Oracle® Real User Experience Insight (UXinsight)

Installation Guide

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Oracle Real User Experience Insight (UXinsight), Installation Guide, Release 4.4.1

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Preface

Oracle Real User Experience Insight (UXinsight) provides you with powerful analysis of your network and business infrastructure. You can monitor the real-user experience, define Key Performance Indicators (KPIs) and Service Level Agreements (SLAs), and trigger alert notifications for incidents that violate them.

Audience

This guide is intended for persons responsible for the installation and initial configuration of Oracle Real User Experience Insight (UXinsight).

Some familiarity with network and Web technology is assumed. In particular, you should have a firm understanding of network topology, and a good operational knowledge of your organization's network and application environment.

This guide is organized as follows:

- Chapter 1 introduces UXinsight. In particular, how it monitors data traffic, the role of Reporter and Collector modules, and the supported configurations.

- Chapter 2 describes the procedure preparing the server system(s) for UXinsight, and installing the UXinsight software. This procedure is performed by a system administrator.

- Chapter 3 describes the procedure for initially configuring UXinsight. This procedure is performed by the person within the organization who has been assigned the role of UXinsight Administrator.

- Appendix A highlights the most common issues encountered when installing UXinsight, and offers solutions to quickly locate and correct them. It should be reviewed before contacting Customer Service.

- Appendix B contains licensing information about certain third-party products included with UXinsight.

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Related Documents

For more information, see the following documents in the Oracle Real User Experience Insight (UXinsight) 4.4.1 documentation set:

- *Oracle Real User Experience Insight (UXinsight) User Guide*

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

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1

Getting started

This chapter introduces the role of UXinsight, its architecture, attachment, and deployment options.

What is UXinsight?

The usage of Web applications continues to grow. This includes not only the use of the Internet as a marketing channel, but also Extranet-based supply chain and back-office integration, and Intranet deployment of internal applications. UXinsight is designed for measuring, analyzing, and improving the availability and performance of all of these deployment scenarios.

Data collection

Typically, UXinsight is installed before the webservers, behind a firewall in the DMZ (as shown in Figure 1–1). The data collection method is based on Network Protocol Analysis (NPA) technology. This method is 100% non-intrusive. Hence, it does not place any load on a webserver, or require installing software agents that will impact performance. In addition, it does not require any change to the current application or infrastructure. When a new application release is deployed, or when an additional webserver is added, there is no or very little change required to UXinsight's monitoring environment.

Figure 1–1   How UXinsight collects data.
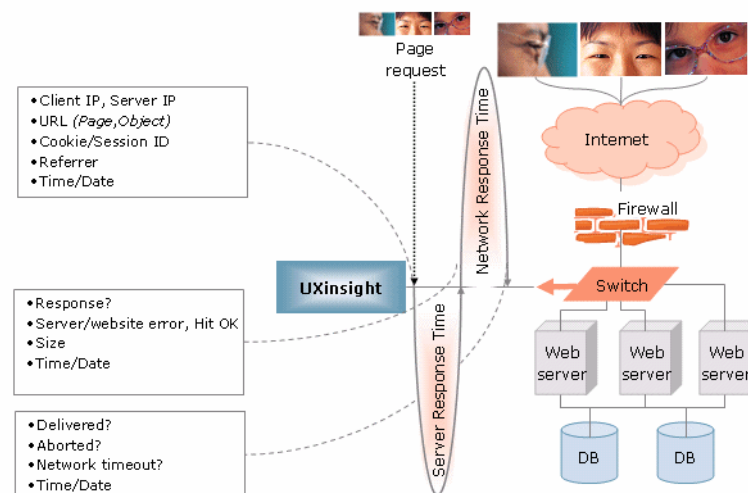
When an object is requested by a visitor, UXinsight sees the request and measures the time the webserver requires to present the visitor with the requested object. At this point, UXinsight

knows who requested the page (the client IP), which object was requested, and from which server the object was requested (server IP).

When the webserver responds and sends the requested object to the visitor, UXinsight sees that response. At this point, UXinsight can see whether there is a response from the server, whether this response is correct, how much time the webserver required to generate the requested object, and the size of the object. In addition, UXinsight can also see whether the object was completely received by the visitor, or if the visitor aborted the download (that is, proof of delivery). Hence, UXinsight can determine the time taken for the object to traverse the Internet to the visitor, and calculate the Internet throughput between the visitor and the server (that is, the connection speed of the visitor).

Product architecture

UXinsight is based on a three-layer product architecture, as shown in Figure 1–2:

Figure 1–2   UXinsight product architecture.
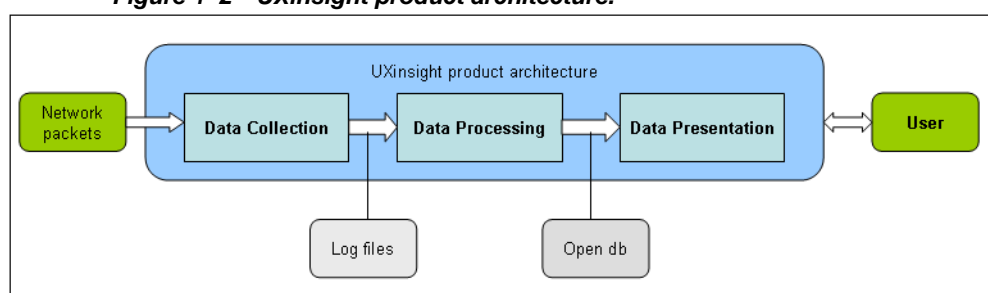
The monitored data packets are processed by the following layers:

- **Data collection**

  This layer is responsible for acquiring raw data and delivering it to the Data processor. This data can be collected from multiple sources. The available attachment options are described later in this section.

- **Data processing**

  This layer converts the raw data into OLAP data sets. These comprise the multidimensional data structure that is viewable within the data browser.

- **Data presentation (reporter)**

  This layer is UXinsight's analysis and reporting environment. This is a Web-based information portal that can be accessed from any selected browser. The interface between the data processing and data presentation layer is based on open db calls.

Security

To read HTTP(S) data streams, a proprietary software module reassembles TCP/IP packet streams. Because the data collectors do not have an assigned IP number, and the software using these data collectors does not have a functional IP stack, UXinsight is not able to respond to incoming traffic received from the data collectors. This makes UXinsight "invisible" to the monitored networks, and completely secure.

Note: Because of the non-intrusive way in which UXinsight collects data, it is not possible for it to request retransmission in the event of an error on the measurement port.

Data collection can be configured to log encrypted data (HTTPs and SSL). To facilitate this, a copy of the webserver's private SSL keys needs to be set up in the data collector. In addition, UXinsight can be configured to omit logging of sensitive data in the arguments of POST requests of forms or content; so called *blinding*.

Installation and deployment options

UXinsight can be installed in two different ways: as a Reporter, or as a Collector. Each installation option is reviewed in the following sections.

- **Reporter**

  This is the standard installation option, and is the simplest to install and configure. Here, the Reporter provides a browser-based interface to the collected data. Note that each Reporter installation also contains a local Collector instance. The Reporter can either be configured to just process information gathered by this local Collector (this is a single-server configuration similar to the one shown in Figure 1–3), or can (optionally) be configured to receive information from additional Collector installations.

- **Collector**

  If a UXinsight system is installed as a Collector, it submits the data it gathers to a Reporter system. A maximum of two Collectors can be attached to the same Reporter. Configuration #1 in Figure 1–3 is an example of a single Collector split-server configuration, while Configuration #2 is an example of a split-server configuration using two Collectors. Note that a direct network connection is required between the Collector(s) systems and the Reporter system.

Figure 1–3 Configuration options.
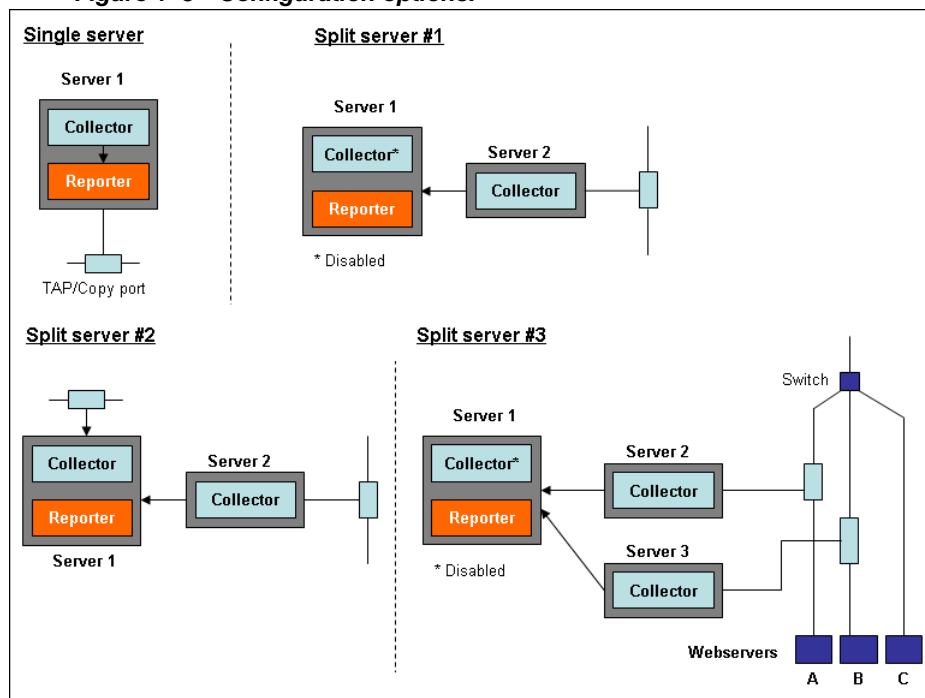
Deployment options

The use of multiple Collectors may be considered when there is a need to monitor very high levels of data traffic. In addition, this deployment also provides the possibility of enhanced

security. For example, by placing the Collector(s) outside the office network, while placing the Reporter system within the network.

Split-server configuration #1 in Figure 1–3 shows an example of a typical DMZ installation. The Collector is located in the DMZ, and the Reporter is within the office network environment. Note that the local Collector instance is disabled. Split-server configuration #2 shows an example of a deployment consisting of two Collectors also being used to monitor DMZ (Server 2) and office network (Server 1) traffic.

Split-server configuration #3 shows an example of a deployment in which both data lines are monitored in the same reporting environment. Note that this deployment assumes that the traffic on each line is mutually exclusive. It also shows an example of a deployment used for security reasons. While the traffic from webservers A and B are monitored and reported, the traffic from webserver C is not. That is also the reason why the Collectors are not placed above the switch.

For security reasons, it is recommended that access to each Collector's Web interface be limited to the internal network, and not the DMZ. This is to prevent unauthorized resetting of the system. Similarly, you may want to locate the Reporter system inside the internal network to maximize its security. The Collector's data gathering ports should be in the DMZ.

Hardware requirements

The required system specifications for the selected configuration (as explained in Section "Installation and deployment options") are described in the following sections.

Note: For more information about required and recommended system specifications, please contact Customer Support.

Single-server requirements

Table 1–1   Single-server system requirements.

Element	Requirements
CPU	64-bit Intel dual-CPU, dual-core Pentium processor (> 2 G Hz) or equivalent.
Memory	16 GB.
Disk space	Minimum 400 GB HDD free space.[1]
Network interfaces	When using a network-tap device[2], a minimum of three network interfaces is required: • Two interfaces for network traffic capturing. • One interface for network services.

[1]   The Reporter servers require high performance data storage. (Hardware) RAID-0, RAID-5, or equivalent storage configurations with high performance disks are strongly recommended.
[2]   When capturing data with a network-tap device, prevent the use of a cascaded taps configuration.

Reporter requirements

Table 1–2   Reporter system requirements.

Element	Requirements
CPU	64-bit Intel dual-CPU, dual-core Pentium processor (> 2 G Hz) or equivalent.

Table 1–2   Reporter system requirements.

Element	Requirements
Memory	8 GB[1].
Disk space	Minimum 400 GB HDD free space[2].
Network interfaces	A minimum of 1 network interface is required.
GSM modem (optional)	Optional support for a GSM modem to send SMS messages. The modem needs to be either GSM07.05 or GSM07.07 compatible. It can be connected through a serial or USB port. If USB is used, UXinsight uses the first available port (ttyUSB0). Alternative methods of sending SMS messages are available (http/email).

[1]   In some situations, more is required.

[2]   The Reporter servers require high performance data storage. (Hardware) RAID-0, RAID-5, or equivalent storage configurations with high performance disks are strongly recommended.

Collector requirements

Table 1–3   Collector system requirements

Element	Requirement
CPU	64-bit Intel dual-core Pentium processor or equivalent.
Memory	8 GB.
Disk space	Minimum 200 GB HDD free space.
Network interfaces	When using a network-tap[1] device, a minimum of three network interfaces are required:
	• Two interfaces for network traffic capturing[2].
	• One interface for communication with the Reporter system.
	When using a network-copy port, a minimum of two network interfaces are required:
	• One interface for network traffic capturing.
	• One interface for communication with the Reporter system.

[1]   When capturing data with a network-tap device, prevent the use of a cascaded taps configuration.

[2]   For up and down stream traffic. Note that the use of taps that integrate up and down stream traffic on one line is not recommended.

Software requirements

Supported GNU/Linux distributions

•   Oracle Enterprise Linux 5

•   Oracle Enterprise Linux 5 update 1

•   RedHat Enterprise Linux 5

•   RedHat Enterprise Linux 5 update 1

Network requirements

•   All server system clocks should be synchronized via NTP using UDP port 123.

•   Support DNS information requests over TCP and UDP port 53.

•   Support reports and email alerts using TCP port 25.

- Support SNMP traps on request from an SNMP Manager using UDP port 161/162.

- The UXinsight user interface is accessible over HTTP(S) ports(s) 80 and/or 443.

Important: The network connections should be set to Promiscuous mode to be able to accept all incoming traffic. If the network interfaces are not set to Promiscuous mode, the connections will not be able to collect any incoming data from the network TAP or copy ports.

Client requirements

The workstations that will access the UXinsight user interface must have one of the following browsers installed:

- Mozilla Firefox 2.0.

- Internet Explorer 6 SP2.

- Internet Explorer 7.

Note that Javascript must be enabled. No other plug-ins are required.

In addition, the workstation should have a screen resolution of 1024 * 768 (or higher).

Important: Ensure that any pop-up blocker within the browser has been disabled.

AJAX support

UXinsight uses AJAX to enhance its user interaction. Internet Explorer relies on the MSXML control to facilitate AJAX. The AJAX dependencies can trigger a security warning when using strict security settings.

Internet Explorer 6 does not properly support transparent images in the PNG format. UXinsight uses a well know fix (AlphaImageLoader) for this problem which relies on DirectX. If you are experiencing browser crashes on IE6, you may need to update your version of DirectX. The PNG fix can trigger a security warning when using strict security settings.

2

Installing UXinsight

This chapter describes the procedure for preparing the server system(s) for UXinsight, and installing the UXinsight software. This is performed by a system administrator. Post-installation configuration of the UXinsight system is described in chapter 3.

Overview

The process of preparing the server system, and installing the UXinsight software, has the following phases:

1. Install the Linux operating system. This is described in Section "Installing the Linux operating system".

2. Install and configure the MySQL database. This is described in Section "Installing and configuring the MySQL database".

3. Configure the Apache webserver. This is described in Section "Configuring the Apache webserver".

4. Install the UXinsight software. This is described in Section "Installing the UXinsight software".

Important: The installation procedure described in the following sections assumes that each system is dedicated to UXinsight. Indeed, it is strongly recommended that UXinsight is only installed on dedicated systems.

Installing the Linux operating system

The procedure for installing Oracle Enterprise Linux 5 is fully described in the product documentation. This section presents a summary of that procedure, and assumes a sound knowledge of Linux administration.

Although the installation procedure described in this section is based on Oracle Enterprise 5, the procedure for installing RedHat Enterprise Linux 5 is virtually identical. For information on vendor-specific variations, consult the appropriate documentation.

Download ISO image and burn CD

1. Download the appropriate ISO image. This should be Oracle Enterprise Linux 5.0 or 5.1 for the x86 64-bit architecture.

2. Unzip each of the files.

3. Burn the ISO files to CD. The operating system consists of five CDs. Note that this requires the use of a CD-burning utility (such as UltraISO or Magic ISO Maker).

> **Note:** According to your corporate policy, the installation procedure may use a different procedure to that described in the following sections.

Run installer

4. Ensure that server system is able to boot from CD. Insert Oracle Enterprise Linux CD #1 into the first server, and power on. In the following description, this is called `linux1`.

> **Note:** After installing Linux on the first node, repeat the Linux installation on the next required system(s).

5. When the Oracle Enterprise Linux boot screen appears, press **Enter** to start the installation process.

6. When asked to test the CD media, select **Skip**. After a short interval, the installer goes into GUI mode. (The media test is not necessary because the CD burning software would have informed you of any errors on the media).

7. At the Welcome to Oracle Enterprise Linux screen, click **Next**.

8. Select the appropriate options from the Language and Keyboard settings screens.

9. If the installer detects a previous version of Enterprise Linux, you are prompted to "Install Enterprise Linux" or "Upgrade an existing installation". Select "Install Enterprise Linux", and click **Next**.

Set up disk partitioning

10. When prompted, select the default Remove Linux partitions on selected drives and create default layout option, and check the option Review and modify partitioning layout. When prompted to confirm your selection, select Yes. Click **Next** to continue.

11. When prompted to confirm the removal of all partitions, click **Next**.

12. Review and modify (if necessary) the automatically selected disk partitions.

For most automatic layouts, the installer assigns 100 MB for /boot, double the amount of RAM (for systems with < 2 GB RAM) or an amount equal to RAM (for systems with > 2GB RAM) for swap, and the remainder is assigned to the root (/) partition. The installer creates a disk configuration using the Logical Volume Manager (LVM). For example, it will partition the first hard drive (/dev/sda in the described configuration) into two partitions: one for the /boot partition (/dev/sda1), and the remainder of the disk dedicated to a LVM named VolGroup00 (/dev/sda2). The LVM Volume Group (VolGroup00) is then partitioned into two LVM partitions: one for the root file system (/), and another for swap. If you have selected a non-standard layout, ensure that the system meets the required disk space specifications shown in Table 2–1. Ensure enough swap space is allocated for Oracle Enterprise Linux. Its required swap space is shown in Table 2–2.

Table 2–1   Required disk space specifications.

Partition	Minimum required disk space (GB)
/tmp/	4
/var/lib/mysql/	300
/home/moniforce/	100

Table 2–2   Required swap space.

Available RAM	Swap space required
4 - 8 GB	Twice the size of RAM
More than 8 GB	Equal the size of RAM

Important: The Reporter server requires high performance data storage. RAID-0 or RAID-5 (or equivalent) storage configurations with high performance disks are strongly recommended.

Note: The requirements shown in Table 2–1 and Table 2–2 can vary depending upon the composition and volume of monitored data. For more information, please contact Customer Support.

13. Accept the GRUB boot loader, as well as all default values, and click **Next**.

Network configuration

14. Use a static IP address for the interface used to access the UXinsight Web frontend.

15. Ensure that the network interface(s) used for network packet monitoring are administrative *up*, but without an IP address.

Important: Make the network interface up status permanent (after a reboot) by setting the ONBOOT parameter of the capturing interfaces to yes. The network interfaces configuration can be found in /etc/sysconfig/networking/devices/ifcfg-eth*X* (where *X* represents the necessary network interface). Alternatively, use the graphical utility **system-config-network** to perform the above actions.
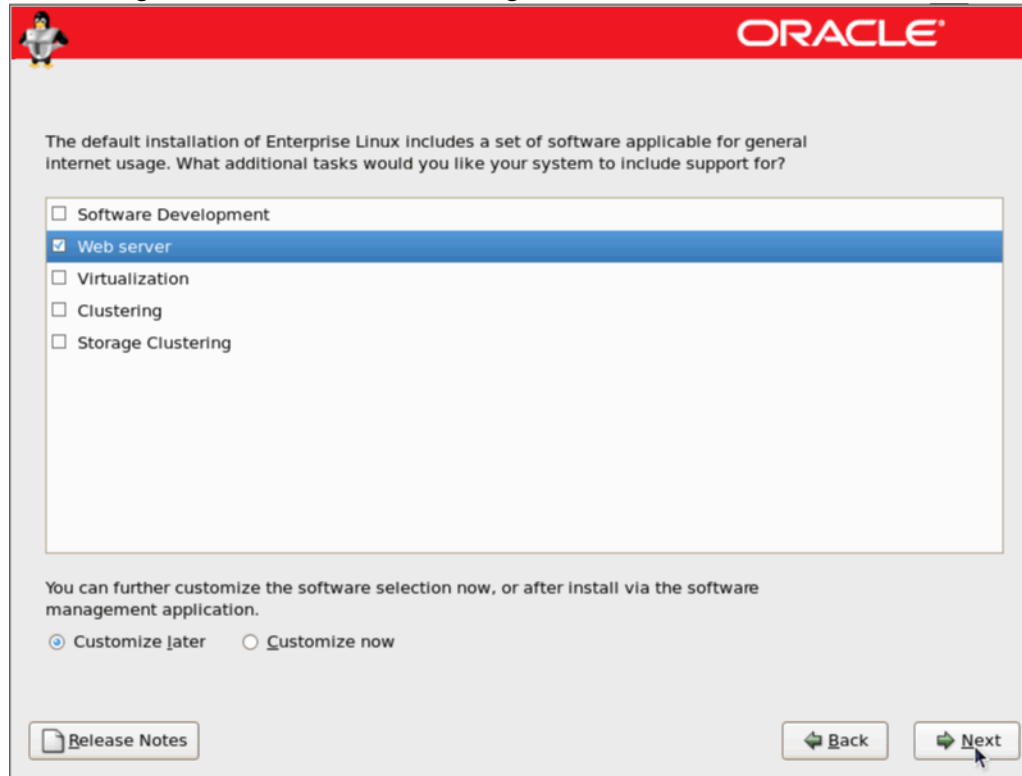
Package installation

16. Select the appropriate time zone for your environment, and click **Next**.

17. Specify a root password, and click **Next**.

18. At the additional tasks dialog box shown in Figure 4, check the Web server check box, and click **Next**.

Figure 2–1   Additional tasks dialog box.

19. At the About to install screen, click **Continue** to start the installation.

20. Depending on the packages you have selected to install, you will be prompted to insert additional CDs. At the prompt screen, click **Next** to begin installation of Enterprise Linux.

21. Upon successful installation, remove the CD, and click **Reboot**.

Post-installation wizard

22. When the system boots for the first time, a post-installation wizard appears, and allows you to finalize the operating system configuration settings. Click **Forward**.

23. At the User license agreement screen, accept the license terms, and click **Forward**.

24. Use the screen shown in Figure 2–2 to allow HTTP and/or HTTPS traffic, and SSH (by default, this is enabled). Note that, when prompted with a warning about not setting the firewall, click **Yes**.
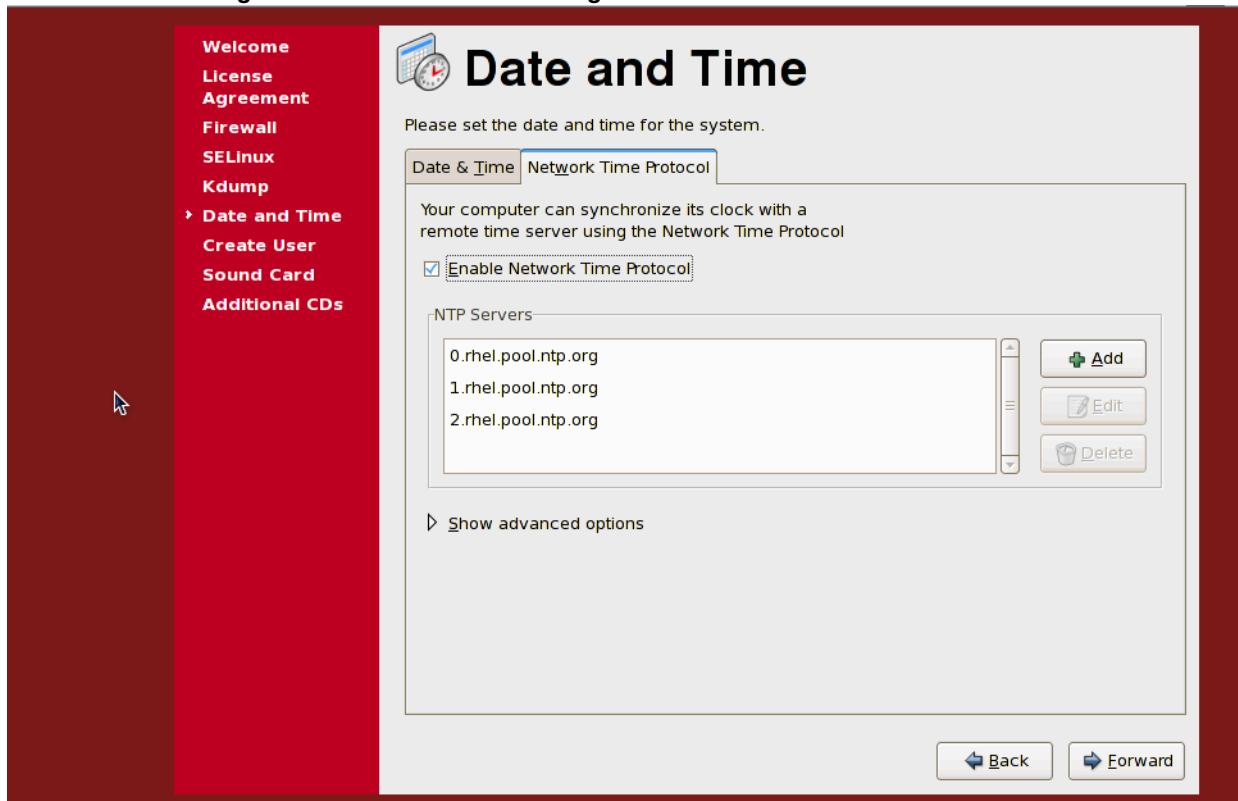
Figure 2–2   Firewall configuration.

25. Use the screen shown in Figure 2–3 to disable SELinux. Click **Forward**. Note that you are prompted with a warning that changing the SELinux setting requires rebooting the system so that the entire system can be relabeled. Click **Yes**.

Figure 2–3   SELinux configuration.
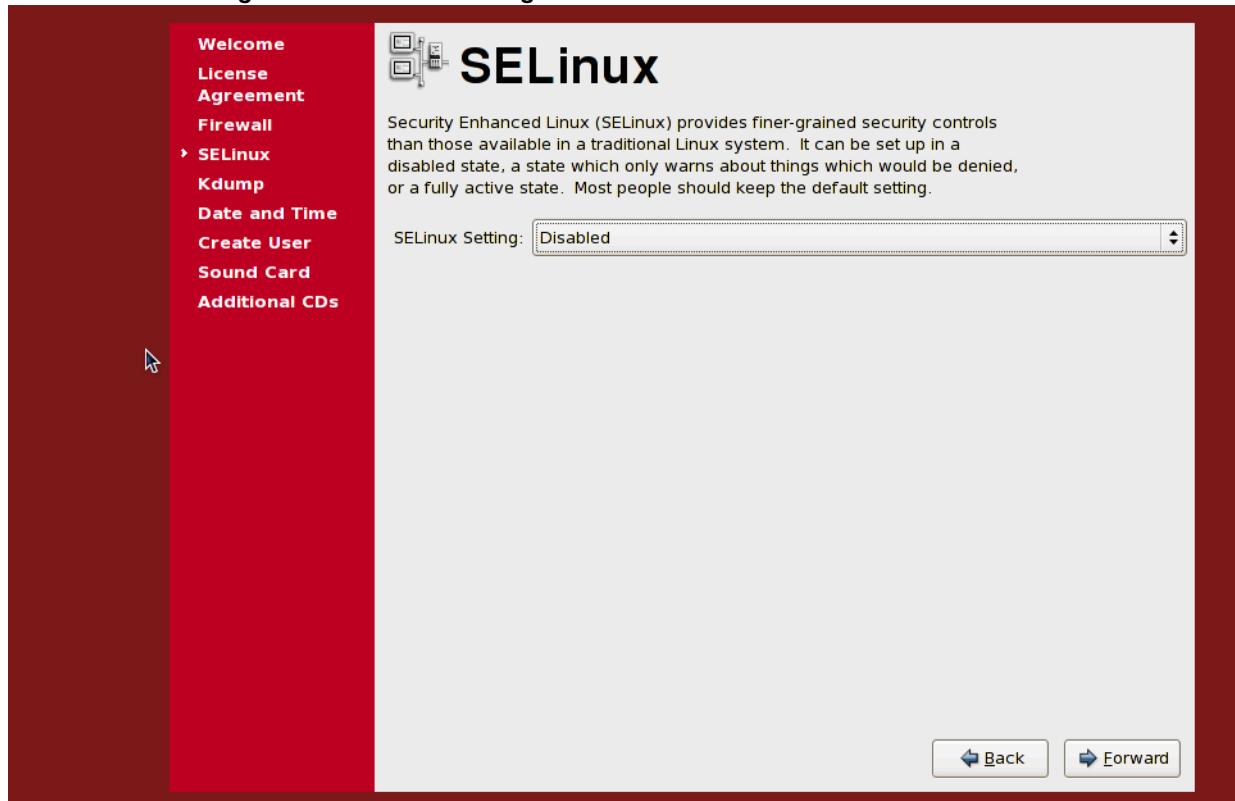
26. Accept the default setting on the Kdump screen (disabled), and click **Forward**.

27. Adjust the date and time settings using the screen shown in Figure 2–4. The use of NTP is strongly recommended, and required in a split-server deployment. Click **OK**.

Figure 2–4   Date and time settings.

Verify NTP daemon operation

28. Because the NTP daemon is a critical component of UXinsight, especially in a split Reporter-Collector configuration, it is recommended that you verify that it is activated during boot. Use the following commands:

```
chkconfig --list | grep ntp

ntpd      0:off   1:off   2:off   3:off   4:off   5:off   6:off

chkconfig ntpd on

chkconfig --list | grep ntp

ntpd      0:off   1:off   2:on    3:on    4:on    5:on    6:off

/etc/init.d/ntpd start

Starting ntpd:                                         [  OK  ]
```

Note that if the NTP daemon is not already running, you can start it with the command

```
/etc/init.d/ntpd restart
```

The following sample output show when the NTP daemon is synchronized (indicated by an "*").

```
ntpq -pn
     remote           refid      st t when poll reach   delay   offset  jitter
  ==============================================================================
  *194.171.167.130 .PPS.           1 u 994 1024 377 6.429   0.041     0.093
  +80.85.129.25    130.235.20.3  3 u 725 1024 377 4.435   0.673     0.129
  +82.94.235.106   135.81.191.59 2 u 678 1024 377 1.709   1.774     0.020
   127.127.1.0     .LOCL.         10 l   8   64 377 0.000   0.000     0.001
```

Create additional users and reboot

29. Create any additional required (non-Oracle) operating system user accounts. Note that during the installation of the UXinsight software, the "moniforce" user account is created.

30. If prompted, confirm the detection of a sound card.

31. On the Additional CDs screen, click **Finish**.

32. Because the SELinux option has been changed (to disabled), you are prompted to reboot the system. Click **OK**.

33. After reboot, use the "root" user account, and the password you specified during installation to logon.

Text mode installation (optional)

When using the text mode installation, the following key settings need to use different default settings in order for UXinsight to run:

- Firewall: blocks all ports except ssh (TCP port 22), and allow HTTP (TCP 80).

- Security: enhanced linux is enabled by default. This needs to be disabled.

Note that configuration of the firewall to allow HTTP(S) traffic, as well as disabling SElinux, can be performed using the **system-config-securitylevel** utility.

Mail (MTA) configuration (optional, Reporter only)

UXinsight assumes a working local MTA for sending PDF reports. By default, Enterprise Linux uses the Sendmail MTA. By default, Sendmail will deliver the e-mail directly to the destination MTA. If this behavior is not according to your needs or policies, sending mail via a SmartHost (relay) might be an alternative. To configure a SmartHost in Sendmail, do the following:

1. Install the `sendmail-cf` RPM package from CD #2 by mounting the CD. For example, `mount /dev/cdrom /mnt/cdrom`.

2. Issue the following commands:

```
cd /mnt/cdrom/Server

rpm -Uhv sendmail-cf-8.13.8-2.el5.x86_64.rpm
```

3. Find the line which contains the Smart Host setting in `/etc/mail/sendmail.mc`. Modify the SMART_HOST setting to your needs. For example:

```
dnl define('SMART_HOST', 'my.mail.server')dnl
```

4. Generate the new configuration into a new `sendmail.cf` by executing the following command:

```
make -C /etc/mail
```

5. Restart sendmail. For example:

```
/etc/init.d/sendmail restart
```

Installing and configuring the MySQL database

Installing the Perl MySQL module

1. Insert CD #2 and issue the following commands:

```
cd /mnt/cdrom/Server
rpm -Uhv perl-DBI-1.52-1.fc6.x86_64.rpm
```

Unpacking the UXinsight software zip file

2. Copy the downloaded UXinsight zip file to `/root` directory on the server, and unzip it. Use the following commands:

```
cd /root
unzip UXinsight.zip
```

The following directories are created which contain the software needed to complete the UXinsight installation:

- `/root/UXinsight/UX44`
- `/root/UXinsight/ZendOptimizer`
- `/root/UXinsight/MySQL`

Installing the bundled MySQL database server

3. Issue the following commands:

```
cd /root/UXinsight/MySQL
rpm -Uhv MySQL-client-enterprise-5.0.50-0.rhel5.x86_64.rpm
rpm -Uhv MySQL-server-enterprise-5.0.50-0.rhel5.x86_64.rpm
rpm -Uhv MySQL-shared-enterprise-5.0.50-0.rhel5.x86_64.rpm
```

The MySQL daemon starts automatically.

Changing the database root password after installation (optional)

If you want to specify a different MySQL password after installation, use the following command:

```
mysqladmin -u root -p<old password> password <new password>
```

You will also need to modify the dbpass setting in `/usr/local/etc/uxdb` accordingly.

Configuration of MySQL daemon

4. The `/usr/share/mysql` directory contains several example MySQL configurations. To use `my-huge.cnf` as the basic MySQL configuration, run the command:

```
cp /usr/share/mysql/my-huge.cnf /etc/my.cnf
```

5. Add or edit the following settings in the [mysqld] section of `/etc/my.cnf`:

```
bind-address = 127.0.0.1
connect_timeout = 60
net_read_timeout = 600
```

```
net_write_timeout = 600
max_heap_table_size = 200M
tmp_table_size = 200M
```

6. You are *strongly* recommended to turn off the binary log file feature. This is because the disk space usage of the log files can become very large, very quickly. Comment the `log-bin` line in `/etc/my.cnf file` as follows:

```
#log-bin=mysql-bin
```

7. Restart MySQL with the following command:

```
/etc/init.d/mysql restart
```

Configuring the Apache webserver

PHP configuration

1. Add or edit the following settings in `/etc/php.ini`:

```
session.gc_maxlifetime = 14400
memory_limit = 96M
upload_max_filesize = 128M
post_max_size = 128M
```

2. Explicitly set the required timezone in the [Date] section. For example:

```
[Date]
; Defines the default timezone used by the date functions
date.timezone = "Europe/Amsterdam"
```

Note: A complete list of available timezones can be found at http://us3.php.net/manual/en/timezones.php.

Install PHP mbstring module

3. Insert CD #3 and mount it. For example, mount `/dev/hdc /mnt/cdrom`. Then issue the following commands:

```
cd /mnt/cdrom/Server
rpm -Uhv php-mbstring-5.1.6-15.el5.x86_64.rpm
```

Install PHP GD module (optional, but recommended)

Note: The GD module is required for changing the company logo in the UXinsight dashboard. Install the RPM from CD #3.

4. Issue the following commands:

```
cd /mnt/cdrom/Server
rpm -Uhv php-gd-5.1.6-15.el5.x86_64.rpm
```

Install PHP MySQL module

5. Install `php-pdo` from CD #3 and `php-mysql` from CD #4. Issue the following commands:

```
cd /mnt/cdrom/Server
rpm -Uhv php-pdo-5.1.6-5.el5.x86_64.rpm
```

6. Remove CD #3, and insert CD #4.

7. Mount The CD. For example, mount `/dev/hdc /mnt/cdrom`.

8. Issue the following commands:

```
cd /mnt/cdrom/Server
rpm -Uhv php-mysql-5.1.6-5.el5.x86_64.rpm
```

Install PEAR modules (optional, but recommended)

Note: In order to install Microsoft Excel export support in UXinsight, you will need to install the PEAR package manager. Install the RPM from CD #4.

9. Issue the following commands:

```
cd /mnt/cdrom/Server
rpm -Uhv php-pear-1.4.9-4.noarch.rpm
```

10. Download the PEAR::Spreadsheet_Excel_Writer package from http://pear.php.net/package/Spreadsheet_Excel_Write , and the PEAR::OLE package from http://pear.php.net/package/OLE. Note that Spreadsheet Excel Writer version 0.9.1 and OLE version 0.6 are required.

11. Install the modules by issuing the following commands:

```
pear install OLE-0.6.0.tgz
install ok: channel://pear.php.net/OLE-0.6.0

pear install Spreadsheet_Excel_Writer-0.9.1.tgz
install ok: channel://pear.php.net/Spreadsheet_Excel_
Writer-0.9.1
```

12. Verify that the modules are installed correctly (directories `/usr/share/pear/SpreadSheeat` and `/usr/share/pear/OLE` should be present).

Install Zend Optimizer

13. Go to the directory containing the Zend Optimizer code, unpack the tar file, and run the Zend optimizer code installer. Accept the license agreement and default paths, and allow the installer to restart the Apache Webserver. Issue the following commands:

```
cd /root/UXinsight/ZendOptimizer
tar zxvf ZendOptimizer-3.3.0a-linux-glibc23-x86_64.tar.gz
cd ZendOptimizer-3.3.0a-linux-glibc23-x86_64
./install
```

Installing the UXinsight software

SNMP (optional, reporter only)

1. For SNMP trap support, additional RPMs need to be installed from disk #2. Use the following command:

```
rpm -Uhv lm_sensors-2.10.0-3.1.x86_64.rpm
```

From disk #4, use the following command:

```
rpm -Uhv net-snmp-utils-5.3.1-14.el5.x86_64.rpm
net-snmp-5.3.1-14.el5.x86_64.rpm
```

2. You can download the UXinsight MIB definition file through the Reporter interface. This definition file can be added to the SNMP manager. The procedure for downloading the MIB file is described in the *Oracle Real User Experience Insight User Guide*.

Installation UXinsight software

3. Go to the directory which holds the UXinsight software, and install the UXinsight RPM packages with the following commands:

```
cd /root/uxinsight/ux44
rpm -Uhv ux-*
```

4. The ux-gui package contains the Webserver configuration for UXinsight (/etc/httpd/conf.d/uxinsight.conf). Therefore, the Apache webserver needs to be restarted with the following command:

```
/etc/init.d/httpd restart
```

5. In order to have the Apache webserver always started after a reboot, issue the following command:

```
chkconfig httpd on
```

Symlinking libpcap

6. The ux-collector software package requires the presence of /usr/lib64/libpcap.so. By default, this is not present. Create a symlink, as root, with the following command:

```
ln -s /usr/lib64/libpcap.so.0 /usr/lib64/libpcap.so
```

Avoiding rsvg warnings

7. UXinsight uses rsvg for graph generation. In order to avoid warnings about a missing directory, create the empty .gnome directory using the following command:

```
mkdir /var/www/.gnome2
```

Configuring Reporter communication (split-server setup only)

A password-less SSH connection must be setup between the Moniforce user from the Reporter system to each Collector system. Do the following:

1. Logon to the Reporter server as root. Issue the following commands:

```
su - moniforce
ssh-keygen -P "" (press Enter to accept the defaults).
```

2. The file /home/moniforce/.ssh/id_rsa.pub contains the public key. Copy the public key id_rsa.pub to each Collector's authorized_keys file.

3. Logon as root on each of the Collector systems. Issue the following commands:

```
su - moniforce
cd ~/.ssh
ssh root@reporter cat /home/moniforce/.ssh/id_rsa.pub >>
authorized_keys
(you will to specify the Reporter system root password)
chmod 600 authorized_keys
```

4. Check that it is now possible to execute a remote command (as moniforce user) on the Reporter system without using a password. For example:

- Logon as root on the reporter server.

- Logon as moniforce user: `su - moniforce`.

- Execute a remote pwd command: `ssh collector pwd`.

- Enter yes to the question "Are you sure you want to continue connecting (yes/no)?".

- The command should return `/home/moniforce`.

5. The above steps must be performed for each Collector!

Note: If the connection between the Reporter and the Collector(s) has not been correctly configured, you will receive an authorization error when the two systems try to connect.

Verify successful installation of UXinsight

Once completion of the Initial Setup Wizard (described in Section "Performing initial configuration"), you can verify you installation by selecting **System** > **Maintenance** > **Software check**. This is fully described in Section "Performing software checks" of the *Oracle Real User Experience Insight (UXinsight) User Guide*.

Tip: Note that if you prefer that the browser is automatically redirected to the correct path UXinsight path, create the file `/var/www/html/index.html` with the following content:

```
<head>
<meta http-equiv="REFRESH" content="0;URL=/uxinsight/">
</head>
```

3

Configuring UXinsight

This chapter describes the procedure for initially configuring UXinsight. This task is performed by the individual within your organization who has been assigned the role of UXinsight **Administrator**. For more information about roles, see Section "Understanding user roles" in the *Oracle Real User Experience (UXinsight) User Guide*.

In order to get UXinsight up and running, you will need to have prepared the server systems for UXinsight, and installed the UXinsight software. This is described in Chapter 2. After that, you are required to perform a basic network configuration (described in Section "Performing initial configuration"), and then perform some post-installation configuration (described in Section "Performing post-installation configuration"). This is necessary in order to start reporting. It includes deciding how pages and users will be identified, and specifying the scope of monitoring in your network environment. Finally, you will need to extend the predefined users described in Section "Authorizing initial users". Note that if you are installing a split-server configuration, you will need to configure each Collector system. This is described in Section "Configuring a Collector system".

Warning: The configuration of UXinsight should be discussed with someone with a detailed knowledge of your organization's network topology.
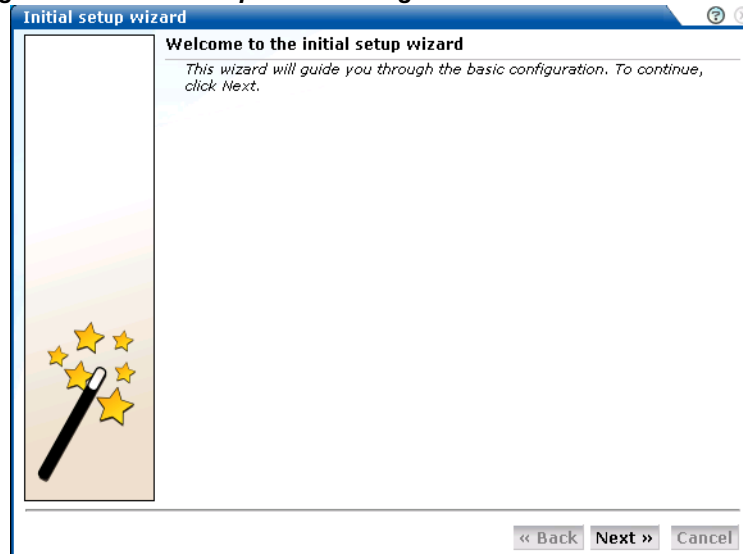
Performing initial configuration

In order for UXinsight to start data monitoring and reporting, it must be configured with some information about your network infrastructure. Once completed, user traffic reporting is available. Note that this initial configuration can be changed later, as necessary. It is only intended to provide UXinsight with sufficient information to start real-user monitoring and reporting.

To perform the initial UXinsight configuration, do the following:
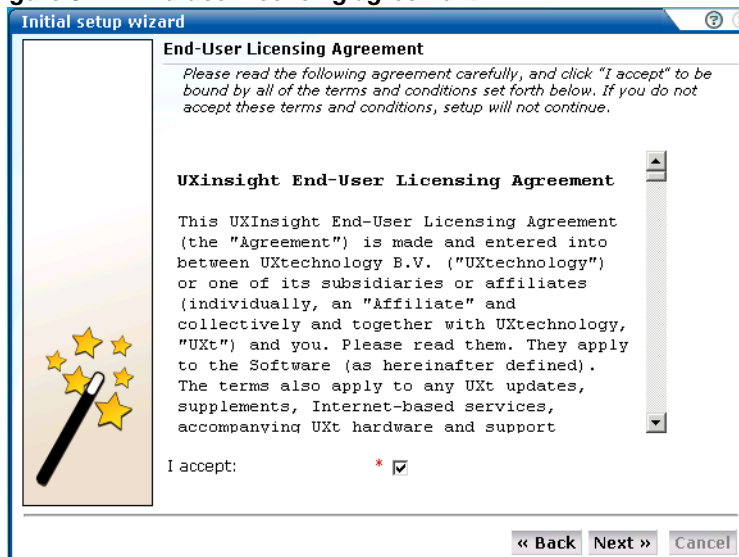
1. Start the Initial setup wizard by pointing your browser at `http://`***Reporter***`/uxinsight`. The dialog shown in Figure 3–1 appears:

Figure 3–1 Initial setup wizard dialog.

Click **Next** to proceed with configuration. The dialog shown in Figure 3–2 appears:

Figure 3–2 End-user licensing agreement.

Tick the acceptance check box, and click **Next**. The dialog shown in Figure 3–3 appears.
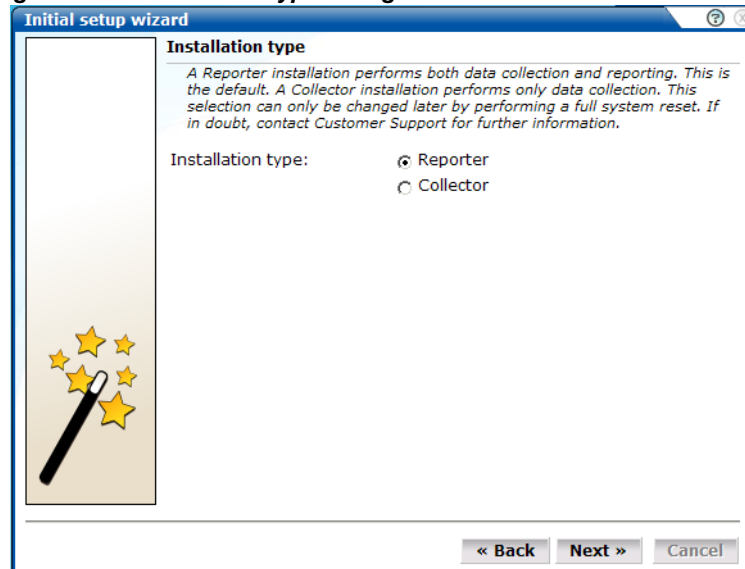
Figure 3–3   Installation type dialog.

2. Use the radio buttons to select the required installation type. A Reporter system performs both data collection and reporting, and is the default configuration. A Collector configuration only performs data monitoring. After making your selection, click **Next**. The dialog shown in Figure 3–4 appears.

Warning: Configuration of a UXinsight system as a Collector (that is, as part of a split-server configuration) is only possible during this initial configuration phase; and this selection cannot be changed later. You should fully understand the implications of your selection before proceeding. Also, see Section "Configuring a Collector system" for important information about registering the Collector with a Reporter system.

Figure 3–4   Mail setup dialog.
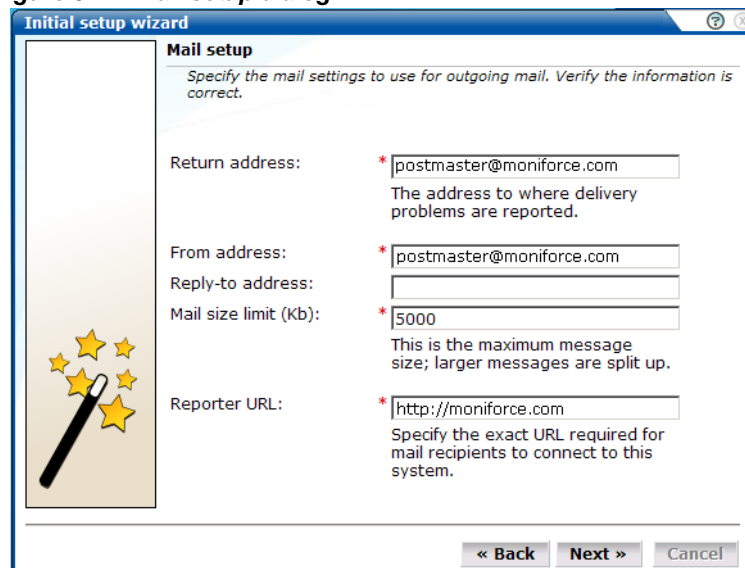
3. Specify the requested information. The email information is used to configure UXinsight's interface to your internal network, and will be used for reporting problems. When you have entered the required information, click **Next**. The dialog shown in Figure 3–5 appears.

Figure 3–5   Settings overview dialog.

4. Check that the information specified in the settings overview is correct. You can use **Back** and **Next** to move between dialogs as necessary. When ready, click **Next**. The dialog shown in Figure 3–6 appears.

Figure 3–6   Applying settings dialog.
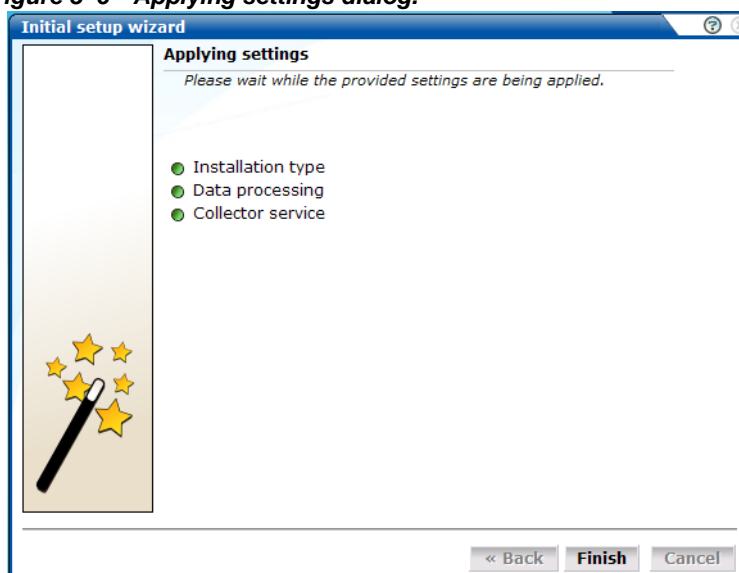
5. This dialog indicates how far the system has got in applying your specified settings. Note that, typically, this process takes a maximum of 15 minutes. When finished, click **Finish** or **Close** to close the dialog.

Configuring a Collector system

If you selected a Collector configuration (Figure 3–3), the dialog shown in Figure 3–7 appears upon completion of applying your specified settings:

Figure 3–7 Collector information panel.
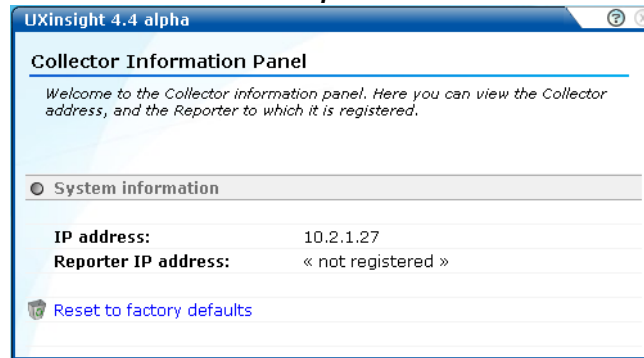
As can be seen in Figure 3–7, the Collector has yet to be registered with a Reporter.

To register a Collector to a Reporter system, do the following:

1. Within the Reporter system, select **System** > **Maintenance** > **Network data collectors**. The Network data collectors window appears.

2. Select **Configuration** > **Register remote Collector**. The Register Collector dialog shown in Figure 3–8 appears.

Figure 3–8 Register Collector dialog.

3. Enter the IP address of the Collector. Optionally, you can also specify a brief description of the attached Collector. When ready, click **Register**. On return to the Network data collectors window, the new Collector should be listed.

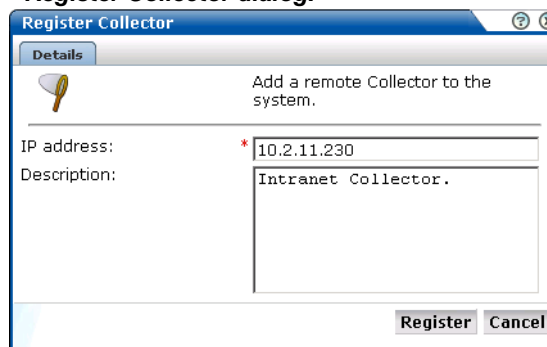**Resetting a Collector system**

As mentioned earlier, it is not possible to select a Collector type installation for a system, and later change it to a Reporter installation. The only way you can change its installation type is by resetting the Collector system with the **Reset to factory defaults** option described in Section "Resetting the system" of the *Oracle Real User Experience Insight (UXinsight) User Guide*. After that, the initial setup wizard would need to be re-run.

Performing post-installation configuration

In order to start reporting, the UXinsight needs certain information about the monitored network environment. It is important to understand that UXinsight is designed to work within a wide range of network environments. Therefore, the configuration choices you make will affect the accuracy and usability of the reported data. It is strongly recommended that you carefully review the settings described in this section.
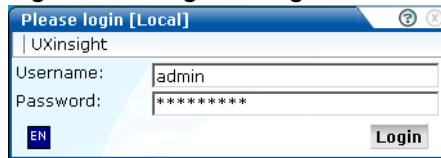
Starting UXinsight

Start UXinsight by pointing your browser at the following URL:

```
http://Reporter/uxinsight/
```

The Logon dialog bow shown in Figure 16 appears:

Figure 3–9   Logon dialog box.

Enter the user name "admin" and the password "installUX", and click **Login**.

Specifying the cookie technology

Within UXinsight, session information is based on cookies. Therefore, UXinsight needs to know and understand the cookie technology (or technologies) your organization is using. The procedure to configure this is described in Section "Specifying cookie technology" of the *Oracle Real User Experience Insight (UXinsight) User Guide*. The structure of supported cookie technologies is explained in Appendix A of the *Oracle Real User Experience Insight (UXinsight) User Guide*.

If cookie information is not available, user tracking is based on visitor IP address. This can lead to unreliable session information. For example, in the case of users behind a proxy server, all users coming from that network would be identified as the same user.

Specifying how users are identified

Within UXinsight, user identification is first based on the HTTP Authorization field. After that, it is derived from the supplied GET/POST argument within URLs. Therefore, if you are using arguments within URLs, the item within these used for user identification must be specified in order to provide reliable results. This is fully described in Section "Identifying users" of the *Oracle Real User Experience Insight (UXinsight) User Guide*.

Naming pages

Page identification within UXinsight is based on applications. Essentially, an application is a collection of Web pages. This is because pages on a website are typically bound to a particular application. For each page that the system detects, it uses the available application definitions to assign a name to it. Note that information about any pages that could not be identified using these definitions is discarded, and, therefore, not available through reports and the data browser. This is fully described in Section "Naming pages" of the *Oracle Real User Experience Insight (UXinsight) User Guide*.

Confirming data collection and logfile processing

At this point, UXinsight should be collecting data from each of its associated Collectors. You can easily check the status of these Collectors by selecting **System** > **Status** > **Collector status**. This opens the Network data collectors window. This is fully described in Section "Viewing the status of the Collectors" of the *Oracle Real User Experience Insight (UXinsight) User Guide*.

In addition, you can obtain an overview of the monitored network traffic by selecting **System** > **Status** > **Data processing**. This screen presents four tabs: **Hits**, **Pages**, **Sessions**, and **Performance**. Correct data processing can be checked in this screen by the following indicators:

- **Hits**: these graphs should at least indicate some level of "Hits on identified page" shown with green bars. If there is no green indication at all, you have probably specified your applications incorrectly, or have not yet specified your applications.

- **Pages**: similar rules as hits apply here. Additionally, if you do not see any red or green bars within the Hits/Pages tabs, the system is not processing any of the collected data at all. After all, hits and pages will only show green indicators in the bars if there is any application specified. Hence, pages and hits can be matched to those applications and reported.

- **Sessions**: This tab provides a powerful indication of the correctness of your cookie settings (see Section "Specifying the cookie technology"). Preferably this screen should have at least 50% - 60% indicated in green. Correct cookie settings are critically important to the system in order to allow full visitor session tracking.

The use of this facility is fully described in Section "Viewing a traffic summary" of the *Oracle Real User Experience Insight (UXinsight) User Guide*.

Specifying the scope of monitoring

Within UXinsight, you control the scope of traffic monitoring by specifying which TCP ports the SYSTEM should monitor. Obviously, no information is available for non-monitored ports. In addition, you can restrict monitoring to specific servers and subnets. This is fully described in Section "Managing the scope of monitoring" of the *Oracle Real User Experience Insight (UXinsight) User Guide*.

Authorizing initial users

In order for users to start working with UXinsight, you will need to authorize the required users. Only one user, the Administrator, is available after installation. All other required users must be created and assigned the necessary roles and access permissions. User roles are described in Section "Understanding user roles" of the *Oracle Real User Experience Insight (UXinsight) User Guide*. User creation and management is fully described in Section "Managing users and permissions" of the *Oracle Real User Experience Insight (UXinsight) User Guide*. Note that passwords are case sensitive, while user names are not. It is recommended that you do not include any diacritic characters, such as u-umlaut.

Table 3–1   Predefined users and roles.

Role	User name	Password
Administrator	admin	installUX

Note: It is recommended that you secure the system after your first logon by changing the password.

A

Troubleshooting

This appendix highlights the most common problems encountered when installing UXinsight, and offers solutions to locate and correct them. The information in this appendix should be reviewed before contacting Customer Support.

Support websites

Information on a wide variety of topics is available via the Oracle website (www.moniforce.com/uxinsight). It is recommended that you visit it regularly for support announcements.

In addition, detailed technical information is available via the Support website (www.moniforce.com/uxinsight/support). This includes information about service pack availability, FAQs, training material, tips and tricks, and the latest version of the product documentation. A valid user name and password is required to access this website.

Contacting Customer Support

If you experience problems with the installation or configuration of the UXinsight, you can contact Customer Support. However, before doing so, it is strongly recommended that you create a Helpdesk report file of your installation. To do so, select **System** > **Configuration** > **Helpdesk report**. This file contains extended system information that is extremely useful to Customer Support when handling any issues that you report.

General (non-specific) problems

If you are experiencing problems with the reporting module, or find its interface unstable, it is recommended that you do the following:

*   Clear all content caching within your browser, and re-start your browser.

*   Examine the error log. This is described in Section "Working with the error log" of the *Oracle Real User Experience Insight (UXinsight) User Guide*.

*   Select **System** > **Maintenance** > Software check to verify the core components of the UXinsight installation. This is described in more detail in Section "Performing software checks" of the *Oracle Real User Experience Insight (UXinsight) User Guide*.

Starting problems

If the system does not seem to start, or does not listen to the correct ports, do the following:

*   Restart each Collector service. To do so, select **System** > **Maintenance** > **Network data collectors**, select each attached Collector, and select the **Restart** option from the pop-up

menu. This is described in more detail in Section "Viewing the status of the Collectors" of the *Oracle Real User Experience Insight (UXinsight) User Guide*.

- Review your network filter definitions. This is described in Section "Defining network filters" of the *Oracle Real User Experience Insight (UXinsight) User Guide*. In particular, ensure that no usual network filters have been applied. This is particularly important in the case of VLANs.

- Ensure that UXinsight is listening to the correct protocols and ports. This is described in Section "Managing the scope of monitoring" of the *Oracle Real User Experience Insight (UXinsight) User Guide*.

- Verify that the Collector interfaces are *up*. This is described in the Section "Installing the Linux operating system".

B

Third-party licenses

This appendix contains licensing information about certain third-party products included with UXinsight 4.4 Unless otherwise specifically noted, all licenses herein are provided for notice purposes only.

The sections in this appendix describe the following third-party licenses:

- Apache software license, version 2.0

- OpenSSL

- PHP

- SpyC

- PEAR

- Prototype.js

- W3C

- JSON

- PNET

- Bitstream Vera Font

- Script.aculo.us

- PNGQuant.c

- Rwpng.c/Rwpng.h

Apache software license, version 2.0

Apache License

Version 2.0, January 2004

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Prototype.js

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Rwpng.c/Rwpng.h

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