



MQSeries® Integrator

Installation and Configuration Guide

Version 1.1

GC34-5503-01

Note: Before using this information, and the product it supports, be sure to read the general information under *Notices* on page 119.

Second edition (June 1999)

This edition applies to IBM® MQSeries Integrator, Version 1.1 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.

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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, *Installation Verification Procedure*, provides the steps necessary to verify that the installation was performed correctly.
- Chapter 7, *Migrating Formats and Rules*, provides the steps necessary to migrate data from a MQSeries Integrator 1.0 database to a MQSeries Integrator 1.1 database.
- Chapter 8, *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 `NEONFormatter` and `NEONRules` 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

- MQSeries, version 5.0, specific to your OS.
- MQSeries, version 5.0 CSD05.
- MQSeries Client CD-ROM.
- MQSeries documentation in HTML format and in PDF format.

Note:

The product package for Oracle includes three CD-ROMs: MQSeries client, MQSeries Integrator for Oracle 7.3, and MQSeries Integrator for Oracle 8 CD-ROMs.

MQSeries Integrator

- MQSeries Integrator Rules daemon specific to your DBMS and operating system (OS).
- Configuration GUIs for `NEONFormatter` and `NEONRules`. The GUIs must 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 `NEONFormatter` and `NEONRules` GUIs. These DLLs must 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.
 - *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*

Summary of Changes

This document is a major revision in support of the functional changes introduced with Version 1.1. This revision also includes maintenance and editorial changes.

The following summarizes the new information.

This chapter, *Supported Platforms and Compilers* on page 5 reflects updated version numbers.

Chapter 6: Installation Verification Procedure on page 79 is a new chapter that describes how to verify that the installation was performed correctly.

Chapter 7: Migrating Formats and Rules on page 89 is a new chapter that describes how to migrate data from a MQSeries Integrator 1.0 database to a MQSeries Integrator 1.1 database.

The *Preparing for a New Installation* section of the *NT Workstation Installation*, *AIX Installation*, *HP-UX Installation*, and *Solaris Installation* chapters includes updated Oracle 7 version numbers and Oracle 8 information.

Supported Platforms and Compilers

Operating System	DBMS	Compiler
AIX 4.2, 4.3	DB2 5.0 DB2 5.2 Oracle 7.3.4 Oracle 8.0.5 Sybase 11.5 Sybase 11.9	IBM C Set ++ version 3 or later
HP-UX 10.20	DB2 5.0 DB2 5.2 Oracle 7.3.4 Oracle 8.0.5 Sybase 11.5 Sybase 11.9	HP C++ version 10.40 (HP-UX 10.20)
Solaris 2.5.1, 2.6	DB2 5.0 DB2 5.2 Oracle 7.3.4 Oracle 8.0.5 Sybase 11.5 Sybase 11.9	Sparcworks C++ compiler version 4.2
Windows NT 4.0	DB2 5.0 DB2 5.2 Oracle 7.3.4 Oracle 8.0.5 MSSQL Server 6.5 Sybase 11.5 Sybase 11.9	Microsoft Visual C++ version 6.0

Disk Space and Memory Requirements

Required disk space is dependent on 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.

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 Integrator documentation requires 1550 MB of disk space (HTML files: 35 MB, PDF files: MB).

The GUI requires 40 MB.

Library and Executable Disk Space Requirements

The following table contains library and executable disk space requirements.

Operating System	DBMS	Libraries & Executables
AIX 4.2, 4.3	DB2 Oracle Sybase	50 MB 115 MB 120 MB
HP-UX 10.20, 11	DB2 Oracle Sybase	80 MB 120 MB 85 MB
Solaris 2.51, 2.6	DB2 Oracle Sybase	90 MB 85 MB 80 MB
Windows NT 4.0	DB2 Oracle SQLServer Sybase	75 MB 60 MB 60 MB 60 MB

Year 2000 Readiness Disclosure

MQSeries Integrator, when used in accordance with its associated documentation, is capable of correctly processing, providing, and/or receiving date information within and between the twentieth and twenty-first centuries, provided that all products (for example, hardware, software, and firmware) used with this IBM program properly exchange accurate date information with it.

Customers should contact third party owners or vendors regarding the readiness status of their products.

IBM reserves the right to update the information shown here. For the latest information regarding levels of supported software, refer to:

<http://www.software.ibm.com/ts/mqseries/platforms/supported.html>

For the latest IBM statement regarding Year 2000 readiness, refer to:

<http://www.ibm.com/ibm/year2000/>

Chapter 2

NT Workstation Installation

The InstallShield Wizard installs both MQSeries Integrator Version 1.1 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 the 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
- Edit the makefile
- Verify the install using
- Migrate formats and rules from your existing database using *Chapter 7: Migrating Formats and Rules* on page 89

WARNING!

You must ensure that the GUIs, databases, and code components of MQSeries Integrator are of the same version. Incompatibility exists when you attempt to use components of different versions. By following the steps provided in this guide, all components of your installation will correspond to MQSeries Integrator Version 1.1 and MQSeries Version 5.0..

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.

If you have MQSeries Integrator Version 1.0 installed and are now installing MQSeries Integrator Version 1.1, you must uninstall Version 1.0 before you install Version 1.1. Be sure to copy and keep any code you may have added to Version 1.0 before you uninstall. To uninstall a previous version of MQSeries Integrator from an NT workstation, refer to *Chapter 8: Uninstalling MQSeries Integrator* on page 99.

Required Software

The following software is required:

- Windows NT, Version 4.0, Service Pack 3

One of the following:

- DB2 Client Application Enabler, Version 5.2
 - ODBC Data Source Administrator (supplied with Windows NT)
- or**
- Oracle 7 Client, Version 7.3.4, including the following components:
 - Oracle Call Interface 7.3.4.0.0
 - Oracle Installer 3.2.2.1.0A
 - Oracle TCP/IP Adapter 7.3.4.0.0

- Required Support Files 7.3.4.0.0
- SQL *Net Client 2.3.4.0.0
- SQL *Plus 3.3.4.0.0

and/or

- Oracle 8 Client, Version 8.0.5, including the following components:
 - Assistant Common Files 8.0.5.0.0
 - Oracle Call Interface 8.0.5.0.0
 - Oracle Installer 3.3.1.0.0C
 - Oracle Named Pipes Protocol Adapter 8.0.5.0.0
 - Oracle Net8 Assistant 8.0.5.0.0
 - Oracle Call Client 8.0.5.0.0
 - Oracle TCP/IP Adapter 8.0.5.0.0
 - Required Support Files 8.0.5.0.0
 - SQL *Plus 8.0.5.0.0

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, 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 6.0 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.

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, using either the ODBC Administrator tool or Client Configuration Assistant, 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 **PATH** environment variable includes the bin and lib directory of the installed MQSI components.
- Be sure the location of the compiler is in the **PATH** environment variable.
- If you have DB2 for Windows NT, open the command prompt window and run the application from that command window.
- If you do not have DB2 for Windows NT, be sure database home lib and bin are in the **PATH** environment variable.
- You have created the group **NEONGRP** on the DB2 server.

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.
- (Oracle 7) The Oracle utility program **plus33** is in the execution path for the user doing the install.
- Be sure the **ORACLE_HOME** environment variable is set to the location of the database home.
- Be sure the **PATH** environment variable includes the product bin directory and the database bin directory.
- The group **NEONGRP** has been created on the server.

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.
- Be sure the **PATH** environment variable includes the product bin directory and the database bin directory.
- The group **NEONGRP** has been created on the server.

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.
- Be sure the **PATH** environment variable includes the product bin directory and the database bin directory.
- 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 books 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 alias
- 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, choose Start→Run from the Windows Start menu. In the Run dialog box, type **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. The software is now installed in the c:\mqi directory. If you chose Typical to install, this directory should contain the following subdirectories (if you chose Compact or Custom to install, the directory only contains subdirectories for the components you selected):

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

6. To make sure that all changes take effect, restart your computer when the installation is complete. (NT-only installation)

Note:

The NT Client installation of MQSeries Integrator 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 21.

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 *Calculating Sizing Data* on page 107, 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 index segments by placing them on different disks and/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:
 - FORMATTER_DATA
 - FORMATTER_INDEX

- RULES_DATA
 - RULES_INDEX
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 Minimum Size guidelines (as shown in the table in step 2 below) 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 **inst_db.cmd** 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 *Calculating Sizing Data* on page 107, for sizing information.

To create user-defined segments:

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` 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. At the command line prompt, change to the **install.sql** directory.

Example:

```
cd \mqi\install.sql
```

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

- **DB2**

Open an NT Command Prompt window and type the following:

```
db2cmd
```

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

```
inst_db.cmd <username> <password> <database alias>
```

- **Oracle**

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

- **SQL Server**

```
inst_db.cmd <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.cmd sa ' ' mycomputer
```

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

Note:

In the **inst_db.log** file, the error "table or view does not exist" does not indicate a problem with database instantiation. The database successfully instantiated if this is the only error you receive.

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 provided 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 `NEONFormatter` and `NEONRules` 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:
rules:dodge:neonuser:neonpwd:
```

Oracle

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

Example:

```
new_format_demo:dodge:neonuser:neonpwd:
rules:dodge:neonuser:neonpwd:
nnfie:dodge:neonuser:neonpwd:
nnrmie:dodge:neonuser:neonpwd:
```

Note that the 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
rules:dodge:neonuser:neonpwd:TESTDATABASE
```

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
COMPILER_inc	Compiler header files
COMPLIER_lib	Compiler libraries
DB_HOME	Database installation
MQSERIES_HOME	MQSeries installation

Note:

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.

Chapter 3

AIX Installation

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

To install the GUI tools on an NT workstation, refer to *Chapter 2: NT Workstation Installation* on page 9.

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

- Prepare for an AIX installation
- Install MQSeries Integrator using `installp` to install files on the server
- Prepare the database for schema installation
- Install the database schema
- Edit the database connection file
- Edit the Makefile
- Install the GUIs and documentation on an NT workstation
- Verify the install using
- Migrate formats and rules from your existing database using *Chapter 7: Migrating Formats and Rules* on page 89

WARNING!

You must ensure that the GUIs, databases, and code components of MQSeries Integrator are of the same version. Incompatibility exists when you attempt to use components of different versions. By following the steps provided in this guide, all components of your installation will correspond to MQSeries Integrator Version 1.1 and MQSeries Version 5.0.

Preparing for an AIX Installation

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

If you have MQSeries Integrator Version 1.0 installed and are now installing MQSeries Integrator Version 1.1, you must uninstall Version 1.0 before you install Version 1.1 on NT. Be sure to copy and keep any code you may have added to Version 1.0 before you uninstall. To uninstall a previous version of MQSeries Integrator from the NT workstation, refer to *Chapter 8: Uninstalling MQSeries Integrator* on page 99. You do not have to uninstall from AIX.

Required Software

On the UNIX Machine

The following software is required on the server:

- AIX, Version 4.2

One of the following:

- DB2, Version 5.2
 - DB2, Client Application Enabler, Version 5.2

or

- Oracle Server, Version 7.3.4 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
- 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 5.2

or

- Oracle 7 Client, Version 7.3.4, including the following components:

- Oracle Call Interface 7.3.4.0.0
- Oracle Installer 3.2.2.1.0A
- Oracle TCP/IP Adapter 7.3.4.0.0
- Required Support Files 7.3.4.0.0
- SQL *Net Client 2.3.4.0.0
- SQL *Plus 3.3.4.0.0

and/or

- Oracle 8 Client, Version 8.0.5, including the following components:

- Assistant Common Files 8.0.5.0.0
- Oracle Call Interface 8.0.5.0.0
- Oracle Installer 3.3.1.0.0C
- Oracle Named Pipes Protocol Adapter 8.0.5.0.0
- Oracle Net8 Assistant 8.0.5.0.0
- Oracle Call Client 8.0.5.0.0
- Oracle TCP/IP Adapter 8.0.5.0.0
- Required Support Files 8.0.5.0.0
- SQL *Plus 8.0.5.0.0

or

- Sybase Client, Version 11.1.1

Note:

If you are installing MQSeries Integrator on the same machine as your database server, 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, using either the ODBC Administrator tool or Client Configuration Assistant, 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.
- The **LIBPATH** environment variable (where the lib for the product and database reside) points to the lib directory for DB2 and the lib for MQSeries Integrator.

- Be sure the **PATH** environment variable includes the product bin directory and the database bin directory.
- You have created the group NEONGRP on the DB2 server.

Oracle

On the NT workstation, verify that you can connect to an appropriately resourced Oracle database that will be used to hold MQSeries Integrator, 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.
- Be sure the **ORACLE_HOME** environment variable is set to the location of the database home.
- The **LIBPATH** environment variable (where the lib for the product and database reside) points to the lib directory for DB2 and the lib for MQSeries Integrator.
- Be sure the **PATH** environment variable includes the product bin directory and the database bin directory.
- 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.
- The group NEONGRP has been created on the server.

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.
- The group NEONGRP has been created on the server.
- The **LIBPATH** environment variable (where the lib for the product and database reside) points to the lib directory for DB2 and the lib for MQSeries Integrator.
- The **PATH** environment variable (where the bin for the product and database reside is set up).

Note:

For more information about setting up the database for MQSeries Integrator to use, see the appropriate database-specific readme file in the books 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 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 alias
- username
- password

Oracle

- SYS userid
- password for SYS userid
- service name

Sybase

- database name
- server name
- username
- password

Installing MQSeries Integrator

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`. The SMIT GUI appears.
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.
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.

SMIT Prompt	Response
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.

Starting installp

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. For more information, see *Adding the mqm User Group and User* on page 67

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

SMIT Prompt	Response
SOFTWARE to install	mqi110 or _all_latest. To install both MQSeries, and MQIntegrator, select _all_latest. To install only MQSeries Integrator, select mqi110 (select this only if MQSeries is already installed).
PREVIEW only? (install operation will not occur)	No
COMMIT software updates?	Yes
SAVE replaced files?	No
EXTEND file systems if space needed?	Yes Select No if you chose Yes for the <i>AUTOMATICALLY install requisite software?</i> prompt.

SMIT Prompt	Response
OVERWRITE same or newer versions?	Yes
AUTOMATICALLY install requisite software?	No To install MQSeries, choose Yes at this prompt. You must then select No at the <i>OVERWRITE same or newer versions?</i> prompt.
VERIFY install and check file sizes?	Yes
Include corresponding LANGUAGE filesets?	No
Detailed output?	Yes
(AIX Version 4.3) Process multiple volumes?	No

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 *OK*.

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 Done.
6. To quit the System Management Interface Tool, choose Exit.

7. The MQSeries Integrator software is now installed in the **/usr/lpp/mqi110** 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

Notes:

- If you installed MQSeries, the MQSeries software is installed in the `/usr/lpp/mqm` directory.
- After MQSeries Integrator installation, if you encounter the error:
Symbol not found slpmprodstab: referencing \$ORACLE_HOME/lib/libcIntsh.so.1.0

the Oracle shared library was not generated when Oracle was installed. To create this shared library, on the AIX machine, run the following command:

```
make -f $ORACLE_HOME/rdbms/lib/cIntsh.mk
```

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 74.

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:
 - FORMATTER_DATA
 - FORMATTER_INDEX
 - RULES_DATA
 - RULES_INDEX

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:

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.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/mqi110/install.sql` directory.
2. To build the MQSeries Integrator schema, type one of the following:
 - **DB2**
Execute the `inst_db.sh` script using the following syntax:

```
inst_db.sh <username> <password> <database>
```
 - **Oracle**

```
inst_db.sh SYS <SYS password> <servicename>
```
 - **Sybase**

```
inst_db.sh <userid> <password> <servername>  
<dbinstance>
```
3. As the script runs, answer the prompts and look for errors.
4. When the script completes the instantiation, a verification message appears.
5. For installation details, refer to the `inst_db.log` file.

Note:

In the `inst_db.log` file, the error "table or view does not exist" does not indicate a problem with database instantiation. The database successfully instantiated if this is the only error you receive.

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, `msgtst` 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:
Rules:dodge:neonuser:neonpwd:
```

- **Oracle**

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

Example:

```
new_format_demo:dodge:neonuser:neonpwd:
Rules:dodge:neonuser:neonpwd:
nnfie:dodge:neonuser:neonpwd:
nnrmie:dodge:neonuser:neonpwd:
```

- **Sybase**

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

Example:

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

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
CC	Compiler
DB_HOME	Database installation
MQSERIES_HOME	MQSeries installation

Note:

Refer to *Chapter 2: NT Workstation Installation* on page 9 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 GUI tools on an NT workstation, see *NT Workstation Installation* on page 9.

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
- Edit the makefile
- Install the GUIs and documentation on an NT workstation.
- Verify the install using
- Migrate formats and rules from your existing database using *Chapter 7: Migrating Formats and Rules* on page 89

WARNING!

You must ensure that the GUIs, databases, and code components of MQSeries Integrator are of the same version. Incompatibility exists when you attempt to use components of different versions. By following the steps provided in this guide, all components of your installation will correspond to MQSeries Integrator Version 1.1 and MQSeriesVersion 5.0.

Preparing for an HP-UX Installation

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

If you have MQSeries Integrator Version 1.0 installed and are now installing MQSeries Integrator Version 1.1, you must uninstall Version 1.0 before you install Version 1.1 on NT. Be sure to copy and keep any code you may have added to Version 1.0 before you uninstall. To uninstall a previous version of MQSeries Integrator from the NT workstation, refer to *Chapter 8: Uninstalling MQSeries Integrator* on page 99. You do not have to uninstall from HP-UX.

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 5.2
 - ODBC Administrator
- or
- Oracle Client, Version 7.3.4 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 5.2
 - ODBC Administrator
- Oracle 7 Client, Version 7.3.4, including the following components:
 - Oracle Call Interface 7.3.4.0.0
 - Oracle Installer 3.2.2.1.0A
 - Oracle TCP/IP Adapter 7.3.4.0.0
 - Required Support Files 7.3.4.0.0
 - SQL *Net Client 2.3.4.0.0
 - SQL *Plus 3.3.4.0.0

and/or

- Oracle 8 Client, Version 8.0.5, including the following components:
 - Assistant Common Files 8.0.5.0.0
 - Oracle Call Interface 8.0.5.0.0
 - Oracle Installer 3.3.1.0.0C
 - Oracle Named Pipes Protocol Adapter 8.0.5.0.0
 - Oracle Net8 Assistant 8.0.5.0.0
 - Oracle Call Client 8.0.5.0.0
 - Oracle TCP/IP Adapter 8.0.5.0.0
 - Required Support Files 8.0.5.0.0
 - SQL *Plus 8.0.5.0.0

or

- Sybase Client, Version 11.1.1

Note:

If you are installing MQSeries Integrator on the same machine as your database server, 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, using either the ODBC Administrator tool or Client Configuration Assistant, 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 the database owner or have DBADM authority.
- Be sure the **SHLIB_PATH** environment variable points to the product lib directory and the database lib directory.
- Be sure the **PATH** environment variable includes the product bin directory and the database bin directory.

- The group NEONGRP has been created on the DB2 server.

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.
- Be sure the **ORACLE_HOME** environment variable is set to the location of the database home.
- Be sure the **SHLIB_PATH** environment variable points to the product lib directory and the database lib directory.
- Be sure the **PATH** environment variable includes the product bin directory and the database bin directory.
- The group NEONGRP has been created on the server.

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.
- Be sure the **PATH** environment variable includes the product bin directory and the database bin directory.
- The **SHLIB_PATH** environment variable) points to the lib directory for DB2 and the lib directory for MQSeries Integrator.
- The group NEONGRP has been created on the server.

Note:

For more information about setting up the database for MQSeries Integrator, see the appropriate database-specific readme file in the books 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 alias
- 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}/mqi110
```

{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/mqi110 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

Subdirectory	Description
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 57.

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 *Calculating Sizing Data* on page 107, 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:
 - FORMATTER_DATA
 - FORMATTER_INDEX
 - RULES_DATA
 - RULES_INDEX
3. Grant DBADM privilege on the MQSI database to the user who will perform the installation.

Oracle

The Oracle installation documentation provides information on creating an Oracle database.

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:

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 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/mqi110/install.sql` directory.
2. To build the MQSeries Integrator schema, type one of the following:
 - **DB2**
Execute the `inst_db.sh` script using the following syntax:

```
inst_db.sh <username> <password> <database>
```
 - **Oracle**

```
inst_db.sh SYS <SYS password> <servicename>
```
 - **Sybase**

```
inst_db.sh <username> <password> <servername>  
<dbinstance>
```
3. As the script runs, look for errors.
4. When the script completes the instantiation, a verification message appears.
5. For installation details, refer to the `inst_db.log` file.

Note:

In the `inst_db.log` file, the error "table or view does not exist" does not indicate a problem with database instantiation. The database successfully instantiated if this is the only error you receive.

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, `msgtst` 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:
rules:dodge:neonuser:neonpwd:
```

- **Oracle**

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

Example:

```
new_format_demo:dodge:neonuser:neonpwd:
Rules:dodge:neonuser:neonpwd:
nnfie:dodge:neonuser:neonpwd:
nnrmie:dodge:neonuser:neonpwd:
```

- **Sybase**

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

Example:

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

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
CC	Compiler
DB_HOME	Database installation
MQSERIES_HOME	MQSeries installation

Note:

Refer to *Chapter 2: NT Workstation Installation* on page 9 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* on page 9.

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
- Edit the Makefile
- Install the GUIs and documentation on an NT workstation
- Verify the install using
- Migrate formats and rules from your existing database using *Chapter 7: Migrating Formats and Rules* on page 89

WARNING!

You must ensure that the GUIs, databases, and code components of MQSeries Integrator are of the same version. Incompatibility exists when you attempt to use components of different versions. By following the steps provided in this guide, all components of your installation will correspond to MQSeries Integrator Version 1.1 and MQSeries Version 5.0.

Preparing for a Solaris Installation

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

If you have MQSeries Integrator Version 1.0 installed and are now installing MQSeries Integrator Version 1.1, you must uninstall Version 1.0 before you install Version 1.1 from Windows NT. Be sure to copy and keep any code you may have added to Version 1.0 before you uninstall. To uninstall a previous version of MQSeries Integrator from the NT workstation, refer to *Chapter 8: Uninstalling MQSeries Integrator* on page 99. You do not have to uninstall from Solaris.

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 5.2
 - DB2 Client Application Enabler, Version 5.2
- or
- Oracle Server, Version 7.3.4 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 C++ 4.2)
- 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 5.2
- or**
- Oracle 7 Client, Version 7.3.4, including the following components:
 - Oracle Call Interface 7.3.4.0.0
 - Oracle Installer 3.2.2.1.0A
 - Oracle TCP/IP Adapter 7.3.4.0.0
 - Required Support Files 7.3.4.0.0
 - SQL *Net Client 2.3.4.0.0
 - SQL *Plus 3.3.4.0.0
- and/or**
- Oracle 8 Client, Version 8.0.5, including the following components:
 - Assistant Common Files 8.0.5.0.0
 - Oracle Call Interface 8.0.5.0.0
 - Oracle Installer 3.3.1.0.0C
 - Oracle Named Pipes Protocol Adapter 8.0.5.0.0
 - Oracle Net8 Assistant 8.0.5.0.0
 - Oracle Call Client 8.0.5.0.0
 - Oracle TCP/IP Adapter 8.0.5.0.0

- Required Support Files 8.0.5.0.0
 - SQL *Plus 8.0.5.0.0
- or**
- Sybase Client, Version 11.1.1

Note:

If you are installing MQSeries Integrator on the same machine as your database server, 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. For more information, 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, using either the ODBC Administrator tool or Client Configuration Assistant, 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.
- The **LD_LIBRARY_PATH** directory points to the product lib directory and the database lib directory.
- Be sure the **PATH** environment variable includes the product bin directory and the database bin directory.
- The group NEONGRP has been created on the DB2 server.

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 exists with the appropriate resources and table spaces.
- Be sure the **ORACLE_HOME** environment variable is set to the location of the database home.
- Be sure the **LD_LIBRARY_PATH** directory points to the product lib directory and the database lib directory.
- Be sure the **PATH** environment variable includes the product bin directory and the database bin directory.
- You know the Oracle SYS account information.
- The group NEONGRP has been created on the server.

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.
- The **LD_LIBRARY_PATH** directory points to the product lib directory and the database lib directory.
- Be sure the **PATH** environment variable includes the product bin directory and the database bin directory.
- There is sufficient disk space for your calculated needs.
- The group **NEONGRP** has been created on the server.
- 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 books 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 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 alias
- 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 ./mqi110
```
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/mqmqm` and `/var/mqmqm/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 setgid 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 <mqi110>was successful* or *Installation of <mqi110> failed*.

11. 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 <mqi110>?,* type **y** (yes).

The installation program begins unpacking and verifying MQSeries Integrator components. When it has completed, it echoes either the

message: *Installation of <mqm> was successful* or *Installation of <mqm> failed*.

12. If the installation was successful, the MQSeries Integrator software is now installed in the **/opt/mqi110** 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

13. 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 74.

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 *Calculating Sizing Data* on page 107, 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:
 - FORMATTER_DATA
 - FORMATTER_INDEX
 - RULES_DATA
 - RULES_INDEX
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:

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/mqi110/install.sql` directory.
2. To build the MQSeries Integrator schema, type one of the following:

- **DB2**

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

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

- **Oracle**

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

- **Sybase**

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

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

Note:

In the `inst_db.log` file, the error "table or view does not exist" does not indicate a problem with database instantiation. The database successfully instantiated if this is the only error you receive.

In addition to the `inst_db.log` file, an `NNFIE.log` may appear. This log only appears if there are failure messages; it will not exist otherwise.

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:  
Rules:dodge:neonuser:neonpwd:  
nnfie:dodge:neonuser:neonpwd:  
nnrmie:dodge:neonuser:neonpwd:
```

- **Oracle**

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

Example:

```
new_format_demo:dodge:neonuser:neonpwd:  
Rules:dodge:neonuser:neonpwd:  
nnfie:dodge:neonuser:neonpwd:  
nnrmie:dodge:neonuser:neonpwd:
```

- **Sybase**

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

Example:

```
new_format_demo:dodge:neonuser:neonpwd:db instance  
Rules:dodge:neonuser:neonpwd:db instance  
nnfie:dodge:neonuser:neonpwd:  
nnrmie:dodge:neonuser:neonpwd:
```

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, mqi110
CC	Compiler
DB_HOME	Database installation
MQSERIES_HOME	MQSeries installation

Note:

Refer to See *NT Workstation Installation* on page 9 to install the MQSeries Integrator client GUIs and/or MQSeries Integrator documentation on an NT workstation client.

Chapter 6

Installation Verification Procedure

The purpose of the Installation Verification Procedure is to confirm that has been correctly installed and configured. Prior to beginning this procedure, complete the MQSeries Installation Verification, found in *MQSeries Version 5.0 Quick Beginnings*.

Set Up Queue Manager

Note:

cdrom represents the pathname to your mounted MQSI CD-ROM drive.

1. Open a command prompt window (on UNIX, start a new session).
2. Create a default queue manager.
 - Type the following at the command prompt:

```
crtmqm -q MQI
```
 - Press ENTER. A status message tells you that the queue manager has been created.
3. Start the queue manager.
 - Type the following:

```
strmqm MQI
```
 - Press ENTER.

4. Create queues.

- Type the following (press ENTER after each line):

```
runmqsc MQI
define qlocal ('RulesIn')
define qlocal ('NoHit')
define qlocal ('RulesFailure')
define qlocal ('accounting')

END
```

- The test queues are created.

Troubleshooting:

- Verify that the execution path contains the MQSeries bin directory.

Edit the Database Configuration File

1. Use your favorite text editor (such as notepad in NT or vi on UNIX) to open the sqlsvses.cfg file, found in the MQSI examples directory.
2. Add two entries with session names "nnfie" and "nnrmie", as shown in bold type in the following example.
3. Go to the section of the sqlsvses.cfg file that displays the database that you are using and enter the information under that section only. For example, if you were using an MSSQL database, the sqlsvses.cfg file would look like this:

```
# -----
# Sqlsvses.cfg - Defines sessions to be used to access the
# Rules & Formatter database. The format of each line depends
# on the database in which the NEON Rules and NEON Formats are
# to be stored.
# Four fields are required in order to specify a connection to
# a DB2 or an
# Oracle database. Five fields are required to specify a
# connection to a SQLServer or a Sybase database.
```

```
# A common routine is used to parse lines from this file, so
# four colons are required in each line.  In other words,
# if only four fields are specified, then there must be a colon
# following the fourth field at the end of the line.  Entries
# can be commented by placing a "#" in column 1.

#
# -----
#
# Format of lines for the various supported database types:
#
# DB2:
#
# SessionName:dBaseName_or_Alias:dBaseUserid:dBasePassword:
#
# (note that the fifth field is blank, so the last colon is
# required)
#
# MS SQLServer:
#
# SessionName:dBaseServer:dBaseUserid:dBasePassword:
# dBaseInstance
#
# Oracle:
#
# SessionName:dBaseService:dBaseUserid:dBasePassword:
#
# (note that the fifth field is blank, so the last colon is
# required)
#
# Sybase:
```

```

# SessionName:dBaseServer:dBaseUserid:dBasePassword:
# dBaseInstance

#

# -----

#

# SessionNames required to run specific utilities:

#

# The SessionName "new_format_demo" is required to run the test
# programs:

# 'apitest' and 'msgtest'.

# The SessionName "rules" is required to run the test programs:

# 'ruletest'

# Any SessionName may be used for the Import/Export utilities,
# NNFie andNNRie, and is specified by the '-s SessionName'
# option. For

# example, a SessionName of "import" and/or "export" could be
# used.

#

# -----

#

# Example SessionNames (uncomment the SessionNames needed):

#

# DB2 database (final colon required on each line):

```



```

# new_format_demo:Database:Userid:Password:

# rules:Database:Userid:Password:

# import:Database:Userid:Password:

# (change Database, Userid, Password above)

#

# MS SQL Server database:

new_format_demo:Server:Userid:Password:Instance

# rules: Server: Userid: Password: Instance
nnrmie: Server: Userid: Password: Instance
nnfie: Server: Userid: Password: Instance

# (change Server, Userid, Password, and Instance above)

#

# Oracle database (final colon required on each line):

# new_format_demo:Service:Userid:Password:

# rules:Service:Userid:Password:

# import:Service:Userid:Password:

# (change Service, Userid, Password above)

#

# Sybase database:

# new_format_demo:Server:Userid:Password:Instance

# rules:Server:Userid:Password:Instance

# import:Server:Userid:Password:Instance

```

```
# (change Server, Userid, Password, and Instance above)
#
# ----- ( End of File ) -----
```

4. Save the file and close.

Troubleshooting:

- Verify that sqlsvses.cfg is spelled correctly.
- Verify that the sqlsvses.cfg file is saved in the examples directory.
- Verify that the sqlsvses.cfg file is located in the same directory as nnrie and nnfie.

Import Test Format and Rules

1. Open a command prompt window (on UNIX, start a new session).
2. Verify that you are in the MQSI examples directory.
3. Execute NNFie to import the test format.
 - Type the following:


```
NNFie -i formats.fie
```
 - Press ENTER.
4. Execute NNRie to import the test rules.
 - Type the following:


```
NNRie -i rules.rie
```
 - Press ENTER.

Troubleshooting:

- Verify that you are in the MQSI examples directory.
- Verify that the sqlsvses.cfg file contains the correct database information as shown in the example.
- Verify that the appropriate DBMS server is running. If it is not, start it.
- Verify that the user specified in the sqlsvses.cfg file has the permissions necessary to access MQSeries Integrator.

Edit the Rules Daemon Configuration Files

1. Use a text editor to edit the MQSIruleng.mpf file found in the MQSI examples directory.
2. Edit the following parameters in all files, as shown in the example below:
 - ServerName = your server name
 - UserID = your DBMS user id
 - Password = password for your dbms user
 - DatabaseInstance = name of your MQSeries Integrator database
 - DatabaseType = correct DBMS type (from the list provided in the mpf). If using DB2, you must select ODBC.

Notes:

The password parameter cannot be NULL or empty, so you must ensure that a password is set for your DBMS user.

For Oracle and DB2, leave "DatabaseInstance" as "???" (for MQSIruleng.mpf) or "xxx" (for MQSIputdata.mpf and MQSIgetdata). This parameter cannot be NULL or empty.

For DB2, enter the database name as the value of "ServerName".

3. Verify that the following line is located at the end of the MQSIputdata.mpf file:

```
OPT_SHUTDOWN = SHUTDOWN
```

This shuts down the Rules daemon after the putdata has executed.

Troubleshooting:

- Verify that you are in the MQSI examples directory.
- Verify that MQSIRuleng.mpf, MQSIputdata.mpf, and MQSIgetdata.mpf are spelled correctly.
- The single spaces before and after the "=" for each parameter are required.

Start the MQSI Rules Daemon

1. Return to the command prompt window.
2. Verify that you are in the MQSI examples directory.
3. Type the following:

```
MQSIRuleng -p MQSIRuleng.mpf
```

- If the Rules daemon ends and returns to the command prompt, it failed to execute.
- You must open a new command prompt if the daemon executes successfully and is not running in the background.

Troubleshooting:

- Check the Rules daemon error log. The default filename is mqsiruleng.log.
- Verify that the MQSIRuleng.mpf file contains the correct connection information, as listed in *Edit the Rules Daemon Configuration Files* on page 85.

- Verify that MQSIRuleng is spelled correctly.
- Verify that you are in the MQSI examples directory.

Run putdata

1. Open a new command prompt window.
2. Verify that you are in the MQSI examples directory.
3. At the command prompt, type the following.

```
MQSIputdata -p MQSIputdata.mpf
```
4. Use a text editor to open the putdata.log file (found in the examples directory) and view the results.

Troubleshooting:

Verify that the MQSIputdata.mpf file contains the correct Put Control and Put Options.

Run getdata

1. To retrieve messages from the output queue, type the following command:

```
MQSIgetdata -p MQSIgetdata.mpf
```

2. For a_msg1.txt, a file named **output** is created. This file should contain the following message:

```
John Doe - 1998.05.16
```

3. Use a text editor to open the getdata.log file (found in the examples directory) and view the results.

Troubleshooting:

- If you find messages on either the RulesFailure or NoHit queues, verify that the messages are in the correct format (for example, semicolon delimited).
- Verify that the rules and format were correctly imported into the MQSeries Integrator database. See *Import Test Format and Rules* on page 84 for more information.
- If you find messages remaining on the RulesIn queue, verify that the Rules daemon is running. If it is running, try stopping (stopeng) and restarting it.

The verification is complete.

Note:

You must run `inst_db` again to reinstantiate your database and ensure that all test data has been removed. Do not define additional users until this step is complete.

Chapter 7

Migrating Formats and Rules

This section explains how to migrate the data from a MQSeries Integrator Version 1.0 database to a MQSeries Integrator Version 1.1 database.

The NNFiE and NNRiE utilities are used to migrate formats and rules.

Notes:

- This migration procedure assumes that you created formats and rules in MQSeries Integrator Version 1.0, and that MQSeries Integrator Version 1.1 is installed.
 - This procedure also assumes that the database to which you are migrating formats and rules is a clean database. If you are migrating to a database that already contains data, data conflicts may occur. For additional information regarding conflict resolution options, refer to the NNFiE and NNRiE sections in the *MQSeries Integrator System Management* guide.
-

NNFie Overview

The `NEONFormatter Import/Export Utility`, NNFie, is used to export existing formats from a MQSeries Integrator database and to import the formats to a MQSeries Integrator Version 1.1 database.

Using NNFie, you can:

- Export existing formats into a file that can be interchanged between platforms.
- Import the file into the 1.1 database. NNFie 1.1 can import a file created by exporting from a MQSeries Integrator formats database.

Additional information regarding NNFie is available in the *MQSeries Integrator System Management* guide.

NNRie Overview

Use the `NEONRules Import/Export Utility`, NNRie, to export existing rules from a MQSeries Integrator database and import them to a MQSeries Integrator Version 1.1 database.

Using NNRie, you can:

- Export a single rule identified by its corresponding application name, message type, and rule name.
- Export a single subscription identified by its corresponding application name, message type, and subscription name.
- Export entire rule sets, rules, and subscriptions identified by corresponding application group and message type names.
- Export all message types and their rule sets identified by the message type's application group name.
- Export all application groups and their associated message types and rules.

This program creates an export file that can be interchanged between platforms. All application groups and their associated message types and rules should be exported. The exported file can then be imported to the 1.1 database using NNRie Version 1.1.

Migrating Formats and Rules

WARNING!

When migrating formats and rules to a 1.1 database, IBM recommends that two separate databases are used. IBM does not recommend rebuilding the schema after export and importing into the same database.

Verify the following before migrating formats and rules:

- There is enough disk space to hold the output file. This file can be re-directed anywhere the system supports.
- The target database (MQSeries Integrator Version 1.1 database) has been instantiated.

The following steps are required to migrate your formats and rules from a 1.0 database to a 1.1 database.

1. Set up your environment.
2. Check the consistency of your 1.0 database using the Consistency Checker version for the database from which you are exporting.
3. Export your data from the 1.0 database.
4. Modify your environment for import.
5. Import your formats into the 1.1 database.
6. Check the consistency of your 1.1 database using the Consistency Checker Version 1.1.

Setting Up Your Environment

The sqlsvses.cfg File

Create the sqlsvses.cfg file. This file is used by the import and export utilities to create a session with the database server. Place this file in a the bin directory where the NNFIe and NNRIe utilities are located.

Note:

One sqlsvses.cfg can be created and used for both NNFIe, which migrates formats, and NNRIe, which migrates rules.

Oracle

The sqlsvses.cfg file must contain:

```
nnfie:<dbms instance>:<user>:<password>:
nrmie:<dbms instance>:<user>:<password>:
```

Sybase and SQL Server

The sqlsvses.cfg file must contain:

```
nnfie:<dbms instance>:<user>:<password>:<database>
nrmie:<dbms instance>:<user>:<password>:<database>
```

DB2

The sqlsvses.cfg file must contain:

```
nnfie:<database name or alias>:<user>:<password>:
nrmie:<database name or alias>:<user>:<password>:
```

Environment Variables

Oracle

Set the following:

```
ORACLE_SID=<servername>
ORACLE_HOME=<your oracle database directory>
```

Sybase and SQL Server

Set the following:

```
SYBASE=<your sybase database directory>
```

DB2

Set the following:

```
DB2INSTANCE=<your DB2 instance name>
```

Checking Consistency

For NEONFormatter and NEONRules, run the Consistency Checker, using the version that matches the version of the database from which you are exporting. You may want to direct the output to a file, as shown in the examples below, rather than standard out because the output from the scripts could be substantial.

The procedure to use the Consistency Checker is available in the *MQSeries Integrator System Management* guide.

Oracle

UNIX

```
formatcc10.ksh <user> <password> <instance> >formatcc10.log
rulecc10.ksh <user> <password> <instance> >rulecc10.log
```

Windows NT

```
formatcc10.cmd <user> <password> <instance> >formatcc10.log
rulecc10.cmd <user> <password> <instance> >rulecc10.log
```

Sybase and SQL Server

UNIX

```
formatcc10.ksh <user> <password> <dbms instance> <database>  
>formatcc10.log
```

```
rulecc10.ksh <user> <password> <dbms instance> <database>  
>rulecc10.log
```

Windows NT

```
formatcc10.cmd <user> <password> <dbms instance> <database>  
>rulecc10.log
```

```
rulecc10.cmd <user> <password> <dbms instance> <database>  
>rulecc10.log
```

DB2

UNIX

```
formatcc10.ksh <user> <password> <database name or alias>  
>formatcc10.log
```

```
rulecc10.ksh <user> <password> <database name or alias>  
>rulecc10.log
```

Windows NT

```
formatcc10.cmd <user> <password> <database name or alias>  
>formatcc10.log
```

```
rulecc10.cmd <user> <password> <database name or alias>  
>rulecc10.log
```

Exporting Formats and Rules

To export formats from your 1.0 database, run NNFie and to export rules, run NNRie, using the version that matches the version of the database from which you are exporting.

The data is exported to files named NEONet.fie and NEONet.rie.

DBMS platforms, MQSeries Integrator 1.0 database:

```
NNFie10 -e NEONet.fie
NNRie10 -e NEONet.rie
```

Modifying Your Environment for Import

For all DBMS platforms, modify your sqlsvses.cfg file to change the instance, username, password, and database (for Sybase and SQL Server) parameters to reflect the MQSeries Integrator Version 1.1 database into which you are importing formats and rules.

Importing Formats and Rules Into Your 1.1 Database

To import formats run NNFie Version 1.1 and to import rules, run NNRie Version 1.1. Make sure you have instantiated the 1.1 database before you attempt to import formats and rules.

UNIX

```
NNFie -i NEONet.fie
NNRie -i NEONet.rie
```

Windows NT

```
NNFie.cmd -i NEONet.fie
NNRie.exe -i NEONet.rie
```

Checking the Consistency of Your 1.1 Database

Run the Consistency Checker Version 1.1. The output is directed to log files named `formatcc11.log` and `rulecc11.log`.

Oracle

UNIX

```
formatcc11.ksh <user> <password> <instance> >formatcc.log  
rulecc11.ksh <user> <password> <instance> >rulecc.log
```

Windows NT

```
formatcc11.cmd <user> <password> <instance> >formatcc.log  
rulecc11.cmd <user> <password> <instance> >rulecc.log
```

Sybase and SQL Server

UNIX

```
formatcc11.ksh <user> <password> <dbms instance> <database>  
>formatcc11.log
```

```
rulecc11.ksh <user> <password> <dbms instance> <database>  
>rulecc11.log
```

Windows NT

```
formatcc11.cmd <user> <password> <dbms instance> <database>  
>formatcc11.log
```

```
rulecc11.cmd <user> <password> <dbms instance> <database>  
>rulecc11.log
```

DB2

UNIX

```
formatcc11.ksh <user> <password> <database name or alias>  
>formatcc11.log
```

```
rulecc11.ksh <user> <password> <database name or alias>  
>rulecc11.log
```

Windows NT

```
formatcc11.cmd <user> <password> <database name or alias>  
>formatcc11.log
```

```
rulecc11.cmd <user> <password> <database name or alias>  
>rulecc11.log
```

Note:

The *System Management* guide provides detailed information to help you resolve NNFie and NNRie conflicts.

Chapter 8

Uninstalling MQSeries Integrator

If you have MQSeries Integrator Version 1.0 installed and are now installing MQSeries Integrator Version 1.1, you must uninstall Version 1.0 before you install Version 1.1 on NT. Be sure to copy and keep any code you may have added to Version 1.0 before you uninstall. You do not have to uninstall from UNIX.

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 -9 pid** (pid is the process id for the daemon process)
 - (Windows NT) Press Ctrl+Alt+Delete 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.
 - Click Stop.
2. From the Windows NT Control Panel, choose Add/Remove Programs.
3. Select MQSeries for Windows NT.
4. Click Add/Remove.
5. Select the components that you want to remove.
6. For MQSeries Server to NT, select either Programs Only or Programs and Data.
7. Click Remove.
8. Select MQSeries Integrator.
9. Click Add/Remove.
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	To remove mqi.rte To remove MQSeries Integrator Version 1.1, mqi11.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, click OK. 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 105.

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, click Product Summary. 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 from Solaris:

1. Choose one of the following:
 - To remove MQSeries Integrator Version 1.0, type **pkgrm mqi**.
 - To remove MQSeries Integrator Version 1.1, type **pkgrm mqi110**.

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. Click Add/Remove.

Appendix A

Calculating Sizing Data

Formatter Space Requirements

To calculate the total database space required for `NEONFormatter`, you must estimate the number of objects used by `NEONFormatter`. 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):

$$\begin{aligned}
 & (F/40) \times 4506 + \\
 & (D/13) \times 4506 + \\
 & (IPC/25) \times 4506 + \\
 & (OFC/43) \times 4506 + \\
 & (FIF/143) \times 4506 + \\
 & (FOF/143) \times 4506 + \\
 & (CF/91) \times 4506 + \\
 & (NV/43) \times 4506 = \\
 & \text{FSpace}
 \end{aligned}$$

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):

$$\begin{aligned}
 &(1819 + (164 \times F)) + \\
 &(1819 + (52 \times D)) + \\
 &(1819 + (164 \times IPC)) + \\
 &(82 \times NV) + \\
 &(1819 + (563 \times OFC)) + \\
 &(1819 + (60 \times FIF)) + \\
 &(1819 + 66 \times FOF)) + \\
 &(1819 + (60 \times CF)) =
 \end{aligned}$$

Fspace

Microsoft SQL Server

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

$$\begin{aligned}
 &(1821 + (168 \times F)) + \\
 &(1821 + (56 \times D)) + \\
 &(1821 + (200 \times IPC)) + \\
 &(84 \times NV) + \\
 &(1821 + (615 \times OFC)) + \\
 &(1821 + (88 \times FIF)) + \\
 &(1821 + (100 \times FOF)) + \\
 &(1821 + (84 \times CF)) =
 \end{aligned}$$

FSpace

Sybase

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

$$\begin{aligned}
 &(1821 + (168 \times F)) + \\
 &(1821 + (56 \times D)) + \\
 &(1821 + (200 \times IPC)) + \\
 &(84 \times NV) + \\
 &(1821 + (615 \times OFC)) + \\
 &(1821 + (88 \times FIF)) + \\
 &(1821 + (100 \times FOF)) + \\
 &(1821 + (84 \times CF)) = \\
 &F\text{Space}
 \end{aligned}$$

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

Rules 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):

$$\begin{aligned}
 & (AG/69) \times 4506 + \\
 & (A/23) \times 4506 + \\
 & (MT/125) \times 4506 + \\
 & (R/39) \times 4506 + \\
 & (AO/29) \times 4506 + \\
 & (S/16) \times 4506 = \\
 & RSpace
 \end{aligned}$$

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):

$$(1318 + (43 \times AG)) +$$

$$(1322 + (13 \times MT)) +$$

$$(1322 + (535 \times R)) +$$

$$(1322 + (216 \times A)) +$$

$$(1322 + (240 \times S)) +$$

$$(1322 + AO) =$$

RSpace

Microsoft SQL Server

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

$(1322 + (47 \times AG)) +$

$(1330 + (17 \times MT)) +$

$(1330 + (601 \times R)) +$

$(1330 + (242 \times A)) +$

$(1330 + (260 \times S)) +$

$(127 + AO) =$

RSpace

Sybase

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

$(1322 + (47 \times AG)) +$

$(1330 + (17 \times MT)) +$

$(1330 + (601 \times R)) +$

$(1330 + (242 \times A)) +$

$(1330 + (260 \times S)) +$

$(127 + AO) =$

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 the 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

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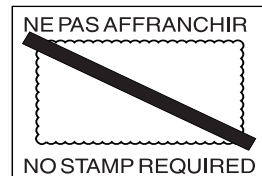
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