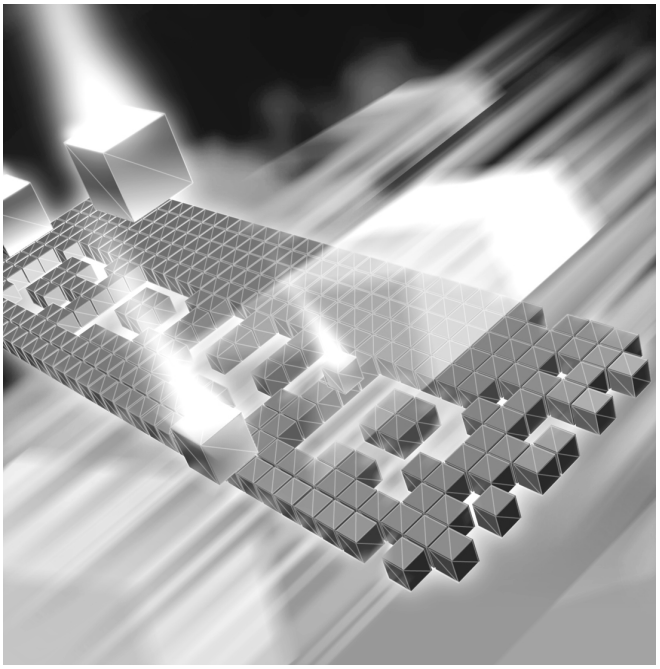

QA Center Performance Edition

Installation and Configuration Guide

Release 05.05

COMPUWARE

Technical support is available from our Customer Support Hotline or via our FrontLine Support Web site.

Customer Support Hotline:
1-800-538-7822

FrontLine Support Web Site:
http://frontline.compuware.com

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US Patent Nos.: Not Applicable.

Doc. CWQLIX550
March 21, 2006

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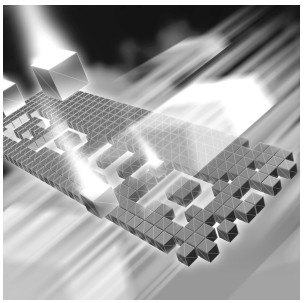

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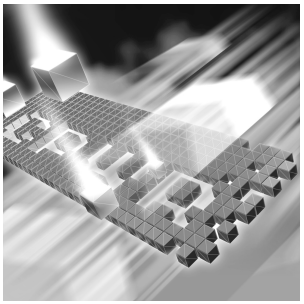

The *QA*Center Performance Edition Installation and Configuration Guide provides information and procedures to install and maintain *QA*Load.

When installing File-AID/CS, refer to the *File-AID/CS Installation Guide* for installation instructions.

Who Should Read This Guide

This guide is intended for administrators who are installing and configuring *QA*Center products; it does not contain reference or usage information. You can find that information in your product's online help facility and documentation set.

Compuware assumes that you are familiar with basic Microsoft Windows navigation. If this is not the case, familiarize yourself with the documentation for Microsoft Windows before reading this guide.

Related Publications

The *QA*Center Performance Edition installation documentation set is comprised of the following:

- The *QA*Center Performance Edition Installation and Configuration Guide, which includes system requirements and instructions for installing *QA*Load.
- The *Distributed License Management License Installation Guide*, which includes instructions for licensing your *QA*Center product.
- The *File-AID/CS Installation Guide*, which includes system requirements and instructions for installing File-AID/CS.

All of these books are provided in PDF format only. You can access the online versions of the *QA*Center Performance Edition Installation and Configuration Guide and the *Distributed License Management License*

Installation Guide from the CD browser (see the instructions that follow) or from Compuware's FrontLine customer support Web site at http://frontline.compuware.com.

Viewing and Printing Online Books

To access these online books:

1. Insert the *QA*Center CD into the CD-ROM drive. If the CD browser does not automatically start, navigate to the CD's root directory and run `setup.exe`.
2. Click **Browse QACenter Documentation**.
3. Select the installation guide that you wish to view. The document opens in Acrobat Reader. (If necessary, Acrobat Reader can be installed from the *QA*Center CD by clicking **Install 3rd Party Software**, then clicking **Install Adobe Acrobat Reader**.)

Because PDF is based on PostScript, a PostScript printer is the most reliable way to print online books. In most cases, you can also print PDF files to PCL printers. If you cannot print the PDF files to your printer, refer to Adobe's Web site at http://www.adobe.com for troubleshooting information.

World Wide Web Information

To access Compuware Corporation's site on the World Wide Web, point your browser at http://www.compuware.com. The Compuware site provides a variety of product and support information.

FrontLine Support Web Site:You can access online technical support for Compuware products via the FrontLine support Web site. FrontLine provides fast access to critical information about your *QA*Center product. You can read or download documentation, frequently asked questions, and product fixes, or e-mail your questions or comments. To access FrontLine, follow these steps:

1. Open a web browser and go to: http://frontline.compuware.com The Welcome to FrontLine page appears.
2. On the right side of the page, enter your login ID and password and click the **Login** button.

Note: If you are a first-time visitor, click the **Register** button to receive your free password to access FrontLine. After you complete the registration form, your login ID and password will be e-mailed to you and your account will be activated.

3 From the drop-down list in the center of the page, select a product and click the **Go** button. You will see the product's FrontLine home page, where you can access documentation, technical information, fixes, and other support items.

Getting Help

At Compuware, we strive to make our products and documentation the best in the industry. Feedback from our customers helps us maintain our quality standards. If you need support services, please obtain the following information before calling Compuware's 24-hour product support hotline:

- The name, release (version), and build number of the *QA*Center product. This information is displayed when you select the About command from your product's Help menu. The name and release are also on the covers of the product documentation.
- Installation information, including installed options, whether the product uses local or network databases, whether it is installed in the default directories, whether it is a standalone or network installation, and whether it is a client or server installation.
- Environment information, such as the operating system and release on which the product is installed, memory, hardware/network specifications, and the names and releases of other applications that were running.
- The location of the problem in the *QA*Center product software, and the actions taken before the problem occurred.
- The exact product error message, if any.
- The exact application, licensing, or operating system error messages, if any.
- Your Compuware client, office, or site number, if available

Customer Support

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One Campus Martius
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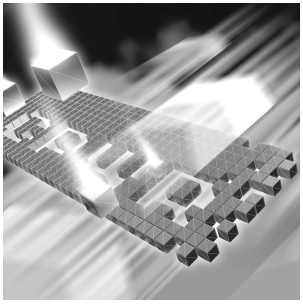
http://frontline.compuware.com

Chapter 1
Getting Started



- Overview of QACenter Performance Edition
- Installation Types
- Before Installation

Overview of *QA*Center Performance Edition

*QA*Center Performance Edition helps organizations conduct realistic, in-depth, and repeatable performance testing on applications throughout the enterprise. With a powerful combination of load testing, infrastructure monitoring, and results analysis tools, *QA*Center Performance Edition helps organizations find and resolve performance problems quickly.

The *QA*Center Performance Edition suite of automated testing and test management tools includes:

QALoad: Load tests enterprise client/server systems and associated networks. *QA*Load can stress your system by simulating thousands of users simultaneously performing different operations. It creates and runs test scripts that can simulate application transactions on the system without involving end users or their equipment.

File-AID/CS: A data management tool that saves time and reduces the level of complexity required in preparing and managing data for testing. It provides facilities for easily copying, transforming, creating, comparing, and modifying data; validating test results; and restoring test data to its baseline state. File-AID/CS is an excellent tool for any testing project where ensuring data and application reliability is critical.

In addition to the *QA*Center Performance Edition suite of products, the *QA*Center Performance Edition CD includes Adobe Acrobat Reader, Microsoft Internet Explorer, Microsoft Virtual Machine, and Java 2 SDK version 1.3 and 1.4 installation programs. To install one or more of these products from the *QA*Center Performance Edition CD, click **Install 3rd**

Party Software, then click on the product installation you would like to perform.

Installation Types

Before you begin, determine the type of installation you need to perform:

Initial Installation: An initial installation is the first-time installation of a product on your computer. See the installation chapter for each product for instructions.

Modify: A modification of the product installation occurs when you add or remove one or more of a product's components, but not all of them. See the maintenance chapter for instructions.

Repair: A repair installation may be necessary due to a corruption of a program or the inadvertent deletion of the product. See the maintenance chapter for instructions.

Remove: A remove or uninstallation removes all the components of a product. See the maintenance chapter for instructions.

Upgrade: Normally, an upgrade to a new release of a product does not require that you uninstall the current release first. If there are special concerns with regard to upgrading a *QA*Center product, they are explained in the product's installation chapter.

Before Installation

Before installing any *QA*Center product, you should carefully review the following information:

System Requirements

Review the system requirements to ensure that you meet the prerequisites for the successful installation and operation of the product. System requirements are listed in the Release Notes as well as in each product's installation chapter in this book.

Release Notes

Review the Release Notes for information about new features, technical notes, and known issues that may enhance or impact your product's performance. Release Notes contain recent changes that may not be included in your *QA*Center product documentation.

Release Notes can be viewed from the *QA*Center CD or on FrontLine, Compuware's product support web site. The Release Notes on FrontLine are periodically updated as new information becomes available.

To access the Release Notes from the *QA*Center CD, follow these steps:

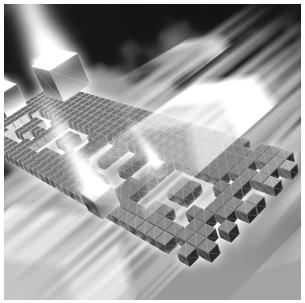
1. Insert the *QA*Center CD into the CD-ROM drive. If the CD browser does not start automatically, navigate to the CD's root directory and run `setup.exe`.
2. Click **View *QA*Center Release Notes**. The Release Notes open in your default Web browser.
3. Read the Release Notes online, or print the document.
4. After reading and/or printing the Release Notes, close the document to return to the CD browser.

To access the Release Notes on FrontLine, follow these steps:

1. Open a web browser and go to: http://frontline.compuware.com. The Welcome to FrontLine page appears.
2. On the right side of the page, enter your login ID and password and click the **Login** button.

   Note: If you are a first-time visitor, click the **Register** button to receive your free password to access FrontLine. After you complete the registration form, your login ID and password will be e-mailed to you and your account will be activated.
3. From the drop-down list in the center of the page, select a product and click the **Go** button. You will see the product's FrontLine home page.
4. On the left side of the product's homepage, select the **Documentation** link. You will see the product's documentation page, which includes links to Release Notes and other documentation types.
5. Click the **HTML** or **PDF** icons to view documents.

Chapter 2
Installing *QA*Load



- Planning Your Installation
- System Requirements
- Integration and Monitoring Requirements
- Installing QALoad
- UNIX Player Installation

Planning Your Installation

*QA*Load consists of separate, installable components for script recording and editing, load testing and test execution management, virtual user generation, results analysis, server monitoring, and network traffic generation. (In addition, there are components related to specific middleware types.) Not all components are required in every testing situation. The following table describes what each component does, and why and where it should be installed. Please refer to this table to determine which components are appropriate for your load testing requirements. For supported operating systems and minimum system requirements for each component, see "System Requirements" on page 17.

After reviewing this table, carefully follow the instructions in "Installing QALoad" on page 24 to ensure that you install only those components that are appropriate for your testing needs.

Table 2-1. *QA*Load Component Descriptions

Component	Purpose	Where to Install
*QA*Load Script Development Workbench	Contains the elements necessary for recording, converting, compiling, and modifying test scripts.	Typically installed on the same workstation (Windows) as the *QA*Load Conductor and *QA*Load Analyze components and on the workstation that has the appropriate application browser you're recording transactions from.
*QA*Load Conductor	Controls the *QA*Load Players and manages tests. It is the center for application playback. In addition, the *QA*Load Conductor is where you check out licenses for virtual users for your load tests. For further information, see "QALoad Concurrent Conductor Licensing" on page 16.	Must be installed on the same workstation as *QA*Load Analyze for reporting purposes. Most users will install *QA*Load Conductor on the same workstation as the *QA*Load Script Development Workbench.
*QA*Load Player	Emulates users by running test scripts that mimic user transactions. *QA*Load Players are available for a number of operating environments. The *QA*Load Player is the most performance-sensitive component of *QA*Load, as it is responsible for creating hundreds or thousands of concurrent virtual users from the same workstation.	If you intend to run large volume load tests, Compuware recommends that you install the *QA*Load Player on a powerful and dedicated workstation. No other resource-intensive processes should be installed or running at the same time the *QA*Load Player is in use for load testing. In addition, Compuware recommends that to make load test management easier, you do not run both the Server Analysis Agent and *QA*Load Player simultaneously on the same workstation.

Table 2-1. *QA*Load Component Descriptions

Component	Purpose	Where to Install
*QA*Load Analyze	The key component for the analysis of statistics measured during the load test. Lets you correlate and report on load testing performance and server utilization statistics gathered during the test.	Typically installed on the same Windows workstation as the *QA*Load Script Development Workbench.
Server Analysis Agent	Monitors the servers and applications that a load test impacts, for example, web server, application server, database server, and database.	Must be installed with the Windows version of the *QA*Load Player (for automatic discovery and control). Although the Server Analysis Agent installs with the Windows *QA*Load Player, Compuware recommends that you do not run virtual users from the same workstations that you are trying to monitor in order to ensure test result accuracy.
ApplicationVantage Agent	Captures network traffic information from a remote machine. The captured data can be used to profile the effect of the network on an application's performance.	Must be installed on the same machine as the *QA*Load Player. **Note**: If ApplicationVantage is installed on the *QA*Load Conductor machine, or if the machine's operating system is Microsoft Windows XP, you must install the ApplicationVantage Remote Agent. The ApplicationVantage Agent version must match the version of the Vantage Console installed.

Table 2-1. *QA*Load Component Descriptions

Component	Purpose	Where to Install
ServerVantage Agent	Used for Performance Monitoring of servers and applications for SAP, WebLogic, WebSphere, WebSphere MQ, and WMI environments.	Must be installed on the same machine as the *QA*Load Conductor. For specific requirements for each environment, see "Installing QALoad" on page 24.
NetLoad Server	The NetLoad UDP and TCP servers are required only when using the TCP and UDP options within NetLoad. They are not required for any other middleware options and need only be installed if using NetLoad.	There are no special considerations for where to install the NetLoad servers.

QALoad Concurrent Conductor Licensing

Required: To use this feature, you must install the License Manager for Windows or UNIX on a license server. Refer to the *License Manager Installation Guide* guide for instructions on installing the License Manager. For information on checking out virtual user licenses in general, refer to the *QA*Load *Conductor Online Help* ***Checking out virtual user licenses*** topic.

*QA*Load's concurrent Conductor licensing, also referred to as Bulk Checkout, allows a number of Conductors to share a pool of virtual users. The number of concurrent Conductors is dependent on the license purchased. To determine how many Conductors and virtual users you are licensed for, view your license using the *Compuware License Administration Utility* (LAU). From the **Start** menu, choose **Programs>Compuware>License Administration>License Administration Utility - LAU4**. The number of licensed Conductors is the value associated with the `QALoad_Conductor` string located in the **Feature** area in the **Version** column. The number of licensed virtual users is the value associated with the *QA*Load string.

*Tip: You can also view the number of licensed virtual users by choosing **Tools>Licensing** from the **QA**Load **Conductor** menu. On the License Information dialog box, in the **Current License Information** area, you will see the **Total number of Virtual User licenses**.*

If your license allows a single Conductor only, then the Bulk Checkout feature of QALoad does not apply to you. For more information on how to use the LAU, see the help in the *License Administration Utility*.

System Requirements

This section describes the general requirements for running a complete installation of *QA*Load, as well as requirements for each individual *QA*Load component that may be installed separately, and requirements for the individual middlewares. Review each section to determine which requirements apply to your configuration.

General Windows Installation Requirements

*QA*Load has the following minimum system requirements:

- Mid-level Pentium III PC with 256 MB of RAM. RAM requirements may vary by middleware.
- 285 MB available disk space.
- Microsoft Windows 2000 Service Pack 4, or Windows XP Professional Service Pack 1 or Service Pack 2.

Required: Microsoft Windows Server 2003 is supported for use with the Player only.

Chinese, Japanese, and Korean operating systems only support the WWW middleware.

- Microsoft Internet Explorer 5.5 Service Pack 4 or later. (See "WWW Requirements" on page 21 for information about support for other browsers.)
- Adobe Acrobat or Acrobat Reader (provided on the *QA*Center CD) to view the online books in PDF format.

Administrative Rights

Installing *QA*Load requires full administrative rights.

Additional Requirements by Component

The following sections detail the system requirements that differ by *QA*Load component. Requirements also vary by middleware; see "Middleware-Specific Requirements" on page 18.

*QA*Load Script Development Workbench

- Microsoft Visual C++ Version 6.0 Service Pack 3 or higher, Visual Studio .NET 2002 (7.0), Visual Studio .NET 2003 (7.1), or Visual Studio .NET 2005 for script compilation and script validation.

Note: Refer to the Technical Notes section of the *QA*Load Release Notes for compiler information for the SAP and Citrix middlewares.

- Microsoft .NET Framework version 1.1.

*QA*Load Conductor Requirements

- TCP/IP communications.
- Microsoft .NET Framework version 1.1.

*QA*Load Analyze Requirements

- MAPI32-compliant mail program such as Microsoft Outlook (required for use of timing file mailing utility).
- The dynamic link library `cdo.dll` must be installed on the machine to use the send utility. CDO is an optional messaging component of Microsoft Outlook. When you view the options for Office or Outlook setup, CDO is listed under the options for Outlook.

*QA*Load Windows Player Requirements

- Java 2 Runtime Environment 1.3 or 1.4 (1.3 and 1.4 are provided on the *QA*Center CD) for running Java scripts.
- TCP/IP communications.

Middleware-Specific Requirements

In addition, your Windows system may need to meet specific requirements to support the middleware you are testing. For middleware-specific requirements, see the following sections:

- "Oracle Net8/Net9 Requirements" on page 19
- "ODBC Requirements" on page 19
- "Uniface Requirements" on page 19
- "Citrix MetaFrame Requirements" on page 20
- "SAP Requirements" on page 20
- "ADO Requirements" on page 20
- "Oracle Forms Server Requirements" on page 21
- "Java Requirements" on page 21
- "WWW Requirements" on page 21
- "Streaming Media Requirements" on page 22

Note: The Winsock and NetLoad middlewares do not have any additional *QA*Load Windows Player.

Oracle Net8/Net9 Requirements

*QA*Load supports load testing under Oracle Net8/Net 9 when the following requirements are met:

*QA*Load Script Development Workbench
- Oracle Net8/Net9 client installation for recording.
- Oracle Call Interface (OCI) development environment for Windows. This is distributed with the Oracle Development Kit as part of the Oracle 8*i* or Oracle 9*i* client installation.

*QA*Load Player
- Oracle Net8/Net9 client installation for playback.

ODBC Requirements

*QA*Load supports load testing under ODBC when the following requirements are met:

*QA*Load Script Development Workbench
- ODBC 2.0, 2.5, 3.0, or 3.5 client installation.
- Visual C++ or ODBC SDK. Libraries from Visual C++, if installed, are used by default unless ODBC SDK libraries are specified.

*QA*Load Player
- ODBC 2.0, 2.5, 3.0, or 3.5 client installation.
- Supports *QA*Load Windows Player only.

Uniface Requirements

*QA*Load supports load testing under Uniface when the following requirements are met:

*QA*Load Script Development Workbench
- Development environment of Uniface V8.2.xx, V8.3.xx, or V8.4.01, complete with the 3GL interface.
- Valid Uniface Software Enable Key (SEK).

- On the Windows XP operating system, QALoad EasyScript for Uniface requires Service Pack s603 or later. On Windows 2000, Uniface Service Pack s601 or later is required.

QALoad Player

- Development environment of Uniface V8.2.xx, V8.3.xx, or V8.4.01, complete with the 3GL interface.
- Valid Uniface Software Enable Key (SEK).
- Supports QALoad Windows Player only.

Citrix MetaFrame Requirements

QALoad supports load testing under Citrix when the following requirements are met:

QALoad Script Development Workbench

- Citrix ICA client installation version 7.1, 8.1, 9.0, or 9.1.
- Citrix MetaFrame 1.8, MetaFrame XP server, or MetaFrame Presentation Server.

QALoad Player

- Citrix ICA client installation version 7.1, 8.1, 9.0, or 9.1.
- Supports QALoad Windows Player only.
- Mid-level Pentium III PC with 256 MB of RAM. Compuware strongly recommends a minimum of 512 MB of RAM.

SAP Requirements

QALoad supports load testing under SAP when the following requirements are met:

QALoad Script Development Workbench

- Appropriate SAP client installation version 4.6D, 6.20, or 6.40. Version 6.20 must be at patch level 40 or later. Version 6.40 must be at patch level 3 or later.
- Appropriate SAP server patches installed:
  - SAP 4.6C server: patch level 32 or later
  - SAP 4.6D server: patch level 21 or later
  - SAP 6.10 server: patch level 17 or later

QALoad Player

- Appropriate SAP client installation version 4.6D, 6.20, or 6.40 for playback. Version 6.20 must be at patch level 40 or later. Version 6.40 must be at patch level 3 or later.
- Supports QALoad Windows Player only.
- Mid-level Pentium III PC with 256 MB of RAM. Compuware strongly recommends a minimum of 512 MB of RAM.

ADO Requirements

QALoad supports load testing under ADO when the following requirements are met:

QALoad Script Development Workbench

- ADO 2.6, 2.7, or 2.8 for recording or script compilation.

QALoad Player

- ADO 2.6, 2.7, or 2.8 required for script playback.
- Supports QALoad Windows Player only.

Oracle Forms Server Requirements

QALoad supports load testing under Oracle Forms Server when the following requirements are met:

QALoad Script Development Workbench

- Oracle Forms versions 6.0 or 6*i* running in socket mode.
- Oracle Forms versions 6*i*, 9*i*, and 10*g* running in servlet mode for both SSL and non-SSL..

QALoad Player

- Java 2 Runtime Environment 1.3 for SSL scripts, or 1.4 for non-SSL scripts (1.3 and 1.4 are provided on the QACenter CD).
- Supports QALoad Windows Player only.

Java Requirements

QALoad supports load testing of J2EE components when the following requirements are met:

QALoad Script Development Workbench

- Java Development Kit 1.3 or 1.4 required for developing Java scripts.

QALoad Player

- Java 2 Runtime Environment 1.3 or 1.4 (1.3 and 1.4 are provided on the QACenter CD) to run Java scripts.

WWW Requirements

QALoad supports load testing under WWW when the following requirements are met:

QALoad Script Development Workbench

- For "Automatically Configure and Start Browser" recording: Internet Explorer 5.5 Service Pack 4 or later.
- For "User Configured and Started Browser or Web Application" recording: Any HTTP application for which a proxy can be set can be used. Use this option to record a non-Internet Explorer browser such as Netscape, Mozilla, Firefox, or Opera.
- Visual Navigator requires Internet Explorer 5.5 Service Pack 4 or later.

QALoad Player

- NTLM playback is not supported on UNIX.

Streaming Media Requirements

*QA*Load supports Streaming Media under WWW when the following requirements are met:

*QA*Load Script Development Workbench

- For "Automatically Configure and Start Browser" recording: Internet Explorer 5.5 Service Pack 4 or later.
- For "User Configured and Started Browser or Web Application" recording: Any HTTP application for which a proxy can be set can be used. Use this option to record a non-Internet Explorer browser such as Netscape, Mozilla, Firefox, or Opera.

*QA*Load Player

- RealOne Player Version 2.0 Build 6.0.x or later, RealPlayer 10, or Windows Media Player 7.x.

Note: Streaming Media playback does not work with player versions other than those stated above.

QALoad UNIX Player Requirements

The *QA*Load Player and associated utilities are supported on AIX, Linux and Solaris. Compilers that are 32-bit compatible are required. The following sections contain the requirements for each operating system.

Required: Compuware recommends that you have a user ID set up on the Player system specifically to run the Player software. For example, set up a user ID (qaload) with a home directory of /usr/qaload or /home/qaload.

UNIX Player Requirements for AIX

- AIX 5L Version 5.2 or 5.3.
- 100 MB minimum available disk space.
- ANSI C compiler for compiling scripts. Compuware requires IBM's VisualAge C and C++ compilers, version 6.0. Compuware also supports the GNU GCC compiler, version 3.3.2.
- Java Runtime Environment 1.3 or 1.4 for developing Java scripts.
- TCP/IP communications.
- Appropriate client application environment (see "UNIX Player Middleware Requirements" on page 23).

Required: The VisualAge compilers must be patched to the level indicated by the "September 2005 VisualAge C++ Professional V6.0 for AIX PTF". For more information, refer to the IBM website.

UNIX Player Requirements for Linux

- Red Hat Enterprise Linux AS, Release 3.
- 100 MB minimum available disk space.
- Compuware requires the Linux system-provided GNU GCC compiler version 3.2.3.

- Java Runtime Environment 1.3 or 1.4 for developing Java scripts.
- TCP/IP communications.
- Appropriate client application environment (see "UNIX Player Middleware Requirements" on page 23).

Required: The system should be updated to the packages indicated in the Red Hat Advisory: RHBA-2005:661-11. Additional packages required to resolve dependencies also should be applied.

UNIX Player Requirements for Solaris

- Solaris 7, Solaris 8, or Solaris 9.
- 100 MB minimum available disk space.
- ANSI C compiler for compiling scripts. Compuware requires Sun Workshop compiler version 5.3 or Sun Forte 6.0. Compuware also supports GNU GCC compiler version 3.2.3.
- Java Runtime Environment 1.3 or 1.4 for developing Java scripts.
- TCP/IP communications.
- Appropriate client application environment (see "UNIX Player Middleware Requirements" on page 23).

UNIX Player Middleware Requirements

The UNIX system running the *QA*Load UNIX Player may need to meet specific requirements based upon which middleware you are testing. See the following middleware-specific requirements:

UNIX Player Requirements for Oracle 7 and Oracle 8

- Oracle OCI development kit for UNIX installed on one of the *QA*Load Player systems to compile the scripts. The OCI development kit is distributed with Oracle Enterprise Server development libraries and client.
- The WWW and Winsock middlewares do not have any additional *QA*Load UNIX Player requirements.

Integration and Monitoring Requirements

Once you install QALoad, you can configure the monitoring function. For information on requirements for integration and remote monitoring, refer to the QALoad *Conductor Online Help* for the ***Integration and Monitoring Requirements*** topic.

Installing *QA*Load

This section explains the installation process for *QA*Load. Please review "System Requirements" on page 17 to ensure that *QA*Load installs and operates properly on your workstation.

Before proceeding with the *QA*Load installation, Compuware recommends that you review the *QA*Load Release Notes, which includes information about new features, technical notes, and known issues. In addition, it documents recent changes that may not be included in your *QA*Load documentation. Please review this information carefully; the Release Notes document is updated as new product information becomes available. To review the Release Notes prior to installation, see "Before Installation" in the "Getting Started" chapter.

Required: Compuware recommends that you exit all non-essential Windows programs before running this setup program. Some Windows programs may interfere with the installation process.

If a previous version of *QA*Load is installed on your computer, or if you have any Beta version installed, Compuware recommends that you back up your data and uninstall *QA*Load before installing the new version. Failure to do so may cause problems.

To perform the installation of *QA*Load, follow these steps:

1. Log on as a user with administrative permissions.
2. Insert the *QA*Center installation CD in the CD-ROM drive. The *QA*Center CD browser should automatically appear. If it does not, navigate to the root directory and run the `setup.exe` file.
3. Click **Install *QA*Center Products**.
4. Click **Install *QA*Load**. The Welcome dialog box appears.
5. Read the welcome screen and click **Next**. The License Agreement dialog box appears.
6. Read the license agreement and click **Yes** to accept the terms of the agreement. The Customer Information dialog box appears.
7. Type your name and company in the **User Name** and **Company Name** fields. Click **Next**. The Choose Destination Location dialog box appears.
8. Select a location for the *QA*Load installation.

- By default, *QA*Load installs in the folder `x:\Program Files\Compuware\QALoad`, where `x` is the drive where Windows resides on your computer.
- To specify a different path, click the **Browse** button and select an existing folder or type the path name in the **Path** field. Click **OK**.

9 Click **Next**. The Select Components dialog box appears.

10 Highlight a component to view a brief description. Select the components you want to install. See Table 2-1 on page 14 for details on each component.

- **Script Development Workbench:** Contains all of the elements necessary for recording, converting, compiling, and modifying test scripts. Select the EasyScript component(s) for which you are licensed. Compuware recommends that you do not select components for which you are not licensed because you cannot create test scripts with those components.
- **Conductor:** Controls the *QA*Load Players and manages tests. The *QA*Load Conductor and Analyze must be installed on the same workstation for reporting purposes. *QA*Load Analyze is automatically selected for you, as well.
- **Players:** Emulates users by running test scripts that mimic user transactions. Each supported platform's Player type can be selected separately for installation. The *QA*Load Player for running Java scripts is automatically installed with the Windows and UNIX Players.
- **Analyze:** Allows you to view timing information from the test in table or graph format.
- **Server Analysis Agent:** Monitors server, application, or database use during a load test. *QA*Load Windows Player is automatically selected for you, as well. The *QA*Load Server Analysis Agent requires that the *QA*Load Windows Player be installed on the same workstation.
- **ApplicationVantage Agent:** This option is not available if the ApplicationVantage Agent is already installed, or if the machine's operating system is Microsoft Windows XP. Allows you to capture trace data on Player machines. ApplicationVantage uses this captured data to analyze application performance problems. **Note**: The ApplicationVantage Agent version must match the version of the Vantage Console Installed.

- **ServerVantage Agent:** Must be installed on the same machine as the QALoad Conductor. Used for Performance Monitoring of servers and applications for SAP, WebLogic, WebSphere, WebSphere MQ, and WMI.
- **NetLoad Server:** The NetLoad UDP and TCP server files are application files that enable NetLoad to perform UDP and TCP testing.

Make your selection(s) and click **Next**. The Select Program Folder dialog box appears.

11 Specify a location for the *QA*Load program shortcuts. You may type a new folder name or select one from the existing folders list. Click **Next**. The Start Copying Files dialog box appears.

12 Review the summary of the settings that you specified and click **Next** to begin copying the program files. The Setup Status dialog box displays the progress of the installation.

13 After the installation completes, the Setup Complete dialog box appears. Depending on the circumstances, you may have the following options:

- **Display Release Notes:** Choose to review the information in the ReleaseNotes.htm file. This file contains information about new features, technical notes, and known issues that may enhance or have an impact on *QA*Load's performance. Release Notes contain recent changes that may not be included in your *QA*Load product documentation.
- **Register for FrontLine:** Choose to review the information on FrontLine technical support site. FrontLine provides fast access to critical information, such as documentation, frequently asked questions, and product fixes. The first time you access FrontLine, you are required to register and obtain a password.
- **Restart Your Computer:** You may be prompted to restart your computer. If you are prompted to restart your computer, you may choose to restart it now (recommended) or to restart it later. If you are migrating from a previous version of *QA*Load, you must restart before using *QA*Load.

14 Click **Finish** to complete the installation of *QA*Load.

15 If you purchased the EasyScript for Secure WWW module to test SSL (Secure Sockets Layer) or HTTPS calls that your browser/server may make, the encryption module is included on the QACenter Installation CD. To install the module:

a. Insert the CD into the CD-ROM drive.

b. Click **Install QACenter Products.**

c. Click **Install SSL**.

Required: You must install the SSL License before installing SSL.

Where To Go Next

- The trial license that is supplied with your *QA*Center product enables you to install the product and run it for a specific time period without first installing a license. During this trial period, you are informed of how much evaluation time remains.

  At any time during the evaluation period, you can obtain and install a permanent license. When the evaluation period expires, you **must** obtain a license and install it before you can successfully run this product. See the *License Manager Installation Guide* for instructions on installing a license. To access this online book:

  a. Insert the *QA*Center CD into the CD-ROM drive. If the CD browser does not automatically start, navigate to the CD's root directory and run `setup.exe`.

  b. Click **Browse QACenter Documentation**.

  c. Select the *License Manager Installation Guide*.

- If Adobe Acrobat or Acrobat Reader is not installed on your computer, click **Install 3rd Party Software**, then click **Install Adobe Acrobat Reader** from *QA*Center's CD browser. Adobe Acrobat or Acrobat Reader is required to view online books in PDF format.

- To install a *QA*Load Windows Player on an additional workstation, follow the instructions on the previous pages. However, on the Select Components dialog box, select to install ***only*** the *QA*Load Windows Player and deselect all other components.

- To install a UNIX Player, see "UNIX Player Installation" on page 28.

- If you are migrating from a previous release of *QA*Load, you must re-compile your existing scripts in the Script Development Workbench to use them in this release.

- If you are ready to begin using *QA*Load, the Getting Started section of the *QA*Load online help.

- For information about modifying, repairing, or removing your *QA*Load installation, see Chapter 3, "Maintaining the Installation" on page 37.

UNIX Player Installation

This section explains the procedure for installing a Player on a UNIX system. The necessary UNIX Player software is distributed with your *QA*Load Windows installation. You can choose to install using a tar file or using the vendor-specific package installation mechanism.

Installing Via Tar File

Load the Player Files

To load the appropriate files for *QA*Load runtime playback onto UNIX, you must FTP the files to the UNIX system and run the installation script. The files are located in the `\UNIX\<platform>\`directory of your *QA*Load installation (for example, **c:\Program Files\Compuware\QALoad\UNIX\Solaris**).

1. FTP, in binary mode, the tar file and installation script file to the desired installation directory, <*installDir*>, on the UNIX system. The installation directory must not contain a previous version of *QA*Load.
2. Log on to the UNIX system.
3. On the UNIX system, change directories to <*installDir*>.
4. Type `chmod 755 QALoadInstall`
5. Run the installation file by typing `./QALoadInstall` and follow the prompts.

   Add the *QA*Load library directory, <*installDir*>`/lib`, to the library path environment variable on your UNIX system. The name of this variable is specific to the operating system. The following table identifies the name of the library path environment variable for the UNIX operating systems that are supported by *QA*Load:

Table 2-2. Library Path Environment Variables

Operating System	Library Path Name
AIX	LIBPATH
Linux	LD_LIBRARY_PATH
Solaris	LD_LIBRARY_PATH

6 If you are replaying EasyScript for Java scripts, make the following changes to the environment on the UNIX system:

- **AIX:** Add the path of `libjvm.a` to the **LIBPATH** environment variable.
- **Linux**: Add the paths of `libjvm.so` and `libhpi.so` to the **LD_LIBRARY_PATH** environment variable. You must also add the fully-qualified path of `libhpi.so` to the **LD_PRELOAD** environment variable; this entry must end with `libhpi.so`.
- **Solaris**: Add the path of `libjvm.so` to the **LD_LIBRARY_PATH** environment variable.

7 If you are using the Oracle middleware on any platform, add the following path to the appropriate library path environment variable:

```
$(ORACLE_HOME)/lib
```

8 If you purchased the *EasyScript for Secure WWW* module to test SSL (Secure Sockets Layer) or HTTPS calls that your browser/server may make, the required files are available only from a Windows system where the QALoad SSL module is installed. For more information about installing this module, see step 15 on page 26.

After installing the SSL module on a Windows system, follow these steps:

a Copy the 'InstallSSL' and 'SSL-<osName>.tar.Z' files from the <windowsInstallDir>\Unix\<platform>\SSL directory on the Windows system to the <installDir> directory on the Unix system.

b In the <installDir> directory on the Unix system, make the installation script executable by typing: `chmod +x InstallSSL`.

c In the <installDir> directory on the Unix system, execute the installation script by typing: `InstallSSL`.

9 If you are using the GNU compiler on Solaris or AIX, add the following line to the end of the **<installdir>/qalplayer.conf** file:

```
CompilerType GNU
```

10 Start the Player Agent by typing ./`PlayerAgent`.

Required: If you restart the UNIX system, you must start the Player Agent manually by typing ./`PlayerAgent` in the installation directory.

Installing a UNIX Player on AIX

Load the Player Files

To load the appropriate package file for QALoad runtime playback onto AIX, you must either mount the installation CD onto the AIX system or FTP the package files from the installation CD to the UNIX system. Once the package is available on the AIX system, use "`smit`" to install the software. The package is located in the `<CD drive>/cpwr/qaload/aix` directory of your QALoad installation CD.

Command Line Installation

To install the UNIX Player on AIX, perform the following steps:

1. If using FTP:
   - Use binary mode to copy the package file `QACPE.bff.Z` to the AIX system.
   - Log on as `root`.

   If using the CD:
   - Log on as `root`.
   - Mount the CD onto the AIX system.
   - Copy the `QACPE.bff.Z` package file onto the system.
2. Change the directory (cd) to where the package file was placed. Note that "`root`" must have write permission in this directory.
3. Uncompress the package file by running the following command:

   ```
   uncompress QACPE.bff.Z
   ```

   This will expand the compressed package file and create the installable package `QACPE.bff`.
4. From the command prompt, type the following command:

   ```
   smit
   ```
5. From the System Management screen, select **Software Installation and Maintenance** and press **Enter** on the keyboard.
6. Select **Install and Update Software** and press **Enter** on the keyboard.
7. Select **Install Software** and press **Enter** on the keyboard.
8. Type or select the directory where the `QACPE.bff` file can be found and press **Enter** on the keyboard.
9. Press **Enter** twice. When the installation is complete, the COMMAND STATUS screen appears.
10. Locate the **Result** column and verify that the package installation was successful.

11 Add `opt/QALoad/lib` to the **LIBPATH** environment variable.

12 If you are replaying *EasyScript for Java* scripts, add the path of `lib-jvm.a` to the **LIBPATH** environment variable.

13 If you are using the Oracle middleware, add the following path to the **LIBPATH** environment variable:

```
$(ORACLE_HOME)/lib
```

14 If you purchased the *EasyScript for Secure WWW* module, to test SSL (Secure Sockets Layer) or HTTPS calls that your browser/server may make, the required file is available only from a Windows system where the QALoad SSL module is installed. For more information about installing this module, see step 15 on page 26.

15 After installing the SSL module on a Windows system, follow these steps:

   a Copy the '`QACPE-SSL.bff.Z`' file from the `<windowsinstallDir/Unix/AIX/SSL` directory on the Windows system to the `<installDir>` directory on the AIX system.

   b In the `<installDir>` directory on the AIX system, uncompress the package file by running the following command:

   ```
   uncompress QACPE-SSL.bff.Z
   ```

   This expands the compressed package file and creates the installable package `QACPE-SSL.bff`.

   c From the command prompt, type the following command:

   ```
   smit
   ```

   d From the System Management screen, select **Software Installation and Maintenance** and press **Enter** on the keyboard.

   e Select **Install and Update Software** and press **Enter** on the keyboard.

   f Select **Install Software** and press **Enter** on the keyboard.

   g Type or select the directory where the `QACPE-SSL.bff` file can be found and press **Enter** on the keyboard.

   h Press **Enter** twice. When the installation is complete, the COMMAND STATUS screen appears.

   i Locate the **Result** column and verify that the package installation was successful.

16 If you are using the GNU compiler, add the following line to the end of the `<installdir>/qalplayer.conf` file:

```
CompilerType GNU
```

17 Change directory (cd) to `/opt/QALoad`.

18 Start the Player Agent by typing `./PlayerAgent`.

Installing a UNIX Player on Linux

Load the Player Files

To load the appropriate files for *QA*Load runtime playback onto Linux, you must either mount the installation CD onto the Linux system or FTP the package file(s) from the installation CD to the UNIX system. Once the package is available on the Linux system, use "`rpm`" to install the software. The package is located in the `<CD drive>/cpwr/qaload/linux` directory of the *QA*Load installation CD.

Command Line Installation

To install the UNIX Player on Linux, perform the following steps:

1 If using FTP:

- Use binary mode to copy the package file `QACPE.rpm` to the Linux system.
- Log on as `root`.

If using the CD:

- Log on as `root`.
- Mount the CD onto the Linux system.
- Copy the `QACPE.rpm` package file onto the system.

2 Change directory (cd) to where you copied the package file. Note that "`root`" must have write permissions in this directory.

3 To install the *QA*Load Player to the default directory of `/opt/QALoad`, execute the following command:

```
rpm -Uvh QACPE.rpm
```

4 Add `/opt/QALoad/lib` to your **LD_LIBRARY_PATH** environment variable.

5 If you are replaying EasyScript for Java scripts, add the paths of `libjvm.so` and `libhpi.so` to the **LD_LIBRARY_PATH** environment variable. You must also add the fully-qualified path of `libhpi.so` to the **LD_PRELOAD** environment variable; this entry must end with `libhpi.so`.

6 If you are using the Oracle middleware, add the following path to the `LD_LIBRARY_PATH` environment variable:

```
$(ORACLE_HOME)/lib
```

7 If you purchased the EasyScript for Secure WWW module to test SSL (Secure Sockets Layer) or HTTPS calls that your browser/server may make, the required file is available only from a Windows system where the QALoad SSL module is installed.For more information about installing this module, see step 15 on page 26.

After installing the module on a Windows system, follow these steps:

a Copy the 'QACPE-SSL.rpm' file from the <windowsInstallDir>/Unix/Linux/SSL directory on the Windows system to the <installDir> directory on the Linux system.

b In the <installDir> directory on the Linux system, uncompress the package file by running the following command:

c To install the QALoad Player to the default directory of /opt/QALoad, execute the following command:

```
rpm -Uvh QACPE-SSL.rpm
```

Required: The encryption package must be installed on the same directory as the QACPE package.

8 Change directory (cd) to the directory where *QA*Load is installed.

9 Start the Player Agent by typing ./PlayerAgent.

Installing a UNIX Player on Solaris

Load the Player Files

To load the appropriate package file for *QA*Load runtime playback onto Solaris, you must either mount the installation CD onto the Solaris system or FTP the package file(s) from the installation CD to the UNIX system. Once available on the Solaris system, you can use "pkgadd" to install the software. The package is located in the <*CD drive*>/cpwr/qaload/solaris directory of your *QA*Load installation CD.

Note: To install the vendor-specific package using the graphical installation, refer to the *Solaris System Administrator's Guide 3rd Edition*.

Command Line Installation

To install the UNIX Player on Solaris, perform the following steps:

1 If using FTP:

- Use binary mode to copy the package file QACPE.tar.Z to the Solaris system.
- Log on as root.

If using the CD:

- Log on as root.
- Mount the CD onto the Solaris system.
- Copy the QACPE.tar.Z package file onto the system.

2 Change directory (cd) to the directory where you copied the package file. Note that "root" must have write permissions in this directory.

3 Uncompress the package file by running the following command:

```
uncompress QACPE.tar.Z
```

This expands the compressed package file and creates the package tar file `QACPE.tar`.

4 Extract the contents of the tar file by running the following command:

```
tar -xvf QACPE.tar
```

This creates the directory structure required for installation.

5 Execute the following command:

```
pkgadd -d .
```

This displays the package to install and prompts you to select the package.

6 Select the *QA*Center Performance Edition package and press **Enter** on your keyboard. You are prompted to **Enter path to package base directory**. This is the path where the package is installed. For example, typing `/opt` installs the package to `/opt/QA`Load.

7 Type the base directory to begin installation.

8 When the installation is complete, the package to install selection displays again. Select **q** to quit.

9 Add `/<base directory>/QALoad/` to your **LD_LIBRARY_PATH** environment variable.

10 If you are replaying EasyScript for Java scripts, add the path of `libjvm.so` to the **LD_LIBRARY_PATH** environment variable.

11 If you are using the Oracle middleware, add the following path to the `LD_LIBRARY_PATH` environment variable:

```
$(ORACLE_HOME)/lib
```

12 If you purchased the EasyScript for Secure WWW module to test SSL (Secure Sockets Layer) or HTTPS calls that your browser/server may make, the required file is available only from a Windows system where the QALoad SSL module is installed.For more information about installing this module, see step 15 on page 26.

After installing the module on a Windows system, follow these steps:

a Copy the `'QACPE-SSL.tar.Z'` file from the `<windowsInstallDir>/Unix/Solaris/SSL` directory on the Windows system to the Solaris system.

b Change directory (cd) to the directory where you copied the encryption package file. Note that "root" must have write permissions in this directory.

c Extract the contents of the tar file by running the following command:

```
tar -xvf QACPE-SSL.tar
```

This creates the directory structure required for installation.

d Execute the following command:

```
pkgadd -d
```

This displays the QACPE-SSL package to be installed and prompts you to select the package.

e Select the QACenter Performance Edition SSL Libraries package and press **Enter** on your keyboard. You are prompted to `Enter path to package base directory`. This is the path where the package is installed. For example, typing `/opt` installs the package to `/opt/QALoad`.

f To begin installation, type the name of the base directory where the main QACenter Performance Edition is installed.

g When the installation is complete, the package to install selection displays again. Select `q` to quit.

13 Change directory (`cd`) to the installation directory, which is either `/opt/QALoad` or the *<base directory>* you selected.

14 If you are using the GNU compiler, add the following line to the end of the **<installdir>/qalplayer.conf** file:

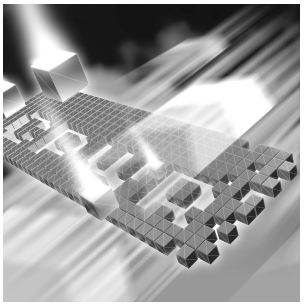
```
CompilerType GNU
```

15 Start the Player Agent by typing `./PlayerAgent`

Where to Go Next

To begin using *QA*Load, refer to the Getting Started section of the *QA*Load online help.

Chapter 3
Maintaining the Installation



- Accessing Maintenance Mode
- Modifying an Installation
- Repairing an Installation
- Removing a Product

Accessing Maintenance Mode

There are two methods for accessing a *QA*Center product's maintenance mode: from the *QA*Center CD or from the Windows Control Panel.

Required: Compuware recommends that you exit all non-essential Windows programs before running this setup program. Some Windows programs may interfere with the installation process.

Accessing Maintenance Mode from the Windows Control Panel

1. Click the Windows **Start** button and choose **Settings>Control Panel**. The Control Panel window appears.
2. Choose the **Add/Remove Programs** icon. The Add/Remove Programs dialog box appears. Select the *QA*Center product to maintain and click **Change/Remove**.

You are presented with the three maintenance mode options: modify, repair, and remove. For more information about these options, see the appropriate section in this chapter.

Accessing Maintenance Mode from the *QA*Center CD

1. In the CD-ROM drive, insert the *QA*Center CD containing the same version of the product that you have installed. The *QA*Center CD

browser should automatically appear. If it does not, navigate to the root directory and run the `setup.exe` file.

2 Click **Install QACenter Products**.

3 Click **Install** *`product name`* (where *`product name`* is the name of the product that you want to maintain).

You are presented with three maintenance mode options: modify, repair, and remove.

Modifying an Installation

For products with optional components, you may want to add or remove a component.

Rather than uninstall and re-install the product, you can modify your installation.

Modifying Products With Optional Components

1 Access maintenance mode using one of the two methods described at the beginning of this chapter.

2 Select the **Modify** option. Click **Next**. The Select Components dialog box appears allowing you to add or remove components.

3 Click **Next**. Setup will add or remove the appropriate components.

4 After modifying, you may be prompted to restart your computer. If you are prompted to restart your computer, you may choose to restart it now (recommended) or to restart it later.

5 Click **Finish** to complete the maintenance.

Repairing an Installation

There may be times when you will need to repair a damaged *QA*Center product installation. This could be due to an inadvertent deletion or corruption of the program. To repair your *QA*Center product, follow these steps:

1 Access maintenance mode using one of the two methods described in "Accessing Maintenance Mode" at the beginning of this chapter.

2 Select the **Repair** option. Click **Next**. Setup will repair the specified *QA*Center product.

3 After repairing, you may be prompted to restart your computer. If you are prompted to restart your computer, you may choose to restart it now (recommended) or to restart it later.

4 Click **Finish** to complete the maintenance.

Removing a Product

If you want to remove a *QA*Center product from a PC, follow these steps:

1 Access maintenance mode using one of two methods described at the beginning of this chapter.

2 Select the **Remove** option. Click **Next**. The Confirm File Deletion dialog box appears.

3 Click **OK**. Setup will remove the specified *QA*Center product from your PC. If your product uses a database repository, it will not be deleted.

4 After uninstalling, you may be prompted to restart your computer. If you are prompted to restart your computer, you may choose to restart it now (recommended) or to restart it later.

5 Click **Finish** to complete the maintenance.

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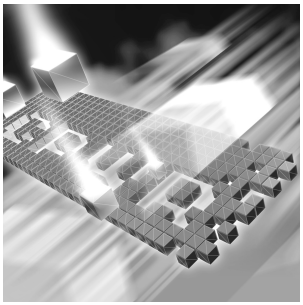

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