

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

```
In -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/nopadcheck)
```

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

7.5 Providing access to the MQSeries Internet Gateway for OS/390 files

Use the OpenEdition **chmod** command to provide the appropriate access to the MQSeries Internet Gateway for OS/390 files and programs. You need to provide access as follows:

- Read and execute access to:
 - The **csq** directory
 - The immediate subdirectories of **csq** (that is, **bin**, **do***, **nl***, and **smp**).
 - MQSeries Internet Gateway for OS/390 executables:
 - csq/bin/dmqcnf
 - csq/bin/dmqcgi
 - csq/bin/dmqicapi
 - csq/smp/dmqsmpl
 - csq/smp/dmqsmpl2
- Read access to:
 - csq/do*/*.htm files
 - csq/do*/*.gif files
 - csq/nl*/*.cat files
- Restricted read access should be given to csq/bin/dmq.ini.

7.6 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 MQSeries Internet Gateway for OS/390 installation.

7.7 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 MQSeries Internet Gateway for OS/390.

7.8 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.

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

Appendix A. MQSeries Internet Gateway for OS/390 install logic

A.1 SMP/E modification control statements

The SMP/E Modification Control Statements (SMPMCS) for MQSeries Internet Gateway 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 IEBTPCH).

A.2 SMP/E JCLIN

The JCLIN for MQSeries Internet Gateway 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 IEBTPCH).

The files containing JCLIN are:

FMID JMQ2106 high-level-qualifier.JMQ2106.F1(JMQ2106)

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

Reader's comments

Program Directory for MQSeries Internet Gateway for OS/390 Version 2 Release 1, Modification Level 0

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Accuracy of the definition of the installation tasks	1	2	3	4	5	N
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