

Rational Integration Tester Agent



Installation Guide

Version 8.0.1



Note

Before using this information and the product it supports, read the information in “Notices” on page 74.

This edition applies to version 8.0.1 of Rational Integration Tester Agent and to all subsequent releases and modifications until otherwise indicated in new editions.

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Contents

About this Publication	v
Intended Audience	vi
Scope	vi
Typographical Conventions	vi
Contacting IBM Support	vi
Before Installing Rational Integration Tester Agent	1
Hardware Requirements	2
Software Requirements	2
Installation Planning	3
Installing Rational Integration Tester Agent	4
Installing on Windows or Linux/Unix	5
Managing Licenses	12
After Installing Rational Integration Tester Agent	14
Introduction	15
Reviewing Installed Items	16
Verifying the Storage of User Files	17
Running Rational Integration Tester Agents on Linux/Unix	18
Deploying Probes	19
Upgrading Rational Integration Tester Agent	20
Uninstalling Rational Integration Tester Agent	21
Troubleshooting	22
Project Fails to Open — Duplicate Items	23
Rational Integration Tester Agent Fails to Start	23

Linux/Unix: Program Does Nothing and Exits	23
Linux: Fail to Start - java.lang.UnsatisfiedLinkError.....	23
Appendix A: Deploying Probes	24
Deploying the System Statistics Probe.....	25
Deploying the Windows Performance Monitor Probe	29
Deploying the TIBCO BusinessWorks Probe.....	34
Deploying the TIBCO Rendezvous Probe	40
Deploying the TIBCO Rendezvous Distributed Queues Probe	45
Deploying the TIBCO Rendezvous Trace Probe	48
Deploying the TIBCO EMS Probe.....	54
Deploying the SonicMQ Probe.....	60
Deploying the webMethods Broker Probe	64
Deploying the webMethods Integration Server Probe.....	69
Glossary	72
Notices	74
Trademarks and service marks	77

About this Publication

Contents

Intended Audience

Scope

Typographical Conventions

Contacting IBM Support

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

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 Agent. 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 Agent

Contents

Hardware Requirements

Software Requirements

Installation Planning

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

1.1 Hardware Requirements

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

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 Agent.

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	<ul style="list-style-type: none">• Version 1.7 (installed by IBM Installation Manager)

Rational Integration Tester Agent 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 Agent. For details about which systems and transports are supported, as well as details about connection requirements, refer to *IBM Rational Integration Tester Installation Guide*.

1.3 Installation Planning

Rational Integration Tester Agent 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 Agent's `plugins` directory. The libraries upon which the transports depend should be made available to the application by means of Library Manager (for information about using Library Manager, refer to *IBM Rational Integration Tester Installation Guide*). At runtime, Rational Integration Tester Agent 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.

Note the following about required network connectivity and deployment:

- Every computer that runs a probe or a test engine instance must have an agent on it to manage these processes, launching them when required and shutting them down at the end.
- Every computer that runs an agent must be able to connect to the database.
- The performance controller computer must be able to contact the database and the agents.

Installing Rational Integration Tester Agent

Contents

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

[Managing Licenses](#)

This chapter describes how to install Rational Integration Tester Agent on Microsoft Windows and Linux/Unix systems.

2.1 Installing on Windows or Linux/Unix

Rational Integration Tester Agent is included in two offerings:

- IBM Rational Performance Test Server
- IBM Rational Virtualization Test Server

The steps described in this section apply to both offerings. You use the IBM Installation Manager application to install this product.

For background information about using Installation Manager, refer to the Rational Virtualization Test Server or the Rational Performance Test Server installation guide, which is included in the launchpad documentation folder on the Setup disk.

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 the steps for the offering that you are installing:

For Rational Virtualization Test Server:

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

For Rational Performance Test Server:

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

The launchpad program starts.

2.1.2 Starting Installation from the Setup Disk

To install the product 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 the steps for the offering that you are installing:

For Rational Test Virtualization Server:

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

For Rational Performance Test Server:

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

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.

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 **RTVS_SETUP** or **RPTS_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, then 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, then 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.

NOTE: If you install multiple packages at the same time, all the packages are installed into the same package group.

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, you can choose whether a Windows service called **IBM RIT Agent** is installed and whether you want this service to run automatically when Windows is started. The service is run under the Local System account, which is a predefined local account used by the Windows Service Control Manager that provides a Windows service with complete unrestricted access to local resources. If you want the **IBM RIT Agent** Windows service to run under a different account (for example, a Domain User Account), use Windows Control Panel to make any necessary changes.
- **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 Configurations page:

- **Optional:** If you want to use Rational Integration Tester Agent with Rational Test Control Panel, click **Register with Rational Test Control Panel** and enter Rational Test Control Panel's URL in the **RTCP URL** field.
- **Mandatory:** Click **Rational Integration Tester Agent Configuration Panel** to specify whether you want Rational Integration Tester Agent to be installed with Rational Performance Test Server or Rational Test Virtualization Server, or whether you want to install the Rational Integration Tester Agent on a non-processor value unit (PVU) license basis to run only probes (for information about PVU licensing, refer to [Processor Value Unit License](#)).

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- Click **Next** to continue.
12. 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.
 13. 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 different plugins. (For information about using this application, refer to *IBM Rational Integration Tester Installation Guide*.) 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.
 14. License the package (for information about this, refer to [Managing Licenses](#)).
 15. To complete installing and configuring the package, refer to [After Installing Rational Integration Tester Agent](#).

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 IBM License Metric Tool page to learn about processor virtualization unit licensing at http://publib.boulder.ibm.com/infocenter/tivihelp/v53r1/index.jsp?topic=%2Fcom.ibm.lmt75.doc%2Fcom.ibm.license.mgmt.admin.doc%2Ft_importing_software_catalogs.html

2.2.1 License Descriptions

As a purchaser of this product, the type of product license that is available is processor value unit licensing

2.2.1.1 Processor Value Unit License

Processor value unit licensing provides the means for IBM to introduce pricing structures that are responsive to both the type and number of processors available to installed products.

Entitlements can be full capacity or subcapacity. Under the processor value unit licensing structure, you license software based on the number of value units assigned to each processor core. For example, processor type A is assigned 80 value units and processor type B is assigned 100 value units. If you license a product to run on two type A processors, you must acquire an entitlement for 160 value units. If the product is to run on two type B processors, the required entitlement is 200 value units.

The processor value units table, which assigns a number of value units to each supported processor type, is regularly updated to provide for the introduction of new processor technologies. Agents retrieve information about the number and type of processor on the monitored computer or partition and the table is used to determine the level of license use in terms of processor value units.

For more information, see http://publib.boulder.ibm.com/infocenter/tivihelp/v53r1/index.jsp?topic=%2Fcom.ibm.lmt75.doc%2Fcom.ibm.license.mgmt.overview.doc%2Fprocessor_value_unit_licenses.html.

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 enable the IBM License Metric Tool for Processor Virtualization Unit licensing

2.2.2.1 Processor Value Unit Licensing

For information about setting up processor value unit licensing, see http://publib.boulder.ibm.com/infocenter/tivihelp/v53r1/index.jsp?topic=%2Fcom.ibm.lmt75.doc%2Fcom.ibm.license.mgmt.overview.doc%2Fprocessor_value_unit_licenses.html.

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.

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 Agent

Contents

Introduction

Reviewing Installed Items

Verifying the Storage of User Files

Running Rational Integration Tester Agents on Linux/Unix

Deploying Probes

Upgrading Rational Integration Tester Agent

Uninstalling Rational Integration Tester Agent

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

3.1 Introduction

After installing Rational Integration Tester Agent, you can:

- Review the installed items to verify that the installation.
- Verify the storage of user files.
- Run agents on Linux/Unix.
- Deploy probes.
- 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
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
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 Agent 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 Agent's performance significantly, so it is recommended that Rational Integration Tester Agent is installed on a local drive.

Rational Integration Tester Agent 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 Agent 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 Running Rational Integration Tester Agents on Linux/Unix

To run the Rational Integration Tester Agent on Linux or Unix, run the agent script in the top-level installation directory.

To run the agent as a service, the script can be included in an init script that runs at boot time. Please contact your system or network administrator for assistance.

3.5 Deploying Probes

A probe measures variables from a particular component in the system, such as a broker, process engine, or host machine, and reports back its findings for processing and storage.

Rational Performance Test Server enables you to create probes that gather statistics for all of the messaging and integration components supported by the product.

For information about installing and configuring probes, refer to [Appendix A: Deploying Probes](#). For information about using probes, refer to *IBM Rational Performance Test Server Reference Guide*.

3.6 Upgrading Rational Integration Tester Agent

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

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 Agent, 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.)

To upgrade a Rational Integration Tester Agent installation, install the new version of Rational Integration Tester Agent as described in [Installing Rational Integration Tester Agent](#).

3.7 Uninstalling Rational Integration Tester Agent

The IBM Installation Manager enables you to unsintall Rational Integration Tester Agent.

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 Agent. These files or the entire directory may also be removed manually.

Troubleshooting

Contents

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

[Rational Integration Tester Agent 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 Agent.

4.1 Project Fails to Open – Duplicate Items

Each file within a Rational Integration Tester Agent 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 Agent.

NOTE: Rational Integration Tester Agent 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 Agent Fails to Start

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

4.3 Linux/Unix: Program Does Nothing and Exits

In *<Rational Integration Tester Agent 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 Agent and Library Manager (LibConfig). You can send any applicable files to IBM Support if you are unable to solve the problem. (For information about using Library Manager, refer to *IBM Rational Integration Tester Installation Guide*.)

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: Deploying Probes

Contents

[Deploying the System Statistics Probe](#)

[Deploying the Windows Performance Monitor Probe](#)

[Deploying the TIBCO BusinessWorks Probe](#)

[Deploying the TIBCO Rendezvous Probe](#)

[Deploying the TIBCO Rendezvous Distributed Queues Probe](#)

[Deploying the TIBCO Rendezvous Trace Probe](#)

[Deploying the TIBCO EMS Probe](#)

[Deploying the SonicMQ Probe](#)

[Deploying the webMethods Broker Probe](#)

[Deploying the webMethods Integration Server Probe](#)

A probe measures variables from a particular component in the system and reports back its findings for processing and storage.

This appendix describes how to install probes for Rational Performance Test Server, and it should be read in conjunction with *IBM Rational Integration Tester Reference Guide* and *IBM Rational Performance Test Server Reference Guide*.

5.1 Deploying the System Statistics Probe

The following sections describe the System Statistics probe and how to configure it.

5.1.1 Probe Explained

The System Statistics (Systat) probe captures key system statistics for the target host. The following table lists those statistics.

Counter	Description
Total CPU load	Percentage average load over all CPUs.
CPU 1 load	Percentage load on a single CPU.
CPU 2 load	Percentage load on a single CPU.
CPU 3 load	Percentage load on a single CPU.
CPU 4 load	Percentage load on a single CPU.
Used memory	Percentage used RAM.
Disk busy %	Percentage of time the hard disk(s) is (are) being read or written to.
Network usage	Percentage of available bandwidth used.
CPU threads saturation	Number of threads waiting for the CPU against total threads.
Memory saturation	Number of pages against number of page faults.
Disk saturation	Disk I/O operations waiting to execute against executed operations.
Network saturation	Rate of network errors for last time period.
Used swap space	Percentage of used swap space.

The Systat probe also captures key process statistics for the target host. The following table lists those statistics.

Process	Description
Per-process CPU load	Percentage CPU load exerted by a specific process.
Pre-process memory consumption	Memory consumption (in kilobytes) exerted by a specific process.

5.1.2 Configuring the Probe

The Systat probe runs on a host machine that has been configured in Architecture School's Physical View.

NOTE: The Systat probe cannot be installed on IBM AIX systems.

The following sections discuss installation issues relating only to Linux systems and configuration issues common to all supported operating systems, including Linux.

5.1.2.1 Installation: Linux Operating Systems Only

If you want to run the Systat probe on Linux, you must first install Libstatgrab, which is a library that provides cross-platform access to statistics about the system where it is run.

One possible installation method would be to build the library yourself as follows:

1. Download the Libstatgrab source code from www.i-scream.org.
2. Extract the Libstatgrab archive file into a user's home directory or sub-directory.

For example:

```
/home/<User name>/dev
```

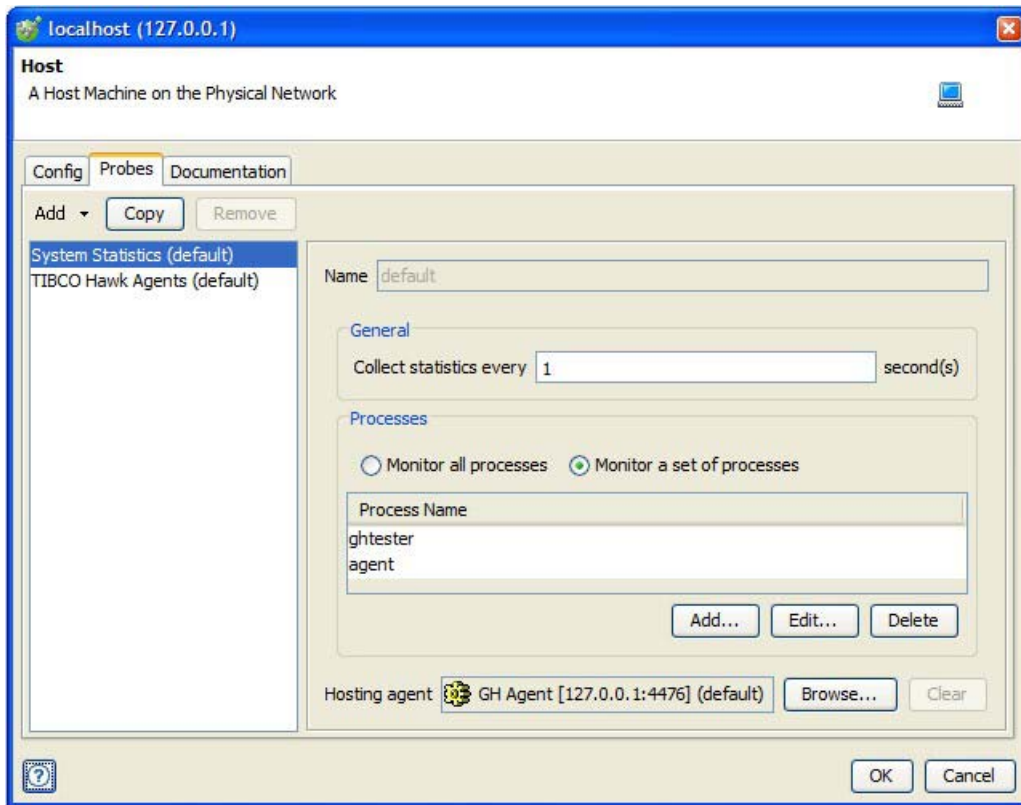
3. Complete the instructions provided in the README file.
4. Copy the resulting libraries to `/usr/lib` (if using a 32-bit version of Linux) or `/usr/lib64` (if using a 64-bit version of Linux).

For example:

```
cp -d src/libstatgrab/.libs/libstatgrab.so* /usr/lib64
```

5.1.2.2 Configuration: All Supported Operating Systems

To configure the default probe or add another, edit the desired host and click the **Probes** tab.



To add a new probe, click **Add > System Statistics**.

To copy an existing probe, select the probe and click **Copy**.

To delete a probe, select the probe and click **Remove**.

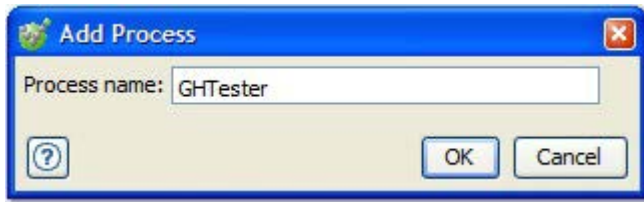
To configure an existing probe, select it and modify the settings in the configuration panel on the right.

For probes other than the default one, you can enter a name in the **Name** field.

Set the interval (in seconds) at which statistics should be collected in the **Collect statistics every ...** field.

Under **Processes**, select whether you want the probe to monitor all running processes on the host (**Monitor all processes**) or a selected subset of processes (**Monitor a set of processes**).

If you select the subset option, you can add the name of a process to monitor by clicking **Add**.

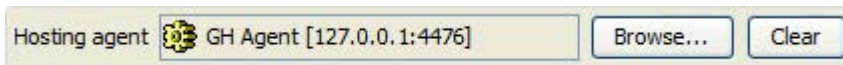


To edit the name of an existing process, select it and click **Edit**.

To delete an existing process, select it and click **Delete**.

NOTE: If the subset option has been selected and no process names are defined, no processes will be monitored (that is, the probe will not produce any data).

To select or change the agent that should host the selected probe, click **Browse** next to the **Hosting agent** field and select the desired agent from the project resource tree.



To clear the current selection, click **Clear**.

5.2 Deploying the Windows Performance Monitor Probe

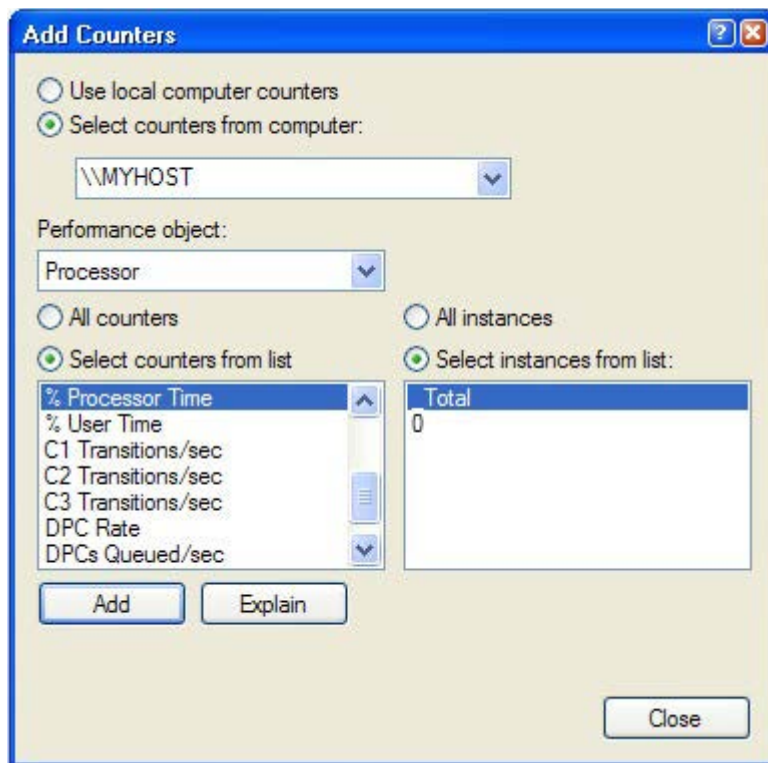
The following sections describe the Windows Performance Monitor probe and how to configure it.

5.2.1 Probe Explained

The Windows Performance Monitor probe captures the same statistics for the target host as those available through the Performance Monitor (`perfmon.msc`) on Windows systems.

NOTE: The Windows Performance Monitor probe requires the installation of the Microsoft Visual C++ 2010 Redistributable package on each computer that is to be monitored. The package can be downloaded from the Microsoft website.

The performance objects and counters available in the probe are the same as those available in the Windows Performance Monitor (an example is shown below).

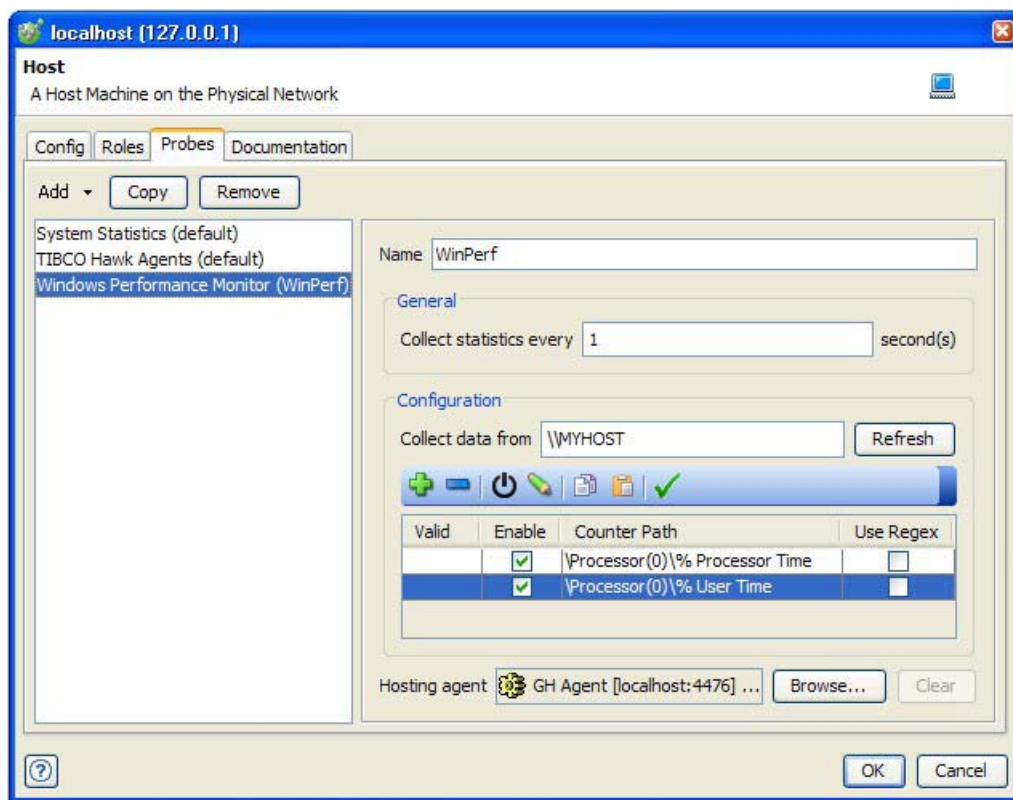


For a description of any of the counters available in the probe, you can click the **Explain** button (shown above) in the Windows Performance Monitor when adding counters.

5.2.2 Configuring the Probe

The Windows Performance Monitor probe runs on a host computer that has been configured in Architecture School's Physical View.

To configure the default probe or add another, edit the desired host and click the **Probes** tab.



To add a new probe, click **Add > Windows Performance Monitor**.

To copy an existing probe, select the probe and click **Copy**.

To delete a probe, select the probe and click **Remove**.

To configure an existing probe, select it and modify its settings in the configuration panel on the right.








Enter a name for the selected probe in the **Name** field.

Set the interval (in seconds) at which statistics should be collected in the **Collect statistics every ...** field.

The **Configuration** panel is used to specify the target host and the counters to monitor. In the **Collect data from** field, which is “tag-aware”, enter the host name of the computer from which statistics should be collected.

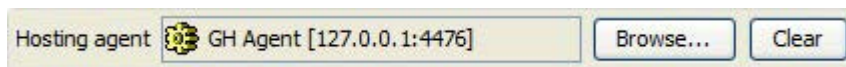
NOTE: If the **Collect data from** field is left blank, the local computer name is used.

Counters are configured using the toolbar above the counter table, as follows:

Icon	Description
	Add one or more counters to the table (see Adding Counters).
	Remove the selected counters from the table.
	Toggles the Enable state of any selected counters.
	Opens the Edit Counter Path dialog for modifying the individual segments of the counter path (see Editing Counters).
	Copies the path of one or more selected counters. The copied paths can be pasted into a text editor to get a new-line-separated list of counter paths (without the computer name prefix), or into another probe configuration on the same host or a different host. You can also copy a path by pressing CTRL+C .
	Pastes a previously copied set of counter paths into the counter table. You can also paste by pressing CTRL+V .
NOTE: A row in the counter table must be selected before pasting.	
	Validates the currently selected rows using the computer name in the Collect data from field and the path of the selected row. If a tag is defined for the host or any of the path entries, the Tag Values dialog will be displayed, prompting the user to inset values. Valid entries will be marked with a green check mark under the Valid column, and invalid entries will be marked with a red “x”.
If the Use Regex option is enabled for a row, the instance (that is, the string within the “()” characters) will be used as a regex pattern. If at least one instance literal matches the regex pattern, the pattern is considered valid.	
NOTE: At runtime, all instances that match the regex pattern will be recorded.	


NOTE: The data in the counter table can be sorted using any column by clicking on the column name. You can change the sort order by clicking a second time on the same column title.

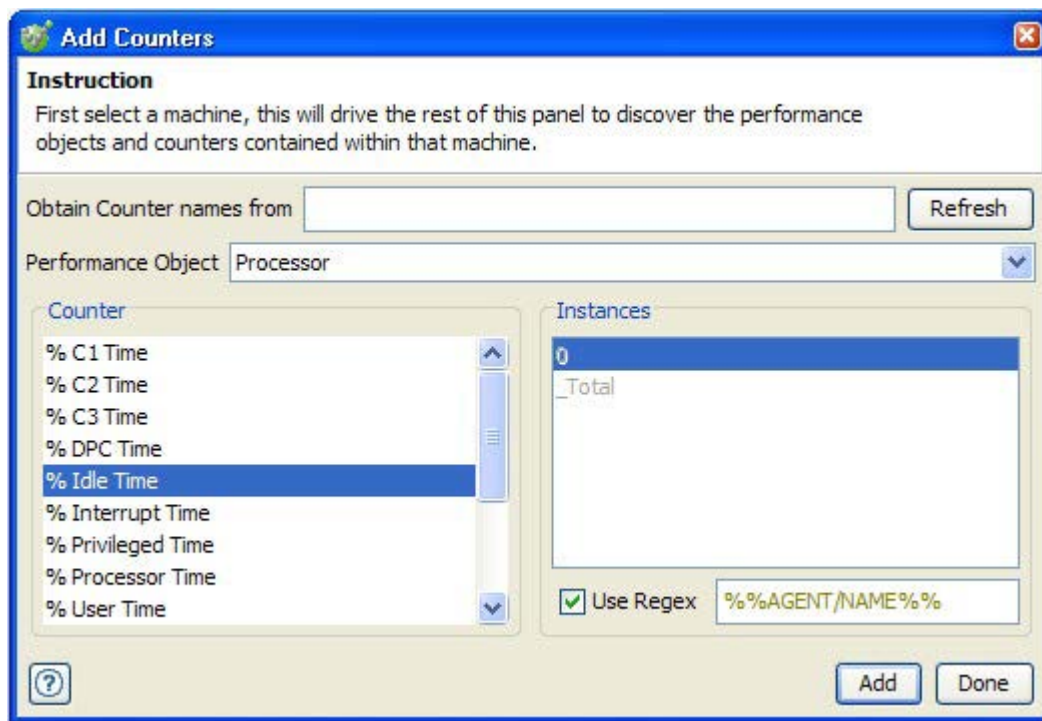
To select or change the agent to host the selected probe, click **Browse** next to the **Hosting agent** field and select the desired agent from the project resource tree.



To clear the current selection, click **Clear**.

5.2.2.1 Adding Counters

To add a row to the counter table under the probe configuration, click the  icon. The **Add Counters** dialog box is displayed.



In the **Obtain Counter names from field**, enter the host name of the computer from which counter names should be obtained and click **Refresh**. The available performance objects and counters will be populated in the Add Counters dialog box. When the dialog box is first opened, the host specified in the probe configuration will be used. If the field is left blank, the local computer name is used. This field is not tag-aware.

In **Performance Object** list, select the performance object that contains the counter(s) to be added.


Under **Counter**, select the desired instance for that counter from the **Instances** list (if available for the selected counter).

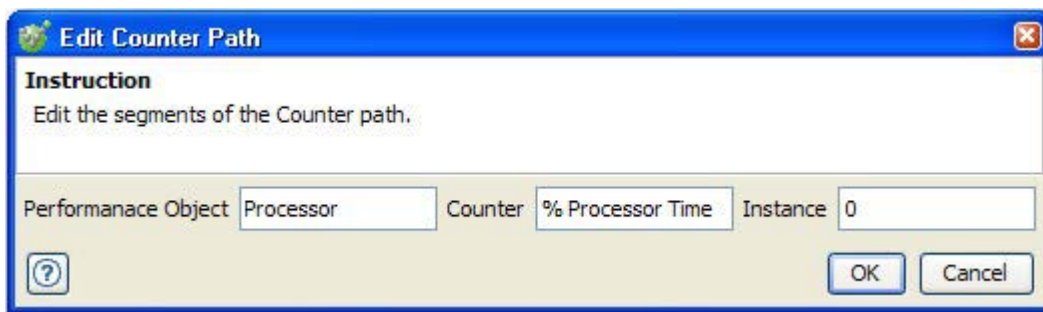
If the **Use Regex** check box is selected, you can add a regular expression (tags are allowed) that will be used to match available instances. When adding the counter, the **Use Regex** check box will be enabled for the selected counter in the probe counter table.

Click **Add** to add the selected counter to the probe configuration.

When finished, click **Done** to close the **Add Counters** dialog box.

5.2.2.2 Editing Counters

After a counter has been added to the probe configuration, its path can be modified by selecting it and clicking the  icon. The **Edit Counter Path** dialog box is displayed.



Modify any of the available path elements (**Performance Object**, **Counter**, and **Instance**) and click **OK** when finished. The **Instance** field is tag-aware.

NOTE: Once back in the probe configuration, any edited path should be validated to ensure that the changes point to a valid counter and instance.

5.3 Deploying the TIBCO BusinessWorks Probe

The following sections describe the TIBCO BusinessWorks (BW) probe and how to configure and use it.

5.3.1 Probe Explained

The TIBCO BusinessWorks probe accesses the TIBCO Hawk microagents within BusinessWorks to collect execution statistics from running BusinessWorks processes.

The probe creates a Hawk transport to communicate (by means of Rendezvous or EMS) with the systems to be monitored.

The following counters are recorded with the probe:

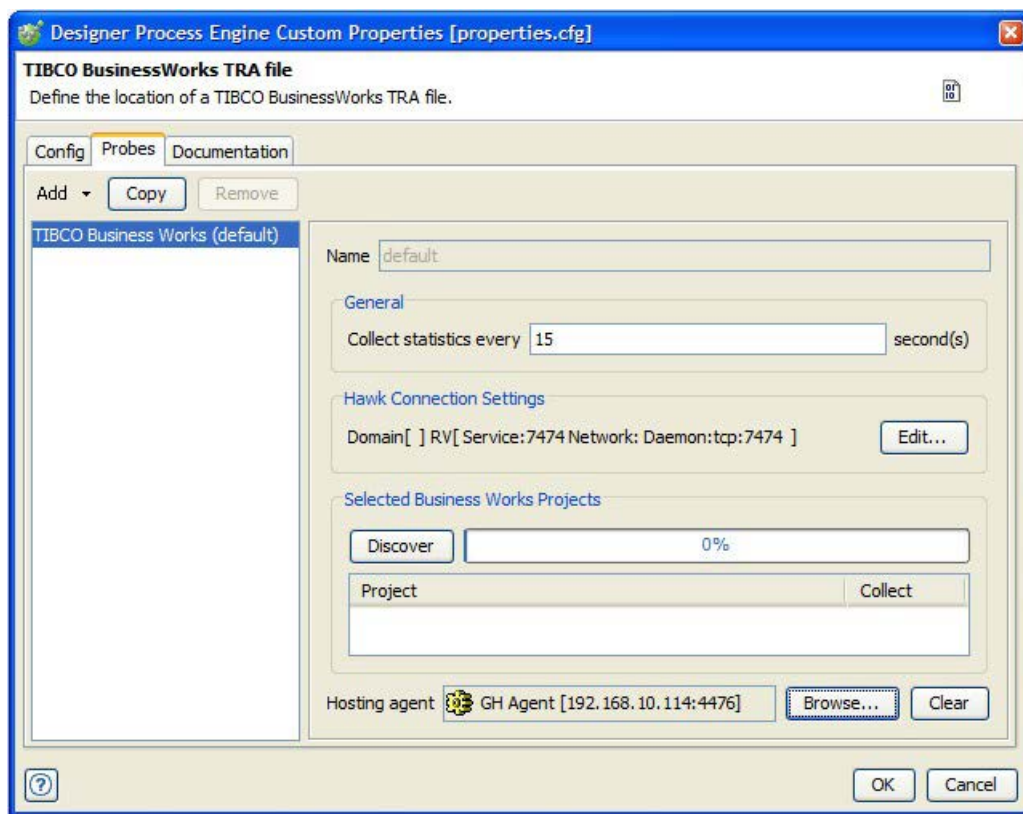
- Average elapsed time (ms)
- Minimum elapsed time (ms)
- Maximum elapsed time (ms)
- Average execution time (ms)
- Minimum execution time (ms)
- Maximum execution time (ms)
- Processes running
- Number aborted
- Number completed
- Number created
- Number queued
- Number suspended
- Number swapped
- Process creation rate

NOTE: The TIBCO Hawk JAR files will need to be present on the host computer used to configure and run this probe. This can be accomplished by installing the TIBCO Runtime Agent (TRA). The configuration of the system can be verified in Library Manager. (For information about using Library Manager, refer to *IBM Rational Integration Tester Installation Guide*.)

5.3.2 Configuring the Probe

The TIBCO BusinessWorks probe runs on a TIBCO BusinessWorks TRA file that has been configured in the Architecture School's Physical View. The TRA file is associated when a BusinessWorks project is added to a Rational Performance Test Server project.

To configure the default probe or add another, edit the desired TRA file and click the **Probes** tab.



To add a new probe, click **Add > TIBCO BusinessWorks**.

To copy an existing probe, select the probe and click **Copy**.

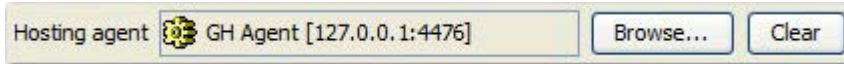
To delete a probe, select the probe and click **Remove**.

To configure an existing probe, select it and modify its settings in the configuration panel on the right.

For probes other than the default one, you can enter a name in the **Name** field.

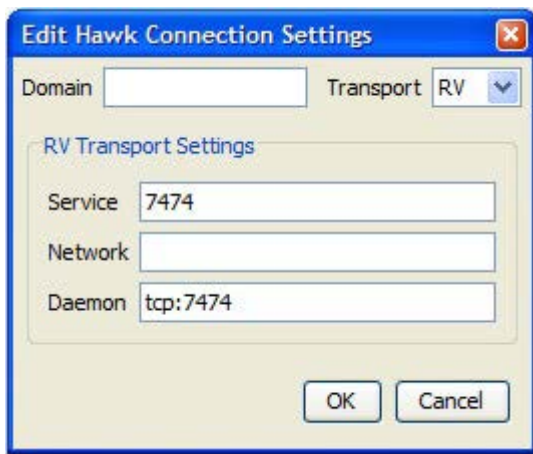
Set the interval (in seconds) at which statistics should be collected in the **Collect statistics every ...** field.

To select or change the agent that should host the selected probe, click **Browse** next to the **Hosting agent** field and select the desired agent from the project resource tree.



To clear the current selection, click **Clear**.

You can modify the default Hawk connection settings by clicking **Edit** next to the current connection description.



Configure the settings to specify the Hawk connection transport and BusinessWorks domain, and click **OK** when finished.

Click **Discover** to search for active BusinessWorks processes that are using the specified Hawk transport. Click **Stop** to terminate the search early.



Displayed hosts may be expanded to show their associated BW processes.

Select the **Collect** check boxes to select the processes in which you are interested. Select/clear the box for the host name to turn on/off all processes. Screen tips show the last time that this BusinessWorks engine was recorded as active within this Rational Performance Test Server project. You can right-click an entry to delete it from the configuration if it is no longer relevant or required.

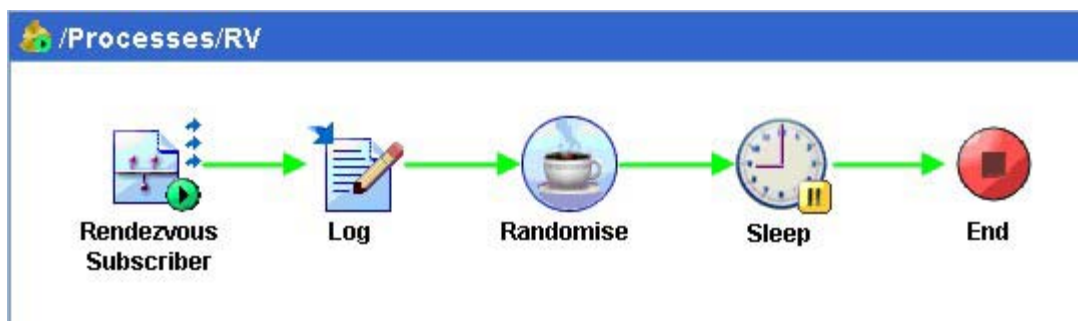
The frequency of data collection is set in the **Collection interval** field.

Click **Finish** to complete the configuration and quit the dialog box.

5.3.3 Using the Probe

After the TIBCO BusinessWorks probe is configured, it will collect data during a performance test. The counters mentioned in [Probe Explained](#) are split among three different sections in the chart configuration tree.

The following is a very simple BusinessWorks process with five activities (including the End) which we will use to illustrate how the counters work.



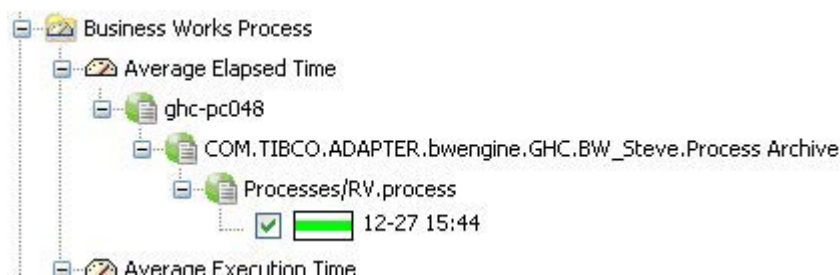
The counters are in the following branches of the chart configuration tree:

- BusinessWorks Process
- Business Works Activities
- Business Works Host

The following sections describe these counters.

5.3.3.1 Process Counters

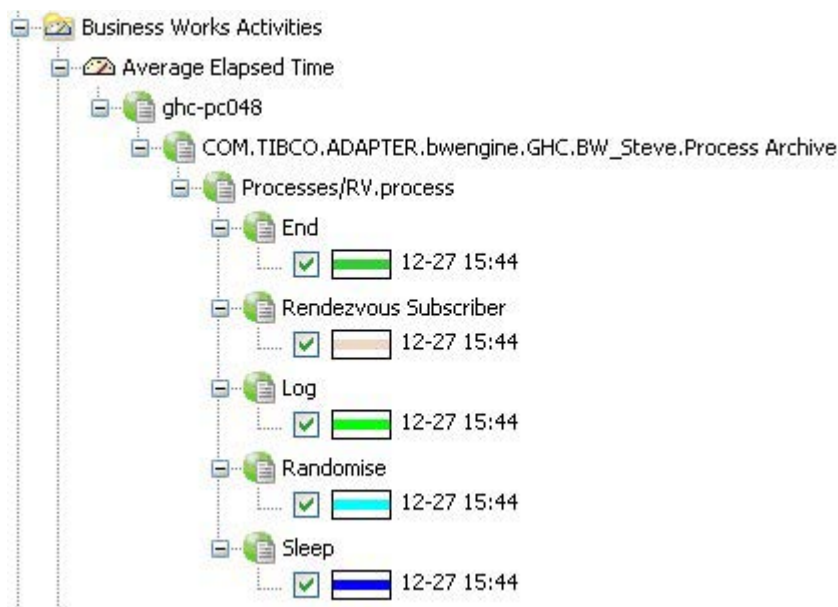
Timings are available for the BusinessWorks processes executed during the test time span.



The screen-shot above shows the Average Elapsed Time counter being selected. This group is ordered by host name then process archive name.

5.3.3.2 Activities Counters

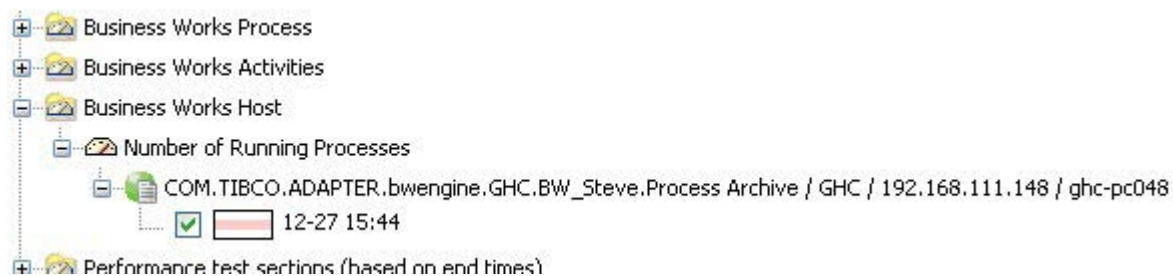
You can see here that timing information is available for each activity in the BusinessWorks process.



NOTE: The counters match with the activities shown in the earlier TIBCO Designer graphic of the process design.

5.3.3.3 Host Counters

The number of running processes is shown for each host computer and the organization in the tree is ordered by BusinessWorks domain name, process archive name, domain name, Hawk domain, and host name.



5.4 Deploying the TIBCO Rendezvous Probe

The following sections describe the TIBCO Rendezvous (RV) probe and how to configure and use it.

5.4.1 Probe Explained

The TIBCO Rendezvous probe captures Rendezvous daemon (RVD) status messages that contain messaging and error rates. These status messages are published by RVDs every 90 seconds, and they consist of the following values:

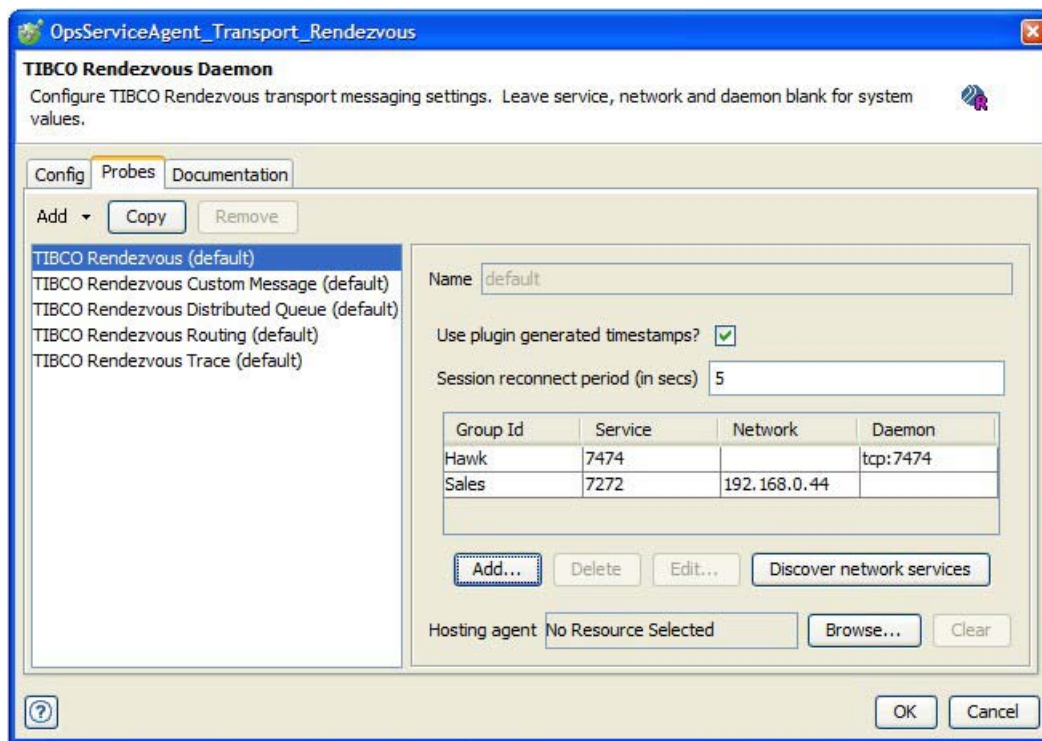
- Messages sent (ms)
- Packets sent (ps)
- Bytes sent (bs)
- Retransmission requests (rx)
- Serial Number
- Version
- HTTP Port
- Process user ID (owner)
- Messages received (mr)
- Packets received (pr)
- Bytes received (br)
- Packets missed (pm)
- Operating System
- HTTP Address
- Uptime (seconds)
- Process ID

NOTE: Status messages are published for each transport. To capture a complete picture of your network, you must configure RVDs and services that will capture all relevant data. It is possible to connect to a remote RVD to monitor a remote network but you must ensure that you comply with the licensing agreement. Your licensing may be based on geography, thus preventing you from monitoring multiple locations on a single server.

5.4.2 Configuring the Probe

The TIBCO Rendezvous probe runs on a TIBCO Rendezvous daemon that has been configured in Architecture School's Physical View.

To configure the default probe or add another, edit the desired RVD resource and click the **Probes** tab.



To add a new probe, click **Add > TIBCO Rendezvous**.

To copy an existing probe, select the probe and click **Copy**.

To delete a probe, select the probe and click **Remove**.

To configure an existing probe, select it and modify its settings in the configuration panel on the right.

For probes other than the default one, you can enter a name in the **Name** field.

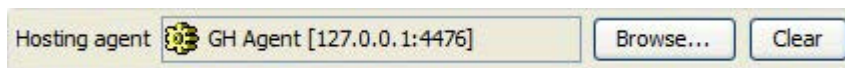
Monitoring groups are added to the probe and their names are used when displaying data in charts. The service/network/daemon is configured for each RVD transport to monitor. You can manually enter this data or click **Discover network services** to use the network services discovery utility. (For information about this utility, refer to [Using the Probe.](#))

Backup RVDs can be configured for each service that you wish to monitor by adding more than one group with the same name. The probe will connect to the first RVD transport listed for that group; if this RVD goes down, the probe will connect automatically to the next applicable RVD. If none of the configured RVDs are available, the probe will attempt to reconnect every **Session reconnect period**.

If the **Use plugin generated timestamps** check box is selected, the probe will set the date and time to be stored. Otherwise, the data and time are taken from the RVD's data.

NOTE: RVDs earlier than version 7 do not contain this data field, so the server time is used. If your servers do not have time synchronization, it is recommended that you enable this option because RVD times may be misleading.

To select or change the agent that hosts the selected probe, click **Browse** next to the **Hosting agent** field and select the desired agent from the project resource tree.



To clear the current selection, click **Clear**.

5.4.3 Using the Probe

Using the RVD discovery process, the TIBCO Rendezvous probe can intelligently search for RV services on network RVDs to help you to build a configuration.

NOTE: The probe is able to start and use `rvtrace` to better discover hosts on the network by selecting the **Interface with SNMP agent in `rvtrace` process** check box. If `rvtrace` is enabled but not configured, a warning message will be displayed. (For more information about `rvtrace`, refer to [Using the `rvtrace` Program](#).)

Configure RVD discovery process

Discovery seeds

Service	Network	Daemon
7500		

Add... Delete Edit...

Host	HTTP Port
------	-----------

Add... Delete Edit...

Advanced

☒ Interface with SNMP agent in `rvtrace` process?

Discover Cancel

If `rvtrace` is not used, the probe requires at least one RVD seed. You can listen on RVD transports (top) or RVD administration web pages (bottom) to search for services. Click **Add** in either section to add a transport or RVD administration URL (for example, `localhost:7580`).

To enable `rvtrace`, select the **Interface with SNMP agent in `rvtrace` process** check box.

When ready, click **Discover** to start the discovery process.

The process may take several minutes because the probe must allow enough time to detect all of the RVDs on the network. Progress is updated as the process continues.

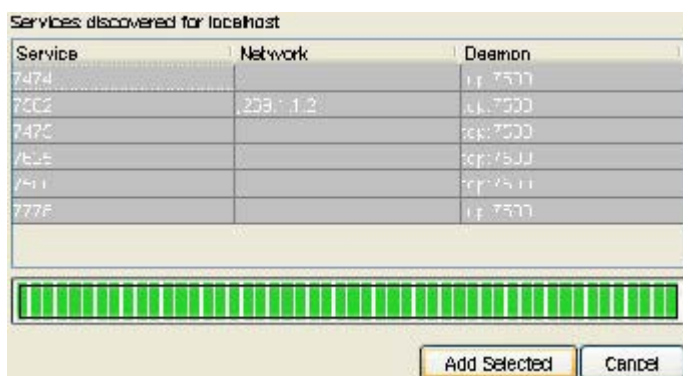
As new services are discovered, subscriptions are created to detect hosts on them, so the completion time may increase to allow enough time (90 seconds) for those advisory messages to be recorded.

The following settings are available to prevent the probe from creating too many simultaneous transports and possibly causing network problems:

- **Maximum active listeners** limits the number of transports that are created.
- **Maximum active listeners per host** limits the number of transports on a given host.

Both settings may be modified while the discovery process is active.

After the process is complete, the list of discovered RVDs is listed. Highlight the ones that you want to use and click **Add Selected**.



The new groups will be added to the configuration.

NOTE: The added groups will have been given default names, which you may want to change.

NOTE: There is no problem in having more than one RVD listening on the same service on the same network.

5.5 Deploying the TIBCO Rendezvous Distributed Queues Probe

The following sections describe the TIBCO Rendezvous Distributed Queues (RVDQ) probe and how to configure it.

5.5.1 Probe Explained

The TIBCO Rendezvous Distributed Queues probe uses Rendezvous daemon (RVD) transports to collect RV Distributed Queue statistics. It subscribes to the distributed queues (DQ) advisories and stores the values in the database.

You do not need to configure the DQs because they are discovered automatically as they appear on the network. However, as with the TIBCO Rendezvous probe (refer to [Deploying the TIBCO Rendezvous Probe](#)), you will need to configure the Rendezvous (RV) transports.

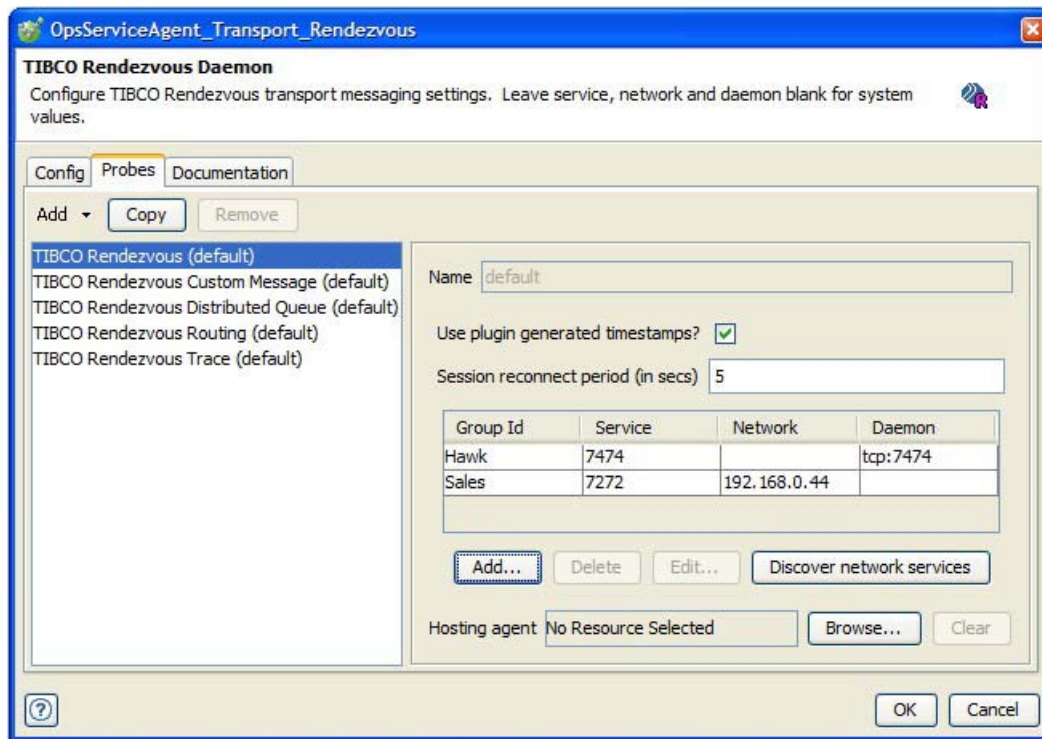
The RVDQ probe collects the following data for overall queues and individual members:

- Tasks accepted
- Tasks rejected
- Tasks completed

5.5.2 Configuring the Probe

The TIBCO RVDQ probe runs on a TIBCO Rendezvous daemon that has been configured in Architecture School's Physical View.

To configure the default probe or add another, edit the desired RVD resource and click the **Probes** tab.



To add a new probe, click **Add > TIBCO Rendezvous Distributed Queue**.

To copy an existing probe, select the probe and click **Copy**.

To delete a probe, select the probe and click **Remove**.

To configure an existing probe, select it and modify its settings in the configuration panel on the right.

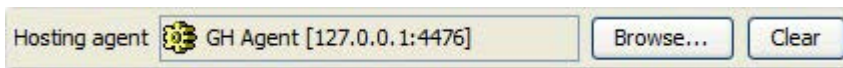
For probes other than the default one, you can enter a name in the **Name** field.

The **Update Period** field should be set to something suitable. DQ advisories are published when the queue members accept, reject, and complete tasks, so this period is used by the probe to calculate period values. It records all of the events internally and stores the period values in the database.

RV transports with their associated Group IDs are configured in the same way as the TIBCO Rendezvous probe's RV transports, and the same RVD discovery process is available. (For information about this, refer to [Deploying the TIBCO Rendezvous Probe](#).)

NOTE: The RVDQ probe subscribes to RVDQ advisories, so no messages will be received when there are periods of inactivity for a given queue. During these periods, the probe stores a zero value at the start of inactivity and at the beginning of new activity.

To select or change the agent that hosts the selected probe, click **Browse** next to the **Hosting agent** field and select the desired agent from the project resource tree.



To clear the current selection, click **Clear**.

5.6 Deploying the TIBCO Rendezvous Trace Probe

The following sections describe the TIBCO Rendezvous Trace (RVTRACE) probe, how to configure the probe, and how to use the `rvtrace` program.

5.6.1 Probe Explained

The TIBCO Rendezvous Trace probe uses the TIBCO program `rvtrace` to monitor networks and capture Rendezvous daemon (RVD) subject statistics.

NOTE: `rvtrace` is a tool that network administrators can use to monitor and categorize network packets in addition to reporting statistics at regular intervals. Licenses for `rvtrace` are purchased separately from Rendezvous component licenses. For more information about `rvtrace` licensing, contact your local TIBCO representative.

The TIBCO Rendezvous Trace probe connects to one or more running instances of `rvtrace` by means of an SNMP interface and collects data in the following categories:

- Subject
- Point-to-Point
- Multicast
- Network
- Retransmission

For example, the Subject data category contains messaging rates broken down by individual subjects, either as the number of messages or the number of bytes. (For a full description of all data items, refer to TIBCO Rendezvous documentation or visit the TIBCO website.)

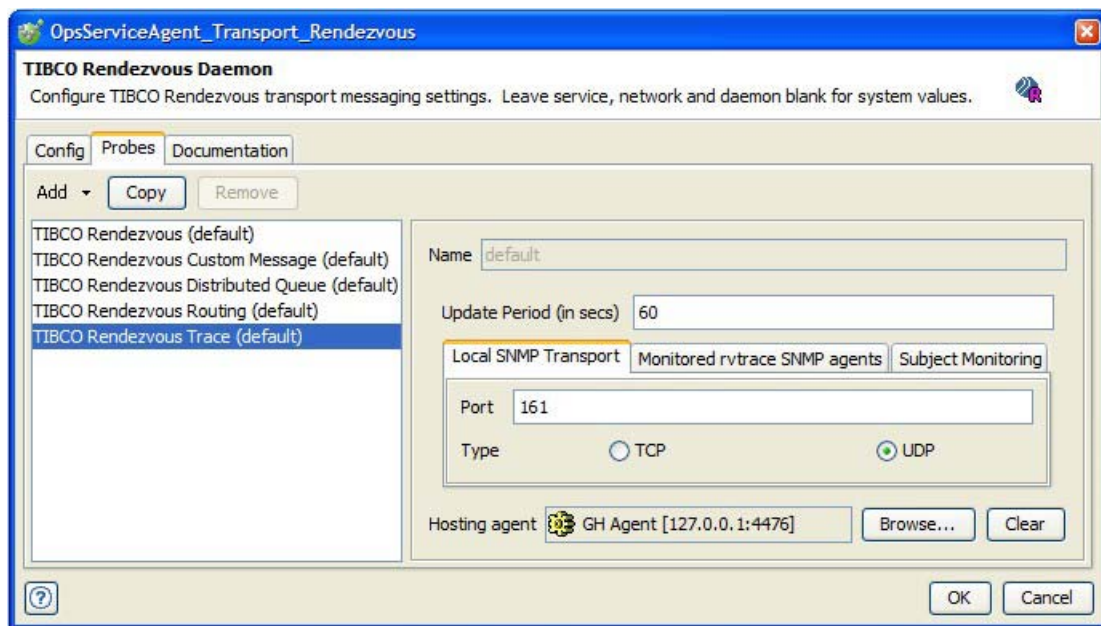
By running multiple instances of `rvtrace`, it is possible to monitor more than one network.

NOTE: You should check your probe licensing agreement to verify that you are allowed to monitor all of the networks planned because there may be geographic or environment restrictions.

5.6.2 Configuring the Probe

The TIBCO Rendezvous Trace probe runs on a TIBCO Rendezvous daemon (RVD) that has been configured in Architecture School's Physical View.

To configure the default probe or add another, edit the desired RVD resource and click the **Probes** tab.



To add a new probe, click **Add > TIBCO Rendezvous Trace**.

To copy an existing probe, select a probe and click **Copy**.

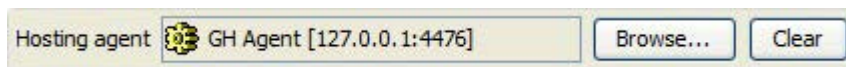
To delete a probe, select it and click **Remove**.


For probes other than the default one, you can enter a name in the **Name** field.

In the **Update Period**, enter (in seconds) the time interval between each query to the rvtrace process.

NOTE: The rvtrace process has its own update interval (the default is 10 seconds), and messaging statistics are reset at the end of this period. The TIBCO Rendezvous Trace probe must use the same update period as rvtrace. Otherwise, data will be lost. For more information, refer to [Using the rvtrace Program](#).

To select or change the agent that hosts the selected probe, click **Browse** next to the **Hosting agent** field and select the desired agent from the project resource tree.

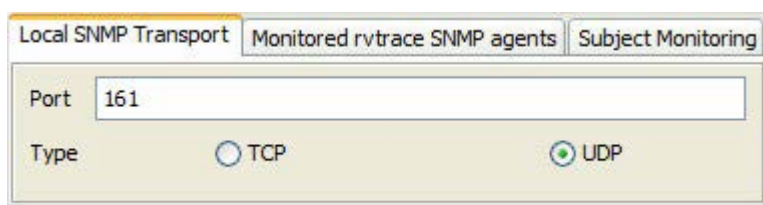


Hosting agent  GH Agent [127.0.0.1:4476] Browse... Clear

To clear the current selection, click **Clear**.

Under the **Update Period** field, you can configure the local SNMP port used by the probe, the *rvtrace* agents that are to be used, and subject monitoring details.

Click the **Local SNMP Transport** tab to configure the port used by *rvtrace*.



Local SNMP Transport Monitored *rvtrace* SNMP agents Subject Monitoring

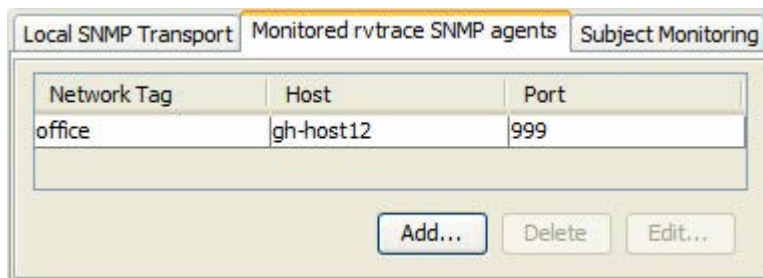
Port

Type ☐ TCP ☒ UDP

The default port used by *rvtrace* for SNMP is UDP 161, but you can change the port number. Alternatively, depending on how *rvtrace* is configured, you can use TCP instead of UDP.

NOTE: On Unix systems, if the port number is less than 1024, the probe will have to be run as user *root* (or an equivalent super user) because, on Unix, ports below 1024 are privileged.

Click the **Monitored *rvtrace* SNMP agents** tab to configure the *rvtrace* agents to be used.



Local SNMP Transport Monitored *rvtrace* SNMP agents Subject Monitoring

Network Tag	Host	Port
office	gh-host12	999

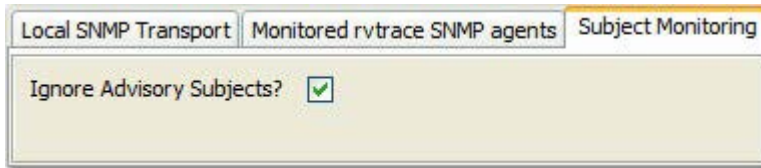
Add... Delete Edit...

Click **Add** to add an agent, and enter the **Network Tag**, **Host**, and **Port** as required. The **Network Tag** will be displayed on the client, so it should be a meaningful name.

To delete an agent, select it and click **Delete**.

To edit an agent, select it and click **Edit**.

To limit the data collected, click the **Subject Monitoring** tab and select the **Ignore Advisory Subjects?** check box.



NOTE: The underscore (_) character is used to indicate RVD advisory subjects.

5.6.3 Using the rvtrace Program

To force the `rvtrace` program to listen for SNMP connections from the TIBCO Rendezvous Trace probe, run program with the `-snmp` command-line option.

To limit console output, you can run the `rvtrace` program with the `-no-display` command-line option.

By default, `rvtrace` uses UDP port 161 (TIBCO Rendezvous documentation describes how to change this). You need to specify the update interval to match that of the configured probe. The default interval is 10 seconds, but you may want to use a longer interval to limit the amount of data that is stored. The interval is set with the `-u` command-line option.

Therefore, an example command to run `rvtrace` is as follows:

```
rvtrace -u 60 -snmp -no-display
```

The following sections provides some information about running `rvtrace` on Windows and Unix system. (For complete and comprehensive information about using `rvtrace`, refer to the TIBCO Rendezvous documentation or visit the TIBCO website.)

5.6.3.1 Windows Systems

When running `rvtrace` on Windows, you first need to install WinPcap, which is included in the Rational Integration Tester Agent installation program (for information about this, refer to [Installing Rational Integration Tester Agent](#)).

The WinPcap software installs DLL files that `rvtrace` requires to capture RVD messages. You also need to ensure that the network interface used is the correct one (specified with the `-i` command-line option). If you do not use the correct interface, `rvtrace` will not collect any data. You can find network device names in the Windows registry or you can run WinDump, which is the Windows version of `tcpdump`, the command-line network analyzer for Unix. (WinDump can be downloaded from the WinPcap website.)

For example, if you run a command of the following format:

```
windump -D
```

The output may look similar to the following:

```
1.\Device\NPF_GenericDialupAdapter (Generic dialup adapter)
2.\Device\NPF_{AC533C74-32A4-44AD-8675-5A16D50D0170} (3Com
EtherLink PCI)
```

You can use this information when running the `rvtrace` command.

For example:

```
rvtrace -i \Device\NPF_{AC533C74-32A4-44AD-8675-5A16D50D0170} -
u 60 -snmp -no-display
```

5.6.3.2 Unix Systems

When running `rvtrace` on Unix, no other software is required. However, `rvtrace` must be able to open the network port in promiscuous mode, which requires super user permissions.

Typically, the `rvtrace` program has “set user to root” enabled. If this is true, it may be run as a normal user. (Contact your system administrator if you need assistance or to verify this.)

You must configure `rvtrace` to monitor the correct network port. A list of network interfaces can be displayed by running `ifconfig`.

For example:

```
host% /sbin/ifconfig -a

lo0: flags=1000849<UP,LOOPBACK,RUNNING,MULTICAST,IPv4> mtu 8232
index 1 inet 127.0.0.1 netmask ff000000

hme0: flags=1000843<UP,BROADCAST,RUNNING,MULTICAST,IPv4> mtu
1500 index 2 inet 192.168.111.8 netmask ffffffff00 broadcast
192.168.111.255
```

In this case, the hme0 interface will be used when running the rvtrace command:

```
rvtrace -i hme0 -u 60 -snmp -no-display
```

5.7 Deploying the TIBCO EMS Probe

The following sections describe the TIBCO EMS probe and how to configure it.

5.7.1 Probe Explained

The TIBCO EMS probe makes a TCP connection to one or more TIBCO EMS servers and periodically extracts messaging statistics for the following categories:

- Topic
- Queue
- Route
- Server

For a full description of all of these data items and the settings for the EMS server reporting intervals, refer to the TIBCO EMS documentation or the `tibemsd.conf` configuration file or visit the TIBCO website.

The TIBCO EMS probe queries each EMS server to determine the statistics interval and uses it when polling for updates.

The following is an excerpt from the `tibemsd.conf` file:

```
server_rate_interval= 60

statistics= enabled

rate_interval= 60

detailed_statistics= NONE

statistics_cleanup_interval= 120

max_stat_memory= 64MB
```

The values for `server_rate_interval` and `rate_interval` are the same. The `server_rate_interval` setting determines how often server statistics are refreshed, and `rate_interval` is used for topics, queues, and routes.

The TIBCO EMS probe uses the value of `server_rate_interval`, and if the value for `rate_interval` is different, data will be lost. If you change these values, you must restart the EMS server.

NOTE: The default interval for EMS servers is one second, but this may create a heavy load on the collection process if several EMS servers are configured on the probe.

The TIBCO EMS probe will reconnect to EMS servers automatically if they restart.

The following table describes the topic and queue counters provided by the TIBCO EMS probe.

Counter	Description
pmc	Pending message count.
pms	Pending messages size (bytes).
imr	Inbound message rate (per second).
omr	Outbound message rate (per second).
ibr	Inbound bytes rate (per second).
obr	Outbound messages size (bytes).
imc	Inbound message count.
obc	Outbound message count.
ibc	Inbound bytes count.
obc	Outbound bytes count.
dc	Count of durable subscribers.
adc	Count of active durable subscribers.
sc	Subscriber count.

The following table describes the route counters provided by the TIBCO EMS probe.

Counter	Description
imr	Inbound message rate (per second).
omr	Outbound message rate (per second).
ibr	Inbound bytes rate (per second).
obr	Outbound messages size (bytes).
imc	Inbound message count.
obc	Outbound message count.
ibc	Inbound bytes count.

Counter	Description
obc	Outbound bytes count.

The following table describes the route counters provided by the TIBCO EMS probe.

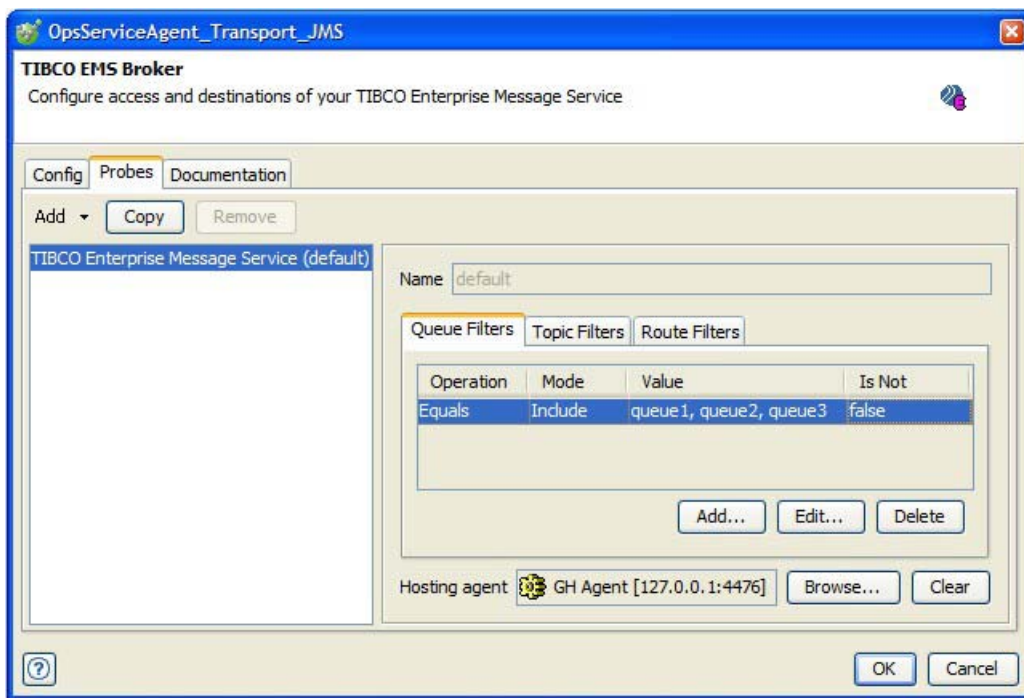
Counter	Description
totalConn	Total connections.
durConn	Durable connections.
msgMem	Message memory in use (bytes).
msgMemPooled	Message memory in use by pooling (bytes).
obr	Outbound bytes rate.
ibr	Inbound bytes rate.
omr	Outbound message rate.
imr	Inbound message rate.
pmc	Pending message count.
pms	Pending message size (bytes).
qc	Queue count.
tc	Topic count.

NOTE: Message rates are calculated over the interval period. If a topic receives a burst of 200 messages and the interval is set to 60 seconds, you would expect to see a message rate of 3 (200/60).

5.7.2 Configuring the Probe

The TIBCO EMS probe runs on a TIBCO EMS Broker that has been configured in Architecture School's Physical View.

To configure the default probe or add another, edit the desired broker resource and click the **Probes** tab.



To add a new probe, click **Add > TIBCO Enterprise Message Service**.

To copy an existing probe, select the probe and click **Copy**.

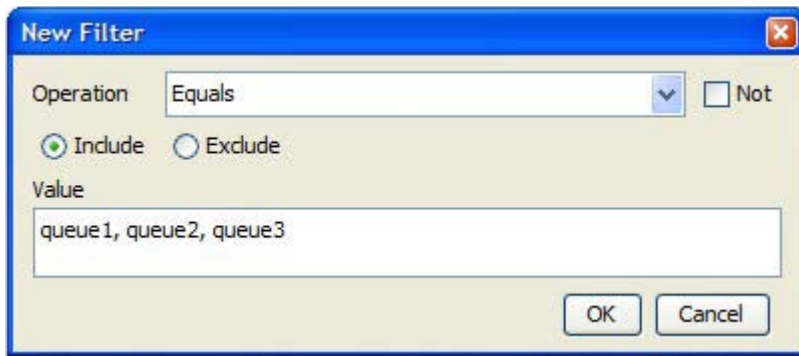
To delete a probe, select the probe and click **Remove**.

For probes other than the default one, you can enter a name in the **Name** field.

You can define filters within the probe configuration that allow queues, topics and routes to either be included or excluded based on their name. Filters are defined under the appropriate tabs, and each filter set will be applied to the server on which the probe is configured.

To add a filter:

1. Click the desired tab.
2. Click **Add**.



3. In the **Operation** list, click one of the options described in the following table.

Option	Description
Wildcard	Define a string using * as a wildcard character. For example, the text <code>server1.myQueue.out</code> will match the filter value <code>server*myQueue*</code> .
Ends with	The text must end with the filter value. For example, the text <code>server1.myQueue.out</code> will match the filter value <code>e.out</code> .
Contains	The text must contain the filter value. For example, the text <code>server1.myQueue.out</code> will match the filter with value <code>myQueue</code> .
Starts with	The text must start with the filter value. For example, the text <code>server1.myQueue.out</code> will match the filter value <code>server</code> .
Equals	The text must be identical. For example, the text <code>server1.myQueue.out</code> will match only the filter value <code>server1.myQueue.out</code> .

4. **Optional:** Select the **Not** check box to reverse the result of the specified filter.

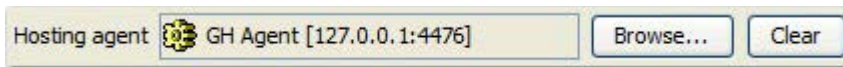
-
5. Clicking the **Include** or **Exclude** option buttons determines whether the filter will include or exclude the item that matches the filter.

6. In the **Value** field, enter the filter value to match for inclusion or exclusion.

Multiple values can be added by separating each with a comma. The filter example shown in the graphic would include all queues whose names equal either queue1, queue2, or queue3.

7. Click **OK**.

To select or change the agent that hosts the selected probe, click **Browse** next to the **Hosting agent** field and select the desired agent from the project resource tree.



To clear the current selection, click **Clear**.

5.8 Deploying the SonicMQ Probe

The following sections describe the SonicMQ probe and how to configure it.

5.8.1 Probe Explained

The SonicMQ probe collects statistics for Sonic broker, queue and agent components.

The following table describes the agent/container data that can be monitored from a Domain Manager.

Counter	Description
Pool waits	Number of times that transient management tasks had to wait because a pooled thread was not immediately available to service such tasks. Evaluated over the last 30 minutes.
Maximum threads used	Maximum size of thread pool used to service transient management tasks since last metrics reset.
Thread pool size	Size of thread pool used to service transient management tasks.
Total threads used	Total number of threads used by the container and its hosted components.
Maximum memory usage	Maximum heap space used by the container and its hosted components since last metrics reset.
Memory usage	Heap space used by the container and its hosted components.

The following table describes the broker data that can be monitored from a Domain Manager.

Counter	Description
Application messages received	Application messages received per second (excludes internal/management messages).
Application messages delivered	Application messages delivered/sec (excludes internal/management messages).
Bytes received	Broker wide bytes received/sec (includes internal/management messages).
Bytes delivered	Broker wide bytes delivered/sec (includes internal/management messages).

Counter	Description
Connections count	Inbound connection count to broker.
Connections rejected	Rejected connection attempts per minute.
Topic store size	Total size in bytes of topic message store.

The following table describes the broker connections data that can be monitored from a Domain Manager.

Counter	Description
Messages received	Messages received by a connection/sec.
Messages delivered	Messages delivered to a connection/sec.

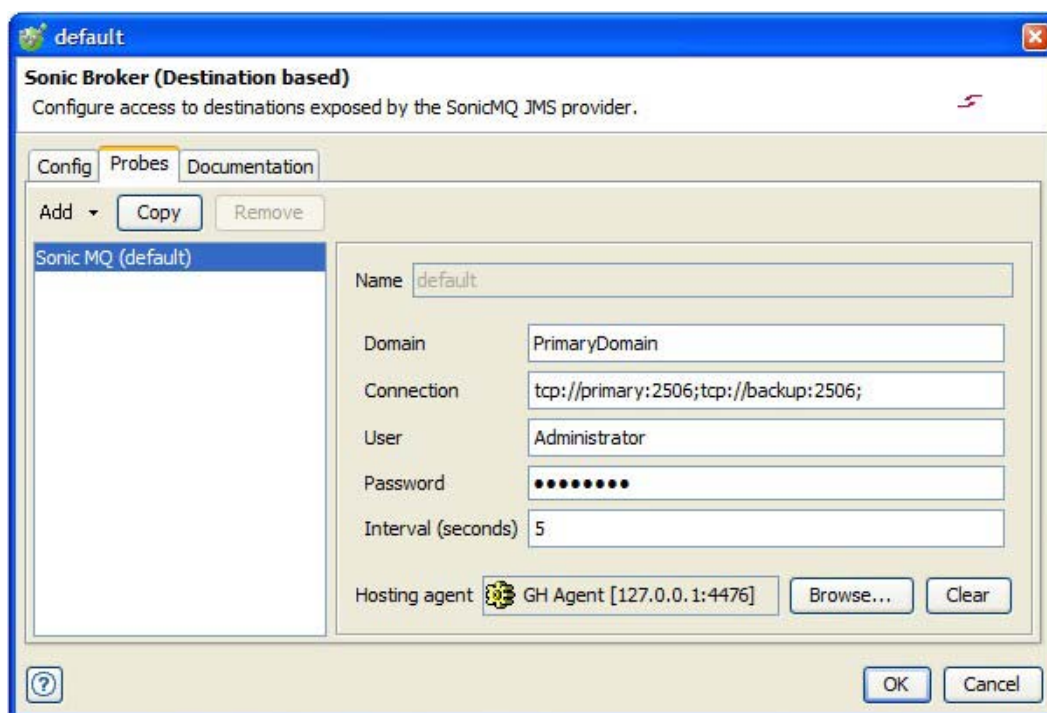
The following table describes the broker queue data that can be monitored from a Domain Manager.

Counter	Description
Messages delivered	Messages delivered to a queue/sec, including rejected messages.
Messages received	Messages received by a queue/sec.
Maximum messages in queue	Maximum number of messages in a queue during a collection interval.
Message count	Number of messages in a queue.
Message size	Size of messages in a queue.

5.8.2 Configuring the Probe

The SonicMQ probe runs on a Sonic Broker that has been configured in Architecture School's Physical View.

To configure the default probe or add another, edit the desired broker and click the **Probes** tab.



To add a new probe, click **Add > SonicMQ**.

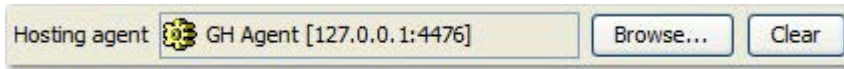
To copy an existing probe, select the probe and click **Copy**.

To delete a probe, select the probe and click **Remove**.

To configure an existing probe, select it and modify the settings required to connect to the desired Domain Manager. You can configure a primary and backup Domain Manager by using a semi-colon (;) to separate the two connections. After it starts, the probe will attempt to connect to the first server and provide a fault-tolerant connection to the backup server should the primary become unavailable.

For probes other than the default one, you can enter a name in the **Name** field.

To select or change the agent that hosts the selected probe, click **Browse** next to the **Hosting agent** field and select the desired agent from the project resource tree.



To clear the current selection, click **Clear**.

5.9 Deploying the webMethods Broker Probe

The following sections describe the SonicMQ probe and how to configure it.

5.9.1 Probe Explained

The webMethods Broker probe collects statistics for webMethods brokers, event types, clients, and client groups.

The following table describes the broker data that can be monitored by the webMethods Broker probe.

Counters	Description
Clients	The number of connected and non-connected clients on the broker.
Event Types	The number of event-types installed.
Events Published	The number of events published by all clients.
Events Delivered	The number of events delivered by all clients.
Events Queued	The number of events queued by all clients.
Traces Published	The number of trace events published by the broker.
Max Publishes	The maximum number of publishes.
Max Events	The maximum number of events.
Next Sequence Number	Next operation sequence number.
Retry Attempts	The number of retry attempts.
Event Log Length	The length of the event log.
Reserved Publishes	Total number of reserved publishes.
Guaranteed Publishes	Total number of guaranteed publishes.
Volatile Publishes	Total number of volatile publishes.
Guaranteed Events	Number of guaranteed events.
Volatile Events	Number of volatile events.
Current Publishes	Number of current publishes.
Current Events	Number of current events.
Events In Queue	Number of events placed in the queue.
Last Event Enqueued	Time when the last event was enqueued.

Counters	Description
Queue Length	Number of events in the queue.
Queue Size	Number of bytes worth of events in the queue.
Queue Highest Length	Highest value of Queue Length.
Queue Highest Length Time	The last time that Queue Highest Length was set.

The following table describes the event-type data that can be monitored by the webMethods Broker probe.

Counters	Description
Events Published	The number of events of this type published.
Events Delivered	The number of events of this type delivered.
Last Published	The time when the last event of this type was published.
Last Delivered	The time when the last event of this type was delivered.
Client Subscriptions	The number of subscriptions open which include this event-type.
Forwards Received	The number of events of this type received by means of forwarding from another broker.
Last Forward	The time the last event of this type was received by means of forwarding from another broker.
Publishing Groups	The number of client groups that can publish this event-type.
Subscribing Groups	The number of client groups that can subscribe to this event-type.

The following table describes the client data that can be monitored by the webMethods Broker probe.

Counters	Description
Events Published	The number of events published by this client.
Events Delivered	The number of events delivered by this client.
Events Queued	The number of events queued by this client.
Events Retrieved	The number of events retrieved by this client.

Counters	Description
Events Unacknowledged	The number of events unacknowledged by this client.
Last Published	The time when the last event was published by this client.
Last Delivered	The time when the last event was delivered by this client.
Last Queued	The time when the last event was queued by this client.
Last Retrieved	The time when the last event was retrieved by this client.
Queue Length	The number of events in the client queue.
Queue Byte Size	The number of bytes worth of events in the client queue.
Queue Highest Length	The highest value of Queue Length.
Queue Highest Length Time	The last time that Queue Highest Length was set.

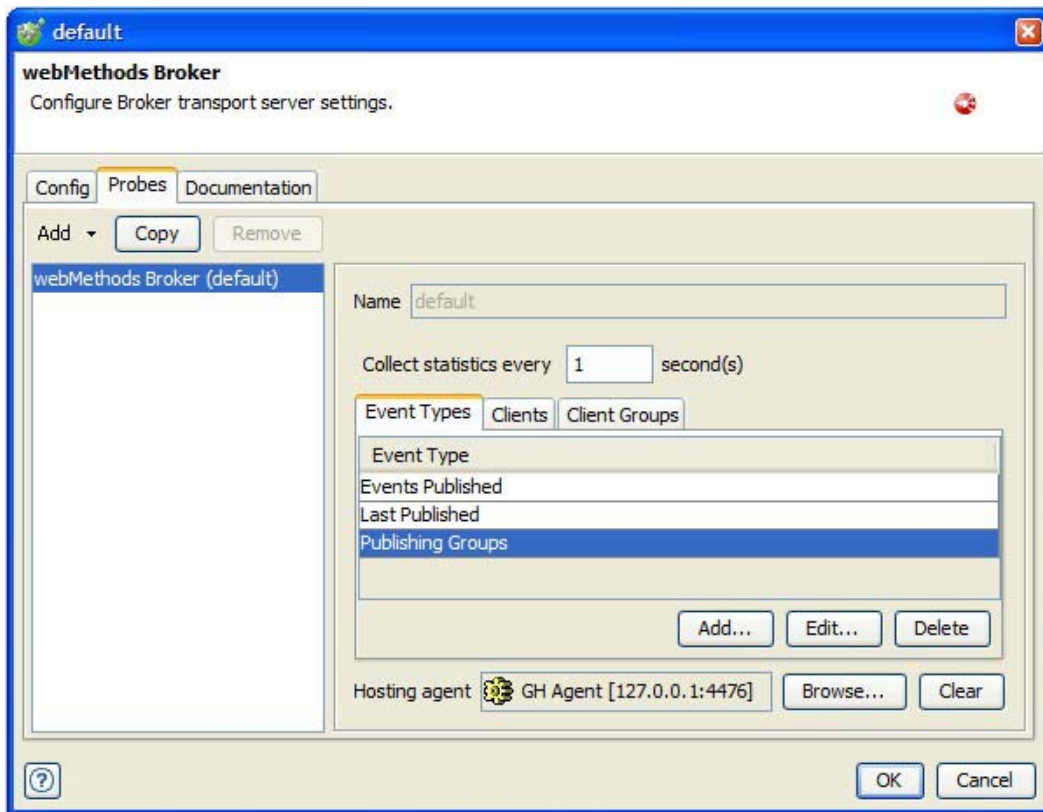
The following table describes the client group data that can be monitored by the webMethods Broker probe.

Counters	Description
Events Published	The number of events published by member clients.
Events Delivered	The number of events delivered by member clients.
Last Published	Time when the last event was published by a member.
Last Delivered	Time when the last event was delivered by a member.

5.9.2 Configuring the Probe

The webMethods Broker probe runs on a webMethods Broker that has been configured in Architecture School's Physical View.

To configure the default probe or add another, edit the desired broker and click the **Probes** tab.



To add a new probe, click **Add > webMethods Broker**.

To copy an existing probe, select the probe and click **Copy**.

To delete a probe, select the probe and click **Remove**.

For probes other than the default one, you can enter a name in the **Name** field.

In the **Collect statistics every...** field, enter the frequency at which statistics should be collected.

Under the **Event Types**, **Clients**, and **Client Groups** tabs you can add specific counters for which data should be collected (for information about this, refer to [Probe Explained](#)).

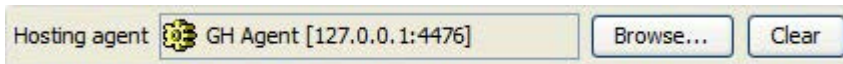
To add an entry under the selected tab, click **Add** and enter the counter name when prompted.



To modify the name of an existing counter under the current tab, select it and click **Edit**.

To delete a counter from the current tab, select it and click **Delete**.

To select or change the agent that hosts the selected probe, click **Browse** next to the **Hosting agent** field and select the desired agent from the project resource tree.



To clear the current selection, click **Clear**.

5.10 Deploying the webMethods Integration Server Probe

The following sections describe the SonicMQ probe and how to configure it.

5.10.1 Probe Explained

The webMethods Integration Server probe collects statistics for the server and for specific webMethods services.

The following table describes the integration server statistics that can be monitored by the webMethods Integration Server probe.

Counter	Description
Current System Threads	The current number of system threads.
Peak System Threads	The peak number of system threads.
Current Service Threads	The current number of service threads.
Peak Service Threads	The peak number of service threads.
Current Total Sessions	The current number of open sessions.
Peak Total Sessions	The peak number of open sessions.
Current Licensed Sessions	The current number of open licensed sessions.
Peak Licensed Sessions	The peak number of open licensed sessions.
Completed Requests	The total number of completed server requests.
Average Request Time	The current average server request time.
Total Average Request Time	The total average server request time.
Service Error Count	The number of service errors registered.
Started Requests per Minute	The number of started requests per minute.
Completed Requests per Minute	The number of completed requests per minute.
Total JVM Memory	The total amount of memory available to the IS JVM.
Used JVM Memory	The current amount of memory used by the IS JVM.
Free JVM Memory	The amount of available memory unused by the JVM.
Server Uptime	The number of seconds this server has been running.

Counter	Description
Total Service Invocation Count	The total number of service invocations.
Total Cached Services	The number of services that have been cached.
Total Prefetched Services	The number of services that have been prefetched.

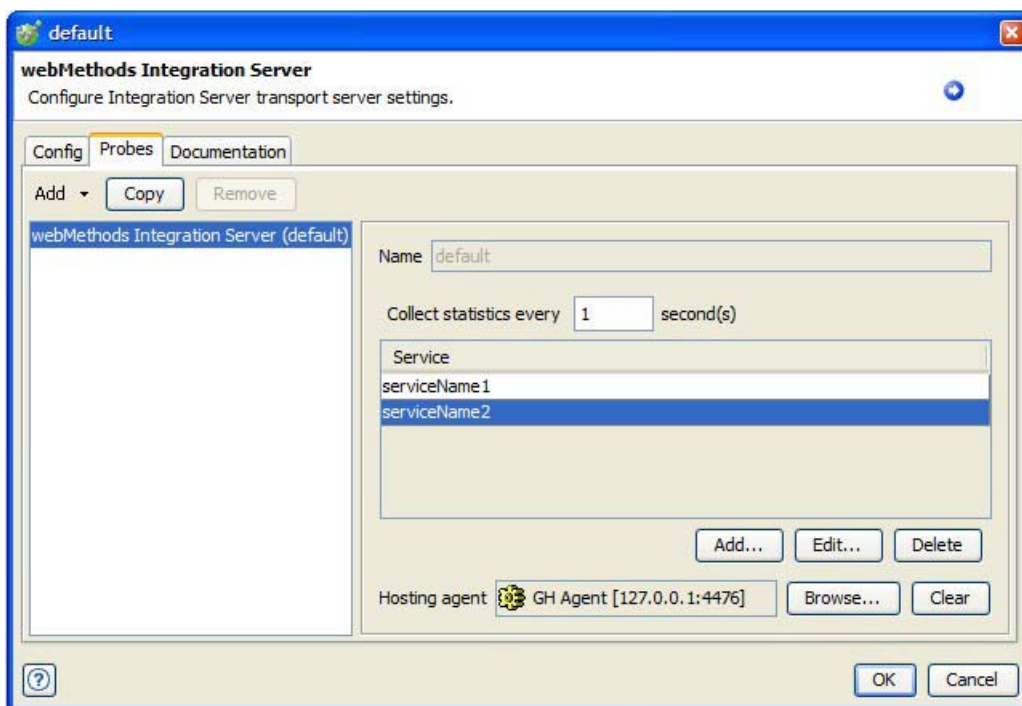
The following table describes the services data that can be monitored by the webMethods Integration Server probe.

Counter	Description
Invocation Count	The number of times the service has been invoked.

5.10.2 Configuring the Probe

The webMethods Integration Server probe runs on a webMethods Integration Server that has been configured in Architecture School's Physical View.

To configure the default probe or add another, edit the desired server and click the **Probes** tab.



To add a new probe, click **Add > webMethods Integration Server**.

To copy an existing probe, select the probe and click **Copy**.

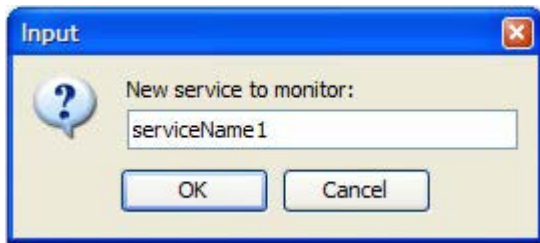
To delete a probe, select the probe and click **Remove**.

For probes other than the default one, you can enter a name in the **Name** field.

In the **Collect statistics every...** field, enter the frequency at which statistics should be collected.

Specific services can be monitored by adding them to the **Service** table.

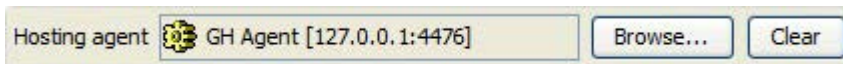
Click **Add** to enter the name of a service to monitor.



To modify the name of an existing service, select it and click **Edit**.

To delete a service, select it and click **Delete**.

To select or change the agent that hosts the selected probe, click **Browse** next to the **Hosting agent** field and select the desired agent from the project resource tree.



To clear the current selection, click **Clear**.

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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