Oracle® Real User Experience Insight

Accelerator for Oracle E-Business Suite Guide

Release 1.1 for Linux x86-64

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Oracle Real User Experience Insight Accelerator for Oracle E-Business Suite Guide Release 1.1 for Linux x86-64

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Preface

Oracle Real User Experience Insight (RUEI) 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 document is intended primarily for the Administrator responsible for maintaining the RUEI installation. It describes how your RUEI installation can be extended to provide specific support for the monitoring of Oracle E-Business Suite (EBS) applications.

Important

If your monitored Web environment contains EBS applications, is it *strongly* recommended that you make use of this support. It not only saves time in the configuration of your EBS applications within RUEI, considers the specific characteristics of the different frameworks upon which EBS applications are built, and makes these applications more compatible, but also ensures that EBS applications are monitored correctly.

The information provided in this guide is specific to RUEI release 4.5.1 (or any higher maintenance release). If you upgrade your RUEI installation to a higher version, you will also need to upgrade to the latest version of this package.

The monitoring support provided by this package has been verified against EBS R12. However, it is designed to work equally well with other versions of EBS.

End User Monitoring requires Oracle Forms 6i with patch 7130248, or release 10g R2 or higher.

Prerequisites

The Administrator should have firm operational knowledge of their organization's network and application environment. In addition, they should have a good understanding of the EBS architecture. Note that assistance from the EBS administrator or application specialist may also be required.

Before proceeding with the configuration procedure described in this guide, RUEI should already have been successfully placed within your organization's network, and the Initial Setup Wizard run to provide information about the network infrastructure. The procedure to do this is fully described in the *Oracle Real User Experience Insight Installation Guide*.

The RUEI application is a non-intrusive solution to the monitor the production environment, without touching it. By default, the Forms protocol does not send all information relevant for monitoring over the line. Therefore, the Forms server requires some different configuration settings. To apply these settings, a restart of the Forms server is required.

Oracle Forms Support

Oracle Forms can be configured in two modes: servlet and socket. In servlet mode, a Java servlet (called the Forms Listener servlet) manages the communication between the Forms Java client and the OracleAS Forms services. In socket mode, the desktop clients access the Forms server directly. Currently, the RUEI accelerator for E-Business Suites only supports servlet mode. If sockets mode is used within your applications, the performance of individual form actions cannot be detected. A detailed description of the operation and configuration of Oracle Forms in servlet and socket mode is available at `http://metalink.oracle.com/metalink/plsql/ml2_documents.showNOT?p_id=384241.1`.

See Appendix A for information about verifying the mode in which Oracle Forms is configured.

Using This Guide

This guide is organized as follows:

- Chapter 1, "Installation and Configuration" describes how to install and configure the RUEI EBS Package for the monitoring of EBS-based applications.
- Chapter 2, "Monitoring and Reporting Considerations" provides additional information about the EBS frameworks relevant to the monitoring of EBS applications in RUEI.
- Appendix A, "Checking Socket and Servlet Mode" presents a description of how to check whether the Oracle Forms server is running in servlet or socket mode.
- Appendix B, "Troubleshooting" highlights the most common problems encountered when installing the RUEI accelerator for Oracle E-Business Suite.
- Appendix C, "Third-Party Licenses" contains licensing information about certain third-party products included with RUEI.

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Related Documents

For more information, see the following documents in the Oracle Real User Experience Insight library:

- *Oracle Real User Experience Insight Installation Guide*
- *Oracle Real User Experience Insight 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.

1 Installation and Configuration

This chapter describes the procedure for installing the EBS Package, and configuring your application definitions within RUEI to enable the accurate monitoring of EBS-based applications.

1.1 Why Use This Accelerator Pack?

This accelerator package for RUEI enables out-of-the-box monitoring of EBS modules. This monitoring supports user session tracking, the discovery of end-user performance issues, and the identification of application issues associated with EBS modules running both the OA and JTT frameworks, as well as Oracle Forms applications running in servlet mode.

This accelerator package automatically discovers all installed EBS modules, and translates network objects to business functions. This facilitates the measurement and monitoring of real-user transactions, from initial query to their commit as part of business transactions. Individual user actions are automatically matched to the correct module, form, or formblock in order to provide contextual analysis. This state-of-the-art monitoring solution supports the creation of KPIs for critical packaged applications, and the analysis of real-user business transactions.

1.2 Working Within a Forms-Only Environment

The information presented in this guide is relevant to all EBS customers. However, customers working within a Forms-only environment should pay particular attention to the issues highlighted in this section.

In order for RUEI to accurately report on EBS-based applications, it needs information about your production environment. In particular, it needs to map functional areas to reported names. As explained in Section 1.10, "Synchronizing RUEI With The EBS Production Environment", this is done through running the `create_EBS_info.sh` script. Customers within Forms-only environments are also recommended to run this script and upload the generated `.txt` files.

Manually Creating Functional Mappings

The `create_EBS_info.sh` script uses a number of EBS database tables to retrieve information about the installation and configuration of your Oracle Forms instance. The exact database tables used are fully described in Section 2.2, "Database Tables".

However, the APPLSYS.FND_APPLICATION, APPLSYS.FND_APPLICATION_TL, APPLSYS.FND_FORM, APPLSYS.FND_FORM_TL and other tables used by the script do not exist in a Forms-only environment. Therefore, you can either rely on the default

(template) mappings provided with RUEI (described later in this section), or you can specify the required mappings by creating the associated .txt files manually.

When creating these files manually, the following tab-separated files are required:

- EBS_formname2details.txt: specifies a functional description for each form. Each line in the file should have the following format:

  formname{TAB}*form_description*

  For example:

  ```
  ADSAPCRD        Credit Card Expense Transaction Entry
  ADSAPPRC        Procurement Card Transaction Entry
  ADSCONC         Running Jobs
  ADSCONC         Tax Locations
  ADSCSCRC        Healthcare CC
  ADSMAILI        Mail Information
  ADSRSETUP       ADS Repurpose Setup
  ADSSOE          Custom Order Entry
  ADSSOE          View Person Life Event Information
  AKDAPREG        Application Module Parameters Registry
  ```

- EBS_formname2appshort.txt: specifies the short (3-letter) version of the application name of which each form is part. Each line in the file should have the following format:

  formname{TAB}*short_application_name*

  For example:

  ```
  ADSAPCRD        ads
  ADSAPPRC        ads
  ADSCONC         ads
  ADSCSCRC        ads
  ADSMAILI        ads
  ADSRSETUP       ads
  ADSSOE          ads
  AKDAPREG        ak
  AKDATTRS        ak
  AKDFLOWB        ak
  ```

- EBS_appsort2appname.txt: specifies the mapping between the short (3-letter) application name and the full application name. It has the following format:

  short_application_name{TAB}*application_name*

  For example:

  ```
  abm     Activity Based Management (Obsolete)
  ad      Applications DBA
  ads     Applications Demonstration Services
  ads_dev ADS Development
  ahl     Complex Maintenance Repair and Overhaul
  ahm     Hosting Manager(Obsolete)
  ak      Common Modules-AK
  alr     Alert
  ame     Approvals Management
  amf     Fulfillment Services (Obsolete)
  ```

Be aware the created configuration files must be uploaded for each required suite in a .zip file. This may only contain non-empty .txt files. In addition, all files must be in

the root directory. That is, subdirectories are not permitted. It is important you upload the correct configuration file for the required suite, and that it is based on the actual production environment. The procedure to update the configuration file is fully described in Section 1.10, "Synchronizing RUEI With The EBS Production Environment".

Relying on the Default (Template) Mapping

If manually creating the required mappings is not practical, you can simply rely on the default (template) mappings already configured within RUEI. While this approach provides an adequate level of reporting, it is subject to the following restrictions:

- *form_name*: normally this would be the 8-character technical name translated to a functional description. However, because this is not available, the 8-character technical name is reported instead.
- *app*: normally this would be derived from the mapping file that connects the form name with the application. However, because this is not available, the first three letters of the form name are reported instead.
- *application_name*: normally this would be derived from the mapping file. However, because this is not available, the *app* is reported instead. For example, "eds" instead of "Application Demonstration Services" as shown in Figure 2–1.

Keeping Matching Information up-to-date

Because Forms-only environments typically change over time, it is strongly recommended that you regularly review your mapping information. Be aware the above restrictions will also apply to any forms that have been added to your environment since your last ran the `create_EBS_info.sh` script or manually created the mapping files.

1.3 Overview

EBS is based on several frameworks. Because these frameworks allow customers to extend their applications with their own functionality, RUEI requires information about their implementation in order to correctly monitor them.

The EBS monitoring functionality provided with this package supports all out-of-the-box EBS functionality, as well as some level of customization. It is possible that certain EBS customizations may provide unexpected reporting results within RUEI. This mainly concerns the mapping of functional areas to reported names.

In order to facilitate the correct monitoring of EBS-based applications by RUEI, you need to do the following:

1. Configure the Oracle Forms server to enable End User Monitoring. While RUEI is 100% non-intrusive, you will need to re-start your EBS server after changing this option.
2. (Optionally) enable Forms over SSL instead of Forms-encryption.
3. Install the package RPMs on the RUEI Reporter system.
4. Verify the scope of monitored traffic.
5. Specify the cookie technology used to track user sessions.
6. Create and configure the EBS suite(s) required for your EBS-based applications.
7. Run the `create_EBS_info.sh` script on the EBS production environment.
8. Verify and evaluate the EBS suite configuration.

Each of these steps are discussed in more detail in the following sections.

1.4 Enabling End User or Chronos Monitoring

End User Monitoring is Forms functionality that triggers additional information messages to be sent by the applet to the Web server. These additional messages are required by RUEI to retrieve screen definitions (such as formname) that are otherwise not sent over the connection. End User Monitoring functionality was introduced in Forms 6i as Chronos messaging. This functionality is not available in Oracle Forms 9.0.4. In release 10.1.2 and higher, this functionality is called End User Monitoring.

Depending on the Oracle Forms version you are using, follow the procedure described in the relevant section below. If you are not using Oracle Forms, the rest of this section can be skipped.

Enabling End User Monitoring (for Oracle Forms Version 10.1.2 and Higher)

The following steps are required to activate End User Monitoring for release 10.1.2 and higher.

1. Configure the `ORACLE_HOME/forms/server/formsweb.cfg` file to enable monitoring of specific applications. Set the following:

   ```
   EndUserMonitoringEnabled=true
   EndUserMonitoringURL=http://EBS-hostname:EBS-portnumber/oracle_smp_
   chronos/oracle_smp_chronos_sdk.gif
   ```

2. Restart the Forms server to activate the changes. The changes will only become available for new sessions.

Additional information can be found in the *Oracle Application Server Forms Services Deployment Guide 10g Release 2 (10.1.2)*. This is available at `http://download.oracle.com/docs/cd/B25527_01/doc/frs/forms/B14032_02/chronos.htm#sthref606`. The webcache functionality mentioned in that guide is not required for the correct working of RUEI. The URL mentioned in the guide is incorrect, and is clarified in later release notes.

Enabling Chronos Monitoring (for Oracle Forms Version 6i)

For Forms release 6i, Chronos monitoring should be used as an alternative to the procedure described above. To enable Chronos monitoring, do the following:

1. Ensure that the patch 7130248 for release 6.0.8.28.0 is installed on the Oracle Forms system.
2. Configure the `ORACLE_HOME/forms/server/formsweb.cfg` file by adding the following lines:

   ```
   ChronosEnabled=true
   ChronosURL=http://EBS-hostname:EBS-portnumber/oracle_smp_chronos/oracle_smp_
   chronos_sdk.gif
   ```

> **Note:** The `ChronosEnabled` and `EndUserMonitoringEnabled` settings are case sensitive, and should be set to `true`.

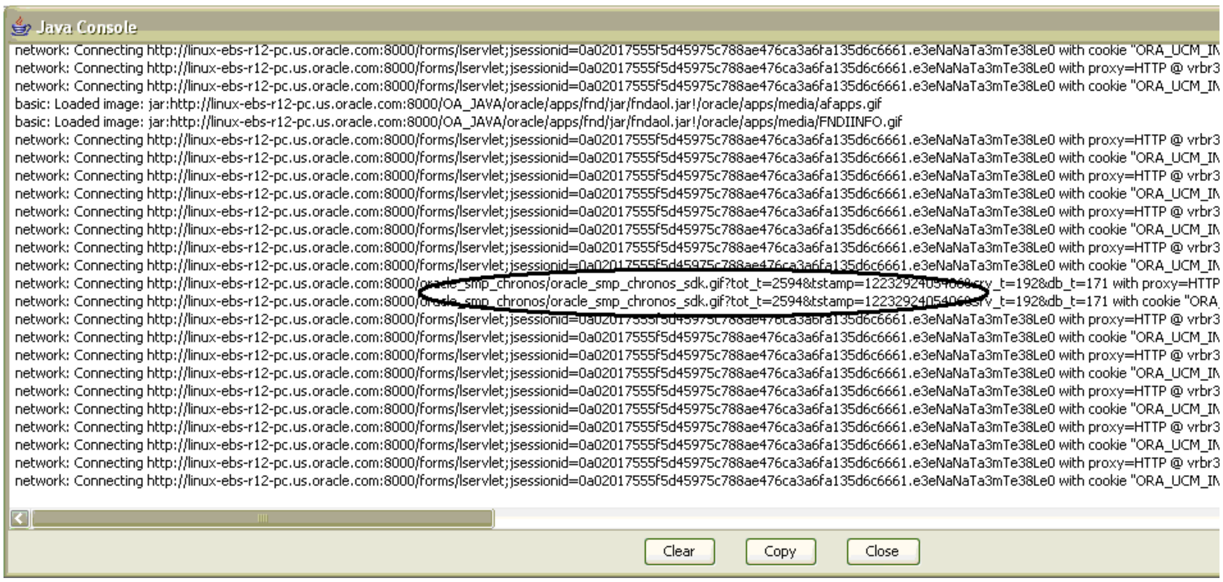
Verifying Chronos End User Monitoring

Verify that Chronos hits are sent by doing the following:

1. Login to Forms.

2. Open the Java console of the JVM in which Oracle Forms is running.
3. Activate trace level 2 by pressing 2.
4. Perform some Forms-based action that leads to a commit.
5. Verify that the reported trace output contains the file `/oracle_smp_chronos/oracle_smp_chronos_sdk.gif`. An example is shown in Figure 1–1:

Figure 1–1 Java Console



6. Confirm the hit appears in the log files on the RUEI Reporter system using the following command as the `moniforce` user:

   ```
   zgrep oracle_smp_chronos
   $WEBSENSOR_HOME/data/*/http/currentdate/http-*
   ```

   Note that the use of the timestamp in the above command is to limit the displayed list. The *`currentdate`* should be specified in the form yyyymmdd.

1.5 Enable Forms Over SSL Instead of Forms Encryption

By default, Oracle Forms traffic is send over the HTTP layer. (The socket version is not supported in combination with RUEI). To obscure the information sent over the line, a propriety Forms encryption method is used. This encryption is not assumed to be secure. Instead, the use of SSL encryption is recommended when information is sent over the Internet.

In order to allow RUEI to measure functional errors, Forms-encryption should be disabled, and SSL encryption used instead. Please refer to your Web server's product documentation for information on how to enable SSL encryption. In addition, it is recommended that you read the relevant sections of the *Oracle Real User Experience Insight User Guide* for information how SSL-encrypted traffic can be measured within RUEI.

The Forms encryption can be influenced by an environment variable set in the `default.env` file used by the Forms server. This variable differs depending on the Forms version. For example:

```
FORMS60_MESSAGE_ENCRYPTION=false
FORMS_MESSAGE_ENCRYPTION=false
```

A restart of the Forms server is required to activate the setting.

1.6 Installing the Package RPMs

Note it is assumed a working RUEI system has been installed and configured (as described in the *Oracle Real User Experience Insight Installation Guide*), and is fully operational. Install the EBS support package on the RUEI reporter system using the following commands as the `root` user:

```
cd /root/RUEI/45
rpm -Uhv ux-suites-ebs-*.x86_64.rpm
```

Note the location of the RPM depends on where you unzipped the package.

1.7 Verifying the Scope of Monitoring

Often the EBS software is configured to use a non-standard port, such as 8000. The port on which your EBS installation is running can be found by examining the login URL. This takes the following format:

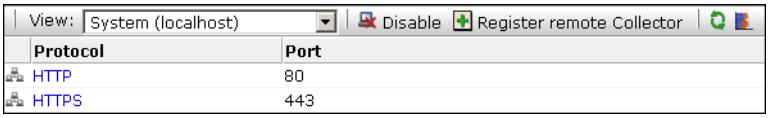
`https(s)://`*`hostname`*`:`***`portnumber`***`/OA_HTML/`*`AppsLogin`*

Verify that the ***`portnumber`*** is configured as one of the defined ports (HTTP or HTTPS). In addition, if a HTTPS port is specified, ensure that a copy of the Web server's private SSL key is imported into the Collector system.

To verify the port number, do the following:

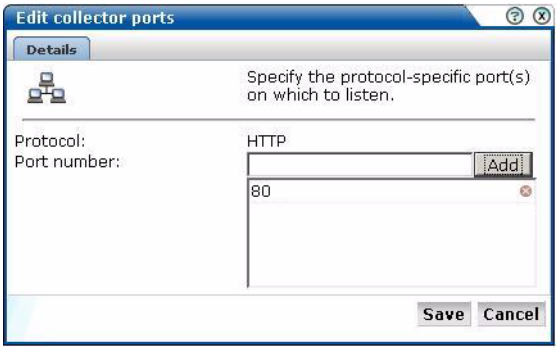
1. Select **Configuration**, then **Security**, and then **Protocols**. The currently monitored ports are displayed. An example is shown in Figure 1–2:

Figure 1–2 Monitored Ports



2. Use the **View** menu to select each Collector. The System (localhost) item represents the local server system.
3. If the port number is not already listed, click the required protocol (HTTP or HTTPS). The dialog shown in Figure 1–3 appears.

Figure 1–3 Edit Collector Ports



To add a new port number, enter the required number in the Port number field, and click **Add**. The default Oracle Forms port is 8000. Note, if required, this needs to be manually added. To remove a port from the list, click the **Remove** icon to the right of the port number. When ready, click **Save**.

4. For each Collector, you are prompted to restart the Collector. This is necessary in order to make your changes effective. Note you can also restart the selected Collector by clicking the **Restart Collector** icon shown in Figure 1–2.

5. For HTTPS traffic, you should also verify that, for each Collector, the required SSL key is installed by selecting **Configuration**, then **Security**, and then **SSL keys**. Use the **View** menu to select a Collector. If the host name does not match one of the already listed SSL keys, import the required SSL key. The procedure to do this is fully described in the *Oracle Real User Experience Insight User Guide*. In addition, you should verify that the key is not expired, and activated.

1.8 Specifying the Cookie Technology

Within RUEI, session information is based on cookies. The cookies are used to connect hits to a specific visit. In general, the cookie is also connected to the user login page which allows RUEI to include a user name to all subsequent hits with the same cookie. There are already some cookies available in EBS. However, these are not generally usable. The main problems with them are they not sufficiently unique (for instance, `oracle.uix`), and not wide enough (for instance, JSESSIONID is only used for the `/OA_HTML/` part of the Web site).

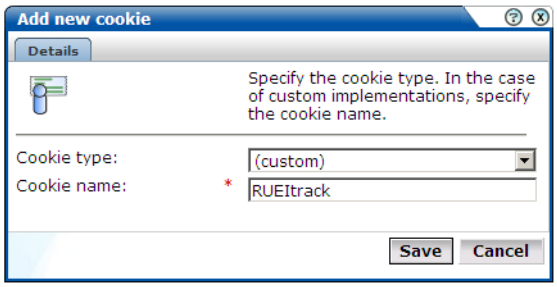
The recommended implementation of client-side cookies is as follows:

1. Add the following code to the EBS login page:

```
<SCRIPT
LANGUAGE="JavaScript">if(document.cookie.indexOf('track=')==-1){document.cookie
='track='+parseInt(Math.random()*2147418112)+new
Date().getTime()+';path=/;domain='+document.location.host.substring(
document.location.host.lastIndexOf('.',
document.location.host.lastIndexOf('.') - 1)) ;}</SCRIPT>
```

2. Select **Configuration**, then **Applications**, and then **Session tracking**. Click **Add new cookie**. The dialog shown in Figure 1–4 appears.

Figure 1–4 Custom Cookie



3. Select the cookie technology (custom) from the list, and specify the cookie name "RUEItrack". When ready, click **Save**.

A maximum of five session cookies can be specified. Any changes made to this setting are applied after a short interval (typically, 5 - 10 minutes), and are then visible within the Reporter system after this.

Verifying the Cookie Configuration

To verify your cookie configuration, do the following:

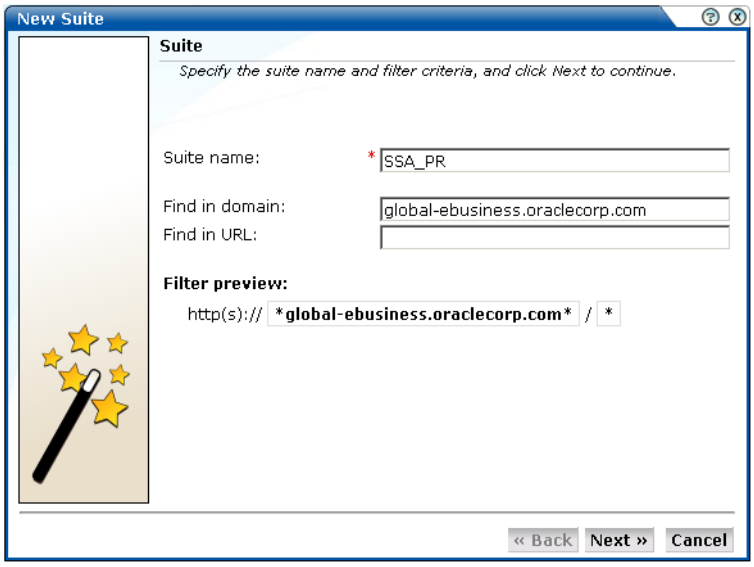
1. Clear all cookies in the browser.
2. (Re)login to the EBS application.
3. Execute some actions that load Oracle Forms.
4. Execute some actions in Oracle Forms.
5. Logout.
6. Wait for at least 10 minutes.
7. Open the RUEI Reporter environment.
8. Select **Browse data**, open the All sessions group, select **Session diagnostics**, and locate the recorded session (by user ID or time). You can filter on applications.
9. Open the session and verify that:
   - There where more pageviews than just the login page. This verifies that the session ID is preserved in the OA framework after the login.
   - At least some Oracle Forms activity has been recorded with "unidentified action". This verifies that servlet calls are recorded correctly.
   - At least one specific Oracle Forms action, such as "openform, query, commit, or newform", has been recorded. This verifies that the Chronos calls are recorded correctly.

When not all hits are connected with the same cookie, it is recommended that you investigate where the problem is located (for instance, the domain or path option of the cookie), and resolve it in the appropriate manner.

1.9 Creating the EBS Suite Definition

Within the RUEI Reporter, create and configure the suite definition(s) required for your EBS-based applications. Do the following:

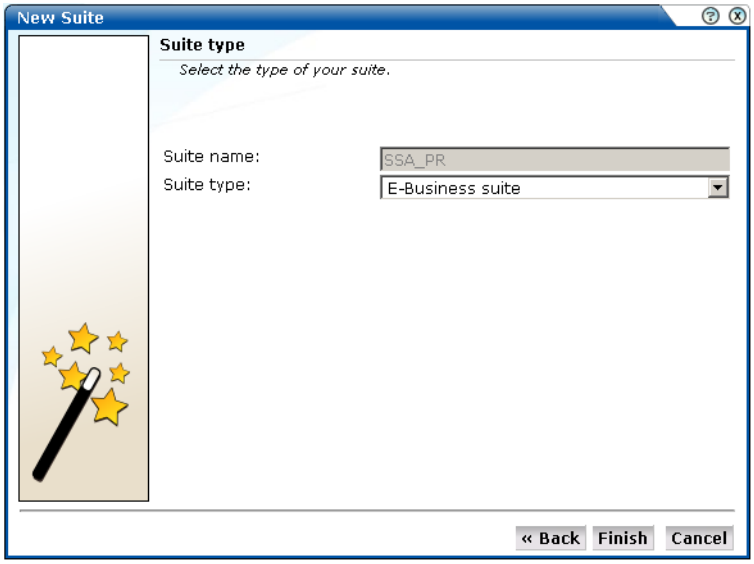
1. Select **Configuration**, then **Applications**, and then **Suites**[1]. Click **New suite**. The dialog shown in Figure appears.



2. Specify a name for the suite. The name must be unique across suites, services, and applications, and is restricted to a maximum of six characters. Note that the suite cannot be renamed later.

3. Use the remaining fields to specify the scope of the suite. This is defined in terms of partial page URLs. Note that as you enter this information, you can see the effect of your definition through the **Filter preview** column. The use of blank filters is not permitted. All specified characters are interpreted as literals. When ready, click **Next**. The dialog shown in Figure 1–5 appears.

Figure 1–5 Suite Type

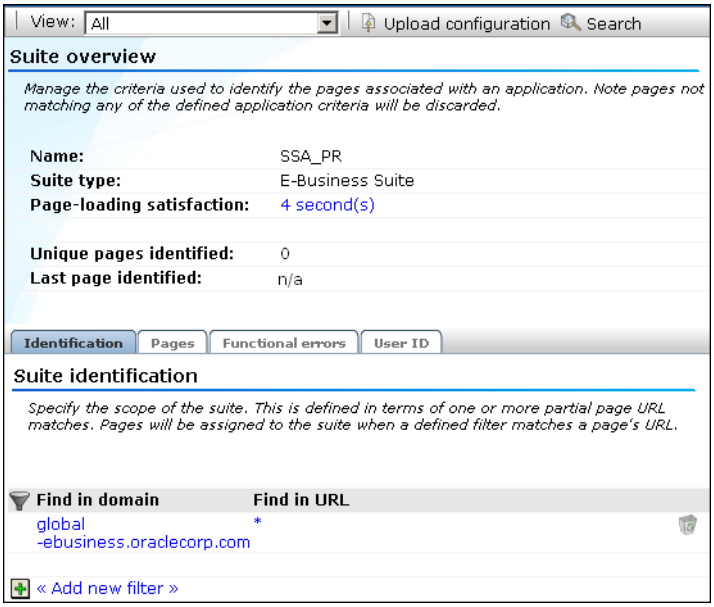


4. This dialog allows you to specify the Oracle Enterprise architecture upon which the suite is based. The number of options available in this menu depends on the

[1] It can take up to five minutes after the installation of the package RPMs, described in Section 1.6, "Installing the Package RPMs", for the **Suites** option to become available.

suite packages currently installed. Select the option **E-Business Suite**. When ready, click **Finish**. The suite definition you have specified is displayed. An example is shown in Figure 1–6.

Figure 1–6 Suite Overview



1.10 Synchronizing RUEI With The EBS Production Environment

In order for RUEI to understand how the EBS frameworks are implemented within your environment, do the following:

1. Copy the `create_EBS_info.sh` script to the home directory of EBS server. It is located in the `/home/moniforce/websensor/local/download/ebs` directory of the RUEI system.
2. Run the `create_EBS_info.sh` script as any user on the EBS server[2]. This script assigns an identification to the identified page IDs within the environment. The `create_EBS_info.sh` script must be run with the following required parameter:

   ```
   create_EBS_info.sh connect-string
   ```

   where *`connect-string`* is the string used to authorize the script to access the EBS database. The script reads from the APPLSYS schema, and generates `.txt` files in the current directory. For example:

   ```
   create_EBS_info.sh "APPS/APPS@linux-ebs-r12-pc:1522/VIS12"
   create_EBS_info.sh "APPS/APPS@EBS"
   ```

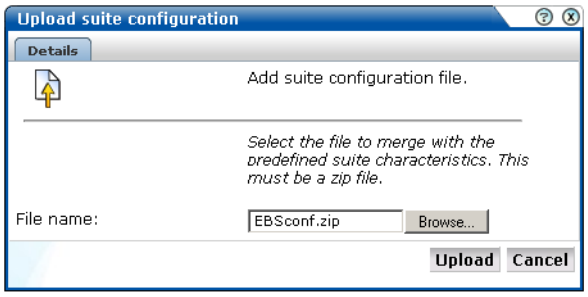
   In multiple instance environments, run the script for each required instance, and separately preserve their created `.txt` files. In addition, create a separate suite definition for each instance, as described in Section 1.9, "Creating the EBS Suite Definition".

[2] The script can also be run in the acceptance environment if it is equivalent to the production environment.

Note: If you make new customizations (or changes to existing customizations) to your EBS applications, you will need to re-run the script, and re-import the generated zip file.

3. The script creates a number of `.txt` files in the directory where the script is executed. All relevant `.txt` files are collected and stored in a `.zip` file. Copy this `.zip` file to a location that can be used for uploading the files to the RUEI Reporter system.
4. Select **Configuration**, then **Applications**, then **Suites**, and select the suite you defined earlier in Section 1.9, "Creating the EBS Suite Definition,". Click **Upload Configuration**. The dialog shown in Figure 1–7 appears.

Figure 1–7 Upload Suite Configuration



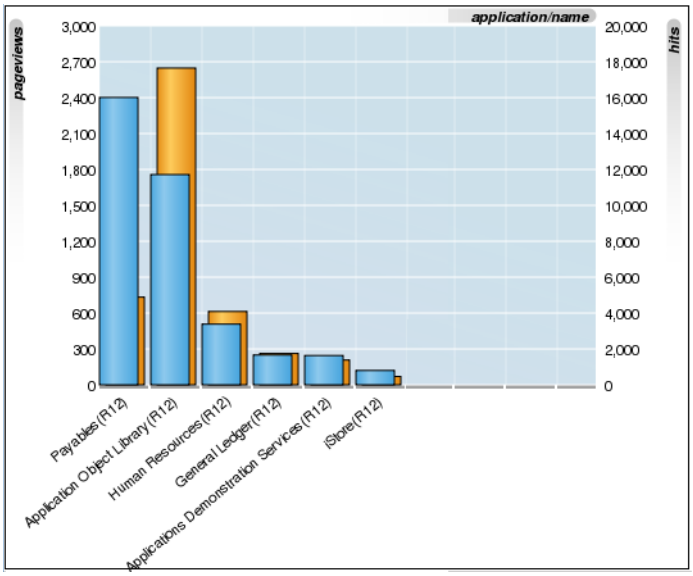
5. Specify the name of the `.zip` file containing the generated `.txt` files. If you manually create `.txt` files, you should use the same structure present in the `.zip` file. To protect against receiving empty definitions, the upload will fail when it contains empty `.txt` files. When ready, click **Upload**.

1.11 Verifying and Evaluating Your Configuration

To ensure the quality of the data being collected and reported by RUEI for your EBS-based applications, it is *strongly* recommended that you verify their reported details. You should pay particular attention to the number of associated pages detected for the defined suite(s).

Select **Browse data**, then select the All pages group, and then the Application sub-group. Within the individual dimensions, such as Pageviews and hits, you can see that pageviews are reported for several applications. The suite name in the definition is shown between brackets. An example is shown in Figure 1–8.

Figure 1–8 Suite Pageviews



Note: The Unique pages identified counter and the Last page identified indicator (shown in Figure 1–6) are disabled. Similarly, the manual page naming facility (described in the *Oracle Real User Experience Insight User Manual*) is not available.

You can also open an overview of the monitored network traffic by selecting **System**, then **Status**, and then **Data processing**. This provides you with immediate information about hits, pages, and session processing, as well as the system load.

For further information on the user of this and other monitoring facilities, refer to the *Oracle Real User Experience Insight User Guide*.

1.12 Known Limitations

Currently, RUEI does not work with all EBS functionality. In particular, the following known limitations exist:

- Oracle Forms is only supported in servlet mode.
- The Forms framework includes functionality to create reports. This functionality is highly configurable by customers. As a result, it is not possible to track reports automatically. In addition, there is no useful translation table with a relevant business-oriented name for the reports. The only solution would to rewrite the known report URLs to correct report names based on a translation file.

  An additional side note on this issue is that some customers are using the 'jobs' functionality to create reports. This is an insecure way to do this, because the next and previous numbers can easily be guessed, and allow users to see reports they may not be authorized to view. Because of the randomness of the name (only a number), it is not useful to report on these type of reports when they are used.

  As a result of the issues described above, Forms reports are not monitored.

- Reporting is based on the last activated area. Hence, when an end-user is browsing simultaneously in multiple browser windows, the reported page name might contain incorrect information.
- Currently, the `create_EBS_info.sh` script only runs on Unix EBS servers.
- An error is not immediately reported if an invalid connect string is specified when running the `create_EBS_info.sh` script. You will need to press **Enter** several times before the error is reported.
- Currently, only applications based on the OA and JTT frameworks are supported. Therefore, such packages as Oracle Applications Manager (OAM) and Oracle Portal are not supported at this time.

2

Monitoring and Reporting Considerations

This chapter explains how information within EBS-based applications is captured and reported by RUEI. Information about specific mechanisms or characteristics to be aware of when monitoring EBS-based applications are also highlighted. It is recommended that you review this information to better understand the reporting of EBS applications within RUEI.

2.1 Hostnames and URL Prefixes

An EBS implementation, the EBS instance, can be identified with a hostname and, sometimes, a URL prefix. Generally, an EBS suite can be accessed in two ways: using only the hostname, or using the fully-qualified hostname (including the domain). Generally, you only need to specify the domain, without any specific URL prefix, and the application is accessed at the default location that is configured out-of-the-box.

Table 2–1 shows how an application's dimensions are reported in RUEI.

Table 2–1 EBS Suite Definitions mapping

Dimension level	Content
Application.name	*application_name* (*suite_name*)
Application. page-group	*suite_name.app* » *form_description*
	suite_name.app » *responsibility_description*
	suite_name.app » *jsp_group*
	suite_name.app » *jsp_name*
	suite_name.app » *servlet_group*
	suite_name.app » *servlet_name*
	suite_name.app » *DAD_location*
Application.page-name	*suite_name.app* » *form_name* » *form_block* » *form_action*
	suite_name.app » *responsibility_key* » *action_description*
	suite_name.app » *jsp_group* » *jsp_name*
	suite_name.app » *jsp_name* » *html_title*
	suite_name.app » *servlet_group* » *servlet_name*
	suite_name.app » *servlet_name* » *html_title*
	suite_name.app » *DAD_location* » *function_name*

Where:

- *action_description* is a description of the action corresponding with one of the following entries in the EBS database:
  - The USER_FUNCTION_NAME column in the FND_FORM_FUNCTIONS_TL table.
  - The ATT_VALUE column in the JDR_ATTRIBUTES table with the property `windowTitle`, `title`, `docName`, or `shortDesc`.
- *application-name* is the name for the application corresponding with the APPLICATION_NAME column in the FND_APPLICATION_TL table.
- *app* is the application short name corresponding with the APPLICATION_SHORT_NAME column in the FND_APPLICATION table.
- *DAD_location* is the location of the pls DAD definition, the full directory, for path that starts with '`/pls/`'.
- *form_action* is one of the following predefined actions:
  - COMMIT: in Forms, issuing a **File** > **Save** or **Commit** triggers a sequence of events that culminate in a database commit being requested. Each form in the current session is internally navigated, and then each block within those forms. Any inserts, updates, and deletes that are required are then sent to the database. Finally, a database commit is issued. The Forms server "Post & Commit" time will comprise the time for this complete operation.
  - QUERY: records the initial query execute and fetch time. Due to the nature of Forms-record buffering inside a block, no attempt is made to accumulate any subsequent fetches after the first fetch. Consequently, a form that fetches only the first 15 rows of a large query will record faster times than one which retrieves all the rows for a query. This is consistent with recording the end-user experience.
  - OPEN: can be used to have multiple forms open at the same time.
  - CALLFORM: can be used to call a new form while keeping the calling form active. When the called form is exited, the processing starts in the calling form from the point where call_form was initiated.
  - NEW FORM: exits the current form and enters the new form. If the calling form was called from a higher form, Forms keeps that higher form active.
  - RUNFORM: records the time taken from calling the forms servlet to actually having a form to work in. Due to the nature of forms initialization, it is unlikely that the start of this operation can be recorded. For most purposes, this time approximates to the time between the Forms server receiving the 'Runform' for an initial Form, and returning to the user for input, including any time spent in the database server.
  - All other actions within forms are reported as 'unidentified action'.
- *form_block* is the name of a functional area within the form.
- *form_name* is the of the form corresponding with the USER_FORM_NAME column in the FND_FORM_TL table.
- *function_name* is the function name of the PLS call.
- *html_title* is the title retrieved from the HTML send from the server back to the end user.
- *jsp_group* is the group name given to a set of `.jsp` files.
- *jsp_name* is the file name of a `.jsp` file.

- *nservlet_group* is the group name given to a set of servlets.
- *nsevlet_name* is the name of an individual servlet.
- *responsibility_key* is the name of the responsibility corresponding with the RESPONSIBILITY_KEY in the FND_RESPONSIBILITY table.
- *suite_name* is the user-defined name specified for the suite upon creation.

Figure 2–1 shows an example of how an EBS application is reported in RUEI.

Figure 2–1 Example of EBS Application Page-Group Reporting

application/name	application/page-group	application/page-name	pageviews
Payables(R12)	R12.ap » Invoice Workbench	R12.ap » APXINWKB » unidentified action	653
Human Resources(R12)	R12.per » F4 Enter Employee	R12.per » PERWSEMP » unidentified action	324
Payables(R12)	R12.ap » Suppliers	R12.ap » APXIISIM » unidentified action	300
Payables(R12)	R12.ap » XpenseXpress	R12.ap » APXXXEER » unidentified action	247
General Ledger(R12)	R12.gl » Account Inquiry	R12.gl » GLXIQACC » unidentified action	144
Applications Demonstration Services(R12)	R12.ads » Procurement Card Transaction Entry	R12.ads » ADSAPPRC » unidentified action	144
Payables(R12)	R12.ap » Payables, Vision Operations (USA)	R12.ap » payables_operations » Search and Select List of Values	134
Payables(R12)	R12.ap » iExpenses	R12.ap » oie_expense_reports_operatio » Create Expense Report: Review	109
Payables(R12)	R12.ap » iExpenses	R12.ap » oie_expense_reports_operatio » Applications Home Page	97
Payables(R12)	R12.ap » iExpenses	R12.ap » oie_expense_reports_operatio » Create Expense Report: Cash and Other Expenses	86
Application Object Library(R12)	R12.fnd » OALogout.jsp	R12.fnd » OALogout.jsp » OALogout.jsp	74
Payables(R12)	R12.ap » Payables, Vision Operations (USA)	R12.ap » payables_operations » Applications Home Page	73
Payables(R12)	R12.ap » Payment Overview	R12.ap » APXPWALL » unidentified action	71
Application Object Library(R12)	R12.fnd » Run Reports	R12.fnd » FNDRSRUN » unidentified action	60
Application Object Library(R12)	R12.fnd » Account Inquiry	R12.fnd » GLXIQACC » Balances:Commit	60
Payables(R12)	R12.ap » Payables, Vision Operations (USA)	R12.ap » payables_operations » Payment Process Requests	49

2.2 Database Tables

The following EBS database tables are used by the `create_EBS_info.sh` script to retrieve information about the customizations:

- APPLSYS.FND_FORM_FUNCTIONS

  Function_id, application_id.

  Function_id is used to fill the `EBS_function_id2*.txt` files.

- APPLSYS.FND_FORM_FUNCTIONS

  User_function_name.

- APPLSYS.JDR_PATHS

  Names and the tree structure.

  Path_name is used to fill the `EBS_pathname2*.txt` files.

- APPLSYS.FND_APPLICATION

  Application short name.

  Application_name is used to fill the `EBS_appshort2*.txt` files.

- APPLSYS.FND_APPLICATION_TL

Application name

- APPLSYS.FND_FORM

  Form_name, application_id

  Form_name is used to fill the `EBS_formname2*.txt` files.

- APPLSYS.FND_FORM_TL

  User-form-name.

- APPLSYS.FND_RESPONSIBILITY

  Responsibility keys

- APPLSYS.FND_RESPONSIBILITY_TL

  Responsibility descriptions

- APPLSYS.JDR_ATTRIBUTES

To make the retrieval easier, the `select` statements make use of the JDR_UTILS and JDR_MDS_INTERNAL packages.

2.3 Actions, Pages, and Objects

Each EBS framework needs to be analyzed to obtain the correct configuration in which all hits are classified as either object hits or action/page hits. Framework-specific considerations are described below.

OA

The OA framework is built using the M-V-C model (Model-View-Controller). Only the controller is relevant to RUEI, because that is the part that will be seen from the HTTP level. The controller decides internally to either show a specific page, or to redirect the visitor to another location that builds up the page. The redirects are recognized automatically; this is normal RUEI functionality.

Based on the URL parameters, the page name is defined (in a redirect situation, the URL of the redirected URL should be used, not the original URL with parameters of the previous page). Besides the controller, the framework also contains some fixed URLs (that by-pass the controller, such as `OALogout.jsp`). These files are recognized together with the JTT-based files.

JTT

The JTT framework is built using the M-V-C model (Model-View-Controller). It differs from the OA framework definition in that there is not one controller for all applications, but one (or multiple) controllers per application. This means that more `.jsp` files are involved, and that requires a investigation of all `.jsp` files involved. A server-side analysis of the `.jsp` files makes it possible to determine the application definition (based on the location of the `.jsp` files).

2.4 Functional Errors

A default RUEI installation recognizes different types of errors. These are in the area of network and HTTP errors. In addition, there is also the facility to manually add functional errors (that is, as site errors). For the EBS frameworks, these content-based errors can be analyzed automatically. To enable this, the functionality described below is implemented.

Oracle Forms Errors

The errors that might occur during a Forms session can be caused by different layers:

- Network errors: are reported in the same way as RUEI does for all applications.
- HTTP server errors (such as 500, 404, and so on) are reported in the same way as all applications are in RUEI.
- Forms servlet errors (servlet connection errors) are reported with their corresponding `ifError` code. These are internal communication errors that occur within the Forms framework.
- Functional errors: these appear as pop-up windows to the end-user, and are created server-side. For normal applications, RUEI supports content scanning of these screens. Content scanning works only when Forms encryption is disabled and, optionally, SSL encryption is used.
- `FRM-92100` and `FRM-99999`: errors classified in the Forms interface with either of these IDs are also captured. They are reported as network or server errors within RUEI using default functionality.

2.5 OA Framework Page Name Deduction

A detailed discussion of the OA framework is available at `http://www-apps.us.oracle.com:1100/fwk/fwksite/510/devguide/ess/ess_state.htm`.

OA-based traffic is mapped to RUEI as follows:

- The controller is used as a key indicator for the user-initiated actions. Hits closely related to the controller are assumed to be elements of that page. The OA framework has two controllers: `OA.jsp`, and `RF.jsp`.
- The naming of the page is based on the parameters send to the controller. The following parameters are taken into account: function_id, _rc, akRegionCode, OAFunc, page, and region. Pages that do not contain references to a (new) form or responsibility will preserve the form name or responsibility of previous pages.

Parameter Mapping

Note that the mapping is only possible when the `EBS_*.txt` files are populated with IDs that match the deployments that are being monitored. To obtain the correct configuration files, the script (described in Section 1.10, "Synchronizing RUEI With The EBS Production Environment") is used to retrieve the correct information from the deployment environment.

The script uses two methods to retrieve the relevant information:

- Analysis of local JSP files to obtain the names of all possible JSP files from the JTT environment. This is done through the execution of a `find` statement in the $APPL_TOP directory.
- A list of SQL statements in the `create_EBS_info.sh` script to retrieve the functional names of the OA framework from the database. These are described in the following section.

2.6 Page Context

Not all actions relate to pages. Hence, this section explains how actions (such as HTTP requests) are reported as page views.

Each time a request is received for a page, the OA Framework creates an OAPageContext that persists until a new page finishes processing. Specifically, the OAPageBean, the primary force behind page processing, creates the OAPageContext.

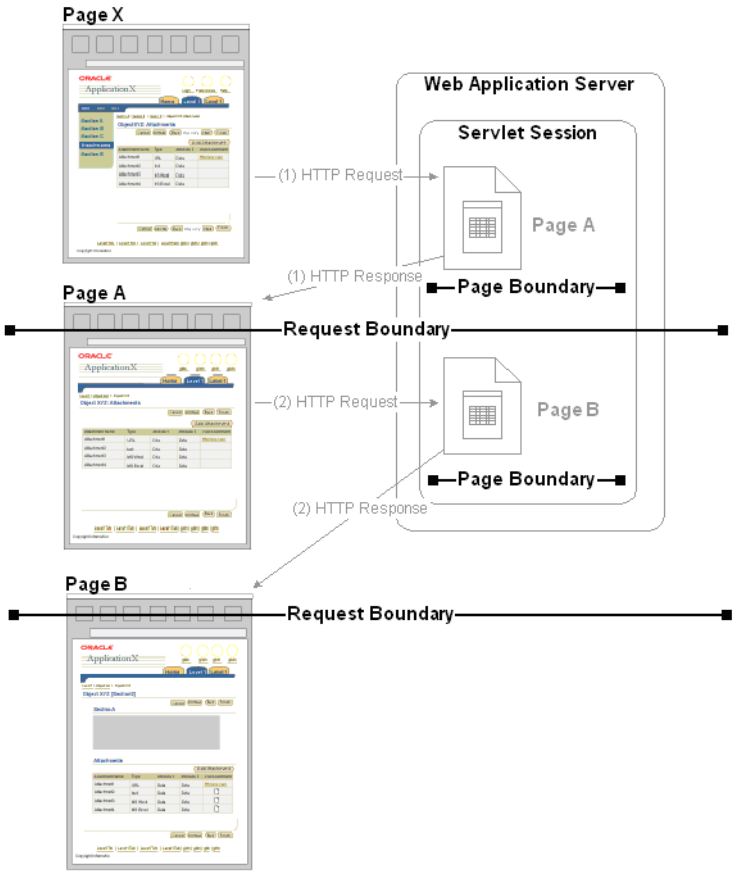
Note that reporting within RUEI is based on the requests seen at the HTTP level. If the page changes within one request, the timings are reported against the original page.

2.6.1 Request and Page Boundaries

A Web application's unit of work is a request/response pair: the browser submits a request, the servlet processes the request, and returns a response. The transmission of a response signifies the end of a single request, or the "boundary" between the completed request and a new one. Similarly, when the OAPageBean finishes processing a page, this is the "boundary" between the current page and a new one.

Hence, in the following scenario where a user navigates from Page X to Page A and then to Page B, we have two request boundaries: the first is between Page X and Page A, the second is between Page A and Page B. We also have two page boundaries in the same conceptual location between Page X and Page A, and Page A and Page B. This is shown in Figure 2–2.

Figure 2–2 Request and Page Boundaries the same

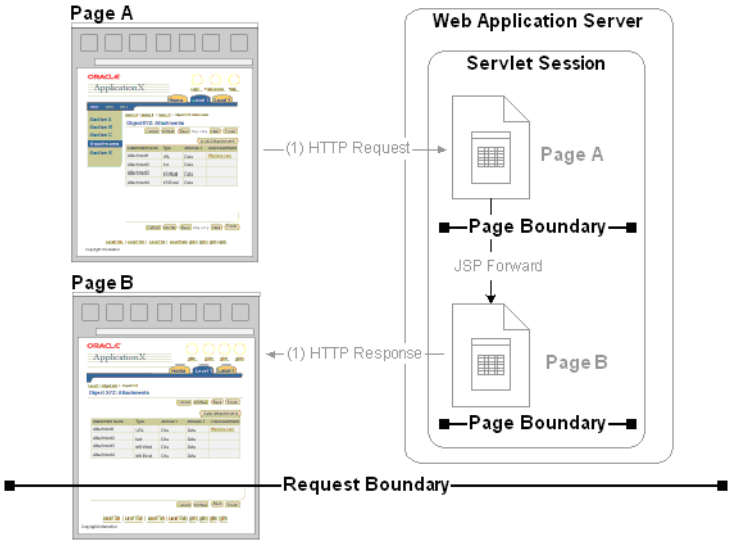


Different Request and Page Boundaries

However, in some situations, the request and page boundaries are not the same. Consider the following JSP Forward case:

- The user navigates from Page X to Page A, as illustrated in Figure 2–2.
- While on Page A, the user selects a control that the Page A code must evaluate before deciding which page to display in response. Therefore, the browser issues a request to Page A which the OA Framework processes (including creating an OAPageContext for the page). Once Page A finishes processing, we've reached the first page boundary as illustrated in Figure 2–3.
- Within the Page A code, the developer evaluates which control the user selected, and issues a JSP Forward to Page B. Instead of providing an HTTP response at this point because we do not want to redisplay Page A, the OA Framework begins processing for Page B (including creating a new OAPageContext for this page). Once Page B finishes processing, we've reached the second page boundary.
- Because Page B must now be displayed to the user, an HTTP response is sent to the browser. We've now reached the request boundary.

Figure 2–3 Different Request and Page Boundaries in the JSP Forward Case



Further information on how a generic JSP application is constructed is available at http://www-apps.us.oracle.com:1100/fwk/fwksite/510/devguide/ess/ess._jspprimer.htm.

2.7 Resources

You may find the information sources useful:

- *Configuring HTTP Server to use SSL in Oracle applications* (note 341904.1).
- *Oracle Forms Service 10g: configuring transport layer security with SSL* (white paper)
- *Oracle Application Server Forms Services Deployment Guide 10g Release 2 (10.1.2), 5.11 Oracle Forms Services and SSL*
- *How to enable SSL for JPI clients (Sun plug-in)* (note 307429.1).

A

Checking Socket and Servlet Mode

This appendix presents a description of how to check whether the Oracle Forms server is running in servlet or socket mode.

Oracle Applications Release 12

Note Oracle Application Release 12 is, by default, configured to run in servlet mode.

Use the following command:

```
$ grep connectMode FORMS_WEB_CONFIG_FILE
```

The current connection mode is reported:

```
connectMode=servlet
```

Alternatively, use the following command:

```
$ grep_frmConnectMode CONTEXT_FILE
```

The current connection mode is reported:

```
<forms_connect oa_var="s_frmConnectMode">servlet</forms_conr....
```

Oracle Applications Release 11

Note Oracle Application Release 11 is, by default, configured to run in socket mode.

Use the following command:

```
$ grep connectMode FORMS60_WEB_CONFIG_FILE
```

The current connection mode is reported:

```
connectMode=socket
```

Alternatively, use the following command:

```
$ grep socket CONTEXT_FILE
```

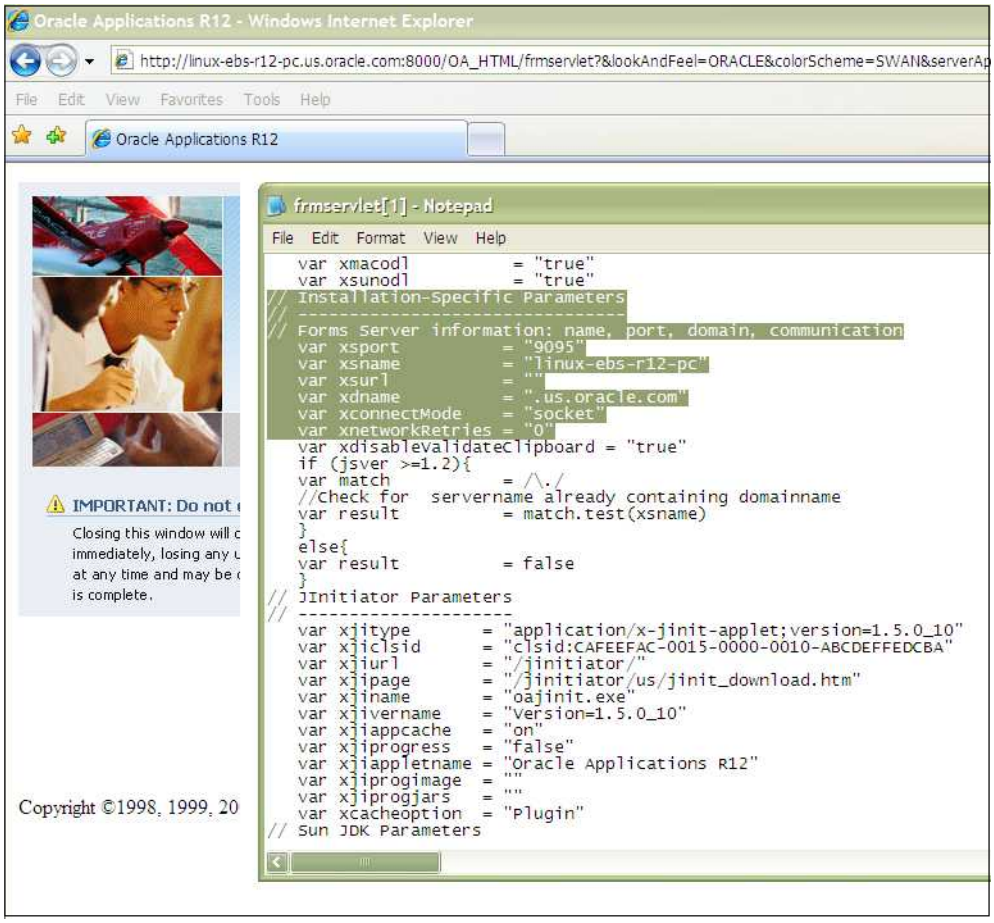
The current connection mode is reported:

```
<forms_connect oa_var="s_frmConnectMode">socket</forms_conr....
```

Checking the HTML Source

Finally, you can also check the HTML source of page used to launch the Oracle Forms application. To do so with Internet Explorer, select **View**, and then **Source**. This contains the connection mode, as shown in Figure A–1.

Figure A–1 Example Launch Page Details



The relevant connection mode information is highlighted.

B

Troubleshooting

This appendix highlights the most common problems encountered when installing the RUEI accelerator for Oracle E-Business Suite. The information in this appendix should be reviewed before contacting Customer Support.

B.1 Suites Option Not Available

As explained in Section 1.9, "Creating the EBS Suite Definition", it can take up to five minutes after the installation of the accelerator package before the **Suites** option becomes available in the Reporter interface.

However, it is possible that, even after waiting, this option does not appear. This problem is caused by an absence of measured data. It is recommended that, before starting to configure the suite definitions, you ensure network traffic is actually being seen by the system. To do so, you should select **System**, then **Status**, and then **Collector status**. The use of this facility is fully explained in the *Oracle Real User Experience Insight User Guide*.

If necessary, you can force the database RPMs to be applied immediately. To do so, logon as the `moniforce` user, and issue the following command:

```
use_check
```

B.2 Network Traffic Does Not Appear to be Measured

In the event that expected network traffic does not appear to be reported, it is recommended that you review the following points:

- RUEI can monitor EBS applications based on the OA, JTT, PLS, Oracle Forms, and servlet frameworks. Generally, suites are configured to run on a specific port which differs per installation. These also need to be specified in RUEI. Select **Configuration**, then **Security**, and then **Protocols**. Review the defined port settings, and ensure they meet the requirements of your EBS applications.
- Once data starts arriving into the RUEI system, it is not reported automatically. At least one application must be defined. At a minimum, this application must contain the relevant domain name, and the unique page-identification scheme within that domain.
- If the monitored traffic includes VLAN-encapsulated traffic, ensure this is configured within RUEI. Select **System**, then **Configuration**, then **Security**, then **Network filters**, and then **VLAN traffic**, to review the defined settings. The use of this facility is fully described in the *Oracle Real User Experience Insight User Guide*.
- Be aware there is no suitable out-of-the-box cookie available for session tracking in EBS. Therefore, a cookie needs to be created on the login page. This should cover

the complete application. By default, the `Jession` cookie only covers the application links, and not the images, CGIs, and libraries. While the `oracle.uix` cookie does cover all hits, it is not unique for each visitor.

- Be aware that because the Traffic summary facility (select **System**, then **Status**, and then **Data processing**) is based on application logic, non-application traffic (such as suites, services, and SSOs) is not represented in the traffic overviews.

It is strongly recommended that after installing the EBS accelerator, you login to the EBS application, and execute a critical path through the application. Then, you should search for recorded action within RUEI, and use the Session Diagnostics facility to verify that it is correctly reported. In particular:

- Verify that descriptions are reported, and not codes. If codes are reported instead of application names, or page-group level codes instead of page-group names, it indicates that the information derived from the `create_EBS_info.sh` script is not activated correctly.
- A large number of reported short sessions indicates that Forms traffic is not being measured.
- A large number of reported `.jsp` files indicates the need for manual page naming (if required by the customer).

C

Third-Party Licenses

This appendix contains licensing information about certain third-party products included with RUEI 4.5. 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

Apache License

Version 2.0, January 2004

`http://www.apache.org/licenses/`

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