MQSeries® Integrator

Installation and Configuration Guide

Version 1.0

GC34-5503-00

Note: **Before using this information, and the product it supports, be sure to read the general information under** *Notices* on page 93**.**

First edition (January 1999)
This edition applies to IBM® MQSeries Integrator, Version 1.0 and to all subsequent releases and modifications until otherwise indicated in new editions. Make sure you are using the correct edition for the level of the product.

Order publications through your IBM representative or the IBM branch office serving your locality. Publications are not stocked at the address given below.

At the back of this publication is a page titled "Sending your comments to IBM". If you want to make comments, but the methods described are not available to you, please address them to:

IBM United Kingdom Laboratories
Information Development,
Mail Point 095,
Hursley Park,
Winchester,
Hampshire,
England,
SO21 2JN.

When you send information to IBM, you grant IBM a nonexclusive right to use or distribute the information in any way it believes appropriate without incurring any obligation to you.

Contents

Chapter 1
Introduction

This guide will help you install MQSeries Integrator and begin to use it effectively.

The guide is organized into the following sections:

- Chapter 1, *Introduction*, describes the MQSeries Integrator product package, documentation set, documentation conventions, and lists supported platforms and compilers.
- Chapter 2, *NT Workstation Installation*, provides the necessary steps to prepare for and run a new NT (DB2, Oracle, SQL Server, and Sybase) installation. This procedure must also be used to install the graphical user interfaces (GUIs) and documentation on an NT workstation when you are doing an AIX, HP-UX, or Solaris MQSeries Integrator installation.
- Chapter 3, *AIX Installation*, provides the necessary steps to prepare for and run an AIX (DB2, Oracle, and Sybase) MQSeries Integrator installation. It also contains the procedures for installing the database schema from AIX, editing the database connection file for your site, verifying the install, and editing the Makefile.
- Chapter 4, *HP-UX Installation*, provides the necessary steps to prepare for and run an HP-UX (DB2, Oracle, and Sybase) MQSeries Integrator installation. It also contains the procedures for installing the database schema from HP-UX, editing the database connection file for your site, verifying the install, and editing the Makefile.
- Chapter 5, *Solaris Installation*, provides the necessary steps to prepare for and run a Solaris (DB2, Oracle, and Sybase) MQSeries Integrator installation. It also contains the procedures for installing the database schema from Solaris, editing the database connection file for your site, verifying the install, and editing the Makefile.

- Chapter 6, *Uninstalling MQSeries Integrator*, provides the steps necessary to uninstall MQSeries Integrator from NT, AIX, HP-UX, Solaris, and uninstall the MQSeries Integrator Client from NT.
- Appendix A, *Calculating Sizing Data*, provides formulas for calculating Formatter and Rules space requirements.
- Appendix B, *Changing Database Sort Order*, provides the procedure for changing the sort order from dictionary to binary.
- Appendix C, *Notices*, provides IBM notices and trademark and service mark information.

Product Package

MQSeries Integrator ships with two distribution CD-ROMs that contain:

- MQSeries Integrator Rules daemon specific to your DBMS and operating system (OS).
- MQSeries, version 5.0, specific to your OS.
- MQSeries, version 5.0 CSD03
- MQSeries Client CD-ROM
- MQSeries documentation in HTML format and in PDF format.
- Configuration GUIs for NEONFormatter and NEONRules. These GUIs should be installed on an NT workstation.
- MQSeries Integrator NEONFormatter and NEONRules libraries specific to your DBMS and OS.
- PowerBuilder dynamic link libraries (DLLs) required to run the Formatter and Rules GUIs. These DLLs should be installed on an NT workstation.
- MQSeries Integrator test and example applications specific to your DBMS and OS.
- MQSeries Integrator documentation set in PDF format, including:
  - ***MQSeries Integrator Installation and Configuration Guide***
  - ***MQSeries Integrator System Management Guide***
  - ***MQSeries Integrator User's Guide***
  - ***MQSeries Integrator Programming Reference for NEONFormatter***
  - ***MQSeries Integrator Programming Reference for NEONRules***
  - ***MQSeries Integrator Application Development Guide***

  All MQSeries Integrator documentation is in the \BOOK directory for NT.

Note:

The Product Package for HP-UX/Oracle includes two CD-ROMS for installation on:

- HP-UX/Oracle 7.3
- HP-UX/Oracle 8

Supported Platforms and Compilers

Operating System	DBMS	Compiler
AIX 4.2	DB2 5.0 Oracle 7.3 Sybase Client 11.1.1 Sybase Server 11.03, 11.5	IBM C Set ++ version 3.1.4
HP-UX 10.20	DB2 5.0 Oracle 7.3 Oracle 8 Sybase Client 11.1.1 Sybase Server 11.03, 11.5	HP C++ version 10.34
Solaris 2.5.1, 2.6	DB2 5.0 Oracle 7.3 Sybase Client 11.1.1 Sybase Server 11.03, 11.5	Sparcworks C++ compiler version 4.0
Windows NT 4.0	DB2 5.0 Oracle 7.3 Oracle 8 SQL Server 6.5 Sybase Client 11.1.1 Sybase Server 11.03, 11.5	Microsoft Visual C++ version 4.2

Disk Space and Memory Requirements

Required disk space is a function of the number of queues, formats, and rules. Recommended memory for satisfactory performance depends on message rates, message sizes, and application-specific factors. For Windows NT/ SQLServer, the recommended memory is 128 MB; for other platforms, the recommended memory is 256 MB.

Operating System	DBMS	Libraries & Executables
AIX 4.2	DB2 5.0 Oracle 7.3 Sybase 11.03 Sybase 11.5	144 MB 117 MB 130 MB 130 MB
HP-UX 10.20	DB2 5.0 Oracle 7.3 Oracle 8 Sybase 11.03 Sybase 11.5	169 MB 117 MB 117 MB 120 MB 120 MB
Solaris 2.5.1, 2.6	DB2 5.0 Oracle 7.3 Sybase 11.03 Sybase 11.5	166 MB 117 MB 120 MB 120 MB
Windows NT 4.0	DB2 5.0 Oracle 7.3 Oracle 8 SQLServer 6.5 Sybase 11.03 Sybase 11.5	125 MB 77 MB 77 MB 77 MB 80 MB 80 MB

MQSeries Integrator Disk Space Requirements

For Solaris, the /var/tmp file system requires at least 250 MB of free space to unpack the MQSeries and MQSeries Integrator products.

The minimum database allocation requires 20 MB.

MQSeries Integrator binaries require 150 MB.

MQSeries base code and server require a minimum of 25-30 MB of disk space to be available for the product code and data.

MQSeries documentation requires 50 MB of disk space (HTML files — 35 MB, PDF files — 15 MB).

The GUI requires 40 MB.

For information on disk space requirements (data only) for Formatter and Rules, refer to Appendix A, *Calculating Table Spaces.*

Chapter 2
NT Workstation Installation

The InstallShield Wizard installs both MQSeries Integrator, release 1.0 and MQSeries, version 5.0. If MQSeries, version 5.0 is already installed, only the MQSeries Integrator components are installed.

For an AIX, HP-UX, or Solaris installation, install the MQSeries Integrator client components (GUIs and MQSeries Integrator documentation) on a Windows NT machine that will be used to manage the MQSeries Integrator installation. GUIs require 40 MB and documentation requires 50 MB of disk space. The database steps are performed on the UNIX server.

For an NT-only MQSeries Integrator installation, install all the components on an NT machine, including database components.

The installation steps are:

- Prepare for the NT installation
- Install MQSeries Integrator
- Prepare the database for schema installation
- Install the database schema
- Edit the database connection file
- Verify the install
- Edit the makefile

Preparing for a New NT Installation

This section describes the steps you should take before you run the MQSeries Integrator installation procedure for a new installation.

Required Software

The following software is required:

- Windows NT, version 4.0, Service Pack 3

One of the following:

- DB2 Client Application Enabler, version 5.0
  - ODBC Data Source Administrator (supplied with Windows NT)

or

- Oracle Client, version 7.3.2, including the following components:
  - Oracle Call Interface 7.3.2.1.0
  - Oracle Installer 3.1.4.1.2E
  - Oracle TCP/IP Adapter 2.3.2.1.4
  - Required Support Files 7.1.3.3.6C
  - Required Support Files 7.3.2.2.0C
  - SQL *Net Client 2.3.2.1.4
  - SQL *Plus 3.3.2.0.2

or

- Microsoft SQL Server, version 6.5 (for an NT-only installation of MQSeries Integrator)

or

- Sybase Client, version 11.1.1

Note:
If you are installing MQSeries Integrator on the same machine as your database server, then you might not have to install a separate database client; instead you can connect directly to the database server.

If you are customizing MQSeries Integrator or compiling applications on NT that use the delivered libraries, you also need the following:

- Microsoft version 4.2 C++ compiler
- The capability to perform software builds via a *make* process, for example, MSDeveloper nmake.

Required Disk Space

The installation disk space requirements depend on which components you install and how much working space you need. Your working space depends on the number of queues, the number and size of the messages on the queues, whether the messages are persistent, and how many formats and rules you plan to build. Archiving capacity on disk, tape, or other media is also required. See *Disk Space and Memory Requirements* on page 6 for more information.

Setting Up the Environment

DB2

Verify the following:

- You can connect to an appropriately resourced DB2 database that stores MQSeries Integrator data, either directly or through a DB2 client.
- A DSN (DB2 instance) is defined, via the ODBC Administrator tool, to point to the DB2 database instance.
- The DB2 utility program **db2** is in the execution path for the user doing the install.
- Be sure the LD_LIBRARY_PATH environment variable points to the directory that contains **libodc.a[libodbc.o]**.

Oracle

Verify the following:

- You can connect to an appropriately resourced Oracle database that stores MQSeries Integrator data, either directly or through an Oracle client.
- You know the Oracle SYS account information.
- There is sufficient disk space for your calculated needs.
- The Oracle utility program **plus33** is in the execution path for the user doing the install.

SQL Server

Verify the following:

- You can connect to an appropriately resourced SQL Server database that stores MQSeries Integrator data, either directly or through a SQL Server client.
- You are a database owner (or have the account information for the owner of the database).
- As database owner, that the target database is the default database.
- There is sufficient disk space for your calculated needs.
- The Microsoft SQL Server utility program **isql** is in the execution path for the user doing the install.

Sybase

On the NT workstation, verify that Sybase Client, version 11.1.1 is installed.

On the Sybase server, verify the following:

- You can connect to an appropriately resourced Sybase database that stores MQSeries Integrator data, either directly or through a Sybase client.
- You are a database owner or know the account information for the owner of the database.

- There is sufficient disk space for your calculated needs.
- The Sybase utility program **isql** is in the execution path for the user doing the install.

Note:
For more information about setting up the database for MQSeries Integrator to use, see the appropriate database-specific readme file in the /IVP directory on your MQSeries Integrator CD-ROM. For example, refer to the readme.db2 file for the DB2 database.

Collecting Information

Before beginning the installation, know the drive letter of the CD-ROM drive from which you will run the installation and the information for the appropriate operating system in the following sections:

DB2

- database instance
- username
- password

Oracle

- SYS userid
- password for SYS userid
- service name

MS SQL Server

- database name
- server name
- username
- password

Sybase

- database name
- server name
- username
- password

Installing MQSeries Integrator

Note:
You must have Administrator authority to install MQSeries. Your user ID can be up to 12 characters long. For example, create an mqm user ID with Administrator authority and perform the installation using this user ID.

To install MQSeries Integrator using the InstallShield Wizard:

1. Insert the CD-ROM into the CD-ROM drive of your NT machine. If your NT machine is configured to autorun from the CD-ROM, the InstallShield Wizard automatically starts.

   Note:
   If the InstallShield Wizard does not automatically start, click setup.exe.

2. Type or select the appropriate responses, choosing Next to continue from screen to screen.
3. On the Setup Type screen, choose one of the installation options described in the following table:

   Note:
   Unless MQSeries version 5.0 is already installed, select Typical. The InstallShield Wizard will not install MQSeries version 5.0 if it exists on your system.

NT-Only Installation

NT Options	Description of Installed Components
Typical	Both binary and SQL program files SDK files for MQ Series NEONFormatter and NEONRules GUIs MQSeries Integrator and MQSeries online documentation
Compact	MQSeries Integrator binary and SQL program files NEONFormatter and NEONRules GUIs **Note**: MQSeries is not installed.
Custom	Only the MQSeries Integrator software components that you select are installed. A Custom Installation screen allows you to select the components.

NT Client Installation for UNIX

NT Client Options	Description of Installed Components
Typical	NEONFormatter and NEONRules GUIs MQSeries Integrator and MQSeries online documentation
Compact	For the NT portion of a UNIX installation, choosing Compact installs GUIs, but not the documentation. **Note**: MQSeries is not installed.
Custom	Only the MQSeries Integrator software components that you select are installed. A Custom Installation screen allows you to select the components.

Note:
The NT client installation installs the GUIs and documentation on an NT workstation when you are performing an AIX, HP-UX, or Solaris MQSeries Integrator installation.

4. If you select either the Typical installation or a Custom installation that includes the MQSeries Toolkit, the Installing MQSeries screen displays the progress of the MQSeries installation. (NT-only installation)
5. To make sure that all changes take effect, restart your computer when the installation is complete. (NT-only installation)

Note:
The NT Client installation is now complete. Execute the following steps for a full NT-only install.

Preparing the Database for Schema Installation

To prepare the database for database schema installation for Oracle and DB2, refer to the next section, *Creating Tablespaces*. For Sybase and SQL Server, refer to the section, *Creating User-Defined Segments* on page 18.

Creating Tablespaces

The database must have MQSI tablespaces created before you can install the database schema. You do not have to create tablespaces with Microsoft SQL Server or Sybase Adaptive Server.

Note:
The size of your tablespaces depends on the numbers of Rules and Formats used at your site. See Appendix A, *Calculating Sizing Data*, for specific sizing information.

You may want to place the tablespaces on different physical disks to balance I/O to avoid disk-access bottlenecks. You should separate data tablespaces and indexes by placing them on different disks or controllers. This optimizes index and data access parallelism.

DB2

For information on creating a DB2 database, refer to the DB2 installation documentation.

To create DB2 tablespaces:

1. Create the MQSI database.
2. Create the following tablespaces in the MQSI database:
   - NNF
   - NNR
   - NNP
3. Grant DBADM privilege on the MQSI database to the user who will perform the installation.

Note:
If you are using DMS tablespaces, use the Oracle guidelines to create minimum DB2 tablespaces.

Oracle

For information on creating an Oracle database, refer to the Oracle installation documentation.

To create Oracle tablespaces:

1. Create a dedicated Oracle instance where the MQSeries Integrator database resides. NEONET is the default Oracle instance name used in the **installation bat** file.

2. Create the following tablespaces in the Oracle database:

Table	Minimum Size
TOOLS	1 MB
TEMP	10 MB
FORMATTER_DATA	20 MB
FORMATTER_INDEX	20 MB
RULES_DATA	20 MB
RULES_INDEX	20 MB

Creating User-Defined Segments

Sybase and SQL Server

Both Sybase and Microsoft SQL Server databases must have user-defined segments created before you can install the database schema. User-defined segments provide a mapping from the database tables and indexes to the underlying disk space on which the database resides. You may want to place the user-defined segments on different physical disks to balance I/O and avoid disk-access bottlenecks. You should separate data and index segments by placing them on different disks and/or controllers. This optimizes index and data access parallelism.

Note that the size of your database depends on the number of Rules and Formats used at your site. Refer to Appendix A, *Calculating Sizing Data*, for sizing information.

To create user-defined segments:

1. Create the following user-defined segments in the database that will contain MQSeries Integrator tables and stored procedures:

   FORMATTER_DATA

   FORMATTER_INDEX

RULES_DATA

RULES_INDEX

The commands necessary to perform this are in the following vendor documentation:

– Sybase. ***SQL Server Reference Manual***.

  The commands are:

```
sp_addsegment
sp_dropsegment
sp_extendsegment
```

– SQL Server. ***Microsoft's Transact SQL Reference, System Stored Procedures***.

  The commands are:

```
sp_addsegment
sp_dropsegment
sp_extendsegment
```

Installing the Database Schema

The inst_db.bat script creates the necessary tables and stored procedures in the MQSeries Integrator database. The script sends the commands from the files in the install.sql directory.

(Oracle) To install the database schema, you need the SYS user id and password.

To install the database schema:

1. Change to the **install.sql** directory.
2. (Oracle) If your database user id is not NEONET, edit **inst_db.bat**. Locate the following line:

   ```
   plus33 NEONET/NEONET@%instance%@neon_db2.sql>>neon_db.log
   ```

   Change NEONET/NEONET to the database userid and password for your database instance.

You will need this database userid and password to edit the database connection file and the daemon parameters file.

3. To build the MQSeries Integrator schema, type one of the following:

   - **DB2**

     Open an NT Command Prompt window. Type the following:

     ```
     db2cmd
     ```

     The db2cmd command opens another Command Prompt window. Switch to that window and run the following command:

     ```
     inst_db.bat<username><password><database instance>
     ```

   - **Oracle**

     ```
     inst_db.bat SYS <SYS password> <Service Name>
     ```

   - **SQL Server**

     ```
     inst_db.bat<username><password><servername><dbname>
     ```

     Note:
     If you have not defined a password for your database username, use two single quotes to specify the password. For example:

     ```
     inst_db.bat sa '' mycomputer
     ```

4. As the script runs, answer the prompts and look for errors.
5. When the script completes the instantiation, a verification message appears.
6. For installation details, look at the **inst_db.log** file located in the **c:\TEMP** directory.

Editing the Database Connection File

Some MQSeries Integrator executables connect to the database using the database connection file sqlsvses.cfg. This file contains entries for DBMS sessions that detail the server name, user id, password, and database name that a particular session uses. Executables search the sqlsvses.cfg file for a given session name and attempt to connect to the MQSeries Integrator database (for example, msgtest searches for new_format_demo).

A sample sqlsvses.cfg file that is commented out is in the /bin directory. Uncomment the section that applies to your DBMS type. You must edit the sample file with your site-specific information. This file enables certain Formatter and Rules executables to connect to the database. For more information, refer to the ***MQSeries Integrator System Management Guide***.

To edit the database connection file:

1. Change to the **bin** directory.
2. In the bin directory, locate the text file s**qlsvses.cfg**.
3. In the sqlsvses.cfg file, edit the following:

DB2

```
<sessionname>:<dbalias>:<username>:<password>:
```

Example:

```
new_format_demo:dodge:neonuser:neonpwd:
Input:dodge:neonuser:neonpwd:
Output:dodge:neonuser:neonpwd:
rules:dodge:neonuser:neonpwd:
```

Oracle

```
<sessionname>:<servicename>:<username>:<password>:
```

Example:

```
new_format_demo:dodge:neonuser:neonpwd:
Input:dodge:neonuser:neonpwd:
Output:dodge:neonuser:neonpwd:
rules:dodge:neonuser:neonpwd:
```

Note that default for both the Oracle username and password is NEONET.

SQL Server

```
<sessionname>:<servername>:<username>:<password>:<dbname>
```

Example:

```
new_format_demo:dodge:neonuser:neonpwd:TESTDATABASE
Input:dodge:neonuser:neonpwd:TESTDATABASE
Output:dodge:neonuser:neonpwd:TESTDATABASE
rules:dodge:neonuser:neonpwd:TESTDATABASE
```

Verifying the Install

To verify that MQSeries Integrator is correctly installed, run msgtest. msgtest verifies that you can connect to the database.

Notes:

- msgtest can also be used to validate format definition. For more information on msgtest, refer to the ***MQSeries Integrator System Management Guide***.
- Instead of using msgtest to verify that you can connect to the database, use the Install Verification Procedure in the /IVP directory on the CD-ROM.

To verify the install:

1. At the command line, type **msgtest**. When msgtest successfully connects to the database, the following prompt appears:

   Enter the input file name:

   If msgtest does not successfully connect to the database, msgtest returns the error: *No session created*.

2. To quit msgtest, press *Enter*.

If you receive the error *No session created*, check the following in your database connection file:

- Be sure there are four colons.

  Examples:

  Oracle

  <sessionname>:<servicename>:<username>:<password>:

  Sybase

  <sessionname>:<servername>:<username>:<password>:<dbname>

- Be sure the user name used is allowed access to the database and verify the password is correct.
- Verify that the case of all the parameters is correct.
- Verify that the sqlsvses.cfg, msgtest, and the command line are in the /bin directory.
- Verify **sqlsvses.cfg** is spelled correctly.

Note:
To verify that MQSeries correctly installed, refer to the verification procedure in ***MQSeries for Windows NT Quick Beginnings***.

Editing the Makefile

An example Makefile, demonstrating how to rebuild the MQSeries Integrator executables, is supplied in the /examples directory. To use the Makefile included in the MQSeries Integrator examples directory, you must edit the Makefile. The following table describes the changes you must make:

Makefile	Change to the location of the:
MQSI_ROOT	MQSeries Integrator installation, for example, C:\MQI
COMPILER_inc	Compiler header files

Makefile	Change to the location of the:
COMPLIER_lib	Compiler libraries
DB_HOME	Database installation
MQSERIES_HOME	MQSeries installation

Notes:

- For an installation that combines NT and UNIX, such as AIX, HP-UX, or Solaris, only the GUIs and documentation are installed on the NT workstation.
- The bin, Makefile, install.sql, and example code are not delivered with NT on NT Client installations for UNIX platforms.

Chapter 3
AIX Installation

This chapter describes the steps to prepare for and run MQSeries Integrator on an AIX installation.

To install the graphical user interface (GUI) tools on an NT workstation, refer to Chapter 2, *NT Workstation Installation*.

The following steps are necessary to install MQSeries Integrator on AIX:

- Prepare for an AIX installation
- Install MQIntegrator using installp to install files on the server
- Prepare the database for schema installation
- Install the database schema
- Edit the database connection file
- Verity the install
- Edit the Makefile
- Install the GUIs and documentation on an NT workstation

To uninstall MQSeries Integrator from AIX and the NT workstation, refer to Chapter 6, *Uninstalling MQSeries Integrator*.

Preparing for an AIX Installation

Required Software

On the UNIX Machine

The following software is required on the server:

- AIX, version 4.2

One of the following:

- DB2, version 5
  - DB2, Client Application Enabler, version 5

  or

- Oracle Server, version 7.3.2 or 8

  or

- Sybase Client, 11.1.1

If you are customizing MQSeries Integrator or compiling applications on AIX that use the delivered libraries, you also need the following:

- A C++ compiler (for example, x/c or AIX)
- The capacity to perform software builds via a *make* process (for example, make)

On the NT Workstation

- Windows NT, version 4.0, Service Pack 3

One of the following:

- DB2 Client Application Enabler, version 5

  or

- Oracle Client, version 7.3.2, including the following components:
  - Oracle Call Interface 7.3.2.1.0
  - Oracle Installer 3.1.4.1.2E

- Oracle TCP/IP Adapter 2.3.2.1.4
- Required Support Files 7.1.3.3.6C
- Required Support Files 7.3.2.2.0C
- SQL *Net Client 2.3.2.1.4
- SQL *Plus 3.3.2.0.2

or

- Sybase Client, version 11.1.1

Note:
If you are installing MQSeries Integrator on the same machine as your database server, then you might not have to install a separate database client; instead you can connect directly to the database server.

Required Disk Space

The installation disk space requirements depend on which components you install and how much working space you need. Your working space depends on the number of queues, the number and size of the messages on the queues, whether the messages are persistent, and how many formats and rules you plan to build. Archiving capacity on disk, tape, or other media is also required. See *Disk Space and Memory Requirements* on page 6.

Setting Up the Environment

DB2

On the NT workstation, verify the following:

- You can connect to an appropriately resourced DB2 database that stores MQSeries Integrator data, either directly or through a DB2 client.
- A DSN (DB2 instance) is defined, via the ODBC Administrator tool, to point to the DB2 database instance.

On the AIX machine, verify the following:

- You can connect to the database that stores MQSeries Integrator data.
- The DB2 utility program **db2** is in the execution path for the user doing the install.
- You are a database owner.
- Be sure the **LD_LIBRARY_PATH** environment variable points to the directory that contains **libodbc.a[libodbc.o]**.

Oracle

On the NT workstation, verify that you can connect to an appropriately resourced Oracle database that will be used to hold MQSeries Integrator data, either directly or through an Oracle client.

On the AIX machine, verify the following:

- The Oracle utility program sqlplus is in the execution path for the user doing the install.
- You can connect to the database that stores MQSeries Integrator data.
- An Oracle database has been created with the appropriate resources and table spaces.
- You know the Oracle SYS account information.

Sybase

On the NT workstation, verify that you can connect to an appropriately resourced Sybase database that will be used to hold MQSeries Integrator data, either directly or through a Sybase client.

On the AIX machine, verify the following:

- You can connect to the database that stores MQSeries Integrator data.
- You are a database owner or know the account information for the owner of the database.
- There is sufficient disk space for your calculated needs.

- The Sybase utility program **isql** is in the execution path for the user doing the install.

Note:
For more information about setting up the database for MQSeries Integrator to use, see the appropriate database-specific readme file in the /IVP directory on your MQSeries Integrator CD-ROM. For example, refer to the readme.db2 file for the DB2 database.

Adding the mqm User Group and User

To install MQSeries, the system administrator must add both a user name and group of mqm.

1. Create a new group named mqm.
2. Create a new user named mqm.

Note:
For the procedure to add the mqm User and User Group, refer to ***MQSeries for AIX Quick Beginnings***.

Collecting Information

Before beginning the installation, know the drive letter of the CD-ROM drive from which you will run the installation and the information for the appropriate operating system in the following sections:

DB2

- database instance
- username
- password

Oracle

- SYS userid
- password for SYS userid

- service name

Sybase

- database name
- server name
- username
- password

Starting installp

Mounting a Directory on AIX

1. Insert the CD-ROM into the CD-ROM drive. You will mount the CD-ROM to an appropriate directory (for example, /mnt/cdrom) in step 7.
2. Set your DISPLAY variable to use the System Management Interface Tool (SMIT) GUI.
3. From the command line, type **smit**.
4. Choose *System Storage Management*.
5. Choose *File Systems*.
6. Choose *Mount A File System*.
7. At the following prompts, either type your response or select a response using the list box.

SMIT Prompt	Response
File System	Choose a file system from the list box or type the file system.
Directory over which to mount?	Blank (default). This directory is the installation source directory. You must enter this directory when prompted by the installation program for: INPUT device/directory for software.

SMIT Prompt	Response
Type of File System?	Either type the name of the file system or select a file system from the list box.
Force the mount?	No (default); if the mount point already exists, it will error out. Yes; if the mount point already exists, it will be corrupted.
Remote node containing the file system to mount?	Type a value.
Mount as a removable file system?	Yes; if you are using a removable drive No; if not.
Mount as a Read Only system?	Yes
Disallow device access via this mount?	Yes or No; depending on user preference.
Disallow execution of suid and sqid programs in this file system?	Yes or No; depending on user preference.

8. To execute the mount command, choose OK..
9. When the mount has succeeded, choose Done.
10. Return to the SMIT System Management window.

Installing MQSeries Integrator

1. From the SMIT System Management window, select the following options:

   - Software Installation and Maintenance
   - Install and Update Software
   - Install and Update from LATEST available Software
   - INPUT device / directory for software

     Input device / directory defaults to the last directory used. Enter the directory where your CD-ROM is mounted.

   To install MQSeries, a user name and group of mqm must exist. See *Adding the mqm User Group and User* on page 29.

2. At the following prompts, either type your response or select the response using the list box.

SMIT Prompt	Response
SOFTWARE to install	mqi or _all_latest. To install both MQSeries, and MQIntegrator, select _all_latest. To install only MQSeries Integrator, select mqi (select this only if MQSeries is already installed).
PREVIEW only? (install operation will not occur)	No
COMMIT software updates?	Yes
SAVE replaced files?	No
AUTOMATICALLY install requisite software?	No To install MQSeries, choose Yes at this prompt. You must then select No at the *OVERWRITE same or newer versions?* prompt.

SMIT Prompt	Response
EXTEND file systems if space needed?	Yes Select No if you chose Yes for the *AUTOMATICALLY install requisite software?* prompt.
OVERWRITE same or newer versions?	Yes
VERIFY install and check file sizes?	Yes
Include corresponding LANGUAGE filesets?	No
Detailed output?	Yes

Note:
To display an explanation of these options, highlight the option and select the ? in the lower-right corner.

3. Choose OK to continue.
4. At the *ARE YOU SURE?* prompt, choose OK.

   The installation program displays the status *Running* and also displays a log of the installation's progress to the SMIT window.

   When the installation is successfully completed, the status changes to *Complete*.

Note:
If the installation fails, the status changes to *Failed.* After you analyze the failure message and fix the problem, from the SMIT window, undo the install and begin again.

5. If the installation successfully completes, choose Cancel.
6. To quit the System Management Interface Tool, choose Exit.

7. The MQSeries Integrator software is now installed in the **/usr/lpp/mqi** directory. This directory should contain the following subdirectories:

Subdirectory	Description
bin	executable programs for MQSeries Integrator
MQIntegratorDocs	PDF files and readmqi.txt
examples	sample C++ code and configuration files for using MQSeries Integrator
include	header files to use when writing C++ code using MQSeries Integrator
install.sql	shell and SQL scripts to instantiate the MQSeries Integrator database
copyright.master	The copyright statement
lpp.readme	The Read Me file
lib	MQSeries Integrator libraries to which applications can be linked
deinstl	Information to be used later by SMIT to uninstall MQSeries Integrator

Note:
If you installed MQSeries, the MQSeries software is installed in the /usr/lpp/mqm directory.

Preparing the Database for Schema Installation

To prepare the database for database schema installation, for Oracle and DB2, refer to the next section, *Creating Tablespaces*. For Sybase, refer to the section, *Creating User-Defined Segments* on page 36.

Creating Tablespaces

The database must have MQSI tablespaces created before you can install the database schema.

Note:
The size of your tablespaces depends on the numbers of Rules and Formats used at your site. See Appendix A: *Calculating Table Spaces* for specific sizing information.

You may want to place the tablespaces on different physical disks to balance I/O to avoid disk-access bottlenecks. You should separate data tablespaces and indexes by placing them on different disks or controllers. This optimizes index and data access parallelism.

DB2

For information on creating a DB2 database, refer to the DB2 installation documentation.

To create DB2 tablespaces:

1. Create the MQSI database.
2. Create the following tablespaces in the MQSI database:
   - NNF
   - NNR
   - NNP
3. Grant DBADM privilege on the MQSI database to the user who will perform the installation.

Oracle

For information on creating an Oracle database, refer to the Oracle installation documentation.

To create Oracle tablespaces:

1. Create a dedicated Oracle instance where the NEONet database resides. NEONET is the default Oracle instance name used in the installation bat file.
2. Create the following tablespaces in the Oracle database:

Table	Minimum Size
TOOLS	1 MB
TEMP	10 MB
FORMATTER_DATA	20 MB
FORMATTER_INDEX	20 MB
RULES_DATA	20 MB
RULES_INDEX	20 MB

Creating User-Defined Segments

Sybase

Sybase databases must have user-defined segments created before you can install the database schema. User-defined segments provide a mapping from the database tables and indexes to the underlying disk space on which the database resides. You may want to place the user-defined segments on different physical disks to balance I/O and avoid disk-access bottlenecks. You should separate data and index segments by placing them on different disks and/or controllers. This optimizes index and data access parallelism.

Note that the size of your database depends on the number of Rules and Formats used at your site. Refer to Appendix A, *Calculating Sizing Data*, for sizing information.

To create user-defined segments:

1. Create the following user-defined segments in the database that will contain MQSeries Integrator tables and stored procedures:

   FORMATTER_DATA

   FORMATTER_INDEX

   RULES_DATA

   RULES_INDEX

   The commands necessary to perform this are in the following vendor documentation:

   – Sybase. ***SQL Server Reference Manual***.

     The commands are:

     ```
     sp_addsegment
     sp_dropsegment
     sp_extendsegment
     ```

Installing the Database Schema

The inst_db.sh script creates the necessary tables and stored procedures in the MQSeries Integrator database. The script sends the commands from the files in the install.sql directory.

(Oracle) You must be SYS user to run **inst_db.sh**.

To install the database schema:

1. Change to the **/usr/lpp/mqi/install.sql** directory.
2. (Oracle) If your database user id is not NEONET, edit the **inst_db.sh** script. Locate the following line:

   ```
   sqlplus NEONET/NEONET@instance%@neon_db2.sql>
   >inst_db.log
   ```

   Change NEONET/NEONET to the database userid and password for your database instance.

You will need this database userid and password to edit the database connection file and the daemon parameters file.

3. To build the MQSeries Integrator schema, type one of the following:

   - **DB2**

     Make sure the system administrator and the database administrator have completed their responsibilities.

     Execute the **inst_db.sh** script using the following syntax:

     `inst_db.sh <username><password><database>`

     <username> and <password> were created by the System Administrator for the user defined above

     <databasename> is the database created by the Database Administrator

   - **Oracle**

     `inst_db.sh SYS <SYS password> <servicename>`

   - **Sybase**

     `inst_db.sh<userid><password><servername><dbinstance>`

4. As the script runs, answer the prompts and look for errors.
5. When the script completes the instantiation, a verification message appears.
6. For installation details, refer to the **inst_db.log** file.

Editing the Database Connection File

Some MQSeries Integrator executables connect to the database using the database connection file sqlsvses.cfg. This file contains entries for DBMS sessions that detail the server name, user id, password, and database name that a particular session uses. Executables search the sqlsvses.cfg file for a given session name and attempt to connect to the MQSeries Integrator database (for example, msgtest searches for new_format_demo).

A sample sqlsvses.cfg file that is commented out is in the /bin directory. Uncomment the section that applies to your DBMS type. You must edit the sample file with your site-specific information. This file enables certain Formatter and Rules executables to connect to the database. For more information, refer to the ***MQSeries Integrator System Management Guide***.

To edit the database connection file:

1. Change to the **bin** directory.
2. In the bin directory, locate the text file **sqlsvses.cfg**.
3. In the **sqlsvses.cfg** file, edit the following:
   - **DB2**

     ```
     <sessionname>:<dbalias>:<username>:<password>:
     ```

     Example:

     ```
     new_format_demo:dodge:neonuser:neonpwd:
     Input:dodge:neonuser:neonpwd:
     Output:dodge:neonuser:neonpwd:
     Rules:dodge:neonuser:neonpwd:
     ```
   - **Oracle**

     ```
     <sessionname>:<servicename>:<username>:<syspassword>:
     ```

     Example:

     ```
     new_format_demo:dodge:neonuser:neonpwd:
     Input:dodge:neonuser:neonpwd:
     Output:dodge:neonuser:neonpwd:
     Rules:dodge:neonuser:neonpwd:
     ```
   - **Sybase**

     ```
     <sessionname>:<servername>:<username>:<password>:
     <databasename>
     ```

     Example:

     ```
     new_format_demo:dodge:neonuser:neonpwd:db instance
     Input:dodge:neonuser:neonpwd:db instance
     Output:dodge:neonuser:neonpwd:db instance
     Rules:dodge:neonuser:neonpwd:db instance
     ```

Verifying the Install

To verify that MQSeries Integrator is correctly installed, run msgtest. msgtest verifies that you can connect to the database.

Notes:

- msgtest can also be used to validate format definition. For more information on msgtest, refer to the ***MQSeries Integrator System Management Guide***.
- Instead of using msgtest to verify that you can connect to the database, use the Install Verification Procedure in the /IVP directory on the CD-ROM.

To verify the install:

1. At the command line, type **msgtest**. When msgtest successfully connects to the database, the following prompt appears:

   Enter the input file name:

   If msgtest does not successfully connect to the database, msgtest returns the error: *No session created*.

2. To quit msgtest, press *Enter*.

If you receive the error *No session created*: check the following in your database connection file:

- Be sure there are four colons.

  Examples:

  Oracle

  <sessionname>:<servicename>:<username>:<password>:

  Sybase

  <sessionname>:<servername>:<username>:<password>:<dbname>

- Be sure the user name used is allowed access to the database and verify that the password is correct.
- Verify that the case of all the parameters is correct.
- Verify that the sqlsvses.cfg, msgtest, and the command line are in the /bin directory.
- Verify **sqlsvses.cfg** is correctly spelled.

Note:
To verify that MQSeries correctly installed, refer to the verification procedure in ***MQSeries for AIX Quick Beginnings***.

Editing the Makefile

An example Makefile, demonstrating how to rebuild the MQSeries Integrator executables, is supplied in the /examples directory. To use the Makefile included in the MQSeries Integrator examples directory, you must edit the Makefile. The following table describes the changes you must make:

Makefile	Change to the location of the:
MQSI_ROOT	MQSeries Integrator installation, for example, /usr/lpp/mqi
COMPILER_inc	Compiler header files
COMPLIER_lib	Compiler libraries
DB_HOME	Database installation
MQSERIES_HOME	MQSeries installation

Note:
Refer to Chapter 2, *NT Workstation Installation*, to install the MQSeries Integrator client GUIs and/or MQSeries Integrator documentation on an NT workstation client.

Chapter 4
HP-UX Installation

This chapter describes the steps to prepare for and run MQSeries Integrator on an HP-UX installation.

To install the graphical user interface (GUI) tools on an NT workstation, refer to Chapter 2, *NT Workstation Installation*.

The following steps are necessary to install MQSeries Integrator on HP-UX:

- Prepare for an HP-UX installation
- Use swinstall to install files on the server
- Prepare the database for schema installation
- Install the database schema
- Edit the database connection file
- Verify the install
- Edit the makefile
- Install the GUIs and documentation on an NT workstation.

To uninstall MQSeries Integrator from HP-UX and the NT workstation, refer to Chapter 6, *Uninstalling MQSeries Integrator*.

Preparing for an HP-UX Installation

Required Software

On the UNIX Machine

The following software is required on the server:

- HP-UX, version 10.20

One of the following:

- DB2 Client Application Enabler, version 5
  - ODBC Administrator

  or

- Oracle Client, version 7.3.2 or 8

  or

- Sybase Client, version 11.1.1

If you are customizing MQSeries Integrator or compiling applications on HP-UX that use the delivered libraries, you also need the following:

- A C++ compiler (for example, HP C++A 10.34)
- The capacity to perform software builds via a *make* process (for example, make)

On the NT Workstation

- Windows NT, version 4.0, Service Pack 3

One of the following:

- DB2 Client Application Enabler, version 5
  - ODBC Administrator
- Oracle Client, version 7.3.2, including the following components:
  - Oracle Call Interface 7.3.2.1.0
  - Oracle Installer 3.1.4.1.2E

- Oracle TCP/IP Adapter 2.3.2.1.4
- Required Support Files 7.1.3.3.6C
- Required Support Files 7.3.2.2.0C
- SQL *Net Client 2.3.2.1.4
- SQL *Plus 3.3.2.0.2

or

- Sybase Client, version 11.1.1

Note:
If you are installing MQSeries Integrator on the same machine as your database server, then you might not have to install a separate database client; instead you can connect directly to the database server.

Required Disk Space

The installation disk space requirements depend on which components you install and how much working space you need. Your working space depends on the number of queues, the number and size of the messages on the queues, whether the messages are persistent, and how many formats and rules you plan to build. Archiving capacity on disk, tape, or other media is also required. See *Disk Space and Memory Requirements* on page 6.

Setting Up the Environment

DB2

On the NT workstation, verify the following:

- You can connect to an appropriately resourced DB2 database that stores MQSeries Integrator data, either directly or through a DB2 client.
- A DSN (DB2 instance) is defined, via the ODBC Administrator tool, to point to the DB2 database instance.

On the HP-UX machine, verify the following:

- You can connect to the database that stores MQSeries Integrator data.
- The DB2 utility program **db2** is in the execution path for the user doing the install.
- You are a database owner.
- Be sure the **LD_LIBRARY_PATH** environment variable points to the directory that contains **libodbc.a[libodbc.o]**.

Oracle

On the NT workstation, verify that you can connect to an appropriately resourced Oracle database that will be used to hold MQSeries Integrator data, either directly or through an Oracle client.

On the HP-UX machine, verify the following:

- The Oracle utility program **sqlplus** is in the execution path for the user doing the install.
- You can connect to the database that stores MQSeries Integrator data.
- An Oracle database has been created with the appropriate resources and table spaces.
- You know the Oracle SYS account information.

Sybase

On the NT workstation, verify that you can connect to an appropriately resourced Sybase database that will be used to hold MQSeries Integrator data, either directly or through a Sybase client.

On the HP-UX machine, verify the following:

- You can connect to the database that stores MQSeries Integrator data.
- You are a database owner or know the account information for the owner of the database.
- There is sufficient disk space for your calculated needs.

- The Sybase utility program **isql** is in the execution path for the user doing the install.

Note:
For more information about setting up the database for MQSeries Integrator to use, see the appropriate database-specific readme file in the /IVP directory on your MQSeries Integrator CD-ROM. For example, refer to the readme.db2 file for the DB2 database.

Adding the mqm User Group and User

To install MQSeries, the system administrator must add both a user name and group of mqm.

1. Create a new group named mqm.
2. Create a new user named mqm.

Note:
For the procedure to add the mqm User and User Group, refer to ***MQSeries for HP-UX Quick Beginnings***.

Collecting Information

Before beginning the installation, know the HP-UX path to the mounted CD-ROM device from which you will run the installation, the root password for the HP-UX Server, and the information for the appropriate operating system in the following sections:

DB2

- database instance
- username
- password

Oracle

- SYS userid
- password for SYS userid
- service name

Sybase

- database name
- server name
- username
- password

Installing MQSeries Integrator

To start swinstall and install MQSeries Integrator:

1. Log in as root.
2. Mount the CD-ROM.

   Example:

   ```
   mount -r -F cdfs/dev/dsk/c1t2d0 /cdrom
   ```

3. If you are running in an X11 environment, set the DISPLAY environment variable.

   Example:

   ```
   export DISPLAY=xxx.xxx.xxx.xxx:0.0
   ```

4. To begin the install, type:

   ```
   swinstall
   ```

   The SD Install Software Selection and the Specify Source windows appear.

5. In the Specify Source window, at Source Depot Type, select CDROM, then enter the Source Host Name and Source Depot Path.

   Source Depot Path example:

   ```
   /{cdrom}/mqi100.000
   ```

   {cdrom} is where the CD-ROM was mounted in step 1.

6. Choose OK. The Specify Source window closes, and the SD Install - Software Selection window becomes active.

7. Choose one of the following:

Note:
You may not want to install all of the MQSeries components. For example, you may not want to install the foreign language components of MQSeries to save disk space.

- To install all the components of MQSeries Integrator and MQSeries, select both MQSIntegrator and MQSeries. From the menu bar, select Actions→Mark for Install. This marks all components for install.
- Select MQSIntegrator and from the menu bar select Actions→Mark for Install.

  To install only selected components of MQSeries:

  – Double-click MQSeries. The SD - Install Software selection window now indicates that you are viewing *Subproducts or Filesets: MQSeries* and MQSeries components are displayed.

  – Select the components that you want to install.

  – From the menu bar, select Actions→ Mark for Install.

  – Double-click (go up) to return to the top. The SE Install - Software Selection window now indicates you are viewing *Top (Bundles and Products)*.

Tip:
Rather than selecting the components that you want to install, it may be easier to select all the components, then double-click MQSeries and unmark a component for install. To unmark, select the components you do not want to install and choose Actions→ Unmark for Install.

8. To change an install option, choose Options→Change Options.
9. Choose Actions→Install (analysis...). The Install Analysis window appears displaying the progress of the installation analysis.

   When the analysis is complete, the status displays *Ready*.

   If the analysis is not successful, an error window appears displaying the specific error. Choose OK to close this window. To adjust the component selections or other install options, choose Cancel to close the Install Analysis window and adjust your component selections following the procedure in step 7.
10. To view a log of the analysis, choose the Logfile button. Choose OK to exit.

    To view the disk space statistics, choose the Disk Space Analysis button. Choose Close to exit.
11. Choose OK to Install. The Confirmation window appears.
12. Choose Yes. The Install Window appears and the installation automatically starts. When the install is complete, the status displays *Completed*.
13. From this window, you can choose the Product Summary button to view the status of the components that were installed and the Logfile button to view a log of actions that occurred.
14. To exit the Install Window, choose Done.
15. Choose File→ Exit to close the SD Install - Software Selection window.
16. The software is now installed in the /opt/mqi directory. This directory should contain the following subdirectories:

Subdirectory	Description
bin	executable programs for MQSeries Integrator
MQIntegratorDocs	PDF files and readmqi.txt
examples	Sample C++ code and configuration files for using MQSeries Integrator
include	Header files to use when writing C++ code using MQSeries Integrator
install.sql	Shell and SQL scripts to instantiate the MQSeries Integrator database
lib	MQSeries Integrator libraries to which applications can be linked

Preparing the Database for Schema Installation

To prepare the database for database schema installation for Oracle and DB2, refer to the next section, *Creating Tablespaces*. For Sybase, refer to the section, *Creating User-Defined Segments* on page 53.

Creating Tablespaces

The database must have MQSI tablespaces created before you can install the database schema.

Note:
The size of your tablespaces depends on the numbers of rules and formats used at your site. See Appendix A, *Calculating Sizing Data*, for specific sizing information.

You may want to place the tablespaces on different physical disks to balance I/O to avoid disk-access bottlenecks. You should separate data tablespaces and indexes by placing them on different disks or controllers. This optimizes index and data access parallelism.

DB2

For information on creating a DB2 database, refer to the DB2 installation documentation.

To create DB2 tablespaces:

1. Create the MQSI database.
2. Create the following tablespaces in the MQSI database:
   - NNF
   - NNR
   - NNP
3. Grant DBADM privilege on the MQSI database to the user who will perform the installation.

Oracle

For information on creating an Oracle database, refer to the Oracle installation documentation

To create Oracle tablespaces:

1. Create a dedicated Oracle instance where the MQSeries Integrator database resides. NEONET is the default Oracle instance name used in the installation bat file.
2. Create the following tablespaces in the Oracle database:

Table	Minimum Size
TOOLS	1 MB
TEMP	10 MB
FORMATTER_DATA	20 MB
FORMATTER_INDEX	20 MB
RULES_DATA	20 MB
RULES_INDEX	20 MB

Creating User-Defined Segments

Sybase

Sybase databases must have user-defined segments created before you can install the database schema. User-defined segments provide a mapping from the database tables and indexes to the underlying disk space on which the database resides. You may want to place the user-defined segments on different physical disks to balance I/O and avoid disk-access bottlenecks. You should separate data and index segments by placing them on different disks and/or controllers. This optimizes index and data access parallelism.

Note that the size of your database depends on the number of Rules and Formats used at your site. Refer to Appendix A, *Calculating Sizing Data*, for sizing information.

To create user-defined segments:

1. Create the following user-defined segments in the database that will contain MQSeries Integrator tables and stored procedures:

   FORMATTER_DATA

   FORMATTER_INDEX

   RULES_DATA

   RULES_INDEX

   The commands necessary to perform this are in the following vendor documentation:

   – Sybase. ***SQL Server Reference Manual***.

     The commands are:

     ```
     sp_addsegment
     sp_dropsegment
     sp_extendsegment
     ```

Installing the Database Schema

The inst_db.sh script creates the necessary tables and stored procedures in the MQSeries Integrator database. The script sends the commands from the files in the install.sql directory.

To install the database schema:

1. Change to the **/opt/mqi/install.sql** directory.
2. (Oracle) If your database instance is not NEONET, edit the **inst_db.sh** script. Locate the following line:

   ```
   sqlplus NEONETNEONET@instance%@neon_db2.sql>>inst_db.log
   ```

   Change NEONET/NEONET to the database userid and password for your database instance.

   You will need this database userid and password to edit the database connection file and the daemon parameters file.
3. To build the MQSeries Integrator schema, type one of the following:

   - **DB2**

     Make sure the system administrator and the database administrator have completed their responsibilities.

     Execute the **inst_db.sh** script using the following syntax:

     ```
     inst_db.sh <username><password><database>
     ```

     <username> and <password> were created by the System Administrator for the user defined above

     <databasename> is the database created by the Database Administrator

   - **Oracle**

     ```
     inst_db.sh SYS <SYS password> <servicename>
     ```

   - **Sybase**

     ```
     inst_db.sh<username><password><servername><dbinstance>
     ```

4. As the script runs, look for errors.

5. When the script completes the instantiation, a verification message appears.
6. For installation details, refer to the **inst_db.log** file.

Editing the Database Connection File

Some MQSeries Integrator executables connect to the database using the database connection file sqlsvses.cfg. This file contains entries for DBMS sessions that detail the server name, user id, password, and database name which a particular session uses. Executables search the sqlsvses.cfg file for a given session name and attempt to connect to the MQSeries Integrator database (for example, msgtest searches for new_format_demo).

A sample sqlsvses.cfg file that is commented out is in the /bin directory. Uncomment the section that applies to your DBMS type. You must edit the sample file with your site-specific information. This file enables certain Formatter and Rules executables to connect to the database. For more information, refer to the ***MQSeries Integrator System Management Guide***.

To edit the database connection file:

1. Change to the **bin** directory.
2. In the bin directory, locate the text file **sqlsvses.cfg**.
3. In the **sqlsvses.cfg** file, edit the following:
   - **DB2**

     ```
     <sessionname>:<dbalias>:<username>:<password>:
     ```

     Example:

     ```
     new_format_demo:dodge:neonuser:neonpwd:
     Input:dodge:neonuser:neonpwd:
     Output:dodge:neonuser:neonpwd:
     rules:dodge:neonuser:neonpwd:
     ```

   - **Oracle**

     ```
     <sessionname>:<servicename>:<username>:<syspassword>:
     ```

Example:

```
new_format_demo:dodge:neonuser:neonpwd:
Input:dodge:neonuser:neonpwd:
Output:dodge:neonuser:neonpwd:
Rules:dodge:neonuser:neonpwd:
```

- **Sybase**

  ```
  <sessionname>:<servername>:<userid>:<password>:<dbnam>
  ```

  Example:

  ```
  new_format_demo:dodge:neonuser:neonpwd:db instance
  Input:dodge:neonuser:neonpwd:db instance
  Output:dodge:neonuser:neonpwd:db instance
  Rules:dodge:neonuser:neonpwd:db instance
  ```

Verifying the Install

To verify that MQSeries Integrator is correctly installed, run msgtest. msgtest verifies that you can connect to the database.

Notes:

- msgtest can also be used to validate format definition. For more information on msgtest, refer to the ***MQSeries Integrator System Management Guide***.
- Instead of using msgtest to verify that you can connect to the database, use the Install Verification Procedure in the /IVP directory on the CD-ROM.

To verify the install:

1. At the command line, type **msgtest**. When msgtest successfully connects to the database, the following prompt appears:

   Enter the input file name:

If msgtest does not successfully connect to the database, msgtest returns the error: *No session created*.

2. To quit msgtest, press *Enter*.

If you receive the error *No session created*, check the following in your database connection file:

- Be sure there are four colons.

  Examples:

  Oracle

  ```
  <sessionname>:<servicename>:<username>:<password>:
  ```

  Sybase

  ```
  <sessionname>:<servername>:<username>:<password>:<dbname>
  ```

- Be sure the user name used is allowed access to the database and verify the password is correct.
- Verify that the case of all the parameters is correct.
- Verify that the sqlsvses.cfg, msgtest, and the command line are in the /bin directory.
- Verify **sqlsvses.cfg** is correctly spelled.

Note:
To verify that MQSeries correctly installed, refer to the verification procedure in ***MQSeries HP-UX Quick Beginnings***.

Editing the Makefile

An example Makefile, demonstrating how to rebuild the MQSeries Integrator executables, is supplied in the /examples directory. To use the Makefile included in the MQSeries Integrator examples directory, you must edit the Makefile. The following table describes the changes you must make:

Makefile	Change to the location of the:
MQSI_ROOT	MQSeries Integrator installation, for example, /opt/mqi
COMPILER_inc	Compiler header files
COMPLIER_lib	Compiler libraries
DB_HOME	Database installation
MQSERIES_HOME	MQSeries installation

Note:
Refer to Chapter 2, *NT Workstation Installation*, to install the MQSeries Integrator client GUIs and/or MQSeries Integrator documentation on an NT workstation client.

Chapter 5
Solaris Installation

This chapter describes the steps to prepare for and run MQSeries Integrator on a Solaris installation.

To install the graphical user interface (GUI) tools and / or MQSeries Integrator documentation on an NT workstation, refer to Chapter 2, *NT Workstation Installation*.

The following steps are necessary to install MQSeries Integrator on Solaris:

- Prepare for a Solaris installation
- Use pkgadd to install files on the server
- Prepare the database for schema installation
- Install the database schema
- Edit the database connection file
- Verify the install
- Edit the Makefile
- Install the GUIs and documentation on an NT workstation

To uninstall MQSeries Integrator from Solaris and the NT workstation, refer to Chapter 6, *Uninstalling MQSeries Integrator*.

Preparing for a Solaris Installation

Required Software

On the UNIX Machine

The following software is required on the server:

- Solaris, version 2.5.1 (SunOS 5.5.1), or Solaris, version 2.6 (SunOS 5.6)

One of the following:

- DB2, version 5
  - DB2 Client Application Enabler, version 5

  or

- Oracle Server, version 7.3.2 or 8

  or

- Sybase Server, version 11.x

It is also recommended that you have a /var/mqm file system mounted and a separate /var/mqm/log file system mounted. You must have at least 250 MB of free space available in /var/tmp to unpack the MQSeries and MQSeries Integrator products. For more information on these file systems, refer to the ***MQSeries for Sun Solaris Quick Beginnings*** guide.

If you are customizing MQSeries Integrator or compiling applications on Solaris that use the delivered libraries, you also need the following:

- A C++ compiler (for example, Sparcworks 4.0 C++ 4.1)
- The capacity to perform software builds via a *make* process (for example, make)

On the NT Workstation

- Windows NT, version 4.0, Service Pack 3

One of the following:

- DB2 Client Application Enabler, version 5

- Oracle Client, version 7.3.2, including the following components:
  - Oracle Call Interface 7.3.2.1.0
  - Oracle Installer 3.1.4.1.2E
  - Oracle TCP/IP Adapter 2.3.2.1.4
  - Required Support Files 7.1.3.3.6C
  - Required Support Files 7.3.2.2.0C
  - SQL *Net Client 2.3.2.1.4
  - SQL *Plus 3.3.2.0.2

  or
- Sybase Client, version 11.1.1

  or

Note:
If you are installing MQSeries Integrator on the same machine as your database server, then you might not have to install a separate database client; instead you can connect directly to the database server.

Required Disk Space

The installation disk space requirements depend on which components you install and how much working space you need. Your working space depends on the number of queues, the number and size of the messages on the queues, whether the messages are persistent, and how many formats and rules you plan to build. Archiving capacity on disk, tape, or other media is also required. See *Disk Space and Memory Requirements* on page 6.

Setting Up the Environment

DB2

On the NT workstation, verify the following:

- You can connect to an appropriately resourced DB2 database that stores MQSeries Integrator data, either directly or through a DB2 client.
- A DSN (DB2 instance) is defined, via the ODBC Administrator tool, to point to the DB2 database instance.

On the Solaris machine, verify the following:

- You can connect to the database that stores MQSeries Integrator data.
- The DB2 utility program **db2** is in the execution path for the user doing the install.
- You are a database owner.
- Be sure the **LD_LIBRARY_PATH** environment variable points to the directory that contains **libodbc.a[libodbc.o]**.

Oracle

On the NT workstation, verify that you can connect to an appropriately resourced Oracle database that will be used to hold MQSeries Integrator data, either directly or through an Oracle client.

On the Solaris machine, verify the following:

- The Oracle utility program **sqlplus** is in the execution path for the user doing the install.
- You can connect to the database that stores MQSeries Integrator data.
- An Oracle database has been created with the appropriate resources and table spaces.
- You know the Oracle SYS account information.

Sybase

On the NT workstation, verify that you can connect to an appropriately resourced Sybase database that will be used to hold MQSeries Integrator data, either directly or through a Sybase client.

On the Solaris machine, verify the following:

- You can connect to the database that stores MQSeries Integrator data.
- You are a database owner or know the account information for the owner of the database.
- There is sufficient disk space for your calculated needs.
- The Sybase utility program **isql** is in the execution path for the user doing the install.

Note:
For more information about setting up the database for MQSeries Integrator to use, see the appropriate database-specific readme file in the /IVP directory on your MQSeries Integrator CD-ROM. For example, refer to the readme.db2 file for the DB2 database.

Adding the mqm User Group and User

To install MQSeries, the system administrator must add both a user name and group of mqm.

1. Create a new group named mqm.
2. Create a new user named mqm.

Note:
For the procedure to add the mqm User and User Group, refer to ***MQSeries for Sun Solaris Quick Beginnings***.

Collecting Information

Before beginning the installation, know the Solaris path to the mounted CD-ROM device from which you will run the installation, the root password for the Solaris server, and the information for the appropriate operating system in the following sections:

DB2

- database instance
- username
- password

Oracle

- SYS userid
- password for SYS userid
- service name

Sybase

- database name
- server name
- username
- password

Installing MQSeries Integrator

To start pkgadd to install MQSeries Integrator:

1. Log in as root.

   Note:
   The file stream is unpacked into the /var/tmp directory. At least 230 MB of disk space must be available in /var/tmp to unpack the MQSeries Integrator software.

   To install MQSeries Integrator, there must be at least 180 MB (177304 blocks) of disk space available in the /opt partition.

2. Change to the directory where the CD-ROM is mounted.
3. To begin the install, type:

   ```
   pkgadd -d mqi100.000
   ```

4. At the prompt: *Select package(s) you wish to process (or 'all' to process all packages)*, choose one of the following:
   - To install only MQSeries Integrator, type **1** and skip to step 10.
   - To install MQSeries, type **2**.
   - To install both MQSeries Integrator and MQSeries, press *Enter*.

   Notes:

   - You may not want to install all of the MQSeries components. For example, you may not want to install the foreign language components of MQSeries to save disk space.
   - This step can take a long time, and the system will not prompt you until it is finished processing the package.

5. If you did not create **/var/mqm** and **/var/mqm/log**, you will receive a warning message and the prompt: *Continue installation (y, n, q)*.

Choose one of the following:

- To continue the installation, type **y**. Pkgadd creates the subdirectories under the /var filesystem.
- To quit the installation and create the filesystems, type either **n** or **q**. After you create the filesystems, restart the installation process.

6. A list of MQSeries components appears. Either type the numbers of the components you want to install, separated by commas, or type **all** to install all the components.
7. At the prompt: *Do you want to install the DCE option?* type either **y** (yes) or **n** (no).

   The installation program echoes the message: *The following files are being installed with setuid and/or detgid permissions:* followed by a list of file names. If the prompt: *[Hit <RETURN> to continue display]* appears, press *Enter*.
8. At the prompt: *Do you want to install these as setuid or setgid files?* We recommend you answer **y** (yes).
9. At the prompt: *This package contains scripts which will be executed with super-user permission during the process of installing this package. Do you want to continue the install of <mqm>?*, type **y** (yes).

   The installation program begins unpacking and verifying MQSeries components. When it has completed, it echoes either the message: *Installation of <mqm> was successful* or *Installation of <mqm> failed.*
10. If you selected all or pressed Enter in step 4, the following prompt is displayed: *There is 1 more package to be installed Do you want to continue with installation [y, n,?].* Type **y**.

    MQSeries components are installed. When this component has completed, it echoes either the message: *Installation of <mqi>was successful* or *Installation of <mqi> failed.*
11. If the installation was successful, the MQSeries Integrator software is now installed in the **/opt/mqi** directory. This directory should contain the following subdirectories:

Subdirectory	Description
bin	Executable programs for MQSeries Integrator
MQIntegratorDocs	PDF files and readmqi.txt
examples	Sample C++ code and configuration files for using MQSeries Integrator
include	Header files to use when writing C++ code using MQSeries Integrator
install.sql	Shell and SQL scripts to instantiate the MQSeries Integrator database
lib	MQSeries Integrator libraries to which applications can be linked

12. The MQSeries software is also now installed in the **/opt/mqm** directory.

Preparing the Database for Schema Installation

To prepare the database for database schema installation, for DB2 and Oracle, refer to the next section, *Creating Tablespaces*. For Sybase, refer to the section, *Creating User-Defined Segments* on page 69.

Creating Tablespaces

The database must have MQSI tablespaces created before you can install the database schema.

Note:
The size of your tablespaces depends on the numbers of rules and formats used at your site. See Appendix A. *Calculating Sizing Data*, for specific sizing information.

You may want to place the tablespaces on different physical disks to balance I/O to avoid disk-access bottlenecks. You should separate data tablespaces and indexes by placing them on different disks or controllers. This optimizes index and data access parallelism.

DB2

For information on creating a DB2 database, refer to the DB2 installation documentation.

To create DB2 tablespaces:

1. Create the MQSI database.
2. Create the following tablespaces in the MQSI database:
   - NNF
   - NNR
   - NNP
3. Grant DBADM privilege on the MQSI database to the user who will perform the installation.

Oracle

For information on creating an Oracle database, refer to the Oracle installation documentation.

To create Oracle tablespaces:

1. Create a dedicated Oracle instance where the MQSeries Integrator database resides. MQSeries Integrator is the default Oracle instance name used in the installation bat file.
2. Create the following tablespaces in the Oracle database:

Table	Minimum Size
TOOLS	1 MB
TEMP	10 MB
FORMATTER_DATA	20 MB
FORMATTER_INDEX	20 MB
RULES_DATA	20 MB
RULES_INDEX	20 MB

Creating User-Defined Segments

Sybase

Sybase databases must have user-defined segments created before you can install the database schema. User-defined segments provide a mapping from the database tables and indexes to the underlying disk space on which the database resides. You may want to place the user-defined segments on different physical disks to balance I/O and avoid disk-access bottlenecks. You should separate data and index segments by placing them on different disks and/or controllers. This optimizes index and data access parallelism.

Note that the size of your database depends on the number of rules and formats used at your site. Refer to Appendix A, *Calculating Sizing Data*, for sizing information.

To create user-defined segments:

1. Create the following user-defined segments in the database that will contain MQSeries Integrator tables and stored procedures:

   FORMATTER_DATA

   FORMATTER_INDEX

   RULES_DATA

   RULES_INDEX

The commands necessary to perform this are in the following vendor documentation:

– Sybase. ***SQL Server Reference Manual***.

The commands are:

```
sp_addsegment
sp_dropsegment
sp_extendsegment
```

Installing the Database Schema

The inst_db.sh script creates the necessary tables and stored procedures in the MQSeries Integrator database. The script sends the commands from the files in the install.sql directory.

1. Change to the **/opt/mqi/**install.sql directory.
2. (Oracle Only) If your database instance is not NEONET, edit the **inst_db.sh** script. Locate the following line:

   ```
   sqlplus NEONET/NEONET@instance%@neon_db2.sql>>inst_db.log
   ```

   Change NEONET/NEONET to the database userid and password for your database instance.

   You will need this database userid and password to edit the database connection file and the daemon parameters file.
3. To build the MQSeries Integrator schema, type one of the following:

   - **DB2**

     Make sure the system administrator and the database administrator have completed their responsibilities.

     Execute the **inst_db.sh** script using the following syntax:

     ```
     inst_db.sh <username><password><database>
     ```

     <username> and <password> were created by the System Administrator for the user defined above

<databasename> is the database created by the Database Administrator

- **Oracle**

  `inst_db.sh SYS <SYS password> <servicename>`

- **Sybase**

  `inst_db.sh<userid><password><servername><dbinstance>`

4. As the script runs, look for errors.
5. When the script completes the instantiation, a verification message appears.
6. For installation details and to see if there are errors, refer to the **inst_db.log** file. You should always check to see if there are errors, even if the verification message says the instantiation completed successfully.

Editing the Database Connection File

Some MQSeries Integrator executables connect to the database using the database connection file sqlsvses.cfg. This file contains entries for DBMS sessions that detail the server name, user id, password, and database name which a particular session uses. Executables search the sqlsvses.cfg file for a given session name and attempt to connect to the MQSeries Integrator database (for example, msgtest searches for new_format_demo).

A sample sqlsvses.cfg file that is commented out is in the /bin directory. Uncomment the section that applies to your DBMS type. You must edit the sample file with your site-specific information. This file enables certain Formatter and Rules executables to connect to the database. For more information, refer to the ***MQSeries Integrator System Management Guide***.

To edit the database connection file:

1. Change to the **bin** directory.
2. In the bin directory, locate the text file **sqlsvses.cfg**.
3. In the **sqlsvses.cfg** file, edit the following:

- **DB2**

  ```
  <sessionname>:<dbalias>:<userid>:<password>:
  ```

  Example:

  ```
  new_format_demo:dodge:neonuser:neonpwd:
  Input:dodge:neonuser:neonpwd:
  Output:dodge:neonuser:neonpwd:
  Rules:dodge:neonuser:neonpwd:
  ```

- **Oracle**

  ```
  <sessionname>:<servicename>:<userid>:<syspassword>:
  ```

  Example:

  ```
  new_format_demo:dodge:neonuser:neonpwd:
  Input:dodge:neonuser:neonpwd:
  Output:dodge:neonuser:neonpwd:
  Rules:dodge:neonuser:neonpwd:
  ```

- **Sybase**

  ```
  <sessionname>:<servername>:<userid>:<password>:
  <databasename>
  ```

  Example:

  ```
  new_format_demo:dodge:neonuser:neonpwd:db instance
  Input:dodge:neonuser:neonpwd:db instance
  Output:dodge:neonuser:neonpwd:db instance
  Rules:dodge:neonuser:neonpwd:db instance
  ```

Verifying the Install

To verify that MQSeries Integrator is correctly installed, run msgtest. msgtest verifies that you can connect to the database.

Notes:

- msgtest can also be used to validate format definition. For more information on msgtest, refer to the ***MQSeries Integrator System Management Guide***.
- Instead of using msgtest to verify that you can connect to the database, use the Install Verification Procedure in the /IVP directory on the CD-ROM.

To verify the install:

1. At the command line, type **msgtest**. When msgtest successfully connects to the database, the following prompt appears:

   Enter the input file name:

   If msgtest does not successfully connect to the database, msgtest returns the error: *No session created*.

2. To quit msgtest, press *Enter*.

If you receive the error *No session created*, check the following in your database connection file:

- Be sure there are four colons.

  Examples:

  Oracle

  <sessionname>:<servicename>:<username>:<password>:

  Sybase

  <sessionname>:<servername>:<username>:<password>:<dbname>

- Be sure the user name used is allowed access to the database and verify the password is correct.
- Verify that the case of all the parameters is correct.
- Verify that the sqlsvses.cfg, msgtest, and the command line are in the bin directory.

- Verify **sqlsvses.cfg** is correctly spelled.

Note:
To verify that MQSeries correctly installed, refer to the verification procedure in ***MQSeries for Sun Solaris Quick Beginnings***.

Editing the Makefile

An example Makefile, demonstrating how to rebuild the MQSeries Integrator executables, is supplied in the /examples directory. To use the Makefile included in the MQSeries Integrator examples directory, you must edit the Makefile. The following table describes the changes:

Makefile	Change to the location of the:
MQSI_ROOT	MQSeries Integrator installation, for example, /opt/mqi
COMPILER_inc	Compiler header files
COMPLIER_lib	Compiler libraries
DB_HOME	Database installation
MQSERIES_HOME	MQSeries installation

Note:
Refer to Chapter 2, *NT Workstation Installation*, to install the MQSeries Integrator client GUIs and/or MQSeries Integrator documentation on an NT workstation client.

Chapter 6
Uninstalling MQSeries Integrator

WARNING!
Before uninstalling MQSeries Integrator, make sure that no MQSeries or MQSeries Integrator programs are running.

To stop the MQSeries Integrator Rules daemon:

- If the daemon is running in the foreground, press Ctrl+C in the window in which the daemon was started.
- If the daemon is running in the background:
  - (UNIX) At the command line, type kill.
  - (Windows NT) Press Ctrl+Alt+C to access the Task Manager and choose End Process.

To stop MQSeries:

Type the following command against any MQSeries queue managers that may be running:

```
endmqm <QueueManager>
```

Uninstalling from NT

This procedure applies only to an NT-only installation.

To uninstall MQSeries Integrator and MQSeries programs on NT:

1. If MQSeries is running, shut it down by doing the following:
   - From the Windows NT Control Panel, choose Services.
   - Select IBM MQSeries.
   - Choose the Stop button.
2. From the Windows NT Control Panel, choose Add/Remove Programs.
3. Select MQSeries for Windows NT.
4. Choose the Add/Remove button.
5. Select the components that you want to remove.
6. For MQSeries Server to NT, select either Programs Only or Programs and Data.
7. Choose the Remove button.
8. Select MQSeries Integrator.
9. Choose the Add/Remove button.
10. From the Windows NT Control Panel, choose Add/Remove programs.

Uninstalling from AIX Using SMIT

To uninstall MQSeries Integrator and MQSeries programs on AIX:

1. Type smit. The main SMIT window appears.
2. From the SMIT window, choose Software Installation and Maintenance.
3. Choose Software Maintenance & Utilities→Remove Installed Software.

   The Remove Installed Software window appears. Verify that the following options are displayed:

Option	Value
Name of Software	mqi.rte
Preview only?	No Yes provides a preview of what you might remove if "No" is selected.
Remove Dependent Software	No (default)
Extend the File System if space needed?	No (default) It should not be necessary to specify Yes.
Detailed output?	Yes, if you want verbose remarks. No results in minimum messaging.

4. From the Remove Installed Software window, choose the OK button. A Confirmation window appears asking ARE YOU SURE?
5. Choose the OK button.

   After the uninstall is complete, remarks are displayed in the output section of the Remove Installed Software window. You can scroll to view remarks for all of the software removed. To exit this window, choose Done, then Cancel.

Tip:
Multiple packages can be removed simultaneously. In the Name of Software field, either type each package (separated by a space) that you want to remove or use the List option to select the packages.

6. Repeat the preceding steps to remove each of the following software pieces:
   - mqm.base.runtime
   - mqm.base.samples
   - mqm.base.sdk
   - mqm.client.rte
   - mqm.msg.en_us
   - mqm.server.rte
   - mqm.server.Bnd
   - mqm.server.mqlink
7. To uninstall the MQSeries Integrator Client from NT, refer to the section, *Uninstalling MQSeries Integrator Client from NT* on page 80.

Uninstalling from HP-UX

To uninstall MQSeries Integrator from HP-UX:

1. Type **swremove**. The SD Remove Software Selection window appears.
2. Select MQSIntegrator.
3. From the menu bar, select Actions→ Mark for Remove. MQSIntegrator is now marked *Yes*.
4. Select Actions→ Remove (analysis...). The Remove Analysis window appears. When the analysis is complete, the status reads *Ready*.
5. To view a log of the analysis, choose the Logfile button and to view the product components, choose the Product Summary button. Choose Done to exit either window.
6. To begin the uninstall, choose OK. The Confirmation window appears.
7. To uninstall, choose Yes. The Remove Window appears displaying the status of the uninstallation. When the uninstall is complete, the status reads *Completed*.
8. To view a log of the uninstall, choose the Logfile button. Choose Done to exit.
9. To close the SD Remove - Software Selection window, choose File→ Exit.

Uninstalling from Solaris

To uninstall MQSeries Integrator and MQSeries programs from Solaris:

1. Type **pkgrm mqi**. The following prompt appears:

   Do you want to remove this package?

2. Type **Y**.
3. When MQSeries Integrator is removed, the following message appears:

   Removal of <mqi> was successful.

4. Type **pkgrm mqm**. The following prompt appears:

   Do you want to remove this package?

5. Type **Y**.
6. When MQSeries is removed, the following message appears:

   Removal of <mqm> was successful.

Uninstalling MQSeries Integrator Client from NT

To uninstall MQSeries Integrator client from NT:

1. From the Windows NT Control Panel, choose Add/Remove programs.
2. Select the MQSeries Integrator Client.
3. Choose the Add/Remove button.

Appendix A
Calculating Sizing Data

NEONFormatter Space Requirements

To calculate the total database space required for NEONFormatter, you must estimate the number of objects used by Formatter. This calculation is the same for DB2, Oracle, Microsoft SQL Server, and Sybase databases.

Estimate the number of:

- Fields (fields are in flat input, flat output and compound formats)
- Literals
- Parse controls
- Name / Value input field validation parameter pairs
- Output format controls
- Flat input formats
- Flat output formats
- Compound formats

DB2

Use the following formula to determine the space needed for NEONFormatter (the key to formula expressions follows the formula):

(F / 40) x 4506 +

(D / 13) x 4506 +

(IPC / 25) x 4506 +

(OFC / 43) x 4506 +

(FIF / 143) x 4506 +

(FOF / 143) x 4506 +

(CF / 91) x 4506 +

(NV / 43) x 4506 =

FSpace

Key
F = Number of fields
D = Number of delimiters
IPC = Number of input parse controls
NV = Name / value input field validation parameter pairs
OFC = Number of output format controls
FIF = Number of flat input formats
FOF = Number of flat output formats
CF = Number of compound formats
FSpace = Total space, in bytes, needed for Formatter

Oracle

Use the following formula to determine the space needed for NEONFormatter (the key to formula expressions follows the DB2 formula):

(1819 + (164 x F)) +

(1819 + (52 x D)) +

(1819 + (164 x IPC)) +

(82 x NV) +

(1819 + (563 x OFC)) +

(1819 + (60 x FIF)) +

(1819 + 66 x FOF)) +

(1819 + (60 x CF)) =

Fspace

Microsoft SQL Server

Use the following formula to determine the space needed for NEONFormatter (the key to formula expressions follows the DB2 formula):

(1821 + (168 x F)) +

(1821 + (56 x D)) +

(1821 + (200 x IPC)) +

(84 x NV) +

(1821 + (615 x OFC)) +

(1821 + (88 x FIF)) +

(1821 + (100 x FOF)) +

(1821 + (84 x CF)) =

FSpace

Sybase

Use the following formula to determine the space needed for NEONFormatter (the key to formula expressions follows the DB2 formula):

(1821 + (168 x F)) +

(1821 + (56 x D)) +

(1821 + (200 x IPC)) +

(84 x NV) +

(1821 + (615 x OFC)) +

(1821 + (88 x FIF)) +

(1821 + (100 x FOF)) +

(1821 + (84 x CF)) =

FSpace

Key
F = Number of fields
D = Number of delimiters
IPC = Number of input parse controls
NV = Name/value input field validation parameter pairs
OFC = Number of output format controls
FIF = Number of flat input formats
FOF = Number of flat output formats
CF = Number of compound formats
FSpace = Total space, in bytes, needed for NEONFormatter

NEONRules Space Requirements

To calculate the total database space required for NEONRules, you must estimate the number of objects used by Rules. This calculation is the same for DB2, Oracle, Microsoft SQL Server, and Sybase databases.

Estimate the number of:

Application Groups

Message types within each application group

Rule names within each message type

Expressions within each rule name

Subscriptions within each rule name

Actions within each subscription

DB2

Use the following formula to determine the space needed for NEONRules (the key to formula expressions follows the formula):

(AG / 69) x 4506 +

(A / 23) x 4506 +

(MT / 125) x 4506 +

(R / 39) x 4506 +

(AO / 29) x 4506 +

(S / 16) x 4506 =

RSpace

Key
AG = Number of application groups
MT = Number of message types within an application group
R = Number of rule names within each message type
A = Number of expressions within each rule
S = Number of subscriptions within each rule
AO = Number of actions within each subscription
RSpace = Total space, in bytes, needed for NEONRules

Oracle

Use the following formula to determine the space needed for NEONRules (the key to formula expressions follows the DB2 formula):

(1318 + (43 x AG)) +

(1322 + (13 x MT)) +

(1322 + (535 x R)) +

(1322 + (216 x A)) +

(1322 + (240 x S)) +

(1322 +AO) =

RSpace

Microsoft SQL Server

Use the following formula to determine the space needed for NEONRules (the key to formula expressions follows the DB2 formula):

(1322 + (47 x AG)) +

(1330 + (17 x MT)) +

(1330 + (601 x R)) +

(1330 + (242 x A)) +

(1330 + (260 x S)) +

(127 + AO) =

RSpace

Sybase

Use the following formula to determine the space needed for NEONRules (the key to formula expressions follows the DB2 formula):

(1322 + (47 x AG)) +

(1330 + (17 x MT)) +

(1330 + (601 x R)) +

(1330 + (242 x A)) +

(1330 + (260 x S)) +

(127 + AO) =

RSpace

Tallying the Space Requirements

DB2

After you calculate the space needed for both NEONFormatter and NEONRules, create or modify tablespaces. For more information on tablespaces, see the section, *Creating Tablespaces*.

Oracle

After you calculate the space needed for both NEONFormatter and NEONRules, create or modify tablespaces. For more information on tablespaces, see the section, *Creating Tablespaces*.

Microsoft SQL Server

Add the calculated space requirements for both NEONFormatter and NEONRules. You will need this total when you create the database.

Sybase

Add the calculated space requirements for both NEONFormatter and NEONRules. You will need this total when you create the database.

Appendix B
Changing Database Sort Order

Microsoft SQL Server

The default sort order for Microsoft SQL Server is dictionary case-insensitive. For MQSeries Integrator Rules daemon to take full advantage of case-sensitive naming conventions and operations, the sort order on the SQL Server must be changed to a binary sort order. Changing the sort order to binary provides a performance advantage over dictionary sort order.

Changing the sort order requires preparation and an understanding of SQL Server. Changing the sort order on SQL Server is easiest on an initial server install. It is more difficult on a server that is established with applications other than MQSeries Integrator running. In ALL cases, make full backups of all databases, especially the master database, before proceeding.

New Install of Microsoft SQL Server

The SQL Server setup program prompts for the sort order and the character set to use. Change the sort order to binary and proceed with the installation as usual.

Upgrade Microsoft SQL Server from Version 4.2 and Earlier

The default sort order is set correctly for MQSeries Integrator in SQL Server versions 4.2 and earlier. If your installation of SQL Server 6.5 is an upgrade from 4.2, changing the sort order may not be necessary. To verify that the sort order is set to binary, log on to the server and execute the sp_helpsort system stored procedure. This returns the character set along with the sort order being used by the server. If the sort order is not set to binary, follow the

instructions in the next section to change the sort order on an established server.

Established Microsoft SQL Server

Changing the sort order on an established server requires preparation and planning. If your server runs applications other than MQSeries Integrator, verify that changing the sort order on the server will not affect the other applications also residing on that server.

Note:
Before performing this procedure, refer to Chapter 3 *(Rebuilding the Master Data* section) in the *Microsoft SQL Server Administrator's Companion*.

To change the sort order on the server:

1. Back up ***all*** databases on the server, especially the master database. This allows you to rebuild the server to its initial settings, if necessary.
2. BCP all of the data from all tables in all databases, since the database backup file contains the sort order used at the time of the backup. When the sort order is changed on the server, the backups are invalid.
3. To export the DDL from the databases, use the Enterprise Manager tool and do the following:
   - Choose Objects→Generate SQL scripts.
   - Check the All Objects box in the Scripting Objects section.
   - Generate a fill for each database.
4. To generate a script for every login and user on the server, use the Enterprise Manager tool and do the following:
   - Choose Objects→Generate SQL scripts.
   - Check all the boxes in the Security section.
   - Generate the script.
5. Shutdown the SQL Server.

6. To change the sort order on the SQL Server:
   - Choose the Setup icon for SQL Server. Two screens appear: a welcome screen, and then a screen indicating that SQL Server is already installed.
   - Choose Continue on each of these screens. The next screen contains a set of radio buttons.
   - Select Rebuild Master Database, then choose Continue. A warning screen appears indicating that rebuilding the master database will destroy all data.
   - Choose Resume. A screen appears that lets you change the sort order.
   - Select the sort order box, select the binary sort order option, and choose Continue. The setup program rebuilds the system databases using the specified sort order.
7. Restart the SQL Server.
8. Login to the server using the SA user ID.
9. Execute the sp_helpsort stored procedure to verify that the sort order was changed to binary.
10. Recreate the database devices and databases.
11. Run the script that was generated in Step 3 for each database.
12. Run the script that was generated in Step 4 for logins and users.
13. BCP the data back into the tables.

Appendix C
Notices

This information was developed for products and services offered in the U.S.A. IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to:

```
IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, NY 10504-1785
U.S.A.
```

For license inquiries regarding double-byte (DBCS) information, contact the IBM Intellectual Property Department in your country or send inquiries, in writing, to:

```
IBM World Trade Asia Corporation Licensing
2-31 Roppongi 3-chome, Minato-ku
Tokyo 106, Japan
```

The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law:

INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY, OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this document to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product and use of those Web sites is at your own risk.

Licensees of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between independently created programs and other programs (including this one) and (ii) the mutual use of the information which has been exchanged, should contact:

```
IBM United Kingdom Laboratories,
Mail Point 151,
Hursley Park,
Winchester,
Hampshire,
England,
SO21 2JN.
```

Such information may be available, subject to appropriate terms and conditions, including in some cases, payment of a fee.

The licensed program described in this document and all licensed material available for it are provided by IBM under terms of the IBM Customer Agreement, IBM International Programming License Agreement, or any equivalent agreement between us.

This information contains sample application programs in source language, which illustrate programming techniques on various operating platforms.

You may copy, modify, and distribute these sample programs in any form without payment to IBM, for the purposes of developing, using, marketing or distributing application programs conforming to the application programming interface for the operating platform for which the sample programs are written. These examples have not been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or imply reliability, serviceability, or function of these programs.

If you are viewing this information softcopy, the photographs and color illustrations may not appear.

Trademarks and Service Marks

The following, which appear in this book or other MQSeries Integrator books, are trademarks of International Business Machines Corporation in the United States, or other countries, or both:

MQSeries
AIX
DB2
IBM

NEONFormatter and NEONRules are trademarks of New Era of Networks, Inc. in the United States and / or other countries.

Microsoft, Windows, Windows NT, and the Windows logo are trademarks of Microsoft Corporation in the United States and / or other countries.

UNIX is a registered trademark in the United States and / or other countries licensed exclusively through X / Open Company Limited.

Other company, product, or service names may be the trademarks or service marks of others.

Index

H

I

M

N

O

P

R

S

T

U

V

W

Sending your comments to IBM
MQSeries Integrator
Installation and Configuration Guide
GC34-5503-00

If you especially like or dislike anything about this book, please use one of the methods listed below to send your comments to IBM.

Feel free to comment on what you regard as specific errors or omissions, and on the accuracy, organization, subject matter, or completeness of this book. Please limit your comments to the information in this book only and the way in which the information is presented.

To request additional publications or make comments about the functions of IBM products or systems, you should talk to your IBM representative or to your IBM authorized remarketer.

When you send comments to IBM, you grant IBM a nonexclusive right to use or distribute your comments in any way it believes appropriate, without incurring any obligation to you.

You can send your comments to IBM in any of the following ways:

- By mail, use the Readers' Comment Form
- By fax:
  - From outside the U.K., use your international access code followed by 44 1962 870229
  - From within the U.K., use 01962 870229

Electronically, use the appropriate network ID:

- IBM Mail Exchange: GBIBM2Q9 at IBMMAIL
- IBMLink: HURSLEY(IDRCF)
- Internet: idrcf@hursley.ibm.com

Whichever you use, ensure that you include:

- The publication number and title
- The page number or topic number to which your comment applies
- Your name / address / telephone number / fax number / network ID

Readers' Comments
MQSeries Integrator
Installation and Configuration Guide
GC34-5503-00

Use this form to tell us what you think about this manual. If you have found errors in it, or if you want to express your opinion about it (such as organization, subject matter, appearance) or make suggestions for improvement, this is the form to use.

To request additional publications, or to ask questions or make comments about the functions of IBM products or systems, you should talk to your IBM representative or to your IBM authorized remarketer. This form is provided for comments about the information in this manual and the way it is presented.

When you send comments to IBM, you grant IBM a nonexclusive right to use or distribute your comments in any way it believes appropriate without incurring any obligation to you.

Be sure to print your name and address below if you would like a reply.

Name Address

Company or organization

Telephone Email

You can send your comments POST FREE on this form from any one of these countries:

Australia	Finland	Iceland	Netherlands	Singapore	United States
Belgium	France	Israel	New Zealand	Spain	of America
Bermuda	Germany	Italy	Norway	Sweden	
Cyprus	Greece	Luxembourg	Portugal	Switzerland	
Denmark	Hong Kong	Monaco	Republic of Ireland	United Arab Emirates	

If your country is not listed here, your local IBM representative will be pleased to forward your comments to us. Or you can pay the postage and send the form direct to IBM (this includes mailing in the U.K.).

1 Cut along this line

2 Fold along this line

By air mail
Par avion

IBRS/CCRI NUMBER: PHQ - D/1348/SO

NE PAS AFFRANCHIR
NO STAMP REQUIRED

IBM

REPONSE PAYEE
GRANDE-BRETAGNE

IBM United Kingdom Laboratories
Information Development Department (MP 095)
Hursley Park
WINCHESTER, Hants
SO21 2ZZ United Kingdom

3 Fold along this line

From: Name _____
Company or Organization _____
Address _____
_____
EMAIL _____
Telephone _____

1 Cut along this line

4 Fasten here with adhesive tape

Printed in U.S.A

GC34-5503-00