

Rational Integration Tester



Installation Guide

Version 8.0.0



Note

Before using this information and the product it supports, read the information in “Notices” on page 57.

This edition applies to version 8.0.0 of Rational Integration Tester and to all subsequent releases and modifications until otherwise indicated in new editions.

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About this Publication

Contents

Intended Audience

Scope

Typographical Conventions

Contacting IBM Support

This guide describes how to install and configure IBM® Rational® Integration Tester.

Intended Audience

This document is intended for users who understand how to prepare for and install commercial software on Microsoft Windows and Linux- and Unix-based operating systems.

Scope

This document describes how to install and configure IBM Rational Integration Tester. The document does not discuss specific messaging technologies, for example, TIBCO EMS, JMS implementations, and so on.

If you wish to familiarize yourself with such technologies, please refer to the documentation that is provided by the relevant companies or individuals.

Typographical Conventions

The following typographical conventions are observed throughout this document.

Type	Usage
Constant Width	Program output, listings of code examples, file names, commands, options, configuration file parameters, and literal programming elements in running text.
<i>Italic</i>	Document title names in statements that refer you to other documents. Also used to highlight concepts when first introduced.
Bold	Menu items in graphical user interface windows (such as Microsoft Windows-based or UNIX X Window applications) from which you select options or execute macros and functions. Submenus and options of a menu item are indicated with a “greater than” sign, such as Menu > Submenu or Menu > Option .

Contacting IBM Support

To contact IBM Support, see: www.ibm.com/contact/us/en/

Before Installing Rational Integration Tester

Contents

Hardware Requirements

Software Requirements

Installation Planning

This chapter describes the hardware, software, and installation planning requirements of Rational Integration Tester.

1.1 Hardware Requirements

The following table describes the **minimum** hardware requirements of Rational Integration Tester.

Requirement	Description
Free Disk Space	<ul style="list-style-type: none">• 400 MB including Java Runtime Environment (JRE)• 300 MB without JRE (applies only to IBM AIX®, Linux, and Oracle Solaris installations)
Physical RAM	4 GB

1.2 Software Requirements

The following table describes the software requirements of Rational Integration Tester.

Requirement	Supported Options
Operating System	<ul style="list-style-type: none">• Microsoft Windows 2000, Windows Server 2003, Windows Server 2008, Windows XP, Windows Vista, or Windows 7• Oracle Solaris 8 (or later)• Red Hat Enterprise Linux v4• IBM AIX versions 4.33, 5.1, 5.2, and 5.3
Java Runtime Environment (JRE)	<ul style="list-style-type: none">• Version 1.7 (installed by IBM Installation Manager)
Rational Integration Tester Project Results Database	<p>A project database is required for storing test results and performance data.</p> <p>Database creation scripts are provided for use with the following supported databases:</p> <ul style="list-style-type: none">• Oracle 9.2i, 10g, or 11g• MySQL 5.0.1 (or later) and MySQL 5.1.x• MS SQL Server 2005 <p>For more information, refer to Creating the Project Database.</p>

1.2.1 Additional Software Requirements

The following sections outline additional Rational Integration Tester software requirements that may apply to your environment.

1.2.1.1 Enabling HTTP Messaging

To enable full HTTP functionality, the required packet capture libraries must be installed. For more information, refer to IBM *Rational Integration Tester Reference Guide for HTTP & Web Services*.

1.2.1.2 Configuring Single Sign On for Project Permissions

Rational Integration Tester project permissions (Active Directory) use Kerberos for authentication, the realm and key distribution center of which must be supplied to Rational Integration Tester. This can be done in the `krb5.ini` file (or `krb5.config`), or by applying the following JVM arguments in Rational Integration Tester's Library Manager:

- `-Djava.security.krb5.realm=<REALM>`
- `-Djava.security.krb5.kdc=<KEY DISTRIBUTION CENTER>`

In Windows, these can be found in the following environment variables:

- `<REALM>` should be the value of `USERDOMAIN`.
- `<KEY DISTRIBUTION CENTER>` should be the value of `LOGONSERVER` with any leading slashes removed (that is, `DOMAIN_SERVER` not `\\DOMAIN_SERVER`).

Additionally, it may be necessary to add the following registry value:

- `allowtgtsessionkey` should be a `DWORD` value with a value of 1.

In Windows XP, add `allowtgtsessionkey` to:

```
HKEY_LOCAL_MACHINE\System\CurrentControlSet\Control\Lsa\Kerberos
```

In Windows 2000, Windows Vista, and Windows 7, add `allowtgtsessionkey` to:

```
HKEY_LOCAL_MACHINE\System\CurrentControlSet\Control\Lsa\Kerberos\Parameters
```

1.2.1.3 Installing Systems, Transports, and Technologies Supported by Rational Integration Tester

Rational Integration Tester enables you to test numerous messaging and governance implementations, workflow and BPM systems, and database providers.

The system or technology being tested must be installed and available to Rational Integration Tester. For details about which systems and transports are supported, as well as details about connection requirements, refer to [Appendix A: Using Library Manager](#).

1.3 Installation Planning

Rational Integration Tester employs a decoupled, plug-in architecture to provide maximum flexibility regarding the messaging transport software that can be tested. This architecture also allows the application to load and execute additional components, such as functions, at runtime.

The program code for each transport is contained in one or more JAR files that must be housed within the Rational Integration Tester's `plugins` directory. The libraries upon which the transports depend should be made available to the application by means of Library Manager. At runtime, Rational Integration Tester will load each of the available plugins, making them available from the appropriate menus.

Functions are loaded in the same dynamic fashion on a **per project** basis. Located at the root of each project is a folder named `classes` that will contain one or more JAR or CLASS files. Those which conform to the functions interface will be made available from within the function action in test sequences.

Some familiarity with the messaging system under test is necessary to get the best out of Rational Integration Tester. Some tests may already exist and these will need to be ported to Rational Integration Tester. A subscriber can be configured to capture messages produced by other test systems and save them to a file. These messages can then be imported into a Rational Integration Tester test.

Installing Rational Integration Tester

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[Installing on Windows or Linux/
Unix](#)

[Managing Licenses](#)

Rational Integration Tester is part of the IBM Rational Test Workbench offering.

For information about installing this offering, refer to the Rational Test Workbench installation guide in the launchpad documentation folder on the Setup disk.

This chapter guides you through the installation of the Rational Integration Tester as part of the Rational Test Workbench installation, using the IBM Installation Manager application.

2.1 Installing on Windows or Linux/Unix

In the Rational Test Workbench media, the Setup disk includes the launchpad program, which provides you with a single location to start the installation process.

Use the launchpad program to start the installation of software in these cases:

- Installing from product CDs
- Installing from an electronic image on your local file system
- Installing from an electronic image on a shared drive

2.1.1 Starting the Launchpad

To install the product, start the launchpad program.

Depending on the source of the product installation, follow one of these procedures to start the launchpad program.

If you are installing from the CDs, complete these steps:

1. Insert the Setup CD into your CD drive.
2. On Linux/Unix, mount the CD drive.
3. If autorun is enabled on your computer, the launchpad program starts automatically. If the launchpad does not start automatically, complete one of these steps:
 - On Windows, run the `launchpad.exe` command, which is located in the root directory of the CD.
 - On Linux/Unix, run the `launchpad.sh` file, which is located in the root directory of the CD.

If you are installing from electronic disks that you downloaded from IBM Passport Advantage®, open a command line, and change to the directory where you extracted the disk images; and then at the command prompt, complete one of these steps:

- On Windows, enter **RTW_SETUP\launchpad.exe**.
- On Linux/Unix, enter **RTW_SETUP/launchpad.sh**.

The launchpad program starts.

2.1.2 Starting Installation from the Setup Disk

To install Rational Integration Tester as a non-administrator, you must manually run the `userinst` program from the Setup disk instead of running the launchpad program. Running the `userinst` program provides the same functions as starting the product installation from the launchpad.

Depending on the source of your product installation, complete one of these procedures to install the product.

If you are installing from the CDs, follow these steps:

1. Insert the Setup CD into your CD drive.
2. On Linux/Unix, mount the CD drive.
3. If `autorun` is enabled on your computer, the launchpad program starts automatically. Stop the launchpad program.
4. In a command line, change to the root of the Setup disk, and complete one of these steps:
 - On Windows, as an administrator, enter **`InstallerImage_win32\install.exe`**.
 - On Windows, as a non-administrator enter **`InstallerImage_win32\userinst.exe`**.
 - On Linux/Unix, as a non administrator, enter **`InstallerImage_linux/install`**.
 - On Linux/Unix, as an administrator, enter **`InstallerImage_linux/userinst`**.

If you are installing from electronic disks that you downloaded from Passport Advantage, open a command line, and change to the directory where you extracted the disk images; then complete one of these steps:

- On Windows, as an administrator, enter **`RTW_SETUP\InstallerImage_win32\install.exe`**.
- On Windows, as a non-administrator, enter **`RTW_SETUP\InstallerImage_win32\userinst.exe`**.
- On Linux/Unix, as an administrator, enter **`RTW_SETUP/InstallerImage_linux/install`**.
- On Linux/Unix, as a non administrator, enter **`RTW_SETUP/InstallerImage_linux/userinst`**.

When the `userinst` or `install` program starts, Installation Manager is installed if it is not already on your computer. Furthermore, Installation Manager is configured with the location of the repository (installation files) for Rational Integration Tester.

2.1.3 Installing the Product Software

By starting the installation process from the launchpad program, Installation Manager is automatically installed if it is not already on your computer, and it starts preconfigured with the location of the repository that contains the product package. If you install and start Installation Manager directly, you must set repository preferences manually.

NOTE: To learn how to install the product from a command prompt in silent mode, see the Installing Silently section of the Installation Manager Information Center:

To install the product from the launchpad:

1. If you are installing from compressed files, such as .zip or ISO files, extract the files into a common directory. Extract the disk images to directories that are named **/disk1**, **/disk2**, and so on. Extract the Setup disk image to a directory that is named **RTW_SETUP**. The Setup disk contains the launchpad program.
2. If you are installing from a CD, insert the first product disk into your CD drive. If autorun is enabled on your workstation, the launchpad starts automatically. Otherwise, start the launchpad program manually.
 - On Windows, run the `launchpad.exe` command, which is located in the root directory of the Setup disk installation image.
 - On Linux/Unix, run the `launchpad.sh` command, which is located in the root directory of the Setup disk installation image.
3. **Optional:** Select a language in which to run the launchpad and Installation Manager.
4. Select the product to install from the launchpad menu. The Install Packages window opens.
5. Click a product package to highlight it. The description of the package is displayed in the Details pane at the bottom of the screen.
6. To search for updates to the product packages, click **Check for Other Versions, Fixes, and Extensions**. If updates for a product package are found, they are displayed in the Installation Packages list on the Install Packages page below their corresponding products. Only recommended updates are displayed by default.

NOTE: To ensure the best performance of the installation, and the products after they are installed, install the product updates.

- To view all updates that are found for the available packages, click **Show all versions**.

-
- To display a package description in the Details pane, click the package name. If additional information about the package is available, such as a readme file or release notes, a More info link is included at the end of the description text. Click the link to display the additional information in a browser. To fully understand the package that you are installing, review all information.

NOTE: For Installation Manager to search the predefined IBM update repository locations for the installed packages, the Search the linked repositories during installation and updates preference on the Repositories preference page must be selected. This preference is selected by default. Internet access is also required. A progress indicator shows that the search is taking place. You can install updates at the same time that you install the base product package.

7. Select the product package and updates to the package to install.
 - Updates that have dependencies are automatically selected and cleared together.
 - Click **Next** to continue.

NOTE: You might see the error, “Packages IBM Rational *product name and version* and IBM Rational *product name and version* cannot coexist in the same package group.” To resolve this error, search for updates to the product packages by clicking **Check for Other Versions, Fixes, and Extensions** and install them. If updates for a product package are found, they are displayed in the Installation Packages list on the Install Packages page below their corresponding products. Only recommended updates are displayed by default.

8. On the Licenses page, read the license agreement for the selected package. If you selected more than one package to install, there might be a license agreement for each package. On the left side of the License page, click each package version to display its license agreement. The package versions that you selected to install (for example, the base package and an update) are listed under the package name.
 - If you agree to the terms of all of the license agreements, click **I accept the terms in the license agreement**.
 - Click **Next** to continue.
9. On the Location page:
 - Create a new package group into which the product package will be installed. Alternatively, if you are installing an update, use the existing package group. A

-
- package group represents a directory in which packages share resources with other packages in the same group.
- **Optional:** If you are installing the package on a computer that is running a 64-bit operating system, you can install the 32-bit version or the 64-bit (default) version of the package.
 - **Optional:** Click **Browse** to change the location of the installation if desired. The default location displayed depends on whether you are using a 32-bit or 64-bit operating system and whether you have chosen to install the 32-bit or the 64-bit version of the package.
 - Click **Next** to continue.
10. On the Features page, select the package features to install.
- **Optional:** If you are installing the package on Windows, select **Network Packet Capture** if you want to enable watch mode when using HTTP or TCP transports. If you are installing the package on Oracle Solaris and you want to enable watch mode when using HTTP transports, refer to [Configuring HTTP Watch Mode \(Solaris Installations Only\)](#). (HTTP watch mode is not currently supported on the IBM AIX and Linux platforms.)
 - **Optional:** To see the dependency relationships between features, select **Show dependencies**. Installation Manager automatically enforces any dependencies with other features and displays updated download sizes and disk space requirements for the installation.
 - **Optional:** Click a feature to view its brief description under **Details**.
 - Click **Next** to continue.
11. On the Summary page, review your choices before installing the product package.
- To change the choices that you made on previous pages, click **Back**, and make your changes.
 - When you are satisfied with your installation choices, click **Install** to install the package. A progress indicator shows the percentage of the installation that is completed.
12. When the installation process is complete, a message confirms the completion of the process.
- Click **View Log File** to open the installation log file for the current session in a new window. You must close the Installation Log window to continue.
 - **Important:** If the package is being installed for the first time, you **must** run the Library Manager application to configure the libraries that are required by
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different plugins. (For information about using this application, refer to [Appendix A: Using Library Manager](#).) However, if you are installing an update, you can choose not to run Library Manager. When finished in Library Manager, click **OK** to save any changes. If you do not save your changes, the package that you have installed may not operate correctly.

- Click **Finish** to start the selected package. The Install Package wizard closes and you are returned to the launchpad program.
13. License the package (for information about this, refer to [Managing Licenses](#)).
 14. To complete installing and configuring the package, refer to [After Installing Rational Integration Tester](#).

2.2 Managing Licenses

Using the Manage Licenses wizard, you can apply a license to a product or upgrade trial versions of an offering to a licensed version by importing a product activation kit. You can also enable floating license enforcement for offerings with trial or permanent licenses to use floating license keys from a license server.

For more information about managing licenses for your Rational product, see these resources:

- The technote at <http://www.ibm.com/support/docview.wss?uid=swg21250404> that deals with Rational product activation.
- The Rational licensing support page at <http://www.ibm.com/software/rational/support/licensing/>.
- The Rational Common Licensing information center at <http://publib.boulder.ibm.com/infocenter/rational/v0r0m0/index.jsp>.

2.2.1 License Descriptions

As a purchaser of an IBM Rational software product, you can choose from four types of product licenses:

- Authorized User licenses
- Floating licenses
- Token licenses

The best choice for your organization depends upon how many people use the product, how often they require access, and how you prefer to purchase software.

2.2.1.1 Authorized User Licenses

An IBM Rational Authorized User license authorizes an individual to use a Rational software product. Purchasers must obtain an Authorized User license for each individual user who accesses the product in any manner. An Authorized User license cannot be reassigned unless the purchaser replaces the original assignee on a long-term or permanent basis.

For example, if you purchase one Authorized User license, you can assign that license to one individual who can use the Rational software product exclusively. The Authorized User license does not authorize a second individual to use that product at any time, even if the licensed individual is not using the product.

2.2.1.2 Floating Licenses

An IBM Rational Floating license is a license for a single software product that can be shared among multiple team members; however, the total number of concurrent users cannot exceed the number of floating licenses you purchase. For example, if you purchase one floating license for a Rational software product, any user in your organization can use the product at any given time. Another person who wants to access the product must wait until the current user logs off.

To use floating licenses, you must obtain floating license keys and install them on a Rational License Server. The server responds to user requests for access to the license keys; the server grants access to the number of concurrent users that equals the number of licenses the organization purchased.

2.2.1.3 Token Licenses

The token-based license model means that you can buy a certain number of token licenses. If you use a Rational tool that checks out a feature that is token-based, the feature line in the license file specifies the number of tokens that are checked out. Token-based licenses can only be used with floating licenses. They cannot be used for authorized user license. For more details about token licensing, contact your local IBM marketing representative.

2.2.2 Enabling Licenses

If you are installing the software for the first time or want to extend a license to continue using the product, you have options on how to enable licensing for your product.

Licenses for this product are enabled in three ways:

- Importing a product activation kit
- Enabling Rational Common Licensing to obtain access to floating license key

2.2.2.1 Activation Kits

The Product Activation Kit CD contains the permanent license key for you product. You use Installation Manager to import the activation kit to your product.

2.2.2.2 Floating License Enforcement

Optionally, you can obtain floating license keys, install IBM Rational License Server, and enable floating license enforcement for your product. Floating license enforcement provides these benefits:

- License compliance enforcement throughout the organization

-
- Fewer license purchases
 - License keys served for IBM Rational Team Unifying and Software Delivery Platform desktop products from the same license server

NOTE: Some versions of Rational products require an upgraded version of the Rational License Server. See this support article for license upgrade information: <http://www.ibm.com/support/docview.wss?uid=swg21250404>

For more information about obtaining activation kits and floating licenses, see Purchasing licenses.

2.2.3 Purchasing Licenses

You can purchase new licenses if your current product license is about to expire or to acquire additional product licenses for team members.

To purchase a new license:

1. Determine the type of license to purchase.
2. Go to ibm.com® or contact your IBM sales representative to purchase the product license. For details, visit the IBM web page on How to buy software.
3. Depending on the type of license you purchase, use the Proof of Entitlement that you receive and complete one of these steps to enable your product:
 - If you purchase Authorized User licenses for your product, go to IBM Passport Advantage, and follow the instructions there for downloading your product activation kit. After you have downloaded the activation kit, import the product activation .jar file by using Installation Manager.

Back up the product activation .jar file. If you uninstall the product and then install the product again, you might need to use the product activation .jar file to license the product again.

- If you purchase floating licenses for your product, go to the IBM Rational Licensing and Download Center, log in (IBM registration is required), and then click the link to connect to the IBM Rational License Key Center. There you can use your Proof of Entitlement to obtain floating license keys for your license server.

Optionally, you can go to IBM Passport Advantage to download the activation kit for your product. After importing the activation kit, you can switch from a

floating to a permanent license type if you use your computer offline for long periods.

To import the activation kit or enable floating license support for your product, use the Manage Licenses wizard in Installation Manager.

2.2.4 Viewing License Information for Installed Packages

You can review license information for your installed packages, including license types and expiration dates, from Installation Manager.

To review your license information:

1. Start Installation Manager.
2. On the main page, click **Manage Licenses**.

The package vendor, current license types, and expiration dates are displayed for each installed package.

After Installing Rational Integration Tester

Contents

Introduction

Reviewing Installed Items

Verifying the Storage of User Files

Creating the Project Database

Configuring HTTP Watch Mode (Solaris Installations Only)

Upgrading Rational Integration Tester

Uninstalling Rational Integration Tester

This chapter provides information about tasks that can be completed after installing Rational Integration Tester.

3.1 Introduction

After installing Rational Integration Tester, you can:

- Review the installed items to verify that the installation.
- Verify the storage of user files.
- Create the project database for storing Rational Integration Tester project data.
- Upgrade the software.
- Uninstall the software.

The follow sections describe these tasks.

3.2 Reviewing Installed Items

Depending upon what has been installed, the following directories will be created and populated under the installation directory.

Directory	Contents
config	Configuration and template files for charts, reporting, projects, and test plans
configuration	System configuration files
docs	Rational Integration Tester product documentation (PDFs)
dropins	User-created plugin files
examples	Example files for the FormatDate custom function
externalSchemaCache	Search location for schema files that may be accessed frequently but may not be accessible from the client computer
features	Version information for installed features/plugins
jre	Bundled Java runtime environment
license	Licensing files
lum	Licensing files
p2	Eclipse files
plugins	Rational Integration Tester transport plugin JAR files
properties	(Used by IBM Tivoli software.)
scripts	SQL scripts
tools	Additional tools
uninstall	Files for uninstalling Rational Integration Tester

3.3 Verifying the Storage of User Files

Rational Integration Tester projects may be created in any location to which a user has access. However, using a remote or network location can reduce Rational Integration Tester's performance significantly, so it is recommended that Rational Integration Tester is installed on a local drive.

Rational Integration Tester creates a `.rit8` directory in the user's home directory to store project and configuration information.

Subject to licensing agreements, a single shared location can be used to allow multiple Rational Integration Tester users on the same computer.

- On the Windows platform, the directory is typically be `C:\Documents and Settings\<User Name>\.rit8`.
- On AIX, Linux, or Solaris, the directory is typically `/home/<User Name>/.rit8`.

Configuration details that are stored include:

- Library Manager settings
- Recently used project lists
- Individual project details
- Project workspace properties
- Schema properties

3.4 Creating the Project Database

Historical test data and performance results from agents and probes are stored in the Rational Integration Tester project database. It is difficult to estimate the space that will be required as the number and type of tests to be run will vary. For example, lengthy performance tests can generate large amounts of data. When creating the project database, 50GB is probably a good starting point.

NOTE: Multiple Rational Integration Tester projects can reside in the same database schema without impacting one other since the projects (and their artefacts) have unique keys.

After installing Rational Integration Tester, you should create the project database in an existing, empty, and supported database (refer to [Software Requirements](#)). The required Oracle JDBC drivers are installed with Rational Integration Tester, and connectivity will be established later from all clients, including ants and probes.

others download

The database creation scripts can be found in the `scripts` folder of your Rational Integration Tester installation (for example, `C:\Program Files\IBM\RationalIntegrationTester\scripts`). A script is provided for each of the supported database providers:

- Oracle: `ghtester_oracle.sql`
- MySQL: `ghtester_mysql.sql`
- MS SQL Server: `ghtester_mssql.sql`

The appropriate script should be run against an empty database by a database administrator.

3.4.1 Oracle

To create the Rational Integration Tester database by using Oracle:

1. Create a new user within a suitably sized tablespace.
2. Grant the following privileges to the new user: `CONNECT`, `CREATE TRIGGER`, `CREATE PROCEDURE`, `CREATE TABLE`, `CREATE SEQUENCE`, `CREATE VIEW`, and `CREATE SYNONYM`.
3. Logged in as the newly created user, run the `ghtester_oracle.sql` script against your database.

NOTE: There are a variety of ways to run the script against the database. For example, using Oracle's SQL Command Line utility, run a command of the following format:

```
@ "<Rational Integration Tester Installation  
Directory>/scripts/ghtester_oracle.sql "
```

3.4.2 MySQL

To create the Rational Integration Tester database by using MySQL:

1. Logged in as user root, create and use a new database.
2. Run (source) the `ghtester_mysql.sql` script against the new database.

NOTE: If you are running from the command line on a Windows system, the path separator should be reversed. For example:

```
mysql> source C:/Program Files/IBM/  
RationalIntegrationTester/scripts/ghtester_mysql.sql;
```

3.4.3 MS SQL Server

To create the Rational Integration Tester database by using MS SQL Server:

1. Create a new database.
2. Run the `ghtester_mssql.sql` script against the new database.

NOTE: If necessary, the SQL Server 2005 driver (`sqljdbc.jar`) can be downloaded from the Microsoft Developer Network website.

3.5 Configuring HTTP Watch Mode (Solaris Installations Only)

To complete installing Rational Integration Tester on Oracle Solaris, you should configure HTTP watch mode with Java Packet Capture (JPCAP).

NOTE: HTTP Watch Mode is not currently supported on the IBM AIX and Linux platforms.

JPCAP is an open source Java library for capturing and sending network packets and can be configured with Rational Integration Tester to enable watch mode for HTTP transports.

To enable JPCAP support on Solaris:

1. Ensure that both LibPCAP and JPCAP are installed.

If they are not installed, install LibPCAP and then JPCAP (the order of installation is important) before continuing.

2. Ensure that the current user ID has write permissions to the Rational Integration Tester installation directories.
3. Find the `libpcap.so` file on the Rational Integration Tester server (for example, in `/usr/local/lib`).
4. Set the `LD_LIBRARY_PATH` variable to the location of `libpcap.so`.

For example (using bash):

```
export LD_LIBRARY_PATH=$LD_LIBRARY_PATH:/usr/local/lib
```

5. Logged in as user `root`, run `<Rational Integration Tester Installation Directory>/LibConfig`.

Library Manager should be displayed and the registered network device(s) on the server should be listed under **Default Network Device**.

6. Select the device that will carry packets transmitted to and from Rational Integration Tester.
7. When finished, click **OK** to save the changes and quit Library Manager.

3.6 Upgrading Rational Integration Tester

You can upgrade from earlier versions of Rational Integration Tester to Rational Integration Tester 8.0.

Sometimes, you may also have to upgrade the schema of the Rational Integration Tester project database

The following sections describe how to complete these upgrade tasks.

3.6.1 Before Upgrading the Software

Before upgrading an existing Rational Integration Tester installation, you must read the Release Notes to learn about changes that could affect your organization's use of Rational Integration Tester, especially any new features.

NOTE: If necessary, IBM can provide your organization with either on-site or online upgrade training. (For information about this, please contact IBM Support.)

3.6.1.1 Determining Upwards Compatibility of Existing Projects

In general, Rational Integration Tester projects are upwardly compatible when used within the same major version of Rational Integration Tester. That is, a project created in, say, Rational Integration Tester 8.x will work in Rational Integration Tester 8.y.

NOTE: GH Tester 5.x projects can be opened in Rational Integration Tester 8.0.

NOTE: It is also possible to migrate GH Tester 4.x projects to Rational Integration Tester 8.0. (For information about this, please contact IBM Support.) However, projects from releases earlier than GH Tester 4.x **cannot** be migrated to Rational Integration Tester 8.0.

If upwards compatibility is not supported by a specific release, it will be highlighted in the Release Notes, so you can plan your upgrades as needed.

NOTE: After a project has been loaded into a newer version of Rational Integration Tester, it **may** no longer operate correctly if it is loaded subsequently into a previous version. Therefore, it is essential to use a **copy** of each of your projects during upgrade testing.

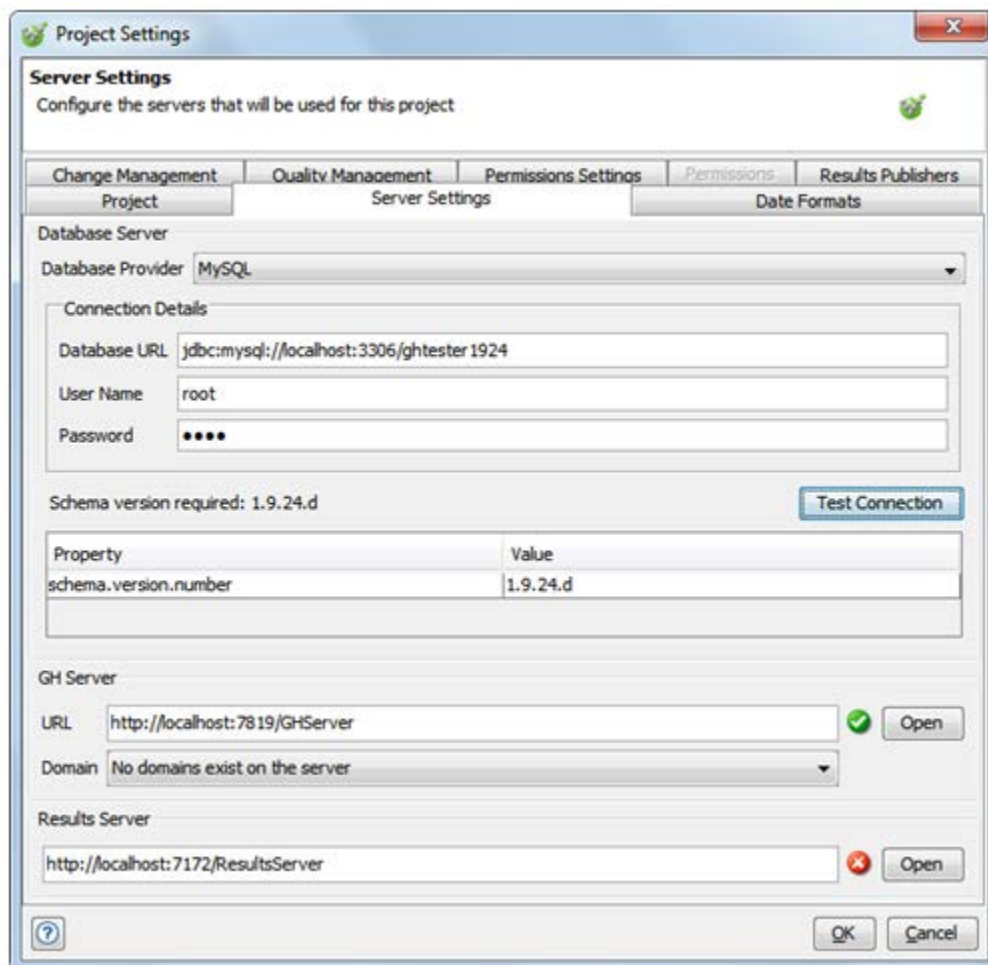
3.6.2 Upgrading the Software

To upgrade a Rational Integration Tester installation:

1. Install the new version of Rational Integration Tester as described in [Installing Rational Integration Tester](#).
2. Verify that the schema version of the Rational Integration Tester project database in use is correct for the new version of Rational Integration Tester.

The required schema version is specified in the Release Notes.

You can verify the schema version by clicking **Test Connection** on the **Server Settings** tab on Rational Integration Tester's Project Settings dialog box, which is opened by clicking **Project > Project Settings** on the menu bar.



If the schema needs to be upgraded, refer to [Upgrading Project Database Schema](#).

-
3. Verify that the new version of Rational Integration Tester runs your existing tests successfully before rolling the product out for general release.

Although IBM performs extensive regression testing before each release, it is not possible to test every combination of test scenarios that may exist in customer environments.

3.6.3 Upgrading Project Database Schema

This section provides information about upgrading the schema version of your Rational Integration Tester project database, and illustrates the process with an example.

NOTE: Please ensure that you have full backups of your project database before making any changes.

NOTE: IBM does not provide scripts to downgrade databases, so a tested backup is essential.

3.6.3.1 Example

IBM provides the scripts that are required to upgrade the project database schema, and they can be found in the *<Rational Integration Tester Installation Directory>\scripts*.

The following example assumes that you are using Oracle for the project database and that the current schema version is 22.

Run the following scripts in this order:

- `patch-1_9_22-1_9_23_oracle.sql`
- `patch-1_9_23-1_9_24_oracle.sql`
- `patch-1_9_24-1_9_24_a_oracle.sql`
- `patch-1_9_24_a-1_9_24_c_oracle.sql`
- `patch-1_9_24_c-1_9_24_d_oracle.sql`

3.6.3.2 Ensuring Compatibility with Rational Integration Tester Client Versions

From GH Tester 5.2.11 onwards, unless otherwise stated in release notes, the previous release of Rational Integration Tester will run on the next release's database schema.

This enables you to upgrade your database schema without having to upgrade all Rational Integration Tester clients simultaneously. After the database schema upgrade

is complete, Rational Integration Tester clients can be upgraded to the new release as required.

NOTE: For versions of GH Tester earlier than 5.2.11, Rational Integration Tester client software and the database schema must be kept in step.

For example, if you are using GH Tester 5.2.11, which uses database schema 1.9.24c, and you wish to upgrade to Rational Integration Tester 8.0.0, the first step is to update the database schema to 1.9.24d because it is required by Rational Integration Tester 8.0.0.

Existing GH Tester 5.2.11 clients will continue to operate normally against the updated database version. After the schema update is complete, individual client computers can be upgraded to Rational Integration Tester 8.0.0.

3.7 Uninstalling Rational Integration Tester

The IBM Installation Manager enables you to uninstall Rational Integration Tester.

The `.rit8` directory and some workspace and schema files that it contains may remain in the home directory of any user who launched Rational Integration Tester. These files or the entire directory may also be removed manually.

Troubleshooting

Contents

[Project Fails to Open — Duplicate Items](#)

[Rational Integration Tester Fails to Start](#)

[Linux/Unix: Program Does Nothing and Exits](#)

[Linux: Fail to Start - java.lang.UnsatisfiedLinkError](#)

This chapter provides information about resolving common problems that may arise when installing and running Rational Integration Tester.

4.1 Project Fails to Open – Duplicate Items

Each file within a Rational Integration Tester project has a unique identifier of the following format:

```
<editableResource createdTimestamp="1317292623890"  
createdUser="atester" id="-44ea417a:132b496f2c1:-7e17"  
type="test_resource"
```

This problem is usually caused by project files being copied using the operating system rather than copying within Rational Integration Tester.

NOTE: Rational Integration Tester must always be used to copy objects.

The error message will tell you which files have the same IDs and the solution is to remove one of them and reopen the project.

4.2 Rational Integration Tester Fails to Start

In some cases, the Rational Integration Tester workspace can become corrupted. Please try renaming the `.rit8` folder and restarting Rational Integration Tester.

4.3 Linux/Unix: Program Does Nothing and Exits

In *<Rational Integration Tester Installation Directory>*\configuration, please check for log files with the file name format *<UTC timestamp>.log* (for example, 1253866725028.log). A new log file is created for each execution of Rational Integration Tester and Library Manager (LibConfig). You can send any applicable files to IBM Support if you are unable to solve the problem.

4.4 Linux: Fail to Start - java.lang.UnsatisfiedLinkError

If the following error occurs, you may need to install the `libxtst` package:

```
java.lang.UnsatisfiedLinkError: /home/root/jdk1.6.0_16/jre/lib/  
i386/xawt/libmawt.so: libXtst.so.6: cannot open shared object  
file: No such file or directory
```

Please contact your system administrator for assistance.

Appendix A: Using Library Manager

Contents

Introduction

Configuring Application Settings

Configuring Third Party Plugins

Configuring JDBC Providers

Configuring Custom Providers

Configuring Default and Custom Provider Library Settings

Resolving Missing Libraries Errors

Using Library Manager Command- Line Options

Reusing Library Manager GUI Settings

This appendix describes how to use Library Manager, which is an application installed with Rational Integration Tester that enables you to manage the libraries (Java JAR files) that are required by different plugins.

5.1 Introduction

Rational Integration Tester uses a plugin architecture to provide support for various middleware and messaging technologies, so the list of third party products with which it interacts can become very large. Library Manager enables you to manage this list.

Therefore, when support for a new architecture or messaging plugin is required, you use Library Manager to add that support.

NOTE: If Rational Integration Tester and Rational Integration Tester Agent are installed on the same computer, Library Manager must be run during the installation of both applications.

If you are using Microsoft Windows, Library Manager can be launched from the IBM program group (default is **IBM > Rational Integration Tester**).

If you are using IBM AIX, Linux, or Oracle Solaris, you can launch Library Manager with *<Rational Integration Tester Installation Directory>/LibConfig*.

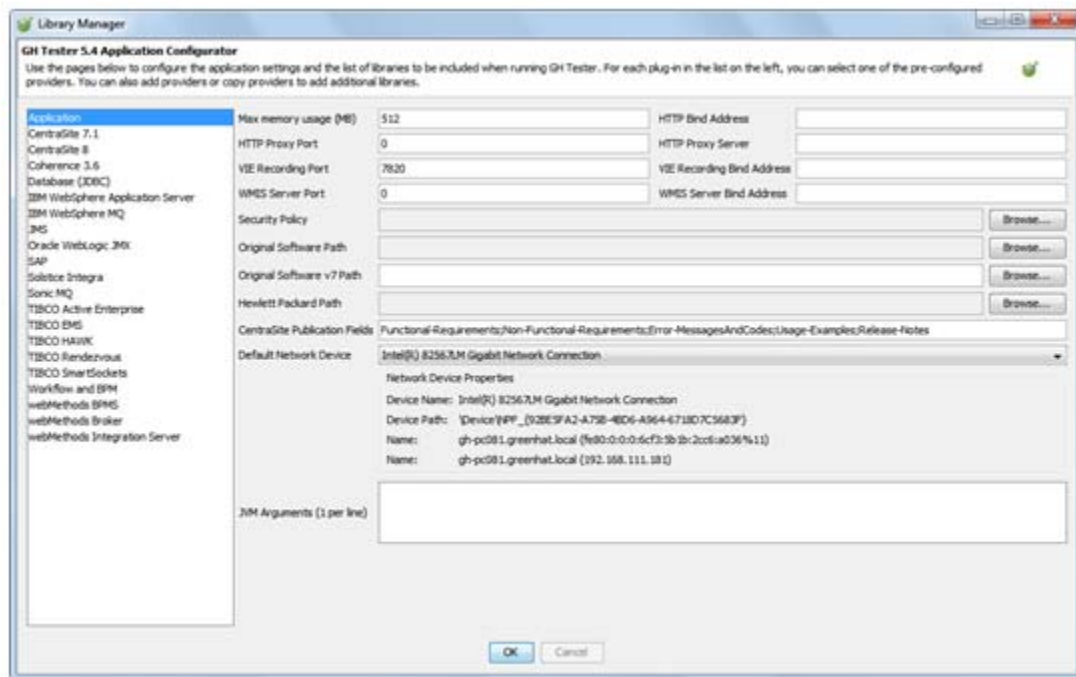
NOTE: On Linux, both Rational Integration Tester **and** Library Manager must be run as an administrator.

NOTE: If you need to run Rational Integration Tester as an administrator, you must first run Library Manager as an administrator. Similarly, if you want to run Rational Integration Tester as a non-administrator user, you must first run Library Manager as that user.

NOTE: Library Manager writes some of its configuration details to the user's home directory (that is, `.rit8`) and to the Rational Integration Tester installation directory. Please ensure that the user ID running Library Manager has sufficient permissions to write to the installation area.

On the Library Manager application window, Rational Integration Tester properties and third party plugins are listed alphabetically on the left side.

To view/modify a specific configuration, select it in the list. The settings for the selected entry are displayed on the right side of the screen.



When you have completed configuring Library Manager, click **OK** to save any changes that have been made and to apply the new settings. If Rational Integration Tester is currently running, you will need to restart it to ensure that any changes that you have made take effect.

NOTE: If Library Manager changes are not applied, you may not have sufficient user privileges. Depending on the operating system being used, you may have to rerun Library Manager as a user with administrative privileges or as an administrator (whichever is applicable).

5.2 Configuring Application Settings

Application settings enable you to configure general properties of the Rational Integration Tester application. Required values are populated with default settings when Library Manager is run for the first time. However, any of the default values can be modified.

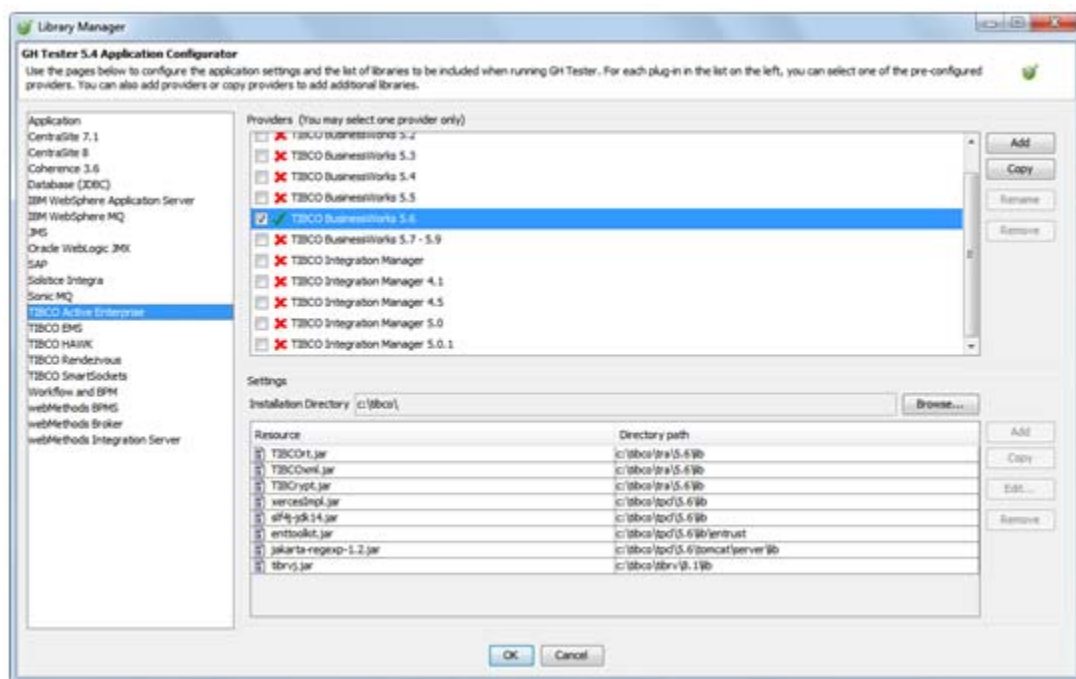
Setting	Description
Max memory usage	The amount of memory (in MB) that should be allocated to the Rational Integration Tester application. Allocating more memory can increase the performance of the application.
HTTP Bind Address	<p>The host name or IP address to which Rational Integration Tester should be bound. This is for use on systems with multiple network interfaces because it prevents Rational Integration Tester from binding to a network address that may not be accessible to remote systems.</p> <p>For example, if a network interface is on a private network and performance tests were run using this interface, the agents would not be able to reply back to the performance controller.</p>
WMIS Server Port	The port where Rational Integration Tester should listen for webMethods Integration Server requests (used when firewall configuration is necessary).
WMIS Server Bind Address	The host name or IP address to which Rational Integration Tester should be bound for webMethods Integration Server requests (for use on systems with multiple network interfaces, or to prevent Rational Integration Tester from binding to a network address that may not be accessible to remote systems).
HTTP Proxy Server & Port	The address and port of the proxy server that Rational Integration Tester should use to connect to HTTP hosts (if necessary).
Security Policy	(Reserved for future use.)
Original Software Path	The path to the Original Software testing module. This is used for running scripts and action maps with the GUI Interaction test action (specify the directory that contains the “Programs” directory).
Hewlett Packard Path	The installation path of HP QuickTest Professional, which is required for running QTP scripts with the GUI Interaction test action.
CentraSite Publication Fields	The default fields to be made available for publishing test suite summary reports to a configured CentraSite server. For more information, refer to <i>IBM Rational Integration Tester Integration Guide for Software AG CentraSite</i> .

Setting	Description
Default Network Device	The default, local network device to use for any direct network-related tasks, such as capturing HTTP packets. The properties of the selected device are displayed below the selection.
JVM Arguments	Arguments to pass to the JVM used by Rational Integration Tester and the command line application. For example, if you want to set the maximum amount of memory (in MB) allocated to the Java heap, you would enter <code>-Xmx<mem_size>m</code> (for example, <code>-Xmx512m</code>). NOTE: Separate arguments must be entered on their own line in Library Manager.

5.3 Configuring Third Party Plugins

The third party systems (plugins) that Rational Integration Tester supports are listed on the left side of Library Manager. For each plugin, one or more providers can be configured. Generally speaking, a provider is a version of an application whose libraries are needed by Rational Integration Tester to interact with the application. Each provider requires a specific set of libraries for use by Rational Integration Tester.

Each plugin is configured in two sections of Library Manager. The specific provider is selected in the upper portion of the screen, and the libraries required by that provider are specified or customized in the lower portion of the screen.



In the example shown above, support for TIBCO Active Enterprise is provided by an installation of BusinessWorks that is installed in the default location on the C: drive.

For the provider you want to use with Rational Integration Tester, select the check box next to the specific provider name. If you do not select the relevant check box, Library Manager will not fully apply the changes.

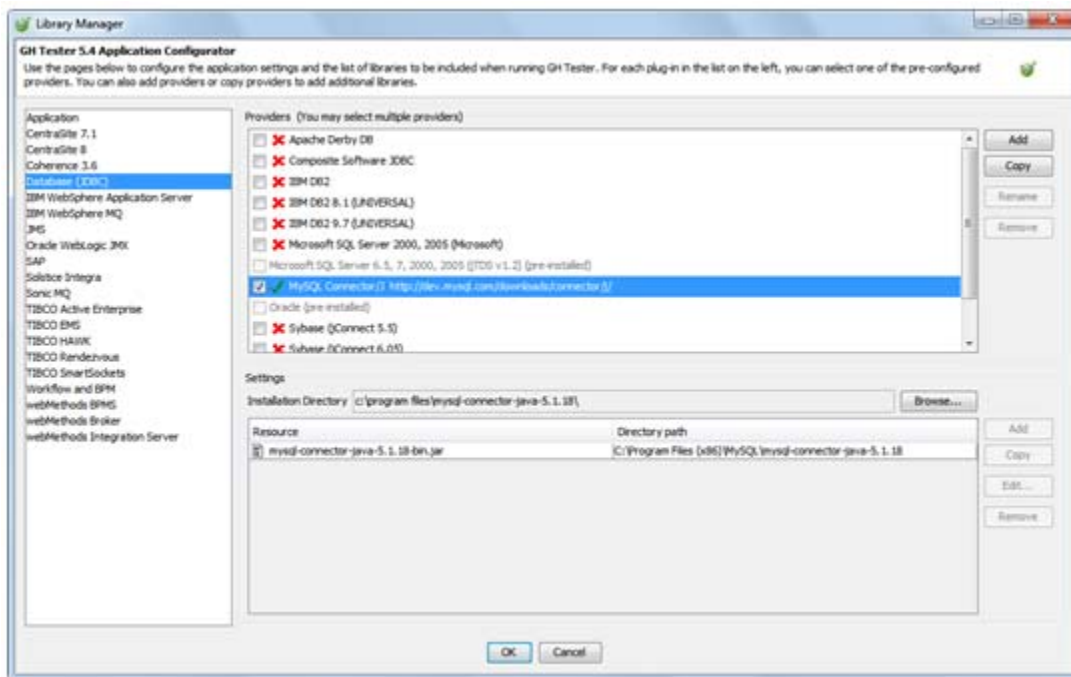
NOTE: For certain provider-types, only **one** specific provider at a time can be selected for use by Rational Integration Tester.

5.4 Configuring JDBC Providers

To enable Rational Integration Tester access to databases for the purpose of testing, you need to add the various libraries to the configuration.

NOTE: JDBC libraries for the supported project databases (by default, Oracle are installed with Rational Integration Tester).

Common databases can be found under **Database (JDBC)**.



Database libraries are selected and configured in the same way as third party plugins, that is, under **Providers**, you select the database provider, and under **Settings**, you configure the libraries for that provider.

NOTE: Database libraries are supplied by the database vendors and **not** by IBM.

For each database that you want to use with Rational Integration Tester, select the check box next to the specific provider name. If you do not select the relevant check box, Library Manager will not fully apply the changes.

NOTE: Multiple databases can be selected in Library Manager.

5.5 Configuring Custom Providers

Library Manager enables you to create new specific providers to supplement any of the existing third party plugins or JDBC providers. You can also rename or remove any new specific providers.

The following sections describe how to use Library Manager for creating and managing new specific providers.

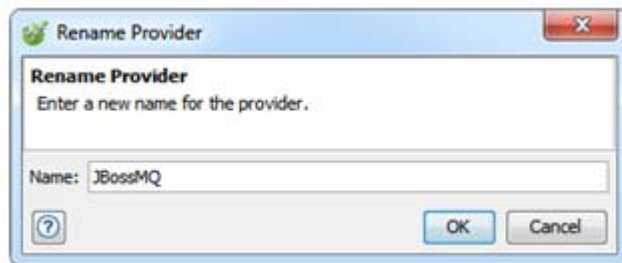
5.5.1 Adding Providers

To add a provider:

1. On the left side of the Library Manager application window, select the relevant provider-type.
2. On the upper-right side of the Library Manager application window, click **Add**.

The Rename Provider dialog box is displayed.

3. In the **Name** field, enter a name for the new provider.



4. Click **OK**.

After the new provider has been created, specify the libraries that are required by the new provider (refer to [Configuring Default and Custom Provider Library Settings](#)).

5.5.2 Copying Existing Providers

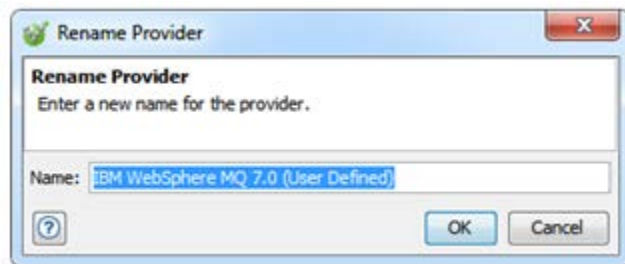
Copying a provider creates a new provider that has the same library requirements as the copied item. This can be useful when creating a provider that uses most or all of the same libraries as an existing provider.

To copy a provider:

1. On the left side of the Library Manager application window, select the relevant provider-type.
2. On the upper-right side of the Library Manager application window, select the provider that is to be copied and click **Copy**.

The Rename Provider dialog box is displayed.

3. In the **Name** field, enter a new name for the provider.



4. Click **OK**.

5.5.3 Renaming Providers

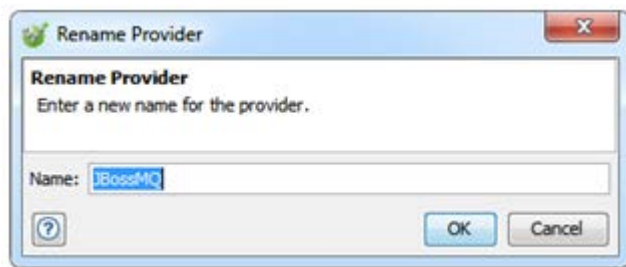
You can rename a custom provider but not a default provider.

To rename a provider:

1. On the left side of the Library Manager application window, select the provider-type.
2. Select the relevant custom provider.
3. Click **Rename**.

The Rename Provider dialog box is displayed.

4. In the **Name** field, enter a new name for the provider.



5. Click **OK**.

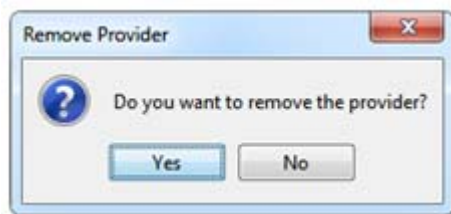
5.5.4 Removing Providers

You can remove a custom provider but not a default provider.

To remove a provider:

1. On the left side of the Library Manager application window, select the relevant provider-type.
2. Select the custom provider you want to remove.
3. Click **Remove**.

A confirmation prompt is displayed.



4. Click **Yes** to confirm the removal.

If you want to cancel and keep the provider, click **No**.

After clicking **Yes**, the selected provider will be removed from the list of providers.

5.6 Configuring Default and Custom Provider Library Settings

For each specific provider (default or custom), one or more libraries need to be specified to ensure correct operation with Rational Integration Tester.

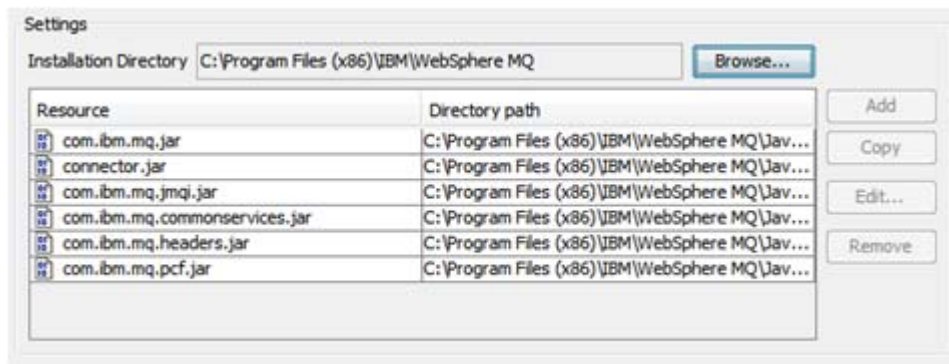
The lower half of the Library Manager application window is used to configure the library settings of each provider.

5.6.1 Changing Installation Directories

Changing the library installation directory for a specific provider (default or custom) forces Library Manager to look for the required JARs in a different location. This can be useful if a provider has been installed in a non-default directory or if the provider JARs are located in a different directory for some other reason.

To change the installation directory of a provider:

1. On the left side of the Library Manager application window, select the relevant provider-type.
2. Select the relevant provider from the list of available providers.
3. Click **Browse**.
4. Locate a new root installation directory for the provider JARs.
5. Click **Select**.



6. Click **OK**.

The specified directory becomes the root directory where Library Manager looks for the provider JARs.

5.6.2 Editing Libraries

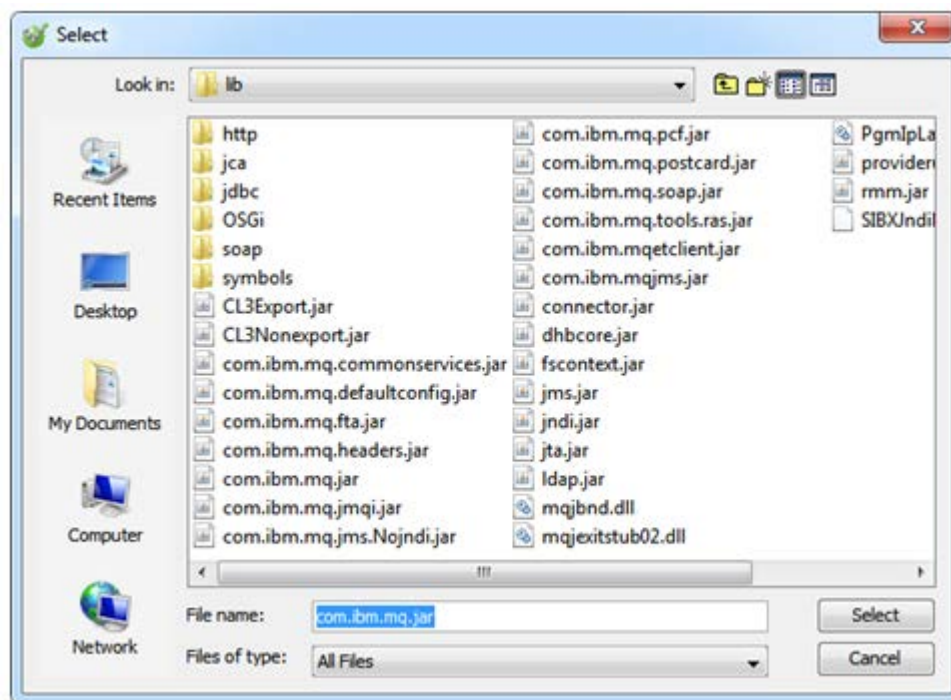
If necessary, you can edit a single library that is required by a specific provider. For default providers, you can change the location of a single library. For custom providers, you can specify a new library altogether, or simply a new location for an existing library.

To edit a library:

1. On the left side of the Library Manager application window, select the relevant provider-type.
2. Select the relevant provider (custom or default) from the list of available providers.
3. Under **Settings**, double-click the library that is to be edited.

Alternatively, select the file and click **Edit**.

The Select dialog box is displayed.



4. Using the Select dialog box, browse for the relevant library.
5. When you have found the relevant library, highlight it and click **Select**.

On the Library Manager application window, the new library and/or location will be displayed for the selected file.

5.6.3 Adding Libraries

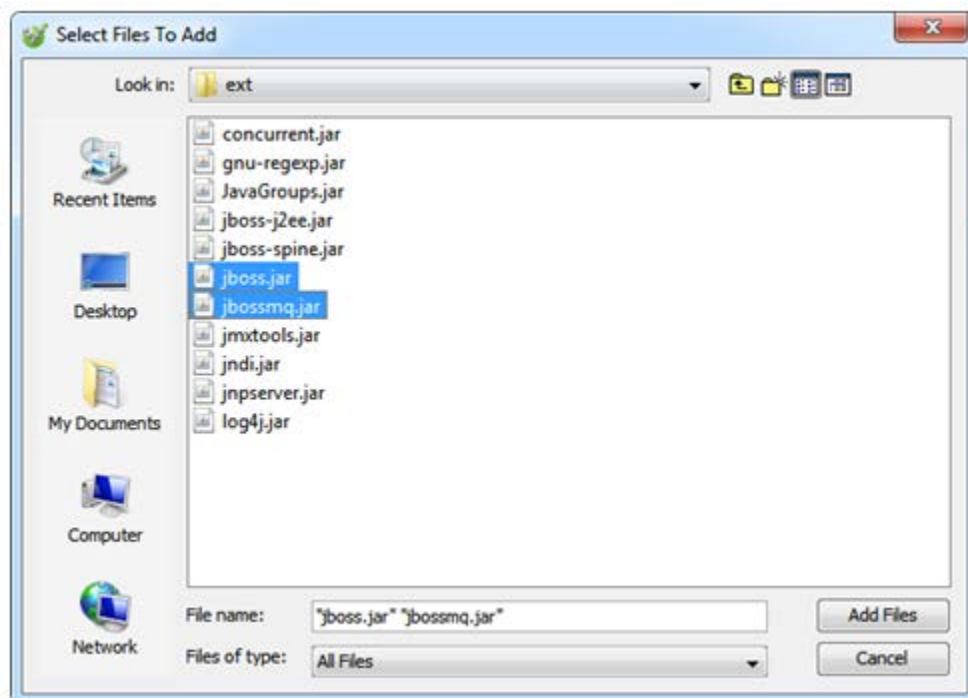
You can add new libraries for custom providers but not for default providers.

To add a library:

1. On the left side of the Library Manager application window, select the relevant provider-type.
2. Select the relevant custom provider from the list of available providers.
3. On the lower-right side of the Library Manager application window, click **Add**.

The Select Files to Add dialog box is displayed.

4. Using the Select Files to Add dialog box, browse for and select the required library or libraries (press CTRL+SHIFT to select multiple files).



5. Click **Add Files**.

5.6.4 Copying Libraries

You can copy libraries of custom providers but not default providers. Being able to copy libraries is useful if you have a number of libraries for a custom provider within the same file path because you can copy an existing entry (that is, one that is already pointing to the desired path) rather than create several new libraries.

To copy a library:

1. On the left side of the Library Manager application window, select the relevant provider-type.
2. Select the relevant custom provider from the list of available providers.
3. On the lower-right side of the Library Manager application window, select the library that is to be copied and click **Copy**.

A duplicate entry is displayed under **Settings**.

4. Double-click the new library to edit it.

Alternatively, select the file and click **Edit**.

The Select dialog box is displayed.

5. Using the Select dialog box, browse for the relevant library.
6. When you have found the relevant library, highlight it and click **Select**.

On the Library Manager application window, the new library and/or location will be displayed for the selected file.

5.6.5 Removing Libraries

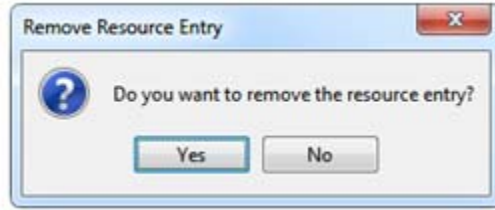
You can remove the libraries of custom providers but not of default providers.

To remove a library:

1. On the left side of the Library Manager application window, select the relevant provider-type.
2. Select the relevant custom provider.
3. On the lower-right side of the Library Manager application window, select the library that is to be removed and click **Remove**.

NOTE: You can select only one library at a time.

A confirmation prompt is displayed.



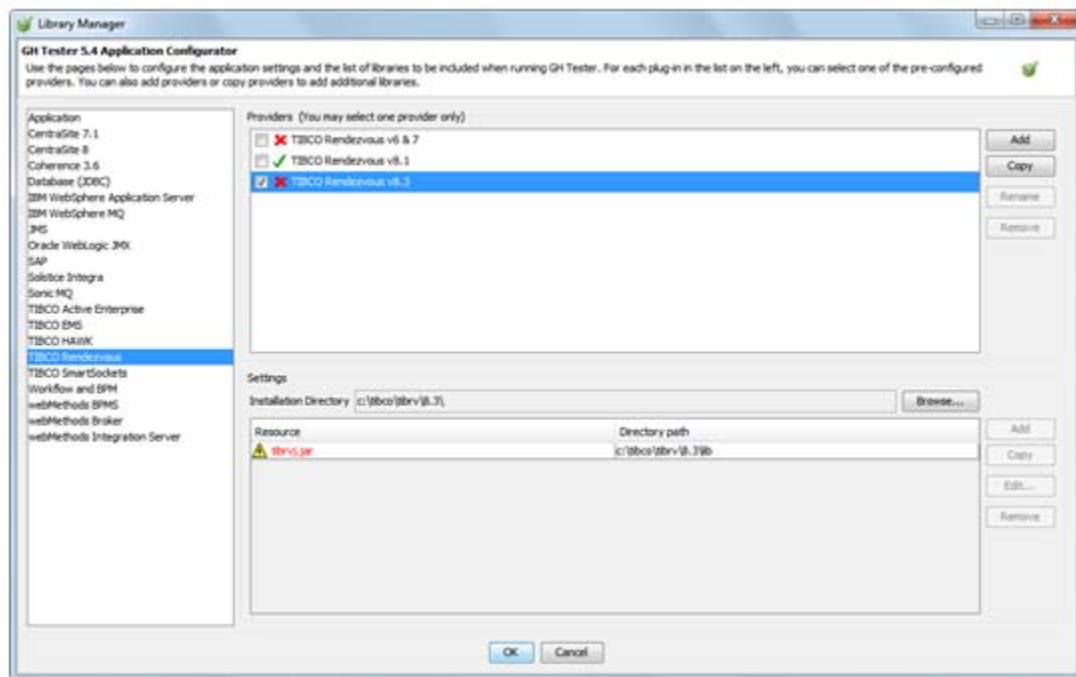
4. Click **Yes** to confirm the removal.

If you want to cancel and keep the library, click **No**.

After clicking **Yes**, the selected file will be removed from the list of libraries for the selected custom provider.

5.7 Resolving Missing Libraries Errors

If any of the required libraries are missing for a specific provider, a red “x” (✗) is displayed next to the provider name. The following graphic shows an example of a provider where the required libraries cannot be found.



It is possible that the relevant application is not installed on the computer or that the libraries cannot be found in the expected default location. If the expected default location is incorrect, click **Browse** to find the correct location for all libraries of the selected provider, or select each library of the selected provider under **Resource** and click **Edit** to find the correct installation location of that library (refer to [Configuring Default and Custom Provider Library Settings](#)).

To resolve the problem shown in the previous graphic, modify the root directory. The files are located and the red “x” icon has changed to a green tick (✓).

5.8 Using Library Manager Command-Line Options

If necessary, Rational Integration Tester can be configured from the command line (for example, on a Unix server that does not have a graphical user interface) using the `-genLibSettings` and `-processLibSettings` options with the `LibConfig` script (or `LibConfig.exe` on the Windows platform).

The `-genLibSettings` option generates an XML configuration file. Ideally, you should generate the file on a computer that is configured the same or similarly to the target computer. If necessary, the generated configuration file can be edited to customize the configuration before being processed on the target computer (using the `-processLibSettings` option).

NOTE: You can take an existing file and use that as a template. To do this, find a computer that has run the graphical version of Library Manager and locate the `librarysettings.xml` file in the user profile (`C:\Documents and Settings\<User ID>\.rit8` or `C:\Users\<User ID>\.rit8` if using Windows, or `$HOME/.rit8` if using Linux or Unix). For an example, refer to [Appendix A: Reusing Library Manager GUI Settings](#).

5.8.1 Generating a Rational Integration Tester Configuration File

To generate an XML configuration file for the current Rational Integration Tester installation, open a command prompt or terminal and enter the following command:

```
LibConfig -genLibSettings <Full path to configuration file>
```

For example:

```
LibConfig -genLibSettings /opt/ghconfig/libsettings.xml
```

The Rational Integration Tester configuration file will be created in the specified location.

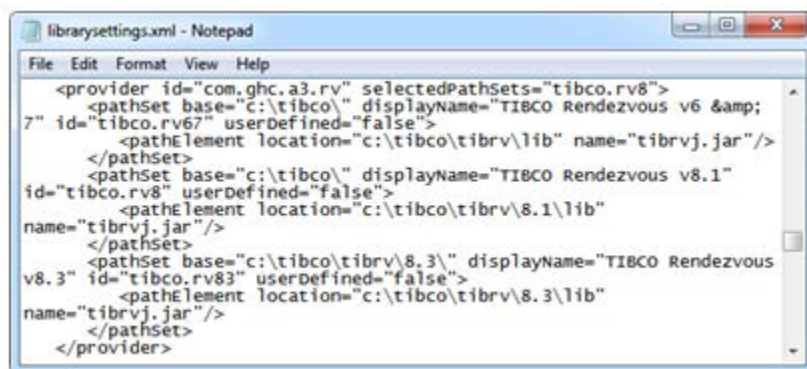
NOTE: The configuration file will contain the current Library Manager settings for the user who generates it (that is, the logged in user who runs the `LibConfig` command).

If necessary, refer to [Editing a Rational Integration Tester Configuration File](#) for information about editing the generated file before processing it on the target computer. If no changes to the configuration are required, refer to [Applying a Rational Integration Tester Configuration File](#).

5.8.2 Editing a Rational Integration Tester Configuration File

After you have generated a Rational Integration Tester configuration file (as described in [Generating a Rational Integration Tester Configuration File](#)), you can apply it to another computer. If the configuration for the target computer needs to be modified, you will need to edit the configuration file manually. To do so, open the configuration file in a text editor and modify its contents as required.

The following graphic shows an example section of the configuration file.



The provider-type is defined in the `provider` element. Specific providers (`displayName`) and their default library locations (`base`) are defined in the `pathSet` element. Specific libraries for each provider are defined in the `pathElement` element using the `location` (for the path) and `name` (for the specific file) attributes.

The environment described by the configuration file (that is, the libraries and their locations) should be valid on the target computer. In other words, ensure that the files in the configuration exist in the proper locations on the target computer.

5.8.3 Applying a Rational Integration Tester Configuration File

After the configuration file has been generated and the library files have been copied to the target computer in the specified locations, you can apply the configuration.

NOTE: Rational Integration Tester must be installed on the target computer (refer to [Installing Rational Integration Tester](#)) before the configuration can be applied.

To apply the configuration file, copy it to the target computer, open a command prompt or terminal on the target computer, and enter a command of the following format:

```
LibConfig -processLibSettings <Full path to configuration file>
```

For example:

```
LibConfig -processLibSettings /opt/ghconfig/libsettings.xml
```

The configuration specified in the XML file will be applied to the Rational Integration Tester installation on the current computer. If you want to verify that the configuration was applied, view the JAR files listed in `META-INF\MANIFEST.MF` in one of the plugin fragment directories (for example, `com.ghc.ibmmq.libraries.fragment_xxx`) in the Rational Integration Tester installation directory.

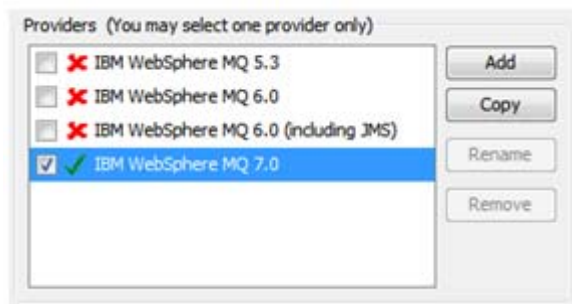
5.9 Reusing Library Manager GUI Settings

When using a command line to configure Rational Integration Tester, you can use an existing file as a template.

The following sections provide examples of how to reuse the `librarysettings.xml` file in the user profile (`C:\Documents and Settings\<User ID>\.rit8` or `C:\Users\<User ID>\.rit8` if using Windows, or `$HOME/.rit8` if using Linux or Unix) created by the graphical version of Rational Integration Tester's Library Manager.

5.9.1 Selecting a Messaging Library

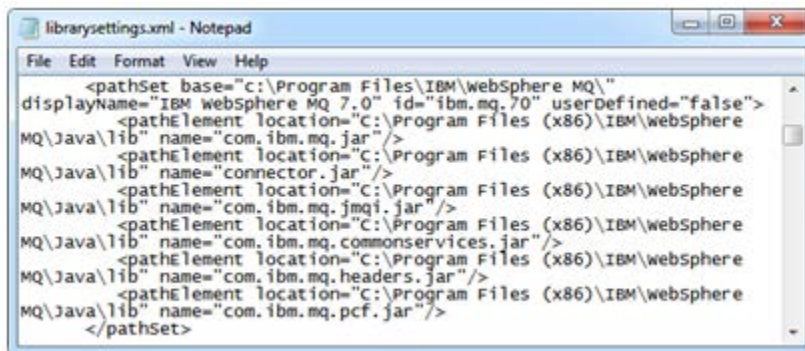
This example involves IBM WebSphere® MQ 7.0 library files. The graphical version of Library Manager is shown with the equivalent sections of XML.



In the `librarysettings.xml` file, select the WebSphere MQ 7.0 provider by name (`ibm.mq.70`).



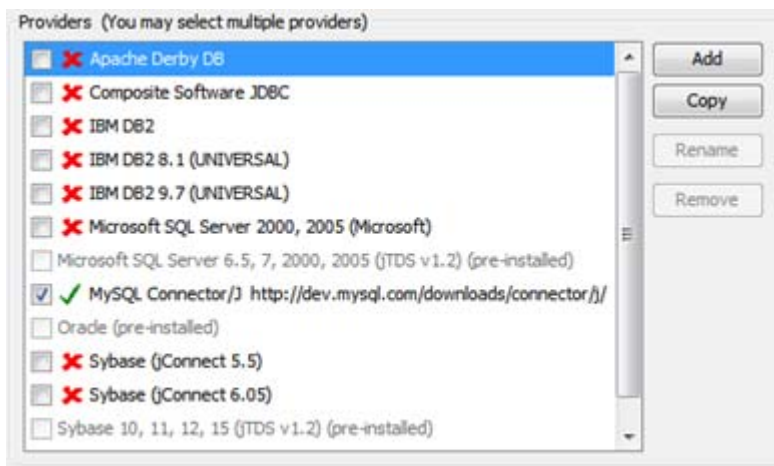
Each version of the libraries follows in `pathSet` sections with the `id` indicating the name.



You can edit the file locations to suit your own installation.

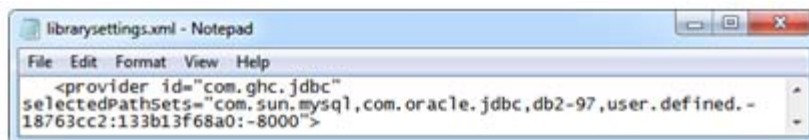
5.9.2 Selecting JDBC Drivers

In this example, a predefined driver for IBM DB2® 9.7 will be selected and a custom entry will be added for Composite. In the **Database (JDBC)** section of Library Manager, select the two providers (as shown in the following graphic) and click **OK** to quit Library Manager.

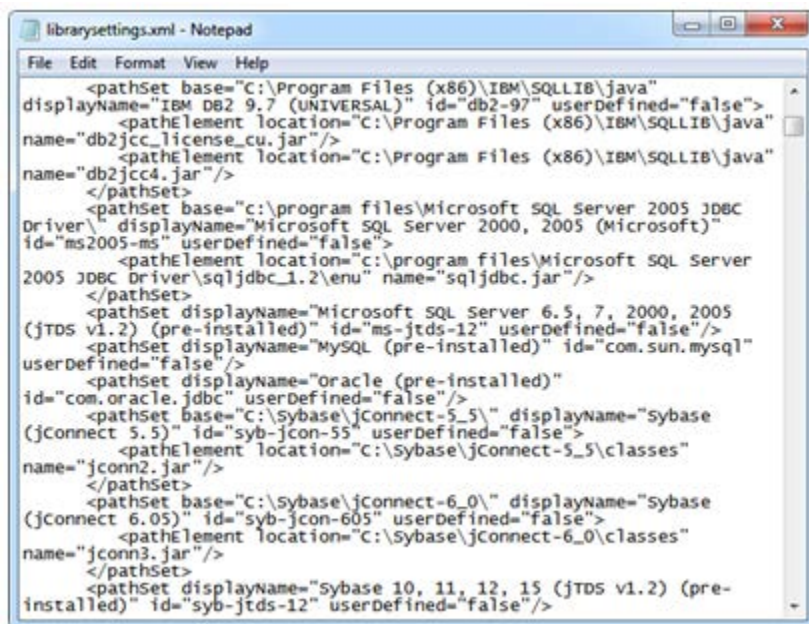


In the `librarysettings.xml` file, the list of selected items is a comma-separated list in `selectedPathSets`.

In the following example, MySQL, Oracle (which installed), DB2, and the custom entry are listed (in that order).



Each provider is listed with its ID.



Each custom entry is given a unique ID. You can set this ID manually in the librarysettings.xml file or create it in the graphical Library Manager and copy it.

```
<pathSet base="<Rational Integration Tester Installation
Directory>" displayName="Composite" id="user.defined.<Custom
Entry ID>" userDefined="true">

<pathElement location="<Composite JDBC Provider JAR File
Directory>" name="<JAR File Name>" />

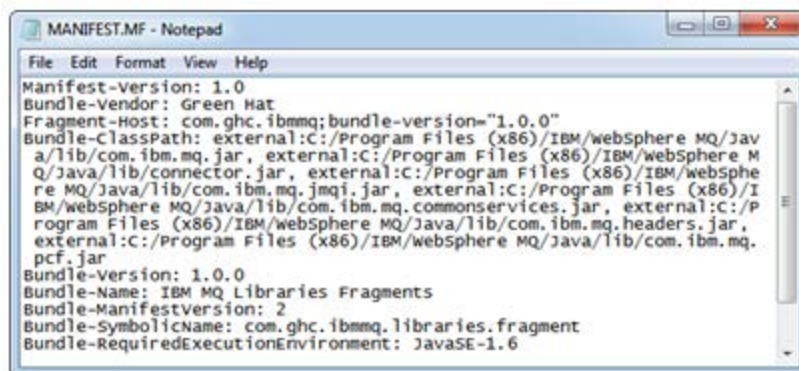
</pathSet>

</provider>
```

5.9.3 Verifying the Configuration of a Library

After you have used a command prompt to run Library Manager, you may wish to verify that a particular library is configured in Rational Integration Tester. This example involves verifying that IBM WebSphere MQ 7.0 is enabled.

In the *<Rational Integration Tester Installation Directory>\plugins\com.ghc.ibmmq.libraries.fragment_<Number>\META-INF* folder, open the MANIFEST.MF file.



You can see that the required JAR files are configured and you can also see their locations.

NOTE: Please do not hand-edit any Rational Integration Tester MANIFEST files because they have a specific format and any changes to them will be lost the next time you run Library Manager.

Glossary

The following table below lists some of the key terms used in this document, and provides a description of each.

Term	Description
Agent	A special Rational Integration Tester process running on a host that allows test engine instances and probes to be launched on demand.
Background Test	A test executed on one or more test engines at a constant load level for the duration of the performance test.
Counter	An individual measurement from part of the system, examples include messages per second and CPU utilization.
Field	A bit of data constituent to a message. Most fields are scalar and therefore unitary, equivalent to data attributes. Vector fields are an aggregation of fields both scalar and vector, and are usually referred to as Messages. See also Message.
Host	The computer where a software process runs.
JMS	Java Message Service, a J2EE technology. Several implementations of JMS exist, for example, IBM WebSphere MQ, TIBCO EMS and SonicMQ.
Load Generating Test	A test that is executed by one or more test engines which may have varying load characteristics.
Message	A unit of information made up of a header consisting of meta-information and a body consisting of the message data.
Performance Test Controller	Process that deploys probe and test configuration and orchestrates the performance test during execution. Communicates with Agents to achieve its objectives.
Probe	Measures information from part of the system and exposes it as one or more counters.

Term	Description
Publisher-Subscriber	A messaging paradigm whereby a messaging network consists of Publishers and Subscribers.
Publishing	Making a message (data) available on a message channel.
Result Set	The results of a performance test execution. One of these is generated every time a performance test is executed.
Server	A host computer on a network shared by more than one user.
Subscribing	Receiving a stream of messages (data) on a given message channel.
Test Engine Instance	An instance of the Rational Integration Tester test engine, started by an agent, to execute a series of tests.
Transport	Informally, the messaging software in use. For example, TIBCO Rendezvous, TIBCO ActiveEnterprise, and IBM WebSphere MQ (JMS).

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