OPTIMIZE

MERCURY BUSINESS AVAILABILITY CENTER™

Real User Monitor Administration

MERCURY™

BUSINESS TECHNOLOGY OPTIMIZATION

Mercury Business Availability Center

Real User Monitor Administration

Version 6.1

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Mercury Business Availability Center, Version 6.1
Business Process Monitor Administration

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Welcome to Real User Monitor Administration

This guide provides detailed instructions on how to install, configure, and administer the Mercury Real User Monitor data collector.

Note: If you are a Mercury Managed Services customer, you must contact a Mercury Customer Support representative to receive connection information that will enable you to work with Real User Monitor.

How This Guide Is Organized

The guide contains the following chapters:

Part I Real User Monitor Introduction and System Requirements

Introduces Real User Monitor and the platform system requirements, and explains how Real User Monitor works.

Part II Installing Real User Monitor

Explains how to install and uninstall the Real User Monitor engine. Also explains how to install and configure one or more Real User Monitor probes.

Part III Working With Real User Monitor

Explains how administer Real User Monitor, as well as how to use the Real User Monitor engine Web and JMX consoles to view and change configuration settings. Also explains how to set URL correlation parameters, as well as how to administer the MySQL database.

Who Should Read This Guide

This guide is intended for the following users of Mercury Business Availability Center:

- Mercury Business Availability Center administrators
- Mercury Business Availability Center data collector administrators

Readers of this guide should be knowledgeable about enterprise system administration and Mercury Business Availability Center data collectors.

Getting More Information

For information on using and updating the Mercury Business Availability Center Documentation Library, reference information on additional documentation resources, typographical conventions used in the Documentation Library, and quick reference information on deploying, administering, and using Mercury Business Availability Center, refer to *Getting Started with Mercury Business Availability Center*.

Part I

Real User Monitor Introduction and System Requirements

1

Introducing Real User Monitor Administration

This chapter introduces Mercury Real User Monitor and explains how it works.

This chapter describes:	On page:
Overview of Real User Monitor	3
How the Real User Monitor Works	4
Ports and Types of Communication Used by Real User Monitor	7
Installing and Administering Real User Monitor	8

Overview of Real User Monitor

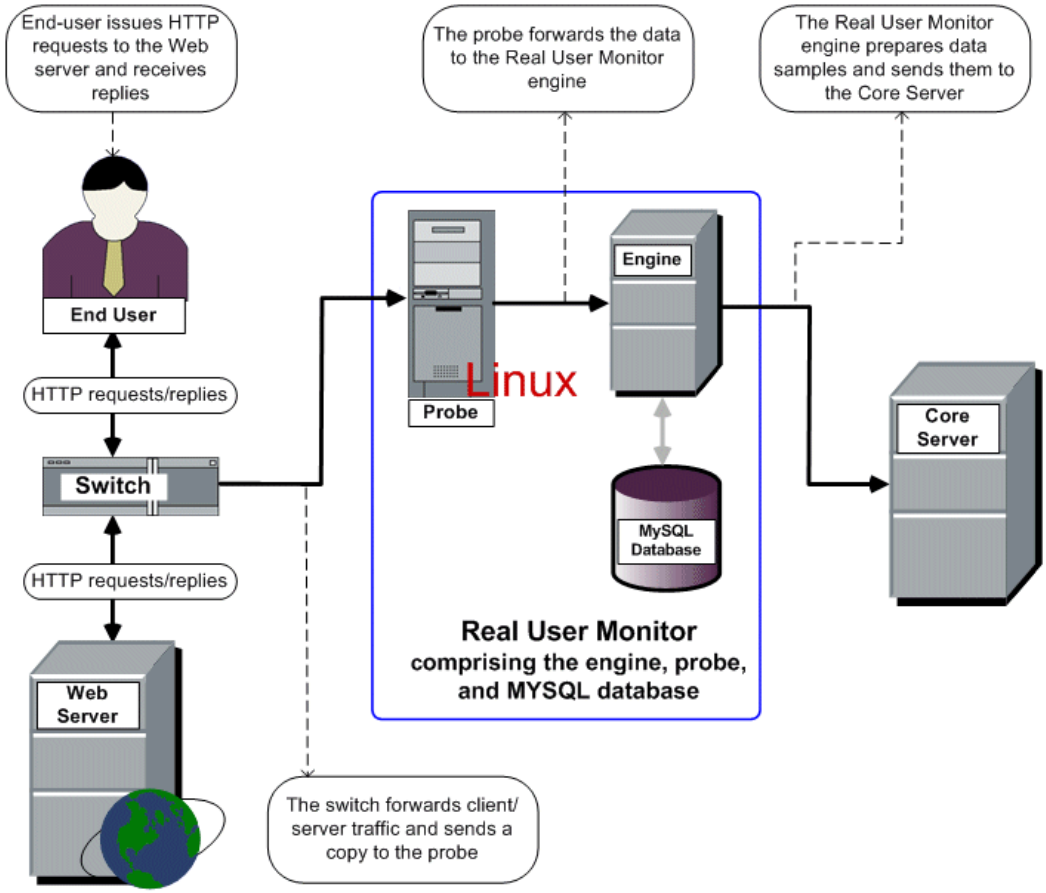
Mercury Real User Monitor measures the end-user experience of real users, enabling administrators to pinpoint the cause of delays and quantify the business impact of detected performance issues related to end users. Monitoring real traffic generated by end users, Real User Monitor collects network and server performance and availability data in real time. When performance and availability exceed specified thresholds, Mercury Business Availability Center proactively alerts application managers who, using the Real User Monitor reports, analyze the collected data in order to isolate the root cause of detected problems.

How the Real User Monitor Works

Mercury Real User Monitor consists of three major components: the probe, the engine, and the MySQL database.

- The **probe** is a non-intrusive, passive listening device that is subject to the same traffic the server receives. It is plugged into a network tap that is connected to a monitored Web server. As end-user traffic passes through the tap, the probe listens to requests and responses sent to and from the Web server. In this way, data is tracked all the way from the end-user's IP address to the Web server handling the request.
- The **engine** receives the data collected by the probe and assembles this data according to the configuration specifications it receives from Mercury Business Availability Center, that have been configured in Monitor Administration. The engine transmits the page, transaction, end-user, and server data samples it creates to the Mercury Business Availability Center Core Server. The Mercury Business Availability Center Core Server then distributes the data to the relevant Mercury Business Availability Center components, which create Real User Monitor alerts, reports, and Dashboard views.
- The **MySQL database** acts as Real User Monitor's repository for data that the Real User Monitor engine does not forward to Mercury Business Availability Center immediately, or at all. The MySQL database stores the Real User Monitor engine's configuration settings, session click-streams (pages and snapshots included in a session), and the open sessions summary.

The following diagram shows how Real User Monitor receives client/server traffic and passes it on to Mercury Business Availability Center.

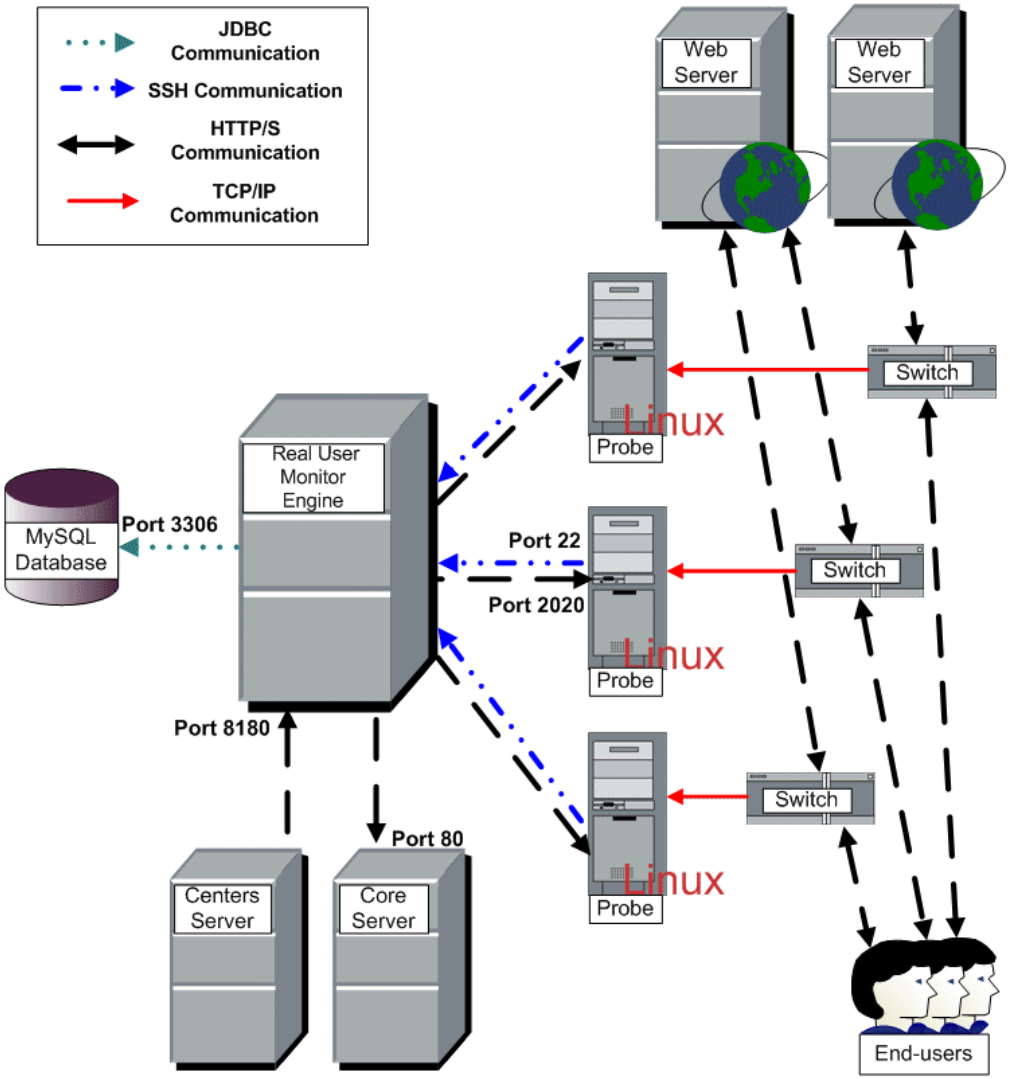


You use the Real User Monitor reports to analyze performance and availability data for the servers, pages, transactions, events, and end users that you configure for monitoring, as well as general statistics that are collected and sent by the probe(s) to the engine. When notified by an alert that a certain performance or availability threshold has been exceeded, you can examine the issue in the appropriate report(s) and try to pinpoint the cause of the problem and the time at which the problem occurred. For detailed information on Real User Monitor reports, see "Real User Monitor Reports" in *Using End User Management*.

In addition, Real User Monitor data is included in Dashboard.For information on displaying Real User Monitor data in Dashboard, see “Real User Monitor Views in Dashboard” in *Using Dashboard*.

Ports and Types of Communication Used by Real User Monitor

The following diagram shows the various ports and type of communications used by Real User Monitor, both internally and externally.



Installing and Administering Real User Monitor

To begin using Real User Monitor, you must perform the following steps (once you have installed Mercury Business Availability Center):

1 **Install the Real User Monitor engine.**

For information on installing the Real User Monitor engine and setting up the engine to connect to the Core Server, see "Installing the Real User Monitor Engine" on page 19.

2 **Create and connect to the MySQL database.**

You can create and connect to the MySQL database either as part of the Real User Monitor engine installation procedure or separately, at a later time. For details on creating the MySQL database as part of the Real User Monitor engine installation procedure, see "Installing the Real User Monitor Engine" on page 19. For details on creating the MySQL database at a later time, see "Overview of the MySQL Database" on page 117.

3 **Install one or more Real User Monitor probes.**

For information on installing a Real User Monitor probe and setting it up to report real-user activity data to the engine, see "Installing the Real User Monitor Probe" on page 55.

4 **If necessary, reconfigure the connection between the Real User Monitor and Mercury Business Availability Center.**

If connection parameters (such as SSL, proxy, and authentication) have changed since the installation of Mercury Business Availability Center, use the Real User Monitor engine's Web console to reconfigure the connection between the Real User Monitor and Mercury Business Availability Center. For detailed information, see "Using the Real User Monitor Engine Web Console" on page 89.

5 Configure Real User Monitor in Mercury Business Availability Center Monitor Administration.

In Monitor Administration, you add the Real User Monitor engine you installed to the monitor tree. You then add one or more probes to the engine and configure the probe(s) to collect data from specific Web servers. In addition, you configure the specific pages, transactions, events, and end users you want to monitor. For more information, see "Configuring the Real User Monitor" in *End User Management Data Collector Configuration*.

Note: You can create Real User Monitor alerts if you want to be notified of certain occurrences while monitoring real-user data. You can view reports of the data collected by Real User Monitor in the End User Management application. For information on configuring alerts, see "Creating Alert Schemes" in *Platform Administration*. For information on viewing Real User Monitor reports, see "Real User Monitor Reports" in *Using End User Management*.

2

Reviewing System Requirements

This section describes the recommended system requirements for running Real User Monitor.

This chapter describes:	On page:
Real User Monitor Engine Requirements	12
Real User Monitor Repository (MySQL Database) Requirements	13
Real User Monitor Probe Requirements	14

Real User Monitor Engine Requirements

Computer/Processor	Dual-CPU Xeon 3.0 GHz Server
Operating System	**Windows:** Windows 2000 Server/Advanced Server, Service Pack 4 Windows 2003 Server standard/enterprise, Service Pack 1 **Solaris:** Sun Solaris 8, 9, 10 (8 and 10 are recommended versions)
Memory	2 GB
Hard Drive	70 GB
Network Card	Gigabit network adaptor

Real User Monitor Repository (MySQL Database) Requirements

Computer/Processor	Dual-CPU Xeon 3.0 GHz Server
Operating System	**Windows:** Windows 2000 Server/Advanced Server, Service Pack 4 Windows 2003 Server standard/enterprise, Service Pack 1 **Solaris:** Sun Solaris 8, 9, 10 (8 and 10 are recommended versions)
Memory	2 GB
Hard Drive	200 GB fast hard drive
Network Card	Gigabit network adaptor
MySQL Version	5.0 (installed by the Real User Monitor installation program)

Real User Monitor Probe Requirements

Hardware and Operating System Requirements

	Minimum	Recommended
Computer/Processor	Dual-CPU Xeon 3.0 GHz Server	Dual-CPU Xeon 3.0 GHz Server
Operating System	Red Hat Enterprise Linux (RHEL) version 4	Red Hat Enterprise Linux (RHEL) version 4
Memory	2 GB	4 GB
Hard Drive	70 GB IDE/SATA	150 GB SCSI SCSI required for high traffic levels of more than 15 MBs. Large disk space required for more than one page back on Snapshot on Error (SSOE).

	Minimum	Recommended
Network Card	**For connecting tap or port mirrored cable:** 1 Intel Pro/1000 (10/100/1000 auto-sensing) **For connecting to management port (used by RUM engine):** 1 Intel Pro/100 (10/100 auto-sensing) set for full duplex For copper connections, MT type card required. For fibre optic connections, MF type card required.	**For connecting tap or port mirrored cable:** 2 Intel Pro/1000 (10/100/1000 auto-sensing) **For connecting to management port (used by RUM engine):** 1 Intel Pro/100 (10/100 auto-sensing) set for full duplex For copper connections, MT type card required. For fibre optic connections, MF type card required.
PCI Slot		1 free 133/100/66 MHz 64 bit PCI slot

Environment and System Requirements

Requirement	Description
Perl	Perl must be installed with the following libraries: ➤ LWP::UserAgent ➤ URI::URL
ssh daemon	➤ Port 22 must be open ➤ Xinetd daemon must be up and listening to ssh clients
beatbox user	A user called **beatbox** is automatically created during installation, but you must manually configure a password for this user. When entering the Real User Monitor probe user and password in Monitor Administration, you must use either the **root** or **beatbox** user (for details, see "Adding a Real User Monitor Engine" in *End User Management Data Collector Configuration*).
Probe console port	Port 2020 is the default port used for accessing the Real User Monitor probe console. If you want to use SSL for accessing the Real User Monitor probe console, you use Apache Web Server as a proxy, limit port 2020 to localhost connections only and open port 443 on the Apache Web Server. For details, see "Using SSL to Access the Real User Monitor Probe Console" on page 59.
Permissions	The following directories must have **2770** permissions, be owned by **beatbox** and belong to the **beatbox** group: ➤ /var/spool/beatbox (and subdirectories) ➤ /etc/beatbox ➤ /var/log/beatbox

Part II

Installing Real User Monitor

3

Installing the Real User Monitor Engine

To monitor real user activity, you must first install the Mercury Real User Monitor engine. You can install the Real User Monitor engine on a Windows or Solaris platform.

You download the Real User Monitor engine installation file from the Downloads page, which you access from the Setup and Maintenance tab in Platform Administration.

This chapter describes:	On page:
Installing the Mercury Real User Monitor Engine on a Windows Platform	19
Installing the Mercury Real User Monitor Engine on a Solaris Platform	32

Installing the Mercury Real User Monitor Engine on a Windows Platform

For details on the system requirements for installing the Mercury Real User Monitor engine on a Windows platform, see "Real User Monitor Engine Requirements" on page 12.

To install the Real User Monitor engine on a Windows Platform:

1 Click the **Mercury Real User Monitor Engine for Windows** link on the Downloads page to download the **MercuryRUMSetup_win.exe** file to the machine on which you want to install the engine.

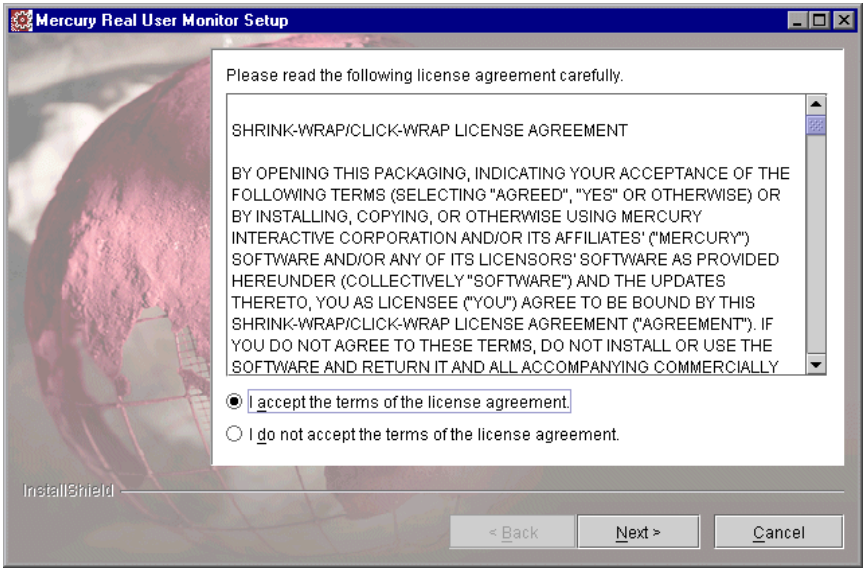
Note: For the Real User Monitor engine setup file to be available on the Downloads page, it must first be installed to Mercury Business Availability Center. For details on installing Mercury Business Availability Center components setup files, see "Installing Components Setup Files to the Mercury Business Availability Center Downloads Page" in *Deploying Servers*.

If you prefer, you can copy the Real User Monitor engine setup program directly from the Mercury Business Availability Center 6.1 Components – Windows CD-ROM, supplied with your Mercury Business Availability Center package.

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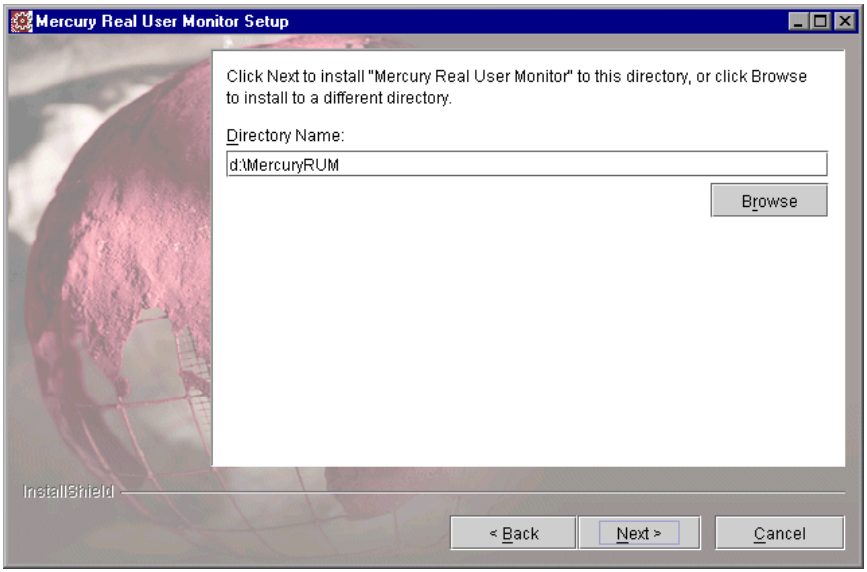
2 On this machine, navigate to the downloaded file and double click **MercuryRUMSetup_win.exe**. The Real User Monitor Engine Setup begins.

3 In the Mercury Real User Monitor Setup wizard, accept the terms of the license agreement.



Click **Next**.

4 Browse to select the path of the directory in which you want to install the Real User Monitor engine, or accept the default path.

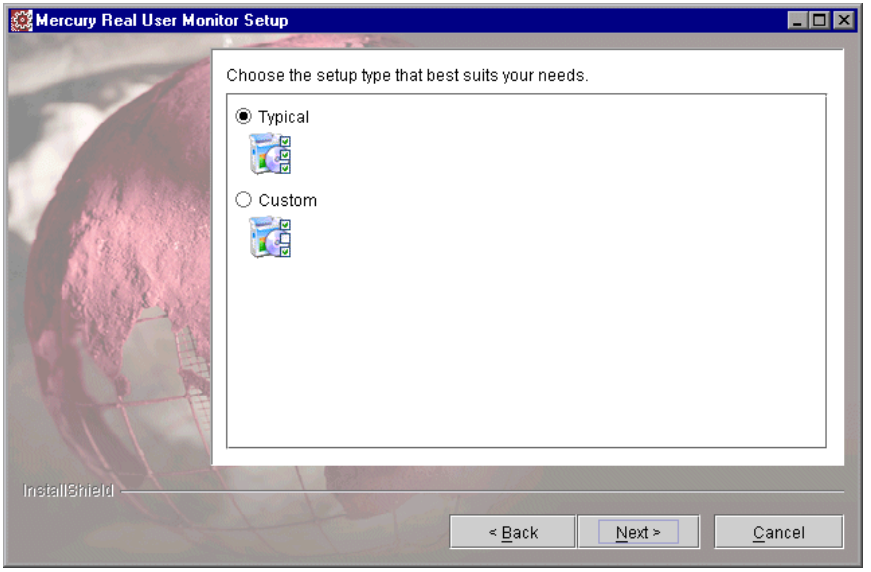


Click **Next**.

5 Select the type of installation you want to perform, **Typical** or **Custom**.

A typical installation installs the Real User Monitor engine and the MySQL database.

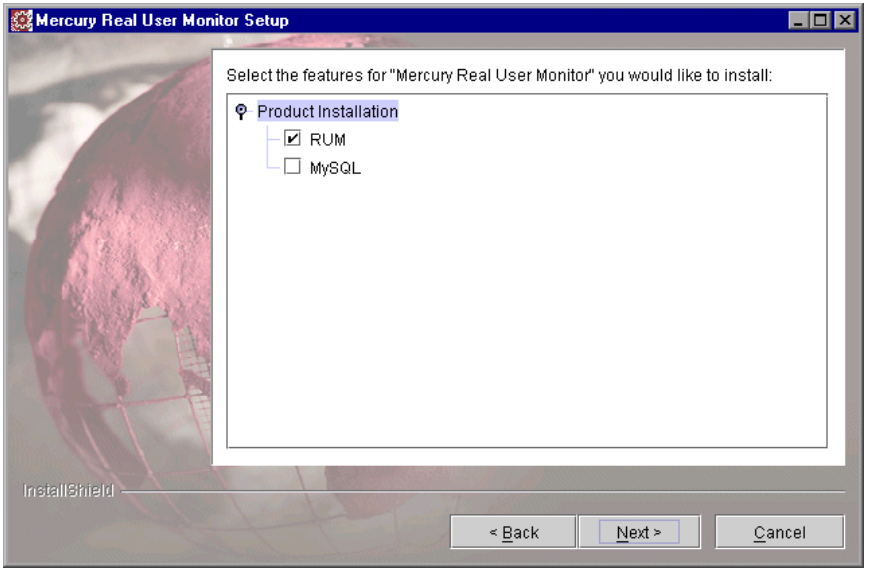
In a custom installation, you can choose whether to install the Real User Monitor engine, the MySQL database, or both.



Click **Next**.

If you chose **Typical** installation, skip to step 7 to continue.

6 If you chose **Custom** installation, select the features you want to include by checking the box to the left of the required feature. You can select one, or both of the features.



Click **Next**.

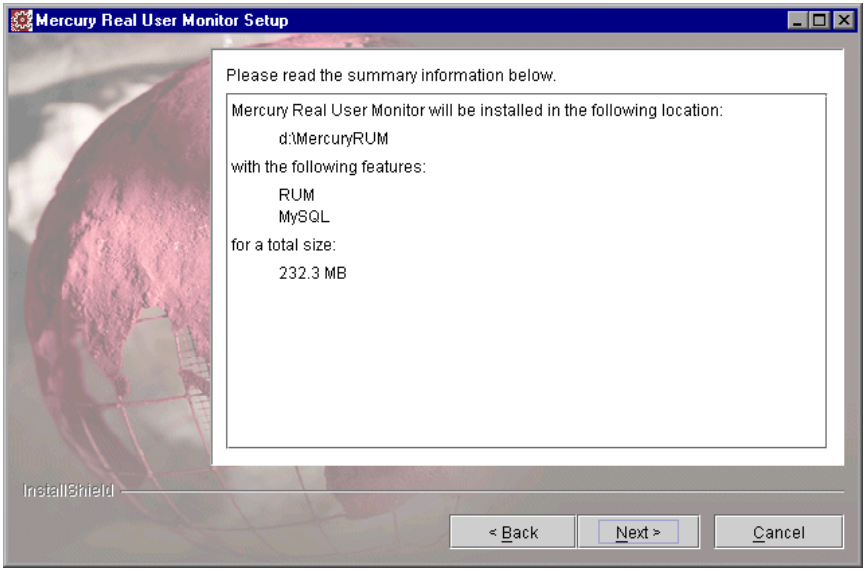
Note:

If you choose **MySQL** only, the MySQL database will be installed in the specified location, but no database schema will be created.

If you choose **RUM** only and do not connect to a database, or **MySQL** only, you are unable to configure connection settings to Mercury Business Availability Center during the installation. You can configure connection settings to Mercury Business Availability Center later via the Real User Monitor Web console (for details, see “BAC Connection Settings” on page 96).

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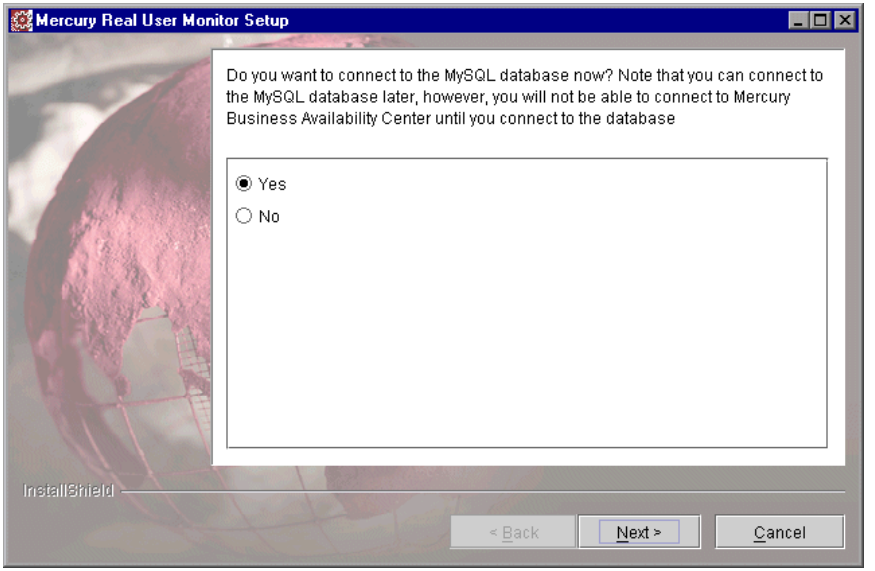
7 Read the summary information. If it is correct, click **Next** to continue with the installation. If it is not correct, click **Back** to correct the information you previously provided.



Click **Next**.

If you chose **Custom installation** > **MySQL** only, skip to step 14 to continue.

8 Select whether you wish to connect to the MySQL database. You can choose to connect to the MySQL database at a later time, but you will not be able to work with Real User Monitor until then. For details of connecting to the MySQL database at a later time, see "Creating and Connecting to the MySQL Database" on page 118.

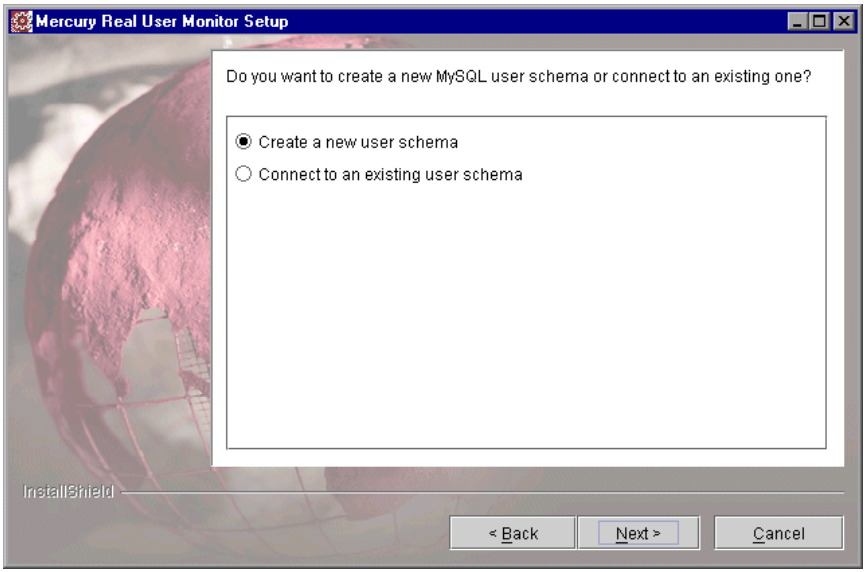


Click **Next**.

If you chose not to connect to the MySQL database, skip to step 14 to continue.

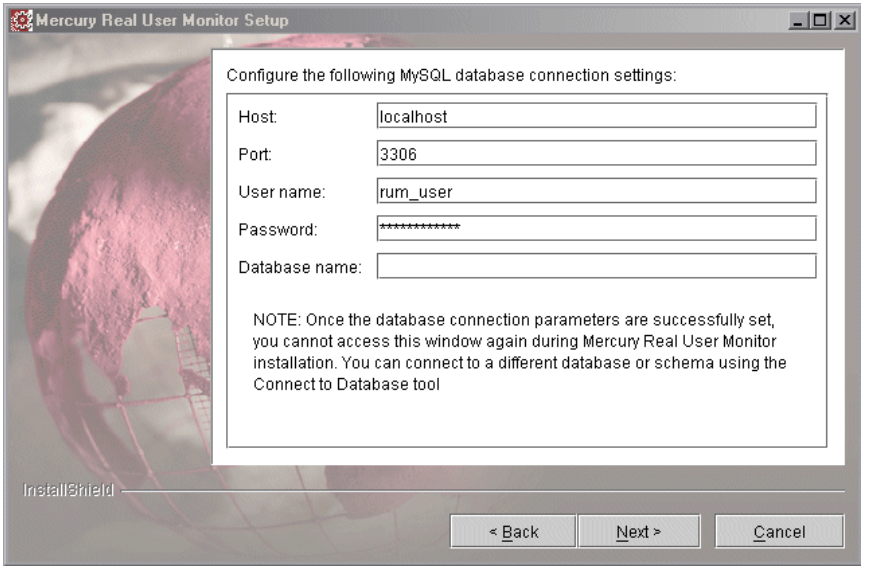
If you chose **Custom installation** > **RUM** only, continue with the next step. Otherwise, skip to step 10 to continue.

9 Select whether you want to create a new user schema for the MySQL database, or connect to an existing user schema.



Click **Next**.

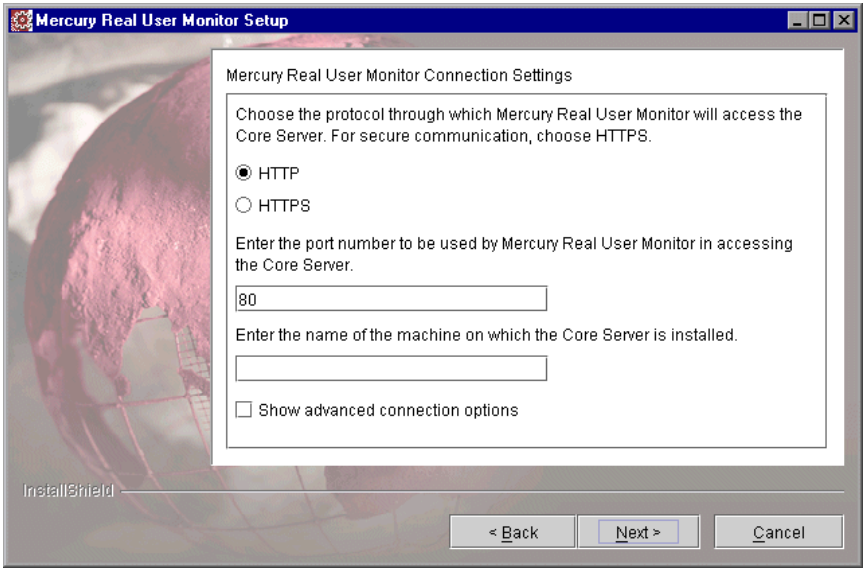
10 Configure the MySQL database settings. You can configure the host name of the machine where the MySQL database resides, as well as the port number for accessing this machine, or you can accept the default settings as they appear below. You can also change the default user name for accessing the MySQL database machine and can define a password for the user. In the **Database name** field, you specify the name for the MySQL database schema.



Click **Next**.

If you chose **Custom installation** > **MySQL** skip to step 14, otherwise proceed with the next step.

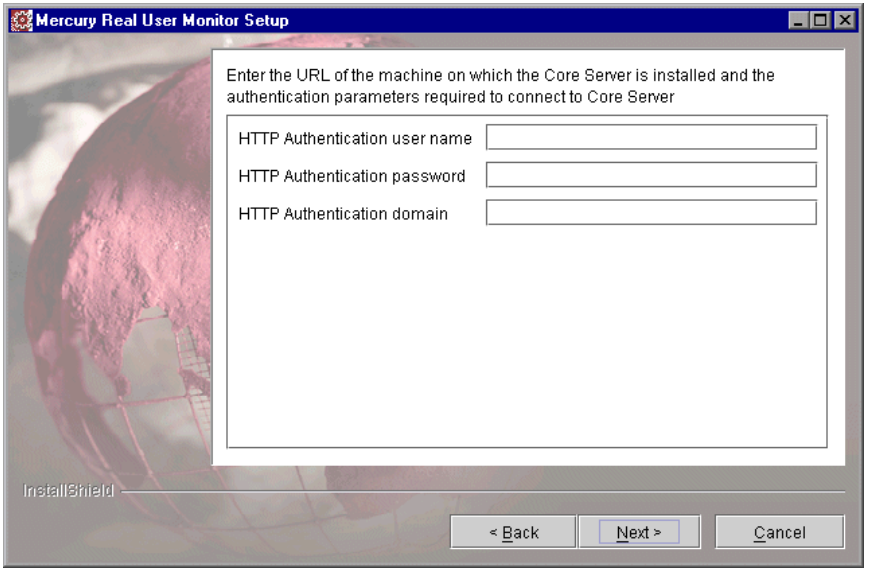
11 In the Real User Monitor Connection Settings screen, select the protocol (HTTP or HTTPS) via which the Real User Monitor engine connects to the Core Server. (For details on configuring a reverse proxy or SSL, see "BAC Connection Settings" on page 96.) Enter the Core Server machine name and the port number through which you want the Real User Monitor engine to communicate with the Core Server. Note that by default, the port number is 80. Check the **Show advanced options** box to configure HTTP authentication or reverse proxy settings



Click **Next**.

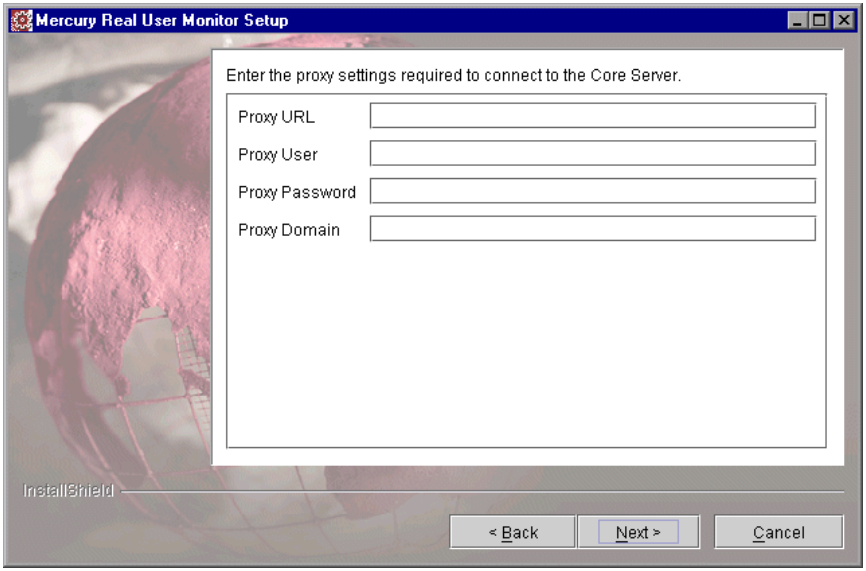
If you checked the **Show advanced options** box continue with the next step for additional connection settings. Otherwise, skip to step 14 to continue.

12 In the first advanced connection settings screen, enter the HTTP Authentication user name and password for connecting to the Core Server as well as the URL of the machine on which the Core Server is installed. For details on configuring basic authentication, see "BAC Connection Settings" on page 96.



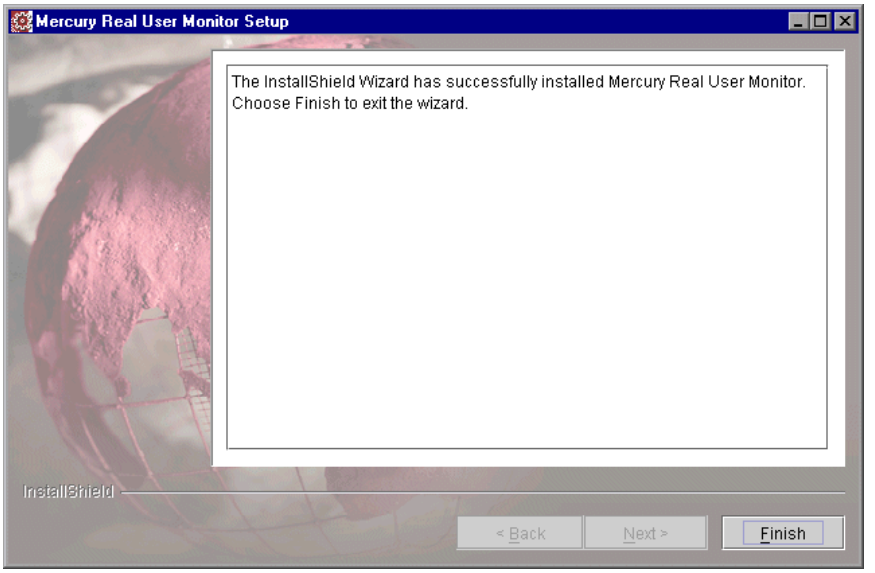
Click **Next**.

13 In the second advanced connection settings screen, enter the proxy settings required for connecting to the Core Server. For details on configuring a reverse proxy or SSL, see "BAC Connection Settings" on page 96.



Click **Next**.

14 Once the Real User Monitor engine has been installed, click **Finish** to exit the wizard.



After successfully installing the Real User Monitor engine and connecting the engine to the MySQL database, you launch Real User Monitor on the machine on which it is installed.

You start Real User Monitor by selecting **Start** > **Programs** > **Mercury Real User Monitor** > **Administration** > **Enable Mercury Real User Monitor**.

You can stop Real User Monitor by selecting **Start** > **Programs** > **Mercury Real User Monitor** > **Administration** > **Disable Mercury Real User Monitor**.

For additional information on starting and stopping Real User Monitor, see “Administering Real User Monitor” on page 83.

Installing the Mercury Real User Monitor Engine on a Solaris Platform

For details on the system requirements for installing the Mercury Real User Monitor engine on a Solaris platform, see "Real User Monitor Engine Requirements" on page 12.

There are two installation modes, console mode and UI mode:

- **Console mode installation:** Console mode enables you to install the Mercury Real User Monitor engine in text format via the terminal command line, by adding **-console** to the installation command line. Between each stage of the installation process (each stage equivalent to a window in UI mode), you have the option to continue to the next stage or move back to the previous stage.

  Select options in console mode by entering the option number. The selected option is marked with an [X].

- **UI mode installation:** UI mode enables you to install the Mercury Real User Monitor engine using UNIX graphical user interface functionality.

  When running the installation in UI mode, make sure that the DISPLAY environment variable is properly configured on the Mercury Real User Monitor engine machine, and that the machine you are installing from is running an X-server (for example, a UNIX machine console or a Linux X-server).

Note: If using MS-DOS Telnet or any kind of serial console connection, you cannot install Mercury Real User Monitor servers in UI mode.

To run the Real User Monitor engine installation in console mode:

1 Click the **Mercury Real User Monitor Engine for Solaris** link on the Downloads page to download the **MercuryRUMSetup_solv4.bin** file to the machine on which you want to install the engine.

Note: For the Real User Monitor engine setup file to be available on the Downloads page, it must first be installed to Mercury Business Availability Center. For details on installing Mercury Business Availability Center components setup files, see "Installing Components Setup Files to the Mercury Business Availability Center Downloads Page" in *Deploying Servers*.

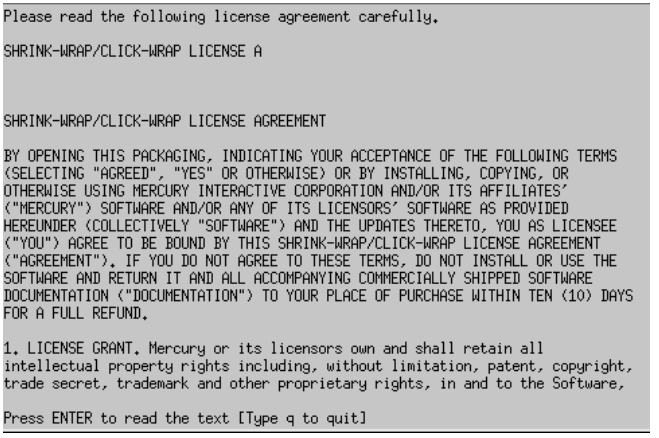
If you prefer, you can copy the Real User Monitor engine setup program directly from the Mercury Business Availability Center 6.1 Components – Solaris CD-ROM, supplied with your Mercury Business Availability Center package.

---

2 Move to the directory in which you saved the **MercuryRUMSetup_solv4.bin** file.

3 Execute the command **./MercuryRUMSetup_solv4.bin - console** to start the installation program.

4 When presented with the terms of the license agreement, press **Enter** to read the terms of the agreement or type **q** and press **Enter** to be prompted with an agreement acceptance option.



5 Type 1 to select **I accept the terms of the license agreement**, and press **Enter**. At the next command prompt, type 0 and press **Enter**.

```
[X] 1 - I accept the terms of the license agreement.
[ ] 2 - I do not accept the terms of the license agreement.

To select an item enter its number, or 0 when you are finished: [0]
```

6 To continue at the following command prompt, type 1 and press **Enter**.

7 Enter the directory in which you want to install the Real User Monitor engine and press **Enter**. To accept the default directory listed, press **Enter**.

```
Mercury Real User Monitor Install Location

Please specify a directory or press Enter to accept the default directory.

Directory Name: [/opt/MercuryRUM]
```

8 To continue at the following command prompt, type 1 and press **Enter**.

9 Select the type of installation you want to perform. To accept the default displayed press **Enter**, or change the selection by entering the number displayed to the left of the installation type and pressing **Enter.** If you change the default option, type 0 at the next command prompt and press **Enter**.

A **typical** installation installs the Real User Monitor engine and the MySQL database.

In a **custom** installation, you can choose whether to install the Real User Monitor engine, the MySQL database, or both.

```
Choose the setup type that best suits your needs.

[X] 1 - Typical

[ ] 2 - Custom

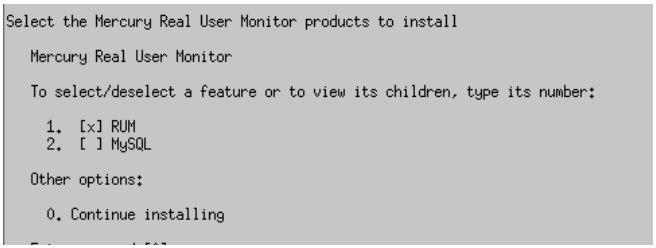
To select an item enter its number, or 0 when you are finished: [0]
```

10 To continue at the following command prompt, type 1 and press **Enter**.

If you chose **Typical** installation, skip to step 13 to continue.

11 If you chose **Custom** installation, select the products you want to include. To accept the default displayed press **Enter**, or change the selection by entering the number displayed to the left of the product and pressing **Enter**.

If you change the default option, type 0 at the next command prompt and press **Enter**. You can select one or both of the features.



Note:

If you choose **MySQL** only, the MySQL database will be installed in the specified location, but no database schema will be created.

If you choose **RUM** only and do not connect to a database, or **MySQL** only, you are unable to configure connection settings to Mercury Business Availability Center during the installation. You can configure connection settings to Mercury Business Availability Center later via the Real User Monitor Web console (for details, see "BAC Connection Settings" on page 96).

---

12 To continue at the following command prompt, type 1 and press **Enter**.

13 MySQL requires a user and group to run. Enter the user name for running MySQL and press **Enter**.



14 Enter the group for running MySQL and press **Enter**.



15 To continue at the following command prompt, type 1 and press **Enter**.

16 Read the summary information. If it is correct, type 1 and press **Enter** to continue. If it is not correct, type 2 and press **Enter** to return to the previous information prompt.

```
Preparing summary...

-------------------------------------------------------------------------------
Mercury Real User Monitor will be installed in the following location:

/opt/MercuryRUM

with the following features:

RUM
MySQL

for a total size:

 312.1 MB

Press 1 for Next, 2 for Previous, 3 to Cancel or 4 to Redisplay [1] ▌
```

If you chose **Custom installation** > **MySQL** only, skip to step 41 to continue.

17 Select whether you wish to connect to the MySQL database. To accept the default displayed press **Enter**, or change the selection by entering the number displayed to the left of your choice and pressing **Enter**. If you change the default option, type 0 at the next command prompt and press **Enter**. You can choose to connect to the MySQL database at a later time, but you will not be able to work with the Real User Monitor until then. For details of connecting to the MySQL database at a later time, see "Creating and Connecting to the MySQL Database" on page 118.

```
Do you want to connect to the MySQL database now? Note that you can connect to
the MySQL database later, however, you will not be able to connect to Mercury
Business Availability Center until you connect to the database

[X] 1 - Yes
[ ] 2 - No

To select an item enter its number, or 0 when you are finished: [0]
```

18 To continue at the following command prompt, type 1 and press **Enter**.

If you chose not to connect to the MySQL database, skip to step 41 to continue.

If you chose **Custom installation** > **RUM** only, continue with the next step. Otherwise, skip to step 21 to continue.

19 Select whether you want to create a new user schema for the MySQL database, or connect to an existing user schema. To accept the default displayed press **Enter**, or change the selection by entering the number displayed to the left of your choice and pressing **Enter**. If you change the default option, type 0 at the next command prompt and press **Enter**.

```
Do you want to create a new MySQL user schema or connect to an existing one?

[X] 1 - Create a new user schema
[ ] 2 - Connect to an existing user schema

To select an item enter its number, or 0 when you are finished: [0] ▉
```

20 To continue at the following command prompt, type 1 and press **Enter**.

21 Enter the host name of the machine where the MySQL database resides and press **Enter**. To accept the default host listed, press **Enter**.

```
Configure the following MySQL database connection settings:

Host: [localhost]
```

22 Enter the port number used to access the MySQL database host and press **Enter**. To accept the default port listed, press **Enter**.

```
Port: [3306]
```

23 Enter the default user name for accessing the MySQL database machine and press **Enter**. To accept the default user name listed, press **Enter**.

```
User name: [rum_user]
```

24 Enter the password for the default user and press **Enter**.

```
Password:
```

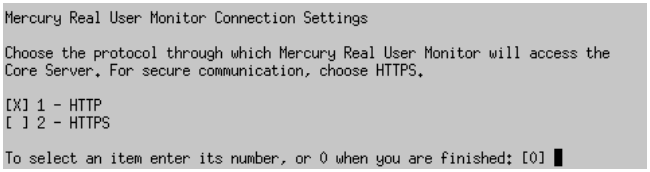
25 Enter the name of the MySQL database schema and press **Enter**.

```
Database name: [] my_storage_dy
```

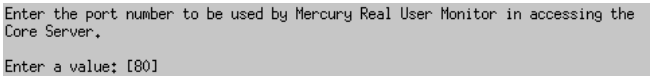
26 To continue at the following command prompt, type 1 and press **Enter**.

If you chose **Custom installation** > **MySQL** skip to step 41, otherwise proceed with the next step.

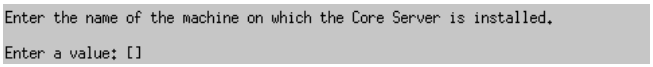
27 Select the protocol (HTTP or HTTPS) via which the Real User Monitor engine connects to the Core Services Server. Type 0 to select the default HTTP option, or 2 to select HTTPS. (For details on configuring a reverse proxy or SSL, see "BAC Connection Settings" on page 96.) Press **Enter**. If you select HTTPS, type 0 at the next command prompt and press **Enter**.



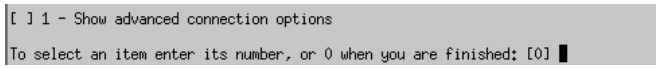
28 Enter the port number through which you want the Real User Monitor engine to communicate with the Core Services Server and press **Enter**. To accept the default port number listed, press **Enter**. By default, the port number is 80.



29 Enter the Core Server machine name or IP address and press **Enter**.



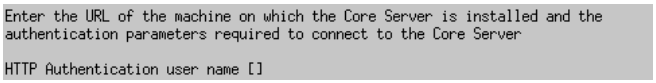
30 To configure HTTP authentication or reverse proxy settings, type 1 and press **Enter** to select **Show advanced connection options**.



31 To continue at the following command prompt, type 1 and press **Enter**.

If you selected **Show advanced connection options**, continue with the next step for additional connection settings. Otherwise, skip to step 41 to continue.

32 Enter the HTTP Authentication user name for connecting to the Core Server and press **Enter**. For details on configuring basic authentication, see "BAC Connection Settings" on page 96.



33 Enter the password for HTTP authentication and press **Enter**.

```
HTTP Authentication password:
```

34 Enter the URL of the machine on which the Core Server is installed and press **Enter**.

```
HTTP Authentication domain []

Press 1 for Next, 2 for Previous, 3 to Cancel or 4 to Redisplay [1] ▌
```

35 To continue at the following command prompt, type 1 and press **Enter**.

36 Enter the URL of the reverse proxy server required to connect to the Core Server and press **Enter**. For details on configuring a reverse proxy or SSL, see "BAC Connection Settings" on page 96.

```
Enter the proxy settings required to connect to the Core Server.

Proxy URL []
```

37 Enter the user name required for accessing the reverse proxy server and press **Enter**.

```
Proxy User []
```

38 Enter the user password required for accessing the reverse proxy server and press **Enter**.

```
Proxy Password:
```

39 Enter the domain for the reverse proxy server and press **Enter**.

```
Proxy Domain []

Press 1 for Next, 2 for Previous, 3 to Cancel or 4 to Redisplay [1]
```

40 To continue at the following command prompt, type 1 and press **Enter**.

41 Once the Real User Monitor engine has been installed, type 3 and press **Enter** to exit the wizard.

42 After successfully installing the Real User Monitor engine and connecting the engine to the MySQL database, you launch Real User Monitor on the machine on which it is installed.

You start Real User Monitor by moving to the **bin** sub directory under the directory in which you installed Real User Monitor, and executing the following command:

./m_daemon_setup –install

You can stop Real User Monitor by moving to the **bin** sub directory under the directory in which you installed Real User Monitor, and executing the following command:

./m_daemon_setup –remove

For additional information on Real User Monitor commands, see "Administering Real User Monitor" on page 83.

To run the Real User Monitor engine installation in UI mode:

1 Click the **Mercury Real User Monitor Engine for Solaris** link on the Downloads page to download the **MercuryRUMSetup_solv4.bin** file to the machine on which you want to install the engine.

Note: For the Real User Monitor engine setup file to be available on the Downloads page, it must first be installed to Mercury Business Availability Center. For details on installing Mercury Business Availability Center components setup files, see "Installing Components Setup Files to the Mercury Business Availability Center Downloads Page" in *Deploying Servers*.

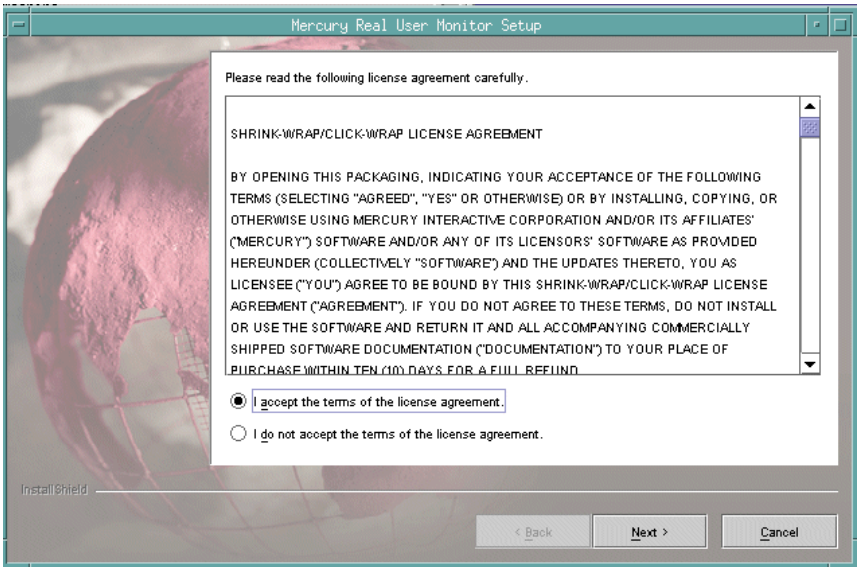
If you prefer, you can copy the Real User Monitor engine setup program directly from the Mercury Business Availability Center 6.1 Components – Solaris CD-ROM, supplied with your Mercury Business Availability Center package.

---

2 Move to the directory in which you saved the **MercuryRUMSetup_solv4.bin** file.

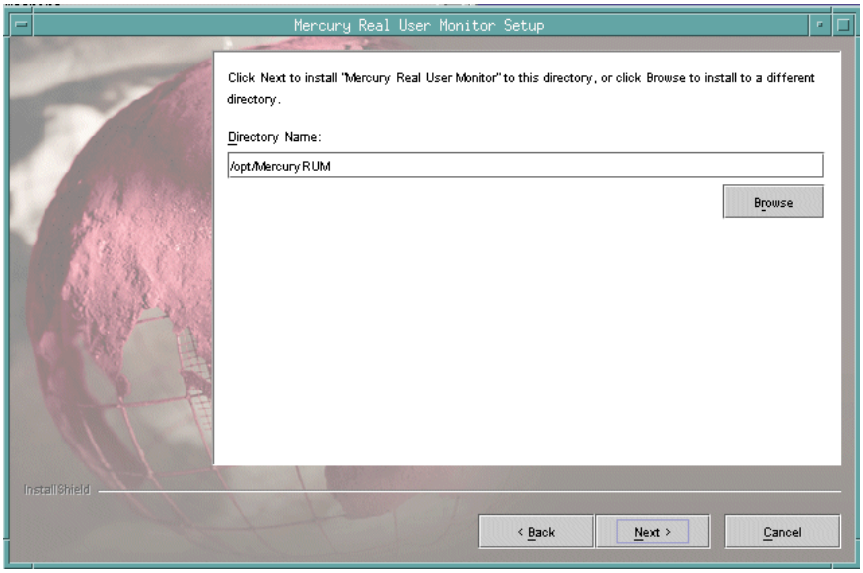
3 Execute the command **./MercuryRUMSetup_solv4.bin** to start the installation program. The Real User Monitor Engine Setup begins.

4 In the Mercury Real User Monitor Setup wizard, accept the terms of the license agreement.



Click **Next**.

5 Browse to select the path of the directory in which you want to install the Real User Monitor engine, or accept the default path.

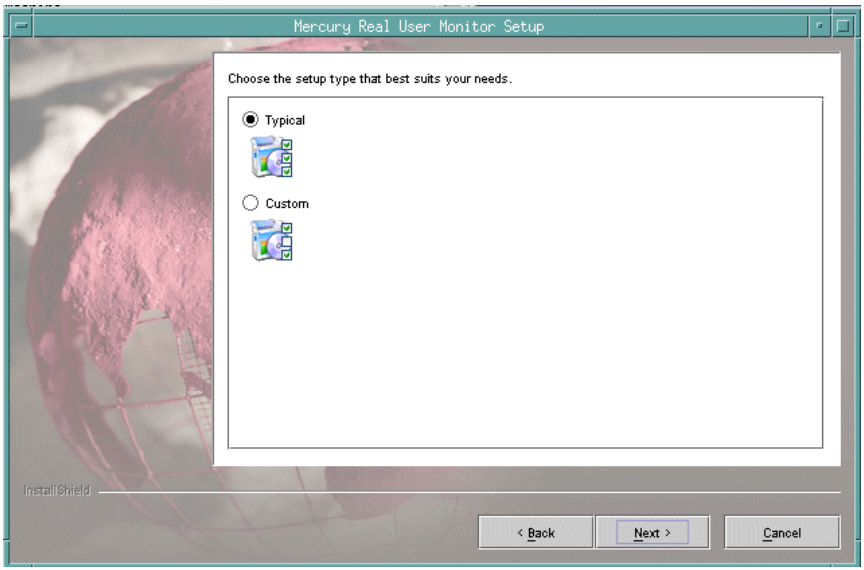


Click **Next**.

6 Select the type of installation you want to perform, **Typical** or **Custom**.

A typical installation installs the Real User Monitor engine and the MySQL database.

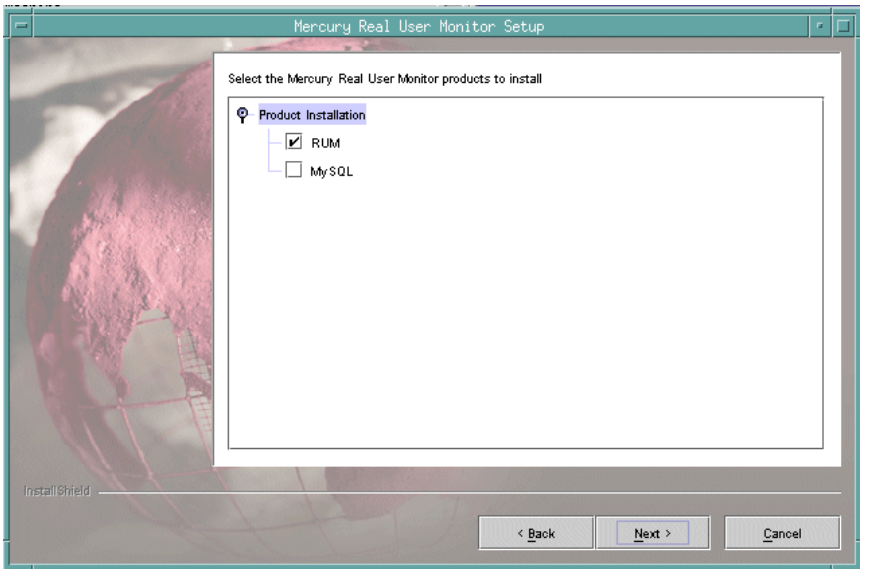
In a custom installation, you can choose whether to install the Real User Monitor engine, the MySQL database, or both.



Click **Next**.

If you chose **Typical** installation, skip to step 8 to continue.

7 If you chose **Custom** installation, select the features you want to include by checking the box to the left of the required feature. You can select one, or both of the features.



Click **Next**.

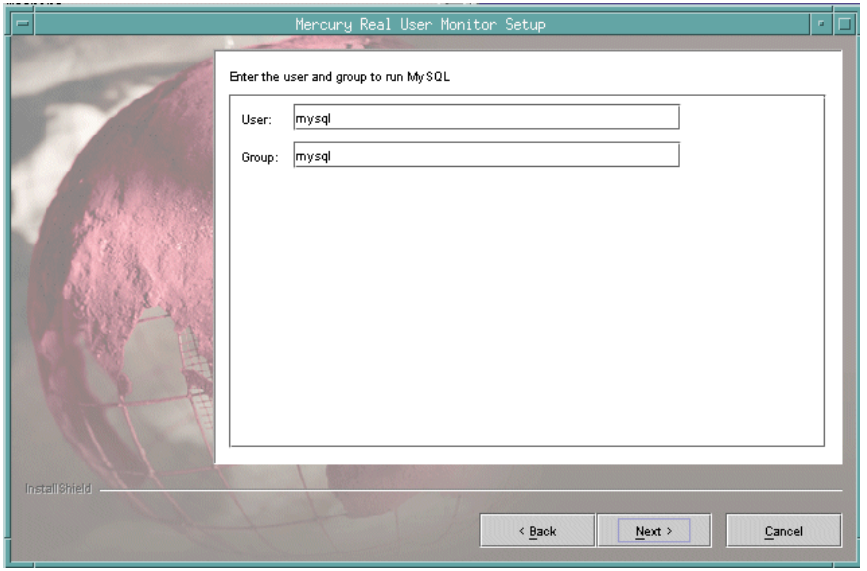
Note:

If you choose **MySQL** only, the MySQL database will be installed in the specified location, but no database schema will be created.

If you choose **RUM** only and do not connect to a database, or **MySQL** only, you are unable to configure connection settings to Mercury Business Availability Center during the installation. You can configure connection settings to Mercury Business Availability Center later via the Real User Monitor Web console (for details, see "BAC Connection Settings" on page 96).

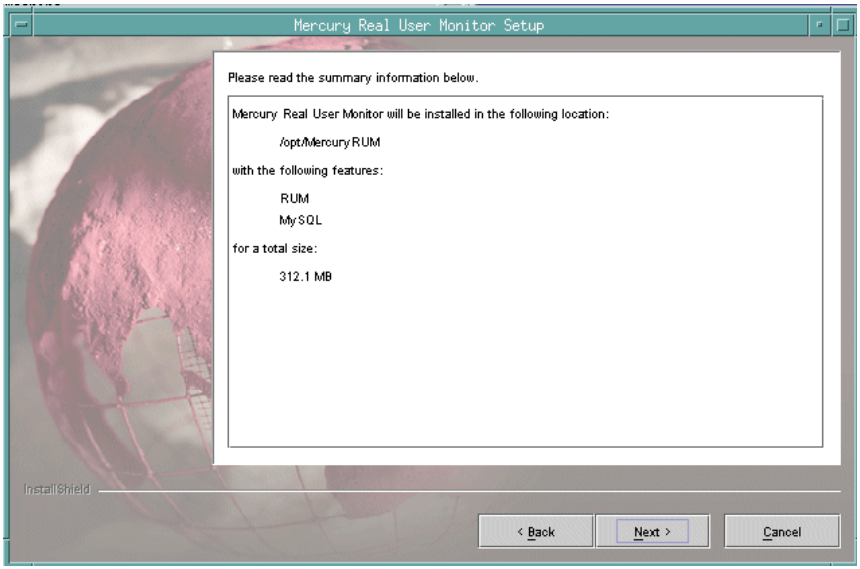
---

8 MySQL requires a user and group to run. Enter the user and group for running MySQL.



Click **Next**.

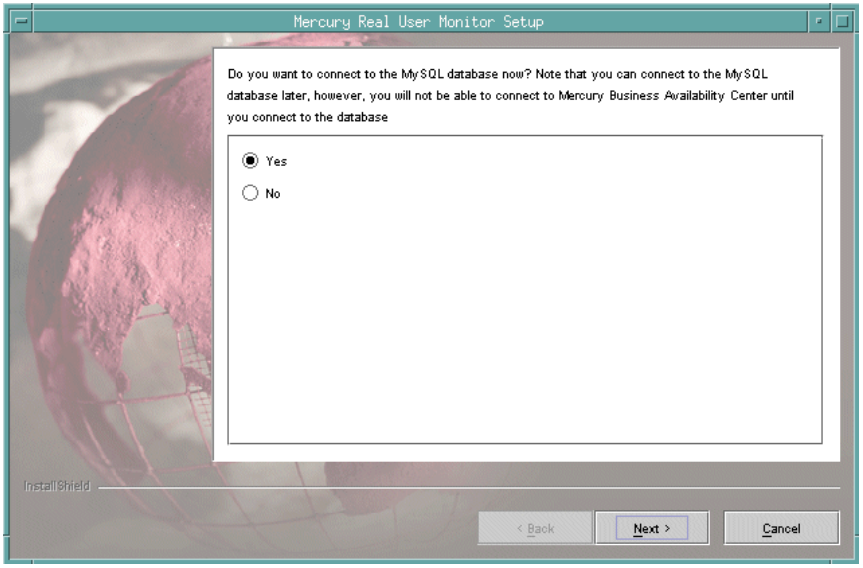
9 Read the summary information. If it is correct, click **Next** to continue with the installation. If it is not correct, click **Back** to correct the information you previously provided.



Click **Next**.

If you chose **Custom installation** > **MySQL** only, skip to step 16 to continue.

10 Select whether you wish to connect to the MySQL database. You can choose to connect to the MySQL database at a later time, but you will not be able to work with the Real User Monitor until then. For details of connecting to the MySQL database at a later time, see "Creating and Connecting to the MySQL Database" on page 118.

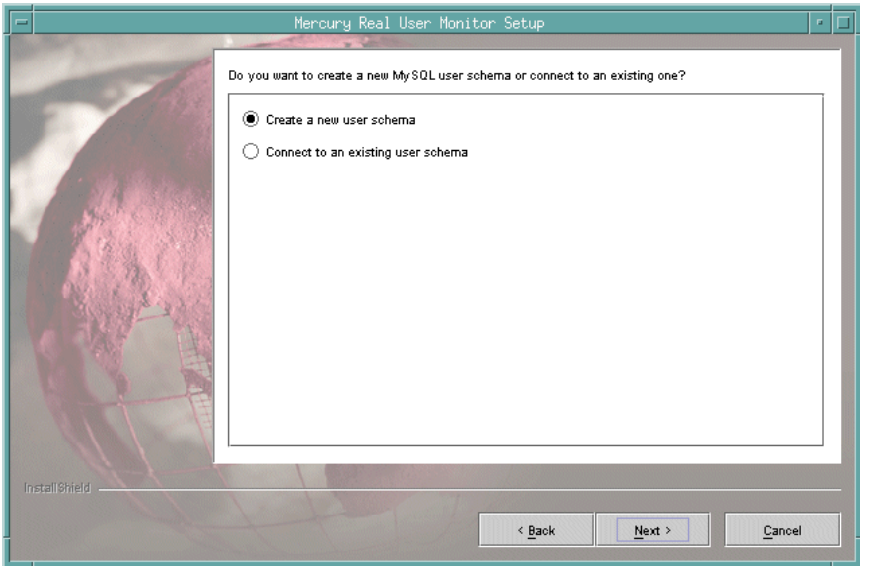


Click **Next**.

If you chose not to connect to the MySQL database, skip to step 16 to continue.

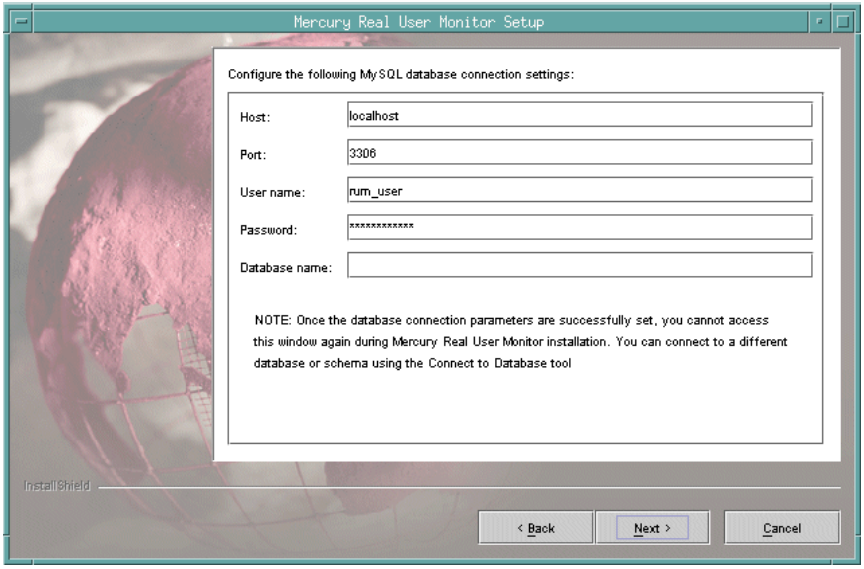
If you chose **Custom installation** > **RUM** only, continue with the next step. Otherwise, skip to step 12 to continue.

11 Select whether you want to create a new user schema for the MySQL database, or connect to an existing user schema.



Click **Next**.

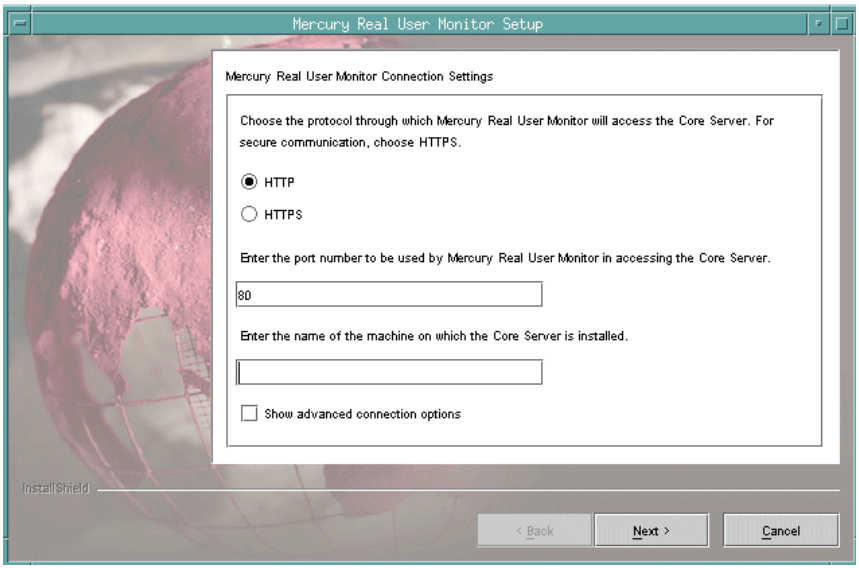
12 Configure the MySQL database settings. You can configure the host name of the machine where the MySQL database resides, as well as the port number for accessing this machine, or you can accept the default settings as they appear below. You can also change the default user name for accessing the MySQL database machine and can define a password for the user. In the **Database name** field, you specify the name for the MySQL database schema.



Click **Next**.

If you chose **Custom installation** > **MySQL** skip to step 16, otherwise proceed with the next step.

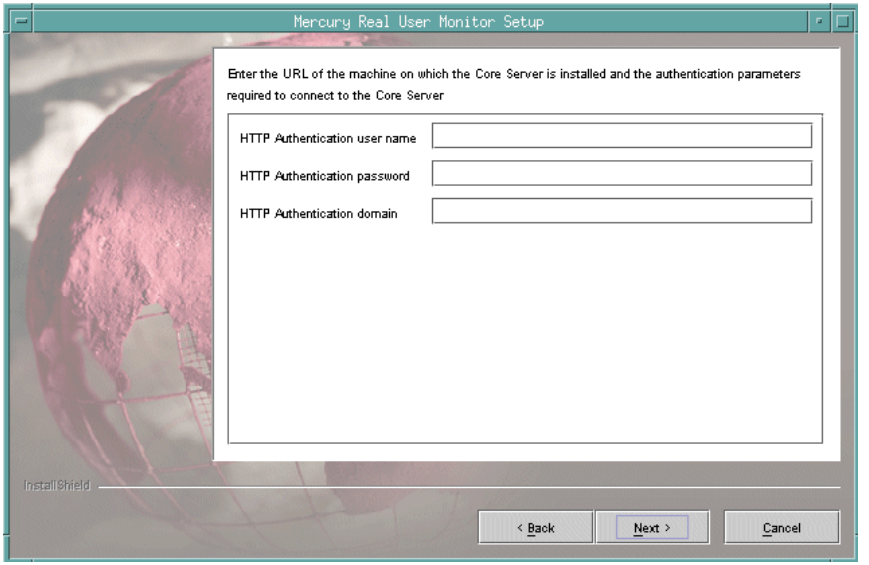
13 In the Real User Monitor Connection Settings screen, select the protocol (HTTP or HTTPS) via which the Real User Monitor engine connects to the Core Server. (For details on configuring a reverse proxy or SSL, see "BAC Connection Settings" on page 96.) Enter the Core Server machine name and the port number through which you want the Real User Monitor engine to communicate with the Core Server. Note that by default, the port number is 80. Check the **Show advanced options** box to configure HTTP authentication or reverse proxy settings



Click **Next**.

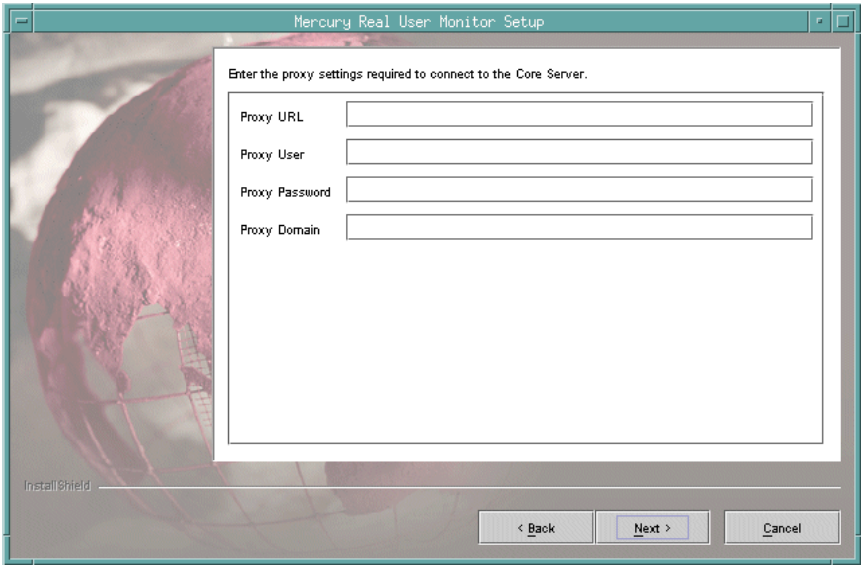
If you checked the **Show advanced options** box continue with the next step for additional connection settings. Otherwise, skip to step 16 to continue.

14 In the first advanced connection settings screen, enter the HTTP Authentication user name and password for connecting to the Core Server as well as the URL of the machine on which the Core Server is installed. For details on configuring basic authentication, see "BAC Connection Settings" on page 96.



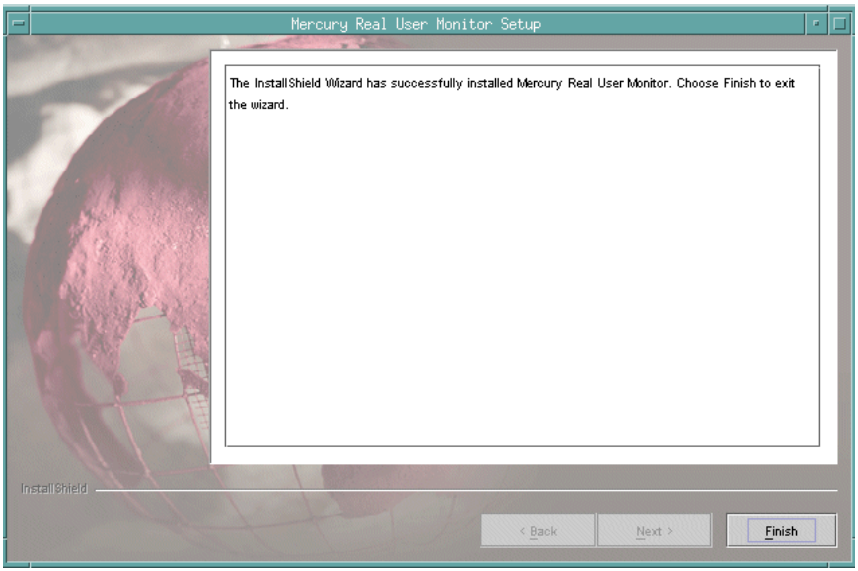
Click **Next**.

15 In the second advanced connection settings screen, enter the proxy settings required for connecting to the Core Server. For details on configuring a reverse proxy or SSL, see "BAC Connection Settings" on page 96.



Click **Next**.

16 Once the Real User Monitor engine has been installed, click **Finish** to exit the wizard.



17 After successfully installing the Real User Monitor engine and connecting the engine to the MySQL database, you launch Real User Monitor on the machine on which it is installed.

You start Real User Monitor by moving to the **bin** sub directory under the directory in which you installed Real User Monitor, and executing the following command:

./m_daemon_setup –install

You can stop Real User Monitor by moving to the **bin** sub directory under the directory in which you installed Real User Monitor, and executing the following command:

./m_daemon_setup –remove

For additional information on Real User Monitor commands, see “Administering Real User Monitor” on page 83.

4

Installing the Real User Monitor Probe

After installing the Mercury Real User Monitor engine, you must install at least one Real User Monitor probe. You then set up the probe to collect real-user data and report this data to the engine.

This chapter describes:	On page:
Physically Connecting the Probe	55
Installing the Probe	57
Stopping and Starting the Probe	59
Using SSL to Access the Real User Monitor Probe Console	59

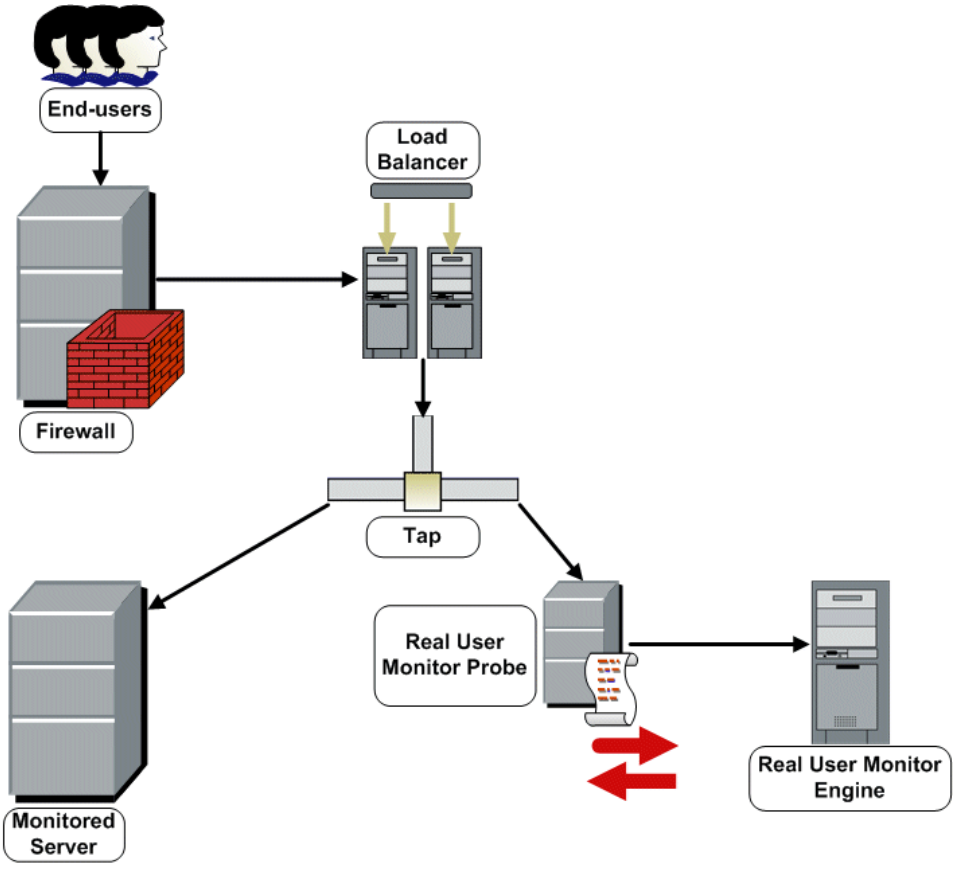
Physically Connecting the Probe

This section describes how to physically connect the Real User Monitor probe to the network.

The Real User Monitor probe runs on a Linux machine that has two network interface cards. For details on the system requirements for the Real User Monitor probe, see "Real User Monitor Probe Requirements" on page 14.

The first network card uses the Linux device **eth0** and is used to communicate with the Real User Monitor engine.

The second network card uses the Linux device **eth1** and is used to communicate with a network tap that is also attached to the server you are monitoring. The tap copies to the probe the network traffic to and from the monitored server.



Note:

- If using a load balancer, it is recommended to place the network tap behind the load balancer
- Load balancers should be configured to use the **x-forward-for** header to preserve end-user IP addresses for use by Real User Monitor.
- For small installations with a low amount of network traffic, instead of using a network tap, the **eth1** port of the Real User Monitor probe can be connected to a switch that is configured for port mirroring for the monitored server.

Installing the Probe

This section describes how to install the probe on a Linux machine.

The Real User Monitor probe is installed on a machine running the Linux operating system. For details on the system requirements for the Real User Monitor probe, see "Real User Monitor Probe Requirements" on page 14.

You download the Real User Monitor probe installation file from the Downloads page, which you access from the Setup and Maintenance tab in Platform Administration.

Note: The Real User Monitor probe installation must be carried out as the root user.

To install the Real User Monitor probe:

1 Click **Mercury Real User Monitor probe** on the Downloads page to download the **MercuryBeatboxSetup_linux.bin** file to the **/var/tmp** directory on the machine on which you want to install the probe. Note that if you cannot download this file directly to the Linux machine on which you are installing the probe, make sure that you download the file to a machine from which you can later FTP (in binary mode) the file to the Linux machine.

Note: For the Real User Monitor probe setup file to be available on the Downloads page, it must first be installed to Mercury Business Availability Center. For details on installing Mercury Business Availability Center components setup files, see "Installing Components Setup Files to the Mercury Business Availability Center Downloads Page" in *Deploying Servers*.

If you prefer, you can copy the Real User Monitor probe setup program directly from the Mercury Business Availability Center 6.1 Components – Linux CD-ROM, supplied with your Mercury Business Availability Center package.

---

2 Run the installation script with the following commands:

- **cd /var/tmp**
- **MercuryBeatboxSetup_linux.bin**

3 Change the sshd daemon to work with xinetd by running the script **/etc/beatbox/configure_ssh.sh**.

4 It is recommended to set the network configuration automatically by running the script **/usr/bin/bb_netconfig.pl**.

5 Start the Real User Monitor probe with the command **/etc/init.d/beatbox-capture start**.

6 Verify that the Real User Monitor probe has successfully started with the command **/etc/init.d/beatbox-capture status**. The following is displayed:

```
[root@beatboxrnd rum-pages]
# /etc/init.d/beatbox-capture status
BeatBox is responding properly.
[root@beatboxrnd rum-pages]#
```

Stopping and Starting the Probe

Once installed on the Linux machine, the Real User Monitor probe will be started automatically each time the Linux machine is started. You can also manually start and stop the Real User Monitor probe.

To start the Real User Monitor probe manually:

1 Log in to the Real User Monitor probe machine as the root user.

2 Start the Real User Monitor probe with the command **/etc/init.d/beatbox-capture start**.

To stop the Real User Monitor probe manually:

1 Log in to the Real User Monitor probe machine as the root user.

2 Stop the Real User Monitor probe with the command **/etc/init.d/beatbox-capture stop**.

Using SSL to Access the Real User Monitor Probe Console

You can configure the Real User Monitor probe machine to require SSL communications to log in to the Real User Monitor probe console. To configure SSL for the Real User Monitor probe console, you carry out the following steps:

➤ "Install the Apache Web Server" on page 60

➤ "Change the Real User Monitor Probe's Default Listen Port" on page 60

➤ "Configure the Apache Web Server" on page 62

➤ "Configure Real User Monitor" on page 63

Install the Apache Web Server

Installing the Apache Web Server on the Real User Monitor probe Linux machine requires the installation of the **httpd** package. For details on installing the httpd package, refer to the Linux documentation.

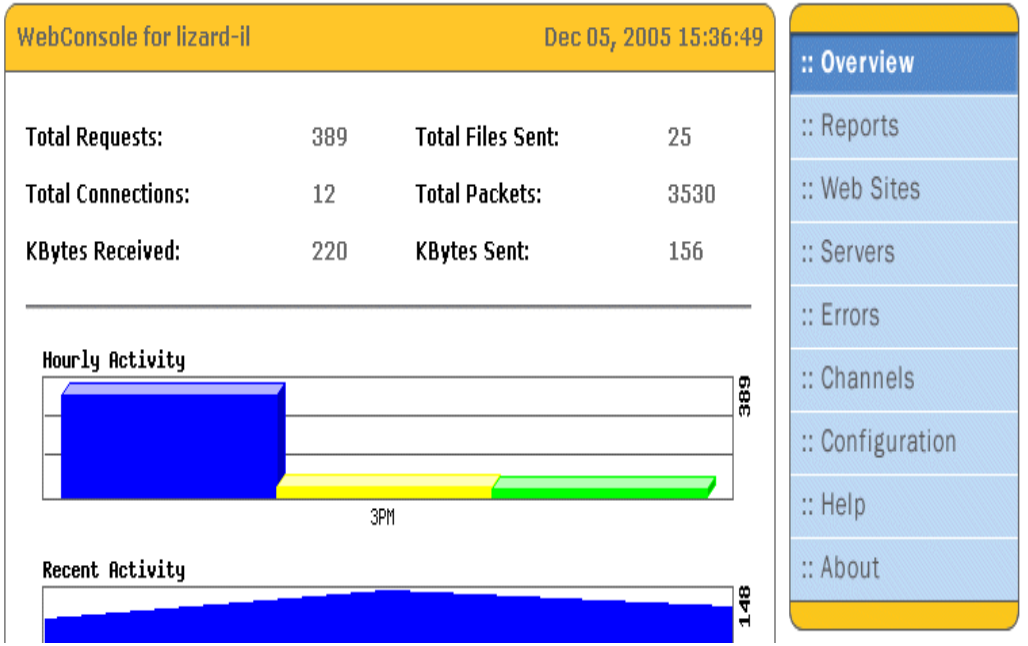
Change the Real User Monitor Probe's Default Listen Port

You change the Real User Monitor probe's default listen port via the Real User Monitor probe console.

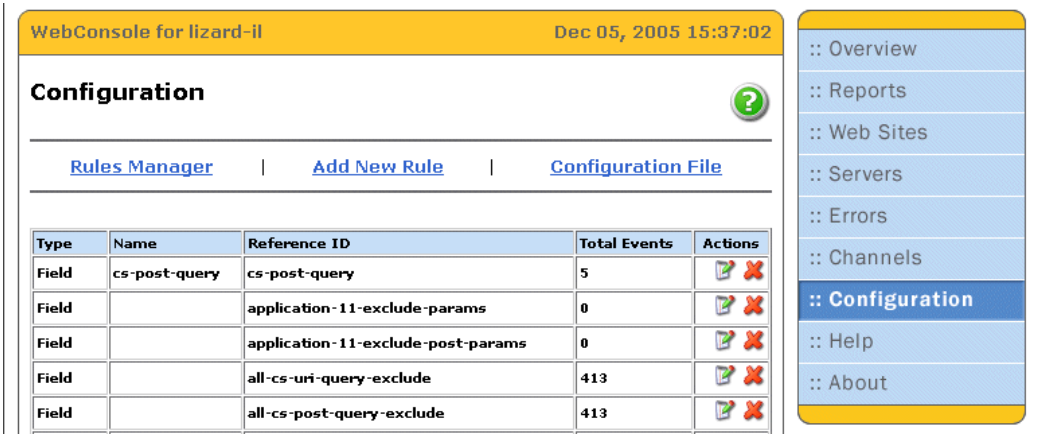
To change the Real User Monitor probe's default listen port:

1 Access the Real User Monitor probe console by launching a Web browser and using the URL **Probe_IP:2020**, where Probe_IP is the IP address of the Real User Monitor probe machine.

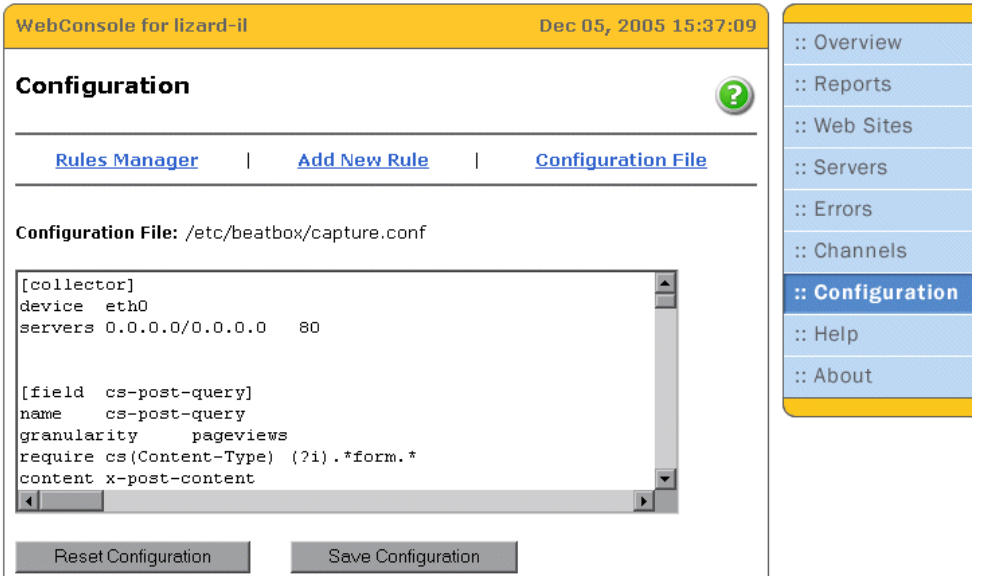
The **Main Console** screen is displayed.



2 Click the **Configuration** tab on the menu at the right of the screen. The **Configuration** screen is displayed.



3 Click **Configuration File** at the top of the screen. The configuration file is opened for editing.



4 Change the default listen port from 2020 to 3030 by adding the following lines to the configuration file:

[webconsole]

listen_port 3030

ip_allow 127.0.0.1

Note: Port 3030 is the recommended port to which to change, but you can use other ports if required.

---

5 Click **Save Configuration** to save the changes.

Configure the Apache Web Server

You configure the Apache Web Server on the Real User Monitor probe Linux machine.

To configure the Apache Web Server:

1 Edit the **/etc/httpd/conf/httpd.conf** file.

2 Change the Apache Web server's listen port by changing the line **Listen 80** to **Listen 2020**.

Note: To enable SSL connections only, remove this line entirely.

---

3 Configure the Apache Web server to redirect (proxy) requests to the Real User Monitor probe, using the Real User Monitor probe's listen port.

- Ensure that the line **LoadModule proxy_module modules/mod_proxy.so** is present.
- Uncomment the line **<IfModule mod_proxy.c>** and the corresponding **</IfModule>**.

➤ In the <**IfModule mod_proxy.c**> section (that is, between <**IfModule mod_proxy.c**> and </**IfModule**>**)** add the lines:

ProxyRequests Off

ProxyPass / http://127.0.0.1:3030/

ProxyPassReverse / http://127.0.0.1:3030/

Note: The port used in this step should be the port you have configured as the Real User Monitor probe's listen port.

Configure Real User Monitor

You configure Real User Monitor on the Real User Monitor engine machine.

To configure Real User Monitor:

1 Edit the **\MercuryRUM\conf\configurationmanager\ Beatbox_Default_Const_Configuration.xml** file.

2 Add the Real User Monitor probe configuration parameters in the **collector** section.

In the <**collector**> section (that is, between <**collector**> and </**collector**>**)** add the lines:

[webconsole]

listen_port 3030

ip_allow 127.0.0.1

Note: The port used in this step should be the port you have configured as the Real User Monitor probe's listen port.

---

3 Save the file and exit.

4 Edit the **\MercuryRUM\conf\probes\probe.default.properties** file.

5 Change the line **config.protocol=http** to **config.protocol=https**.

6 Save the file and exit.

5

Uninstalling Real User Monitor

If you no longer want to use Real User Monitor, you can uninstall the engine.

Note: To uninstall the probe, you need only disconnect it from the network, or shut down the probe machine.

This chapter describes:	On page:
Uninstalling Mercury Real User Monitor on a Windows Platform	65
Uninstalling Mercury Real User Monitor on a Solaris Platform	69

Uninstalling Mercury Real User Monitor on a Windows Platform

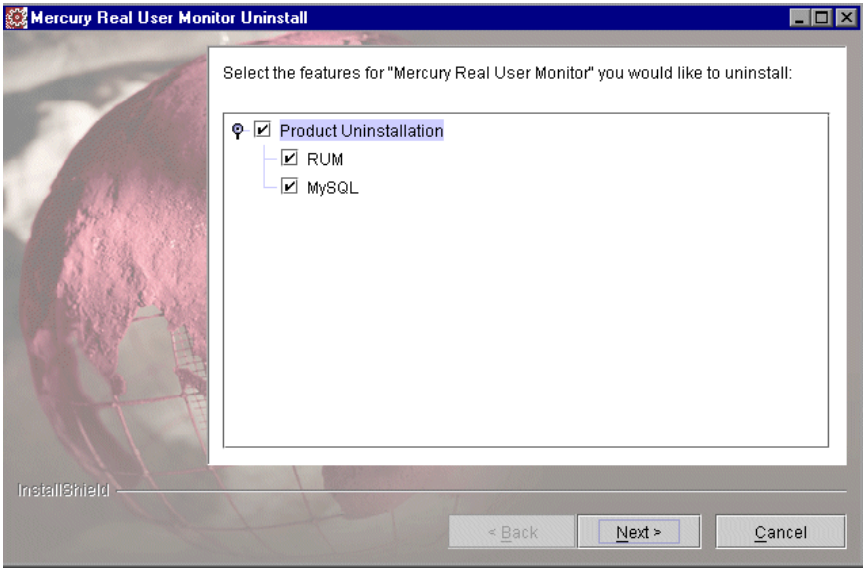
To uninstall the Real User Monitor engine:

1. If Mercury Real User Monitor is running, stop it by disabling it from the start menu (**Start** > **Programs** > **Mercury Real User Monitor** > **Administration** > **Disable Mercury Real User Monitor**).
2. On the machine from which you are uninstalling Mercury Real User Monitor:
   a. Select **Start** > **Settings** > **Control Panel**.
   b. Select **Add/Remove Programs**.

c Select **Mercury Real User Monitor**.

d Click **Change/Remove**.

3 Select the product, or products, you want to uninstall by checking the box to the left of the required product in the list displayed.



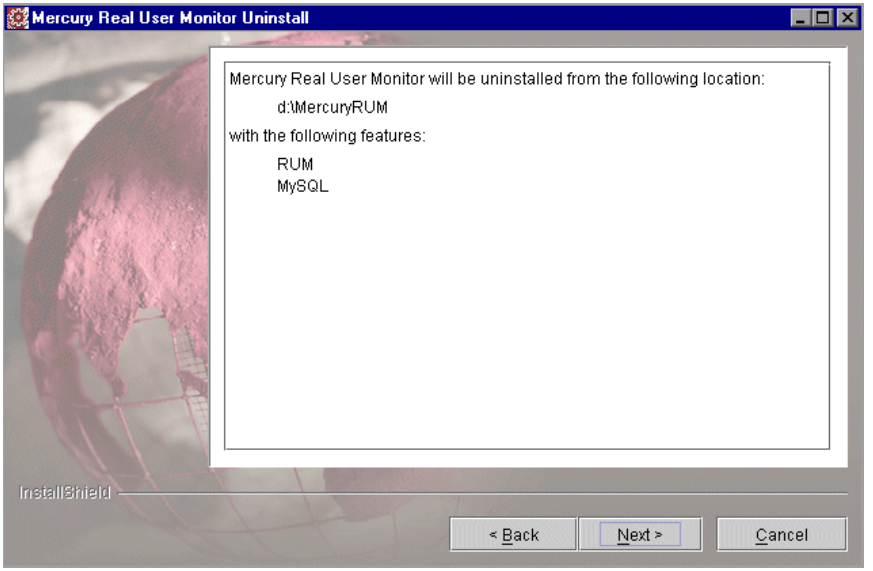
Click **Next**.

Note: If you delete the MySQL database only, the Real User Monitor engine will not work without the MySQL database.

Note: If you delete the Real User Monitor engine only, from a machine on which both the engine and the MySQL database are installed, you will not be able to reinstall the Real User Monitor engine only on that machine until you uninstall the MySQL database.

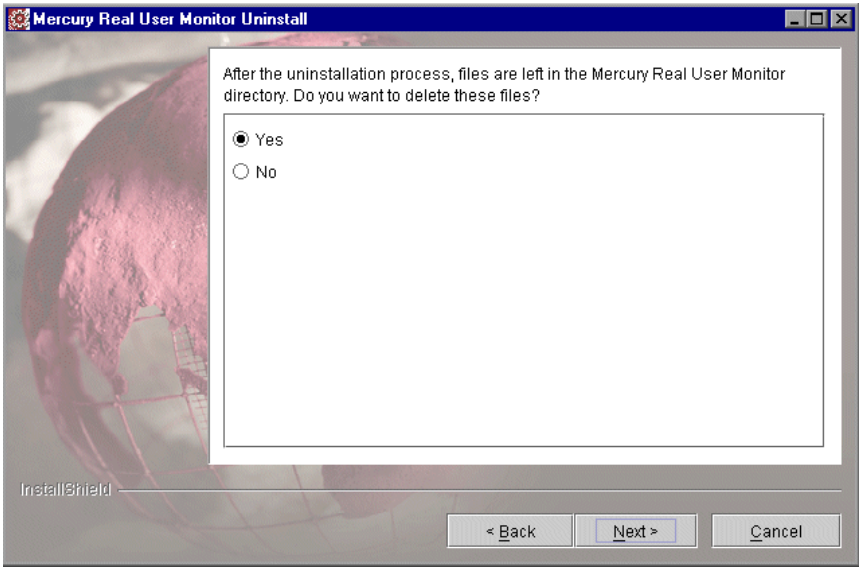
---

4 Read the summary information. If it is correct, click **Next** to continue with the uninstallation. If it is not correct, click **Back** to correct the information you previously provided.



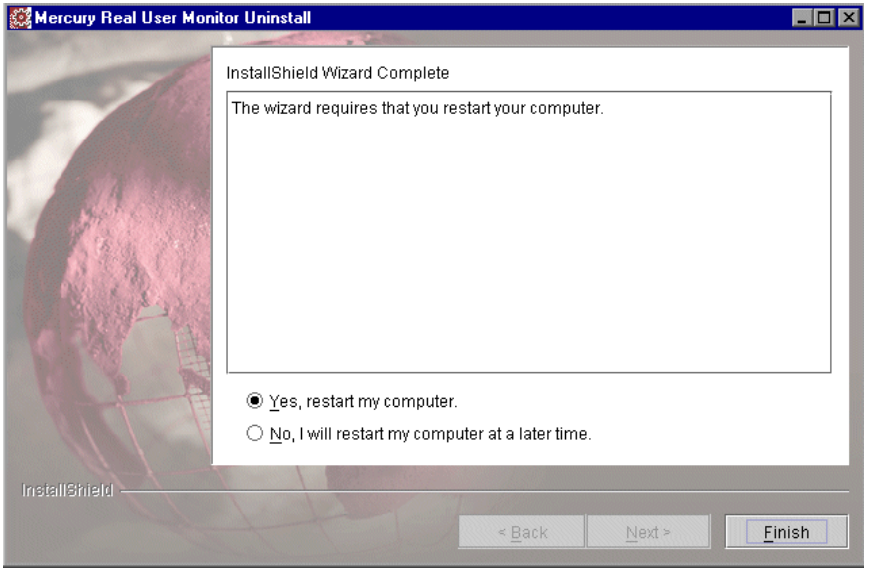
Click **Next**.

5 Choose if you want the uninstall process to delete unused files



Click **Next**.

6 Once the Real User Monitor engine has been uninstalled, click **Finish** to exit the uninstall process. The uninstall process requires you to restart the machine. You can choose to have the uninstall process restart the machine for you automatically, or to restart it yourself manually at a later time.



Uninstalling Mercury Real User Monitor on a Solaris Platform

You can uninstall Real User Monitor in either console mode or UI mode:

- **Console mode:** Console mode enables you to uninstall the Mercury Real User Monitor engine in text format via the terminal command line, by adding **-console** to the uninstall command line. Between each stage of the uninstall process (each stage equivalent to a window in UI mode), you have the option to continue to the next stage or move back to the previous stage.

  Select options in console mode by entering the option number. The selected option is marked with an [X].

- **UI mode:** UI mode enables you to uninstall the Mercury Real User Monitor engine using UNIX graphical user interface functionality.

When running the uninstall process in UI mode, make sure that the DISPLAY environment variable is properly configured on the Mercury Real User Monitor engine machine, and that the machine from which you are uninstalling is running an X-server (for example, a UNIX machine console or a Linux X-server).

Note: If using MS-DOS Telnet or any kind of serial console connection, you cannot uninstall Mercury Real User Monitor servers in UI mode.

To uninstall the Real User Monitor engine in console mode:

1 If Mercury Real User Monitor is running, stop it.

- ➤ Move to the **bin** sub directory in the directory in which you installed Real User Monitor.
- ➤ Execute the command **./m_daemon_setup –remove**.

2 Start the uninstall process.

- ➤ Move to the **_uninst** sub directory in the directory in which you installed Real User Monitor.
- ➤ Execute the command **./uninstall -console**.

3 Select the product, or products, you want to uninstall. To accept the default displayed press **Enter**, or change the selection by entering the number displayed to the left of the product and pressing **Enter**. If you change the default option, type 0 at the next command prompt and press **Enter**.

```
Select the Mercury Real User Monitor products to uninstall

   [x] Mercury Real User Monitor

   To select/deselect a feature or to view its children, type its number:

     1.  [x] RUM
     2.  [x] MySQL

   Other options:

    -1. Deselect 'Mercury Real User Monitor'
     0. Continue uninstalling

   Enter command [0]


Press 1 for Next, 3 to Cancel or 4 to Redisplay [1]
```

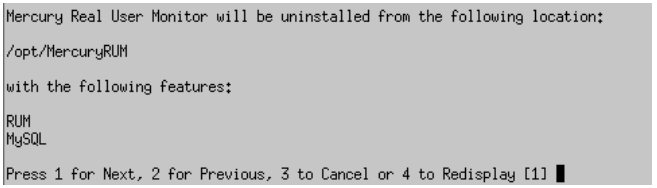
Note: If you delete the MySQL database only, the Real User Monitor engine will not work without the MySQL database.

Note: If you delete the Real User Monitor engine only, from a machine on which both the engine and the MySQL database are installed, you will not be able to reinstall the Real User Monitor engine only on that machine until you uninstall the MySQL database.

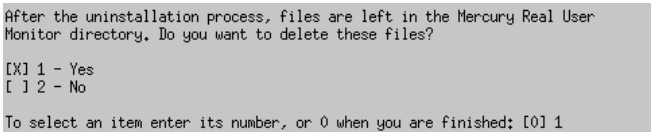
---

4 To continue at the following command prompt, type 1 and press **Enter**.

5 Read the summary information. If it is correct, type 1 and press **Enter** to continue. If it is not correct, type 2 and press **Enter** to return to the previous information prompt.



6 Choose if you want the uninstall process to delete unused files. To accept the default displayed press **Enter**, or change the selection by entering the number displayed to the left of your choice and pressing **Enter**. If you change the default option, type 0 at the next command prompt and press **Enter**.



7 To continue at the following command prompt, type 1 and press **Enter**.

8 Once the Real User Monitor engine has been uninstalled, type 3 and press **Enter** to exit the wizard.

```
The InstallShield Wizard has successfully uninstalled Mercury Real User
Monitor. Choose Finish to exit the wizard.

Press 3 to Finish or 4 to Redisplay [3] ▌
```

To uninstall the Real User Monitor engine in UI mode:

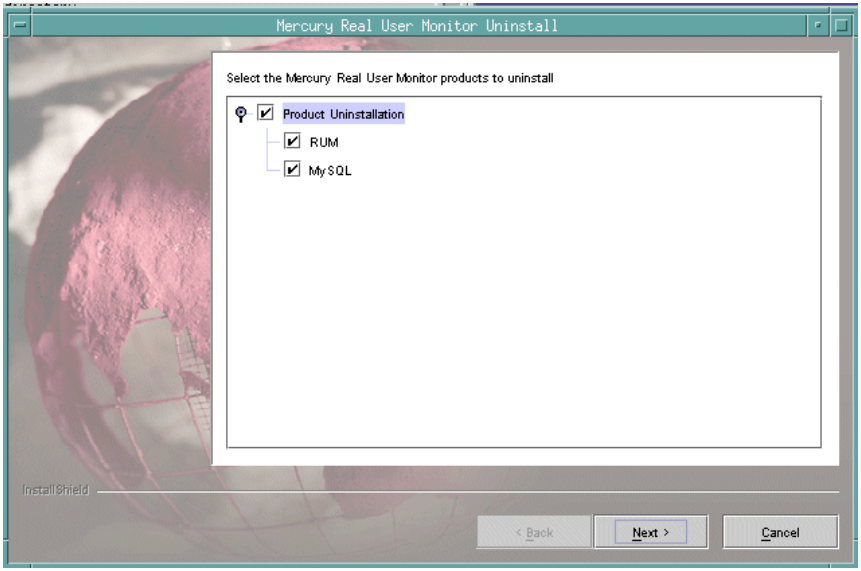
1 If Mercury Real User Monitor is running, stop it.

- ➤ Move to the **bin** sub directory in the directory in which you installed Real User Monitor.
- ➤ Execute the command **./m_daemon_setup –remove**.

2 Start the uninstall process.

- ➤ Move to the **_uninst** sub directory in the directory in which you installed Real User Monitor.
- ➤ Execute the command **./uninstall**.

3 Select the product, or products, you want to uninstall by checking the box to the left of the required product in the list displayed.



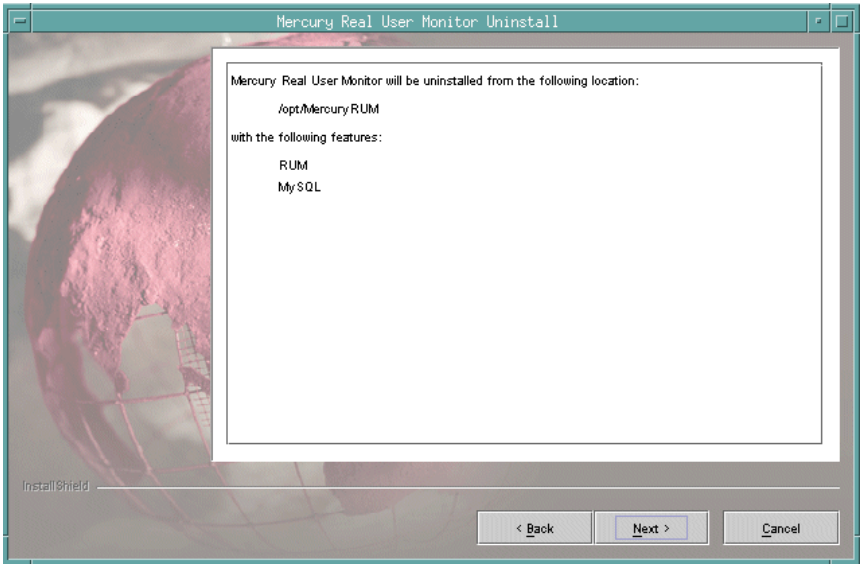
Click **Next**.

Note: If you delete the MySQL database only, the Real User Monitor engine will not work without the MySQL database.

Note: If you delete the Real User Monitor engine only, from a machine on which both the engine and the MySQL database are installed, you will not be able to reinstall the Real User Monitor engine only on that machine until you uninstall the MySQL database.

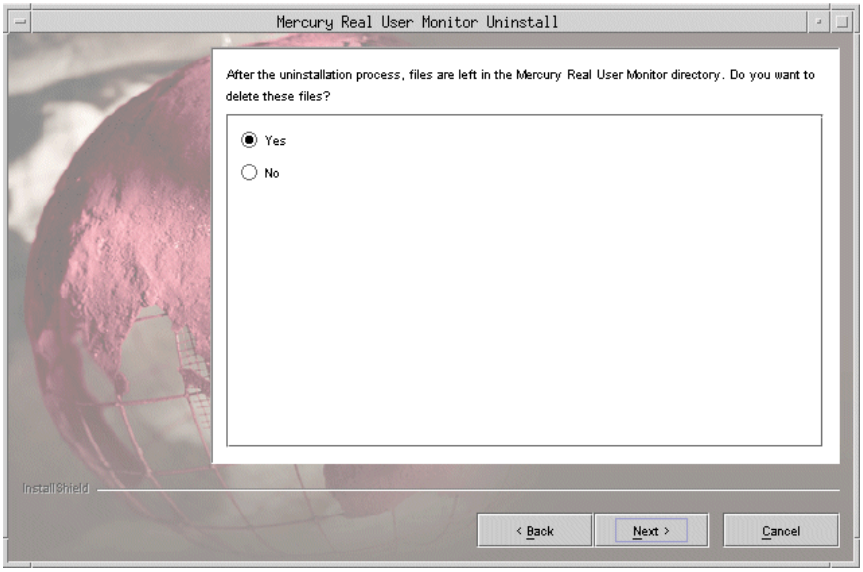
---

4 Read the summary information. If it is correct, click **Next** to continue with the uninstallation. If it is not correct, click **Back** to correct the information you previously provided.



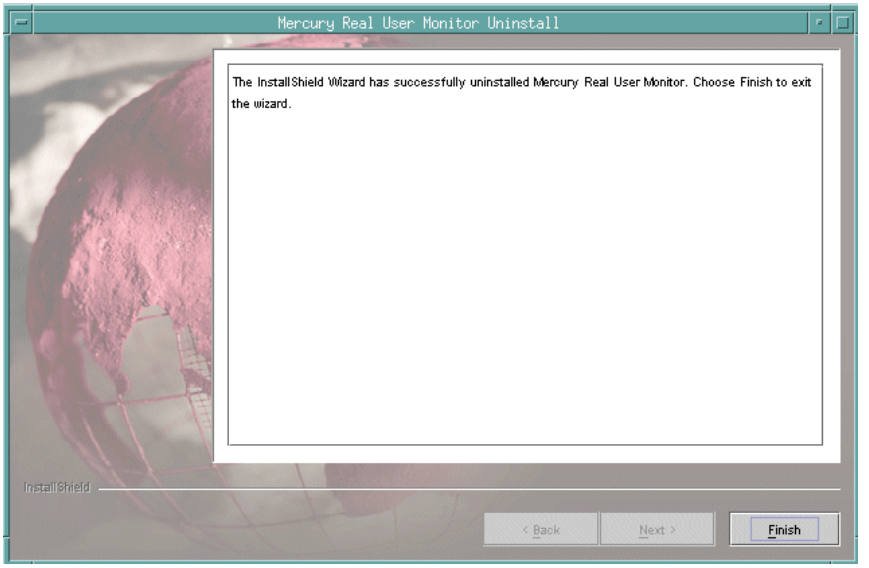
Click **Next**.

5 Choose if you want the uninstall process to delete unused files



Click **Next**.

6 Once the Real User Monitor engine has been uninstalled, click **Finish** to exit the uninstall process.



6

Configuring the Real User Monitor Probe to Monitor SSL Traffic

If you want to monitor SSL traffic using the Mercury Real User Monitor, you must first configure the Real User Monitor probe and engine.

This chapter describes:	On page:
Overview of SSL	77
Configuring the Real User Monitor Probe and Engine for SSL Traffic	77
Converting a Private Key File to PEM Format	79

Overview of SSL

SSL (Secure Sockets Layer) is the leading security protocol that encrypts and decrypts a message for online transmission and authentication. When an SSL session is started, the Web server sends its public key to the client. The client uses this public key to send a randomly generated private key back to the server, which facilitates a private key exchange for the session.

Because the SSL protocol encrypts traffic between the Web server and client, the Real User Monitor cannot analyze SSL traffic the same way it analyzes regular Web traffic. To analyze SSL traffic, you must configure the Real User Monitor probe to be able to use the correct private key for the traffic it is monitoring.

Configuring the Real User Monitor Probe and Engine for SSL Traffic

To configure the Real User Monitor probe and engine to monitor SSL traffic:

1 Copy the private key file of the server whose SSL traffic you want to monitor to the Real User Monitor probe machine (for example, to the /etc/beatbox directory).

Note: The file must be in **pem** format. To convert a file to pem format see "Converting a Private Key File to PEM Format" on page 79.

---

2 On the Real User Monitor engine machine, edit the **<Mercury Real User Monitor engine root directory>\conf\configurationmanager\ Beatbox_Default_Const_Configuration.xml** file.

At the bottom of the **collector** section (that is, between **<collector>** and **</collector>**, add a line for each server (or range of servers) whose SSL traffic you want to monitor, in the following format:

ssl_servers <SERVERRANGE> <PORTRANGE> <PRIVATE KEY FILE>

where:

SERVERRANGE – is the IP range of the server(s) being monitored.

PORTRANGE – is the port range the server(s) uses for SSL traffic.

PRIVATE KEY FILE – is the full path and name of the private key file of the server that you copied to the Real User Monitor probe machine in step 1.

For example:

```
        <collector>
<![CDATA[
[collector]
device          eth1
device              eth2
servers         0.0.0.0/0.0.0.0   80
ssl_servers 192.168.88.10-192.168.88.12 443 /etc/beatbox/my_private_key1.pem
ssl_servers 192.168.88.15-192.168.88.17 443 /etc/beatbox/my_private_key2.pem
]]>
        </collector>
```

3 Force the Real User Monitor engine to reread the Real User Monitor probe configuration:

- Access the JMX console by choosing **JMX Console** from the Configuration dropdown menu in the Real User Monitor Web console, or by using the following URL in your Web browser:

  http://<Real User Monitor engine machine name>:8180/jmx-console

- In the JMX Agent View, scroll down to the **RUM.modules** section and click **service=ConfigurationManagerConf**.
- Click the **Invoke** button for the **forceGetAllConfiguration** operation.

4 Restart the Real User Monitor probe.

Converting a Private Key File to PEM Format

Run the following commands from the Real User Monitor probe machine (or any other openssl machine).

Note: Do not enter any unnecessary spaces in the command line.

To convert a file from pfx (IIS) format to pem format:

openssl pkcs12 -nocerts -nodes -in <filename> -out *.pem

To check that a file is a valid pem file:

openssl rsa -in <rsa file name> -check

Part III

Working With Real User Monitor

7

Administering Real User Monitor

You administer Real User Monitor by using the start menu and task bar icon that are installed during a Windows installation of Real User Monitor, and the terminal command line for Solaris installations.

This chapter describes:	On page:
Real User Monitor Windows Start Menu	84
Real User Monitor Windows Task Bar Icon	85
Real User Monitor Solaris Commands	86

Real User Monitor Windows Start Menu

To access the Real User Monitor Start menu that is added to the Windows machine on which the Real User Monitor engine is installed, select **Start** > **Programs** > **Mercury Real User Monitor**. The menu includes the following options:

Administration

The Administration menu option includes the following options:

Option	Description
Connect to Database	Runs the Mercury Real User Monitor Database Setup wizard, which enables you to create and connect to a MySQL database for the Mercury Real User Monitor. For details, see "Creating and Connecting to the MySQL Database" on page 118.
Disable Mercury Real User Monitor	Stops Real User Monitor on the specific machine, and disables it from being run automatically whenever the machine is started.
Enable Mercury Real User Monitor	Starts Real User Monitor on the specific machine, and sets it to be run automatically whenever the machine is started.
Database (only if the MySQL database has been installed)	Opens a submenu with options for starting and stopping the MySQL database on the machine on which it is installed.

Open Real User Monitor Web Console

Selecting this option opens the Real User Monitor Web console used for administering Real User Monitor. For details, see "Using the Real User Monitor Engine Web Console" on page 89.

Real User Monitor Windows Task Bar Icon



The task bar icon installed with Mercury Real User Monitor provides a menu with options for the Mercury Real User Monitor Agent service. The Mercury Real User Monitor Agent service is responsible for launching Mercury Real User Monitor and managing the processes used by it. The supervisor process manages and monitors the other processes used by Mercury Real User Monitor.

When Mercury Real User Monitor is first enabled, the icon appears with two yellow stars only. When the Mercury Real User Monitor application server has successfully started, the stars change to grey and a green tick appears above them. If there is an error during startup, or an error with JBoss after startup, the green tick in the icon changes to a red X until the problem is rectified.



The menu, which you access by right-clicking the icon, includes the following options:

Option	Description
About	Displays informational data about the Mercury Real User Monitor Agent service.
View Log	Displays the supervisor log, which includes information about the various processes being used by Mercury Real User Monitor.
Settings	Displays the processes in use by Mercury Real User Monitor, and their current settings.
Close	Stops Mercury Real User Monitor and closes the Mercury Real User Monitor Agent service.

Note:

Changing any of the process settings can cause Mercury Real User Monitor to malfunction and should not be done without consulting Mercury Customer Support.

Do not use **Close** to stop Mercury Real User Monitor. Stop Mercury Real User Monitor by using the **Disable Mercury Real User Monitor** option from the **Administration** menu in the Mercury Real User Monitor Start menu only.

Real User Monitor Solaris Commands

You perform the following Real User Monitor administration tasks via the terminal command line of the Solaris machine on which Real User Monitor is installed:

Start Real User Monitor

1. Move to the **bin** sub directory in the directory in which you installed Real User Monitor.
2. Execute the command **./m_daemon_setup –install**.

Stop Real User Monitor

3. Move to the **bin** sub directory in the directory in which you installed Real User Monitor.
4. Execute the command **./m_daemon_setup –remove**.

Connect to database

You run Mercury Real User Monitor database setup to create and connect to a MySQL database for Mercury Real User Monitor. For details, see “Creating and Connecting to the MySQL Database” on page 118.

To run Mercury Real User Monitor database setup:

1. Move to the **bin** sub directory in the directory in which you installed Real User Monitor.
2. Execute the command **./Connect_To_DB** to run the database setup in UI mode, or **./Connect_To_DB - console** to run the database setup in console mode.

8

Using the Real User Monitor Web Console

Once the Real User Monitor engine has been installed and started, you can use the Real User Monitor Engine Web console to view and configure the connection between Real User Monitor and Mercury Business Availability Center, view other Real User Monitor engine settings, monitor the health of Real User Monitor components, and use Real User Monitor diagnostic tools.

This chapter describes:	On page:
Using the Real User Monitor Engine Web Console	89
Monitoring the Health of Real User Monitor Components	92
Real User Monitor Configuration and Settings	95
Real User Monitor Diagnostic Tools	105

Using the Real User Monitor Engine Web Console

You use the Real User Monitor Engine Web console to view and configure the connection parameters between Real User Monitor and Mercury Business Availability Center. You can also view most of the Monitor Administration configuration received from Mercury Business Availability Center as well as monitor the health of Real User Monitor components (for details on configuring the Real User Monitor in Monitor Administration, see "Configuring the Real User Monitor" in *End User Management Data Collector Configuration*). The Real User Monitor Engine Web console also includes a number of diagnostic tools as well as links to the Real User Monitor JMX console.

Once you start the Real User Monitor engine after installation, you can access the Real User Monitor Engine Web console by launching a web browser and entering the following URL:

http://<Real User Monitor engine machine name or IP>:8180

Note: On a Windows machine on which the Real User Monitor engine is installed you can also access the Real User Monitor Engine Web console by selecting **Start** > **Programs** > **Mercury Real User Monitor** > **Open Real User Monitor Web Console.**

Logging In

When you access the Real User Monitor Engine Web console, the login page opens.

Enter the login parameters (login name and password) of a user defined in Real User Monitor, and click **Log In**. After logging in, the user name appears at the top right, under the top menu bar.

Initial access can be gained using the default superuser login parameters: Login Name=**admin**, Password=**admin**. It is recommended that the system superuser change this password immediately to prevent unauthorized entry. For details on changing the password, see “Changing Login Parameters” on page 91.

The Real User Monitor Engine Web console opens, displaying the top menu bar that enables navigation to the configuration, health, tools, and help pages, as well as the Logout button.

Logging Out

When you have completed your session, it is recommended that you log out of the Web site to prevent unauthorized entry by clicking **Logout** at the top of the page.

Changing Login Parameters

You can add, change, and delete Real User Monitor users by editing the **MercuryRUM\conf\rumwebconsole\users.xml** file. In this file, there is a line for each user in the following format:

```
<user name="Administrator" login="admin" password="admin"
“encryptedPassword=”” />
```

Note: It is recommended that the system superuser limit access to the **MercuryRUM\conf\rumwebconsole\users.xml** file.

To add a Real User Monitor user:

1. Open the **MercuryRUM\conf\rumwebconsole\users.xml** file in a text editor.
2. Duplicate the entry for one of the existing users.
3. In the duplicate line, enter the **user name**, **login**, and **password** parameters for the new user. Ensure that the **encryptedPassword** parameter is blank.
4. Save the file.

To change a Real User Monitor user:

1. Open the **MercuryRUM\conf\rumwebconsole\users.xml** file in a text editor.
2. In the appropriate line, change the **user name** and **login** parameters as required.
3. To change a user’s password, enter the new password in the **password** parameter and ensure that the **encryptedPassword** parameter is blank.
4. Save the file.

To delete a Real User Monitor user:

1. Open the **MercuryRUM\conf\rumwebconsole\users.xml** file in a text editor.
2. Delete the appropriate line.
3. Save the file.

Note: Changes to the **MercuryRUM\conf\rumwebconsole\users.xml** file only take effect when the Real User Monitor engine is restarted. When the Real User Monitor engine is started, user passwords in the **password** parameter are encrypted and removed, and the encrypted passwords are stored in the **encryptedPassword** parameter.

Monitoring the Health of Real User Monitor Components

The **Health** dropdown menu on the Real User Monitor Engine Web console menu bar includes an option to display the status of the main Real User Monitor components.

For each component displayed, there are four possible statuses:

- Green – OK
- Yellow – Warning
- Red – Error
- Grey – No status

You can drill down to see the status of the entities that comprise the Real User Monitor component by clicking the component name. The following table lists the components and their entities and describes the meaning of the different statuses:

Component	Entity	OK Status (Green)	Warning Status (Yellow)	Error Status (Red)
BeatBox	Configuration to Probe	Probe was configured successfully		Errors during probe configuration process
	Missing Components Channel	BeatBox Retriever has successfully connected to this channel	BeatBox Retriever is experiencing problems while connecting to this channel	BeatBox Retriever has failed to connect to this channel more than three consecutive times
	Pages Channel			
	Sessions Channel			
	Probe Data Flow	Data from the probe successfully retrieved	Probe has not produced new data	
Configuration Retrieval from BAC server	Connection to BAC server	Connection to BAC server is operational		Connection to BAC server is not operational
	Data type <type name> retrieval	Configuration of data type <type name> successfully retrieved from BAC server		Errors while trying to retrieve configuration data type <type name> from BAC server

Component	Entity	OK Status (Green)	Warning Status (Yellow)	Error Status (Red)
Database	Database connectivity	Connection to database OK		Connection to database not working
	Database response time	Database response time is normal	Database response time is below normal	Database response time is slow
RUM Engine	Publish configuration to module <module name> on host <IP address>	Configuration to module <module name> on host <IP address> successfully published		Error while trying to publish configuration to module <module name> on host <IP address>
	JMS Entry	Real User Monitor is successfully reading data.	Real User Monitor may not be successfully reading data	Real User Monitor is not successfully reading data
	JMS Publisher			
	JMS Raw Entry			
	JMS Samples			

Component	Entity	OK Status (Green)	Warning Status (Yellow)	Error Status (Red)
Samples to BAC server	Connection to BAC server	Real User Monitor is successfully sending samples to Mercury Business Availability Center		Real User Monitor has failed in sending data to Mercury Business Availability Center
	Publisher burst state	All Real User Monitor samples are being sent to Mercury Business Availability Center. No samples are delayed		Real User Monitor is delaying samples so as not to overload Mercury Business Availability Center

Real User Monitor Configuration and Settings

The **Configuration** dropdown menu on the Real User Monitor Engine Web console menu bar includes the following options:

- **BAC Connection Settings** on page 96 – used to view and configure the connection parameters between the Real User Monitor and Mercury Business Availability Center.
- **Advanced Settings** on page 98 – provides links to specific areas of the Real User Monitor JMX console for configuring parameters and settings for individual Real User Monitor modules.

- **JMX Console** on page 98 – provides a link to the Real User Monitor JMX console for configuring parameters for URL correlation in Monitor Administration (for details on URL correlation, see "Correlating Collected Data with Configured Pages" in *End User Management Data Collector Configuration*).
- **Engine Configuration Per Data Type** on page 98 – displays general configuration data of the applications, end-users, pages, probes, transactions, and engine that have been configured for monitoring by Real User Monitor in Monitor Administration.

BAC Connection Settings

This page displays the current configuration settings for the communication channel between Real User Monitor and Mercury Business Availability Center, which you can update. The page contains the following panes:

General

This pane includes a field that contains the hostname of the Mercury Business Availability Center Core Server, a field for the port number used in communicating with the Core Server (80 by default), and a field for the communication protocol used (http by default, or https if SSL is used for communicating with the Core Server).

Note: If you are a Mercury Managed Services user, contact a Mercury Customer Support representative to receive the hostname or URL to enter.

Authentication

To instruct Real User Monitor to use basic authentication in communicating with Mercury Business Availability Center, select the **Use authentication** check box. Enter the user name, password, and domain name of a user recognized by the Core Server in the relevant fields.

For more information on using basic authentication in Mercury Business Availability Center, see "Using Basic Authentication in Mercury Business Availability Center" in *Hardening the Platform*.

Proxy

To instruct Real User Monitor to access the Core Server through a reverse proxy server, select the **Use proxy** check box. Enter the user name, password, domain name, and URL for the reverse proxy server. For information on using a reverse proxy server with Mercury Business Availability Center, see "Using a Reverse Proxy in Mercury Business Availability Center" in *Hardening the Platform*.

SSL

If Real User Monitor has been configured to use the SSL channel in communicating with the Core Server, you configure the following parameters in this pane:

- Keystore path – the path to the Keystore file, which is a file on the Real User Monitor engine machine that contains the private key and client-side certificate used for client authentication in SSL
- Private Key password – the password used for accessing the Private Key file
- Keystore password – the password used for accessing the Keystore file

In addition, you can select the following options by checking the box to the left of the required option:

- Validate host names on server certificates
- Validate that the server certificates are trusted
- Validate that the server certificates are not expired

For information on configuring the Real User Monitor and Mercury Business Availability Center to work with SSL, see "Using SSL in Mercury Business Availability Center" in *Hardening the Platform*.

Note: If you change the configuration, click the **Save Configuration** button to save the configuration and update the Real User Monitor engine.

Advanced Settings

This option displays Real User Monitor modules and provides direct links to specific pages in the Real User Monitor JMX console for viewing and configuring the module settings. Each module listed can have any of the following links associated with it:

- Main Module Page – links to general settings for the module name and status
- Configuration Page – links to settings for the configuration of the Real User Monitor module retrieved from Mercury Business Availability Center
- Settings Page – links to settings for the configuration of the Real User Monitor module in the Real User Monitor engine

For details on working with the JMX console, see "Using the Real User Monitor JMX Console" on page 109.

JMX Console

This option provides a link to the Real User Monitor JMX console, which you use to view and configure Real User Monitor parameters, for example, URL correlation parameters. For details on configuring URL correlation parameters, see "Correlating Collected Data with Configured Pages" in *End User Management Data Collector Configuration*. For details on working with the JMX console, see "Using the Real User Monitor JMX Console" on page 109.

Engine Configuration Per Data Type

This page displays general configuration data of the applications, end-users, events, pages, probes, transactions, and engine that have been configured for monitoring by Real User Monitor in Monitor Administration. You display the data type you wish to see by selecting it from the dropdown menu located at the top left corner of the page and clicking **Generate**.

Applications

When you select applications as the data type to be displayed, the following information about the configured applications is displayed:

Column	Description
ID	An internal ID number allocated by Mercury Business Availability Center.
Is Application enabled	True or False – as configured in Monitor Administration.
Name	The name of the application as configured in Monitor Administration.
Default Page time threshold	The default page time threshold, in milliseconds, as configured for the application in Monitor Administration.
Default Server time threshold	The default server time threshold, in milliseconds, as configured for the application in Monitor Administration.
Probes which monitor the application	The IP addresses and names of the probes configured in Monitor Administration to monitor the application.

For information on configuring applications for monitoring, see "Configuring Applications" in *End User Management Data Collector Configuration*.

End-Users

When you select end-users as the data type to be displayed, the following information about the configured end-users is displayed:

Column	Description
ID	An internal ID number allocated by Mercury Business Availability Center.
Is End User enabled	True or False – as configured in Monitor Administration.

Column	Description
Name	The name of the end-user group as configured in Monitor Administration.
Description	The description of the end-user group as configured in Monitor Administration.
Is Monitored (for collection)	True or False – use host name resolution as configured in Monitor Administration.

For information on configuring end-user groups for monitoring, see "Configuring End-User Groups" in *End User Management Data Collector Configuration*.

Events

When you select events as the data type to be displayed, the following information about the configured events is displayed:

Column	Description
ID	An internal ID number allocated by Mercury Business Availability Center.
Is Event enabled	True or False – as configured in Monitor Administration.
Name	The name of the event as configured in Monitor Administration.
Event type	The event type as configured in Monitor Administration.
Report As Error	True or False – as configured in Monitor Administration.
Create Snapshot	True or False – as configured in Monitor Administration.

For information on configuring events for monitoring, see "Configuring Events" in *End User Management Data Collector Configuration*.

Pages

When you select pages as the data type to be displayed, the following information about the configured pages is displayed:

Column	Description
Page ID	An internal ID number allocated by Mercury Business Availability Center.
Is Page Enabled	True or False – as configured in Monitor Administration.
Page Name	The name of the page as configured in Monitor Administration.
Application	The name of the application in which the page is included.
Description	The description of the page as configured in Monitor Administration.
Monitored Type	The monitoring condition as configured in Monitor Administration. The possible conditions are: 1 = Always 2 = Never 3 = Only as part of a transaction
Page Type	Currently not used
Page Time Threshold	The page time threshold, in milliseconds, as configured for the page in Monitor Administration.
Server Time Threshold	The server time threshold, in milliseconds, as configured for the page in Monitor Administration.
Availability Threshold	The availability threshold, in percent, configured for the page in Monitor Administration.
Timeout	The amount of time, in milliseconds, after which the page is considered to have timed out, as configured for the page in Monitor Administration.
Page URL	The URL of the page as configured in Monitor Administration.

For information on configuring pages for monitoring, see "Configuring Pages" in *End User Management Data Collector Configuration*.

Probes

When you select probes as the data type to be displayed, the following information about the configured probes is displayed:

Column	Description
ID	An internal ID number allocated by Mercury Business Availability Center.
Is probe enabled	True or False – as configured in Monitor Administration.
IP	The IP address of the probe as configured in Monitor Administration.
Login username	The user name for logging in to the probe as configured in Monitor Administration.
Name	The name of the probe as configured in Monitor Administration.
Description	The description of the probe as configured in Monitor Administration.
Monitor All Servers	True or False – as configured in Monitor Administration.

For information on configuring probes for monitoring, see "Configuring a Probe" in *End User Management Data Collector Configuration*.

Transactions

When you select transactions as the data type to be displayed, the following information about the configured transactions is displayed:

Column	Description
Trx ID	An internal ID number allocated by Mercury Business Availability Center.
Is Trx Enabled	True or False – as configured in Monitor Administration.
Trx Name	The name of the transaction as configured in Monitor Administration.
Application	The name of the application in which the transaction is included.
Description	The description of the transaction as configured in Monitor Administration.
Transaction report page	The name of the page which, if reached, will cause the transaction to be reported as unavailable, in the event of a transaction error or timeout within a session.
Refresh behavior	The page instance that is measured in case of a refresh as configured in Monitor Administration. The possible instances are: 0 = First page 1 = Last page
Timeout	The amount of time, in milliseconds, of inactivity since the last page download in a transaction, that will cause the transaction to time out, as configured for the transaction in Monitor Administration.
Gross Time Threshold	The total transaction time threshold (download time + think time), in milliseconds, as configured for the transaction in Monitor Administration.
Net Time Threshold	The net transaction time threshold, in milliseconds, for the pages included in the transaction, as configured in Monitor Administration.

Column	Description
Server Time Threshold	The server time threshold, in milliseconds, as configured for the transaction in Monitor Administration.
Availability Threshold	The availability threshold, in percent, as configured for the transaction in Monitor Administration.
Trx pages	The names of the pages included in the transaction, as configured in Monitor Administration.

For information on configuring transactions for monitoring, see "Configuring Transactions" in *End User Management Data Collector Configuration*.

Engine Settings

When you select engine settings as the data type to be displayed, the following information about the configured engine is displayed:

Column	Description
Engine Name	Name of the engine as configured in Monitor Administration.
Profile ID	Internal Mercury Business Availability Center profile ID.
Profile Name	Internal Mercury Business Availability Center profile name.
Engine ID	Internal Mercury Business Availability Center engine ID.
Customer Name	Always **default client**.
Snapshot page number	Number of pages for which to collect snapshot on error, as configured in Monitor Administration.
Is monitoring default application	The applications that are monitored by the engine, as configured in Monitor Administration. 0 = configured applications only 1 = all applications

Column	Description
Default Application Name	Name of default application (for all applications not configured in Monitor Administration).
Default HTTP Port	Default HTTP port of engine machine.
Default HTTPS Port	Default HTTPS port of engine machine.
Default Application ID	Internal Mercury Business Availability Center application ID.

For information on configuring engine settings, see "Configuring Real User Monitor Engine Settings" in *End User Management Data Collector Configuration*.

Transaction Snapshot Mode

When you select transaction snapshot mode as the data type to be displayed, the following information about the transaction snapshot mode is displayed:

Column	Description
Snapshot mode on	True or False – as configured in Monitor Administration.

For information on configuring transaction snapshot settings, see "Data Reporting Settings" in *End User Management Data Collector Configuration*.

Real User Monitor Diagnostic Tools

The **Tools** dropdown menu on the Real User Monitor Engine Web console menu bar includes the following tools:

- **IP Translator** – used to convert the internal number used by the engine to represent an IP address, to the actual IP address it represents, and vice versa.
- **Time Converter** – used to convert a date and time to an internal number used by the engine machine to represent this value. You can also convert the number used by the engine machine to the date and time it represents.

- **Capture Log Files** – used to create a zip file of the Real User Monitor resource and log files for use by Mercury Customer Support.

IP Translator

You use the IP Translator tool to convert an IP address into different formats. The formats to which the IP data is translated are:

- host name – the name of the machine to which the IP address is assigned.
- signed integer – an internal, signed number used in Real User Monitor data samples.
- unsigned integer – an internal, unsigned number used in Real User Monitor data samples.
- dotted-format IP address – the standard, dotted-decimal notation for the IP address.

You select one of the formats and enter the source data you want to convert to the other formats, or you select the **Resolve Engine host** option to use the IP address of the current Real User Monitor engine machine as the source data.

Click **Submit** to translate the source data to all the other formats.

Time Converter

You use the Time Converter tool to convert a time into different formats. The formats to which the time is converted are:

- the number of milliseconds since January 1, 1970 – an internal number used by the Real User Monitor engine.
- time in Greenwich Mean Time.
- time in the time zone set for the Real User Monitor engine machine.
- You select one of the formats and enter the source data you want to convert to the other formats, or you select the **Current time** option to use the current time as the source data for conversion.

  Click **Submit** to convert the source data to all the other formats.

Capture Log Files

You use this tool to create a **.zip** file of the current status of the Real User Monitor for support purposes.

Click **Capture** and specify the name and location of the file.

9

Using the Real User Monitor JMX Console

You use the Real User Monitor Engine JMX Console to view and configure Real User Monitor settings.

This chapter describes:	On page:
Accessing the JMX Console	109
Setting URL Correlation Parameters	110
Configuring Real User Monitor Aggregation	110

Accessing the JMX Console

Via the JMX console you can view and configure Real User Monitor parameters, view statistics for Real User Monitor modules and services, and view and configure JBoss components.

Once you start the Real User Monitor engine after installation, you can access the Real User Monitor Engine JMX Console by launching the Real User Monitor Engine Web console and choosing **JMX Console** from the **Configuration** dropdown menu. To access a specific area of the JMX Console for an individual Real User Monitor module, select **Advanced Settings** from the **Configuration** dropdown menu in the Real User Monitor Engine Web console and then click on the links for the module you wish to view. For details on the Real User Monitor Engine Web console, see “Using the Real User Monitor Web Console” on page 89.

Note: You can access the Real User Monitor Engine JMX Console from a different machine by launching a Web browser and typing the following:

http://<Real User Monitor engine machine name>:8180/jmx-console

Important: Changing any of the JMX configuration settings can cause Mercury Real User Monitor to malfunction. It is recommended not to change any of these settings.

Setting URL Correlation Parameters

You can configure a number of parameters used by Real User Monitor when correlating recorded URLs with URLs you have configured for monitoring. For details on URL correlation, see "Principles of Correlation" in *End User Management Data Collector Configuration*. For details on configuring URLs for monitoring, see "Configuring the Real User Monitor" in *End User Management Data Collector Configuration*.

Some of the URL correlation parameters are set using the Real User Monitor JMX console. For details on changing URL correlation parameters via the Real User Monitor JMX console, see "Setting URL Correlation Parameters Via the JMX Console" on page 113.

Configuring Real User Monitor Aggregation

Real User Monitor pre-aggregates a number of the data samples it sends to Mercury Business Availability Center. For details on Mercury Business Availability Center aggregation, see "Data Aggregation"in *Reference Information*. For details on Real User Monitor pre-aggregation, see "Aggregating Real User Monitor Data"in *Using End User Management*.

You can change the Real User Monitor default aggregation periods via the JMX console. The following table shows the data sample types that are pre-aggregated by Real User Monitor, their parameter names in the JMX console, and the default aggregation time period:

Data Sample Type	JMX Parameter Name	Default Aggregation Period (in minutes)
Page	DefinedPagesStatisticsInterval	5
Slow Domain	DomainsStatisticsInterval	5
Domain		
Missing Component	MissingComponentsStatistics Interval	5
Server	ServersStatisticsInterval	5
Slow Page	SlowPagesStatisticsInterval	5
Top Domain	TopDomainStatisticsInterval	60
Top Page	TopPagesStatisticsInterval	60

Note: The Slow Domain and Domain data sample types both use the same JMX parameter. Changing the default aggregation period for this parameter will change the aggregation period for both of the data sample types.

To change the Real User Monitor default aggregation periods via the JMX console:

1 Access the JMX console by choosing **JMX Console** from the Configuration dropdown menu in the Real User Monitor Web console, or by using the following URL in your Web browser:

http://<Real User Monitor engine machine name>:8180/jmx-console

2 In the JMX Agent View, scroll down to the **RUM.modules** section and click **service=StatisticsMgrConf**.

3 In the relevant parameter, change the setting to the aggregation period (in minutes) you want.

4 Click the **Apply Changes** button.

Note: Changing the default aggregation periods can significantly affect the amount of data sent by Real User Monitor to Mercury Business Availability Center. It is recommended not to change the default aggregation periods.

10

URL Correlation Parameters

Once the Real User Monitor engine has been installed and started, you can configure a number of parameters to determine how the Real User Monitor correlates recorded URLs with Web pages you have configured for monitoring in Monitor Administration.

This chapter describes:	On page:
Setting URL Correlation Parameters Via the JMX Console	113
Correlating Session ID Parameters	114

Setting URL Correlation Parameters Via the JMX Console

You can change the default setting of a number of parameters used by Real User Monitor when correlating recorded URLs with URLs you have configured for monitoring. For details on URL correlation, see "Principles of Correlation" in *End User Management Data Collector Configuration*. For details on configuring URLs for monitoring, see "Configuring the Real User Monitor" in *End User Management Data Collector Configuration*.

You can configure the following parameters for URL correlation in the JMX console:

- **adaptIndexurl** – by default, the Real User Monitor considers a URL such as **http://www.mercury.com/index.html** to be different from the URL **http://www.mercury.com/**. To instruct Real User Monitor to consider two such URLs as being identical, you set this parameter to **False**.

- **adaptCaseSensitive** – by default, Real User Monitor URL correlation is case-insensitive, so that a recorded URL such as **http://www.mercury.com/rumEnginePage.html** will be correlated with the configured URL **http://www.mercury.com/rumenginepage.html**. To instruct Real User Monitor to use case-sensitive URL correlation (for all but the host and protocol parts of a URL), you set this parameter to **False**.
- **basicAuthentication** – by default, Real User Monitor ignores basic authentication when performing URL correlation. For example, the recorded URL **http://bob:my_password@www.mercury.com** will be correlated with the configured URL **http://www.mercury.com**. To instruct the Real User Monitor to consider basic authentication when performing URL correlation you set this parameter to **False**.

To change the default setting of a URL correlation parameter in the JMX console:

1. Access the JMX console by choosing **JMX Console** from the Configuration dropdown menu in the Real User Monitor Web console, or by using the following URL in your Web browser:

   http://<Real User Monitor engine machine name>:8180/jmx-console

2. In the JMX Agent View, scroll down to the **RUM.modules** section and click **service=ResolverURLMConfig**.
3. In the relevant parameter, change the setting to **False**.
4. Click the **Apply Changes** button.

Correlating Session ID Parameters

You can configure specific parameters in recorded URLs to be ignored by Real User Monitor when correlating recorded URLs with URLs you have configured for monitoring in Monitor Administration. For details on URL correlation, see "Principles of Correlation" in *End User Management Data Collector Configuration*. For details on configuring URLs for monitoring, see "Configuring the Real User Monitor" in *End User Management Data Collector Configuration*.

If you set a parameter to be ignored by Real User Monitor and the parameter is included in a recorded URL, the Real User Monitor will replace the contents of that parameter with an asterisk (*). For example, if you set Real User Monitor to ignore the **BV_SessionID** and **BV_EngineID** parameters in the following URL:

http://www.mercury.com/~anand/Ticket_Confirm.jsp?BV_SessionID=@@@@1812057630.1043567934@@@@&BV_EngineID=cccdadchgidfmlmcefecehidfhfdffk.0&value=0000144976

The URL is translated as follows:

http://www.mercury.com/~anand/Ticket_Confirm.jsp?BV_SessionID=*&BV_EngineID=*&value=0000144976

The parameters to be ignored are defined per application server.

To configure session ID parameters to be ignored:

1. Open the **MercuryRUM\conf\configurationmanager\Application_Server_Types_configuration.xml** file in a text editor.
2. Locate the application server type for which you are configuring the parameters to be ignored. This appears in the format <AppServer name="app_server_name">, where app_server_name is the name of the application server type. For example, for a Broadvision application server, the entry is:

   <AppServer name="BroadVision">
3. Under the application server name, in the section beginning with the **<DiscardParameters>** tag, is a list of the most common session ID parameters for that application server. You can add and delete parameters to create a list of all the parameters you want Real User Monitor to ignore during correlation. Parameters are entered in the format <parameter>parameter_name</parameter>, where parameter_name is the name of the parameter. For example, for a parameter called BV_EngineID, the entry is.

   <parameter>BV_EngineID</parameter>

4. If you want Real User Monitor to consider the parameters you enter as a regular expression instead of a string (which is the default), you add **type="regEx"** to the **<DiscardParameters>** tag. For example, **<DiscardParameters type="regEx">**

5. Under the application server name, in the line:

   <attribute name="enabled">false</attribute>

   change **false** to **true**.

6. Save the file and exit the editor.

11

Administering the MySQL Database

For Real User Monitor to work, it must be connected to a MySQL database that has been created and started.

This chapter describes:	On page:
Overview of the MySQL Database	117
Creating and Connecting to the MySQL Database	118
Starting and Stopping the MySQL Database	119
Maintaining the MySQL Database	120

Overview of the MySQL Database

The MySQL database is the Real User Monitor's data repository. The data that is stored in the MySQL database is data that is either not forwarded at all to Mercury Business Availability Center, or that is only sent on request.

Data that is not forwarded at all to Mercury Business Availability Center is Real User Monitor configuration data. Data that is sent to Mercury Business Availability Center on request is open session data and session click-stream data (data and snapshots of pages included in sessions). Click-stream data accounts for the majority of the data stored in the MySQL database.

The MySQL database can be installed on the same machine as the Real User Monitor engine or on its own machine. For system requirements for the MySQL database, see "Reviewing System Requirements" on page 11.

Creating and Connecting to the MySQL Database

The Real User Monitor engine MySQL database is created during the Real User Monitor engine installation process, if that option is selected. When the MySQL database is created during the installation process, the Real User Monitor engine is connected to it, and the MySQL database is started automatically. The MySQL database to which the Real User Monitor engine is connected must be started for the Real User Monitor engine to work.

You can create a new MySQL database and connect the Real User Monitor engine to it, or connect the Real User Monitor engine to a different, existing MySQL database, if required.

Note: The Real User Monitor engine can only be connected to one MySQL database.

To create and connect to a new MySQL database on a Real User Monitor Windows installation:

1 On the machine on which the Real User Monitor engine is installed, select **Start** > **Programs** > **Mercury Real User Monitor** > **Administration** > **Connect to Database**.

2 Select whether you wish to create and connect to a new MySQL database, or connect to an existing MySQL database. For details, see step 9 in "Installing the Mercury Real User Monitor Engine on a Windows Platform" on page 19.

3 Enter the details of the new MySQL database you wish to create and connect to, or the existing MySQL database to which you wish to connect. For details, see step 10 in "Installing the Real User Monitor Engine" on page 19.

To create and connect to a new MySQL database on a Real User Monitor Solaris installation:

1 On the machine on which the Real User Monitor engine is installed, move to the **bin** sub directory under the directory in which you installed Real User Monitor.

2 Execute the command **./Connect_To_DB** to run the database setup in UI mode, or **./Connect_To_DB - console** to run the database setup in console mode.

3 Select whether you wish to create and connect to a new MySQL database, or connect to an existing MySQL database. For details, see step 19 (for console mode) or step 11 (for UI mode) in "Installing the Mercury Real User Monitor Engine on a Solaris Platform" on page 32.

4 Enter the details of the new MySQL database you wish to create and connect to, or the existing MySQL database to which you wish to connect. For details, see step 21 (for console mode) or step 12 (for UI mode) in "Installing the Mercury Real User Monitor Engine on a Solaris Platform" on page 32.

Starting and Stopping the MySQL Database

When the MySQL database is created during Real User Monitor installation, it is started automatically as part of the process. You can start and stop the MySQL database manually if required.

To start the MySQL database on a Real User Monitor Windows installation:

On the machine on which the Real User Monitor engine is installed, select **Start** > **Programs** > **Mercury Real User Monitor** > **Administration** > **Database** > **Start Real User Monitor Database**.

To stop the MySQL database on a Real User Monitor Windows installation:

On the machine on which the Real User Monitor engine is installed, select **Start** > **Programs** > **Mercury Real User Monitor** > **Administration** > **Database** > **Stop Real User Monitor Database**.

To start the MySQL database on a Real User Monitor Solaris installation:

1 Move to the **/opt/MercuryRUM/MySQL/bin** directory on the Real User Monitor machine.

2 Execute the command **runMySQL.sh**.

To stop the MySQL database on a Real User Monitor Solaris installation:

1. Move to the **/opt/MercuryRUM/MySQL/bin** directory on the Real User Monitor machine.
2. Execute the command **stopMySQL.sh**.

Maintaining the MySQL Database

For details on maintaining the MySQL database, including strategies and procedures for backing up and restoring the database, refer to the Database Administration chapter in the MySQL Reference Manual on the MySQL Web site (http://dev.mysql.com/doc/refman/5.0/en/database-administration.html).

Purging MySQL Binary Log Files

The MySQL binary log contains all statements that updated data in the MySQL database.

The purpose of the binary log is to help update the database to the most current status during a restore operation, as it contains all updates made since the last backup. For details on MySQL binary log files and restoring databases, refer to the Database Administration chapter in the MySQL Reference Manual on the MySQL Web site (http://dev.mysql.com/doc/refman/5.0/en/database-administration.html).

Real User Monitor purges the MySQL binary log files on a daily basis, by deleting all the log files older than five days. You can change the default number of days for which to keep the MySQL binary log files.

To change the default number of days for which to keep MySQL binary log files:

1. Access the JMX console by choosing **JMX Console** from the Configuration dropdown menu in the Real User Monitor Web console, or by using the following URL in you Web browser:

   http://<Real User Monitor engine machine name>:8180/jmx-console

2. In the JMX Agent View, scroll down to the **RUM.modules** section and click **service=MaintenanceDBConfigurationJMX**.

3 In the **MySQLBinaryLogsDaysCount** parameter, change the setting to the required number of days.

4 Click the **Apply Changes** button.

Purging Session Click-Stream Data

The majority of the data stored in the MySQL database is session click-stream data. This data comprises the details and snapshots of pages included in sessions and is sent to Mercury Business Availability Center on request.

Session click-stream data is kept in the MySQL database for a default period of 14 days, after which it is automatically purged from the database. The amount of time for which session click-stream data is stored in the MySQL database can be changed to any number of days between 7 and 100.

To change the period for which session click-stream data is stored in the database:

1 Access the JMX console by choosing **JMX Console** from the Configuration dropdown menu in the Real User Monitor Web console, or by using the following URL in you Web browser:

http://<Real User Monitor engine machine name>:8180/jmx-console

2 In the JMX Agent View, scroll down to the **RUM.modules** section and click **service=MaintenanceDBConfigurationJMX**.

3 In the **PurgingDaysCounter** parameter, change the setting to the required number of days (between 7 and 100).

4 Click the **Apply Changes** button.

Note: By increasing the number of days for which session click-stream data is stored, you may significantly increase the size of the database, which may necessitate additional disk capacity.

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