Monitoring Oracle Forms Server

eG Innovations Product Documentation

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Total Performance Visibility

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Chapter 1: Introduction

An important component of the Oracle Internet Platform is the **Oracle Forms Server**. This application server is optimized to deploy Oracle Forms applications in a multi-tiered environment. It delivers the application infrastructure and the event model to ensure that Internet-based Forms applications automatically scale and perform over any network.

Oracle Forms Developer and Oracle Forms Services provide a complete application framework for optimal deployment of Oracle Forms applications on the Internet. The Oracle Forms Developer enables business developers to build Java applications that are optimized for the Internet without writing any Java code. This developer is specifically designed and optimized to build transactional database applications for the Oracle8i/9i database. It integrates with the Oracle Designer to visually capture business requirements and transform them into physical designs. Using Oracle Forms Developer, you can customize Oracle's pre-packaged applications, to suit the needs of your organization.

It is therefore evident that even the slightest of disturbances in the overall performance or internal operation of the Oracle Forms server, can adversely impact the scalability and network compatability of the Forms applications it supports. If such an eventuality is to be prevented, then it is recommended that you continuously monitor the Oracle Forms server for any minor/major deviations. This is where eG Enterprise helps administrators to continuously monitor the Oracle Forms server.

Chapter 2: How does eG Enterprise Monitor Oracle Forms Servers?

eG Enterprise is capable of monitoring the Oracle Firms server in both agent-based and agentless manners. To make the eG agent monitor the Forms server, make sure that the

2.1 Configuring an Oracle Forms Server

In order to ensure that the eG agents monitor Oracle Forms servers, the **tracing** capability of a Forms server must be enabled. Enabling tracing allows the Forms run time process (**ifweb90.exe**) to generate log files for every user session to the Forms server, and store them in the **trace** and **em** directories in the <ORA_APP_SERVER_INSTALL_DIR>/<FORMS_SERVER_INSTALL_DIR>/. These directories are created when a Forms server is installed in a host. The log files that are stored in these directories contain critical performance metrics pertaining to all the Forms applications executed by a particular Forms servlet deployed on the Forms server. These metrics are later analyzed and processed by the eG agent and displayed in the eG monitor interface.

To enable tracing, follow the steps given below, after installing the eG agent:

1. Execute the Forms9i configuration tool that is bundled with the eG agent, using the following menu sequence (see Figure 2.1):

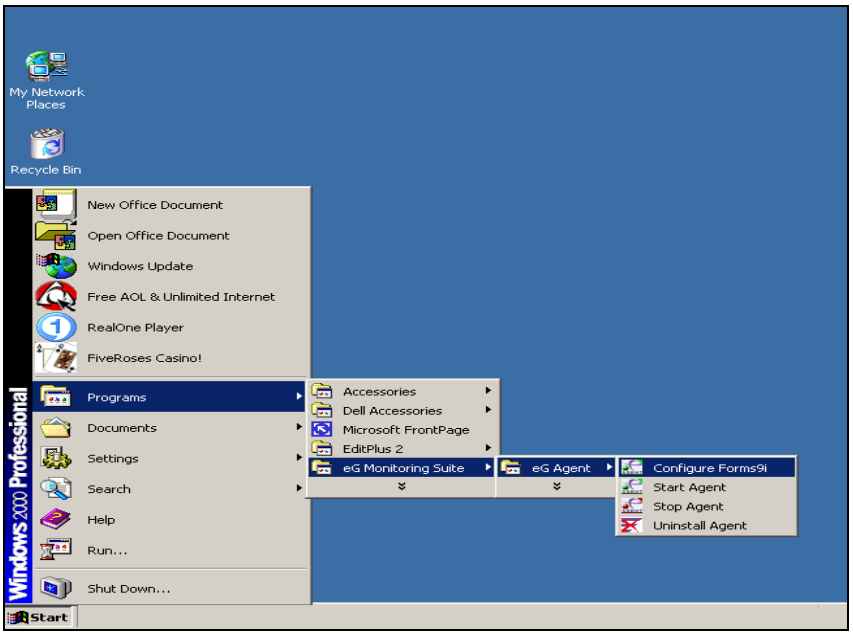

Figure 2.1: Selecting the Configure Forms9i option

2. Upon execution, the Forms 9i configuration tool will display the following options:

```
eG Oracle Forms9i Configuration tool
Enter your choice
1. Configure forms server
2. Remove forms server Configuration
3. Quit
>1
```

To configure the Forms server, choose option 1 by entering **1** against the '**>**' symbol.

3. Setup will now request you to specify the whole path to the location of the Oracle 9i application server installed on the host.

```
Please enter the Oracle home location for the Forms Server: c:\ora9ias
```

4. Next, specify the install directory of the Oracle Forms server.

```
Please enter the Forms working directory: c:\ora9ias\Forms90
```

5. To enable tracing, specify the location of the config file (*.cfg) associated with the Forms servlet that executes the Forms applications to be monitored.

```
Please enter the location of the Forms configuration file:
c:\ora9ias\Forms90\server\forms90demo.cfg
```

6. If the config file was not created or is not available in the specified path, the following error message will appear:

```
The specified configuration file does not exist
```

7. Whenever a Forms servlet is deployed on an Oracle 9i Application Server (O9ias), the administrator creates a Forms servlet config file with the extension ".cfg". This file stores the configuration information pertaining to all the Forms applications executed by that Forms servlet. Therefore, one such file will be created for every Forms servlet deployed on an O9ias. The cfg file typically comprises of:

   - a global settings section that defines the configuration settings that apply to all the Forms applications executed by a particular Forms servlet;
   - multiple application-specific sections that define the configuration settings specific to each of the Forms applications executed by a Forms servlet

8. When the location of a cfg file is specified, the **em_mode** flag in the cfg file will be set to 1 (default is 0), and a new entry will be added against the "otherparams" parameter. Figure 2.2, Figure 2.3, and Figure 2.4 indicate that these entries will be available in the global settings section as well as each of the application-specific sections of the cfg file.

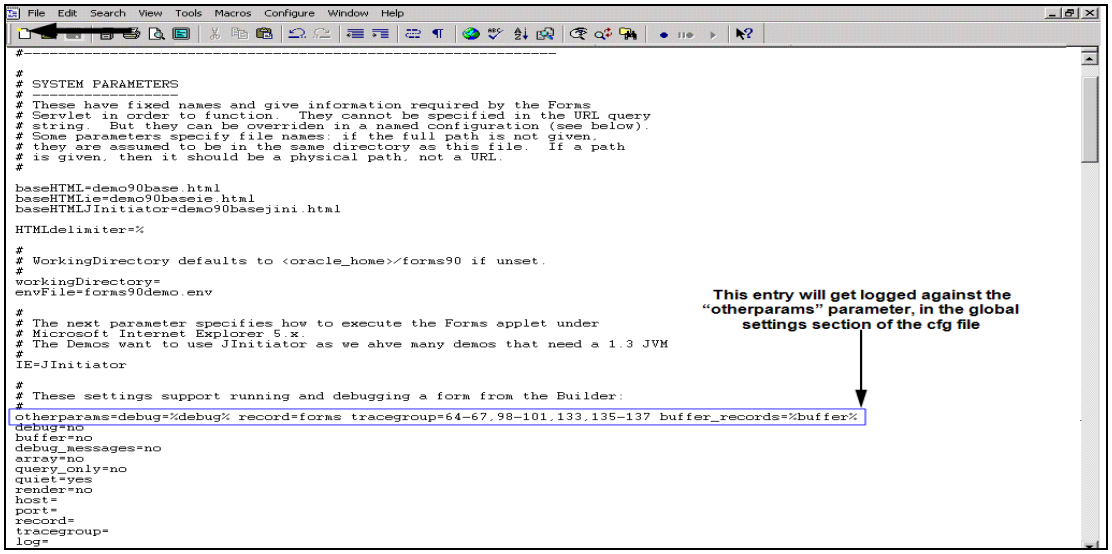

Figure 2.2: An entry in the global settings section

9. When the entry "record=forms" (see Figure 2.2) appears against the "otherparams" parameter, it is a clear indicator that tracing has been enabled for the Forms server. The numbers in the entry "tracegroup=64-67,

98-101,. . . .” in Figure 2.2, indicate the events that will be monitored.

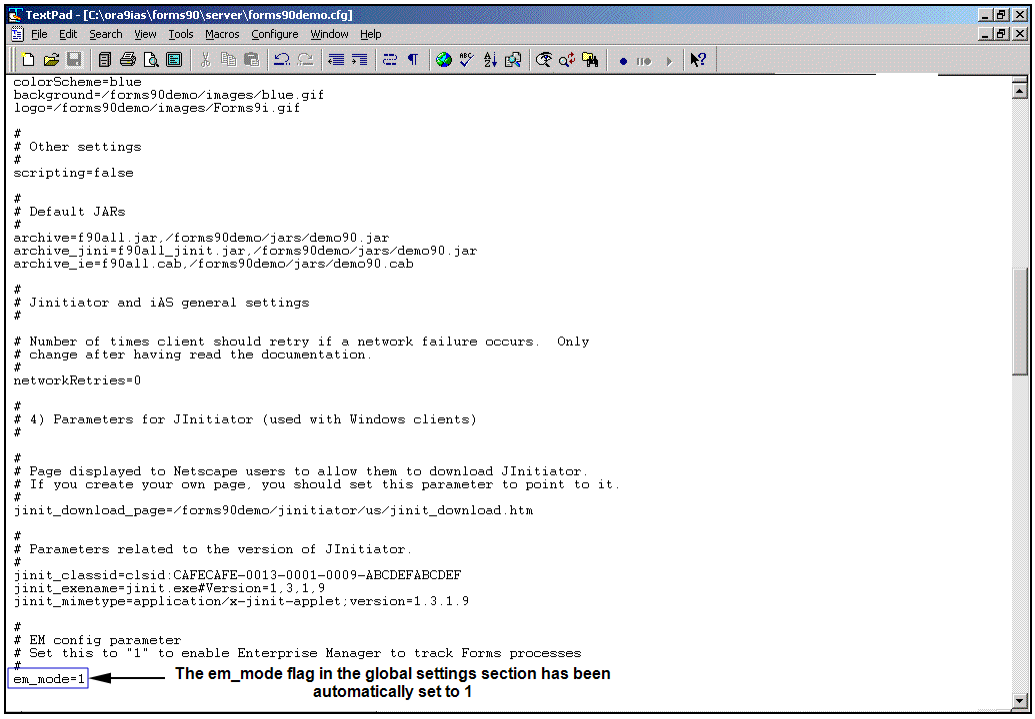

Figure 2.3: The other entry in the cfg file

10. In Figure 2.3, note that the value of the em_mode parameter, which is 0 by default, has become 1. Setting the em_mode parameter to 1 ensures that the Oracle Enterprise Manager tracks all the Forms processes, logs the performance metrics of the processes to a log file, and stores it in the **em** directory present in the <ORA_APP_SERVER_INSTALL_DIR>/<FORMS_SERVER_INSTALL_DIR>/.

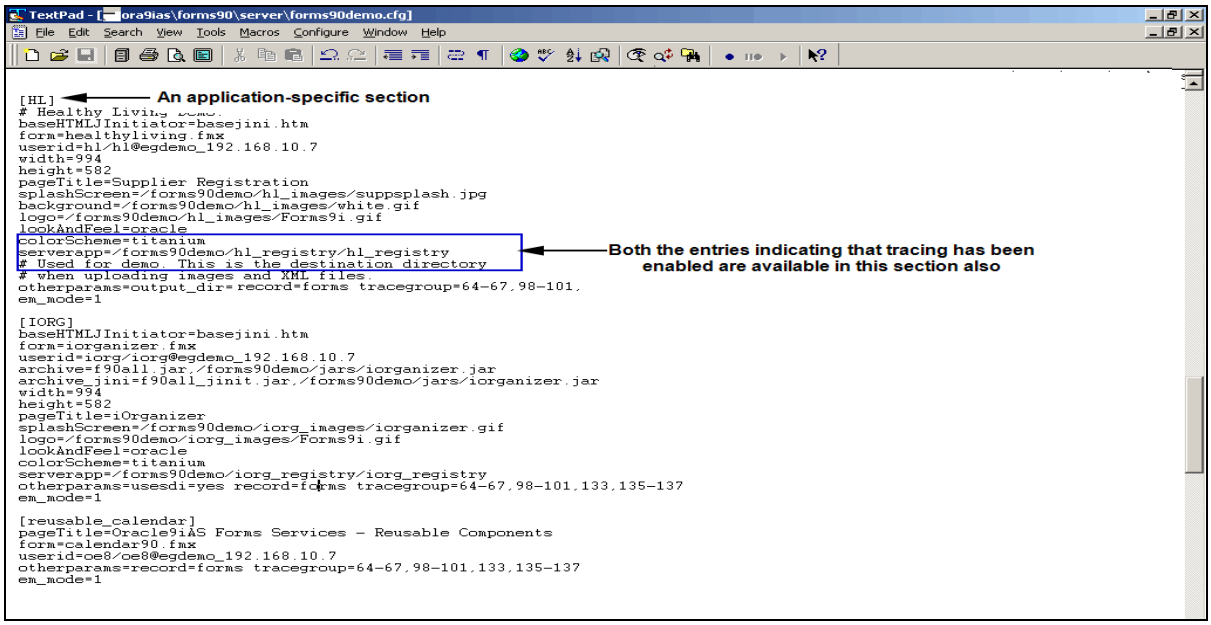

Figure 2.4: Entries in the application-specific section

11. The setup will then check for the existence of the **trace** and **em** directories in the <ORA_APP_ SERVER_ INSTALL_ DIR>/<FORMS_ SERVER_ INSTALL_ DIR>/. By default, these directories will be created by the Forms server installation process. If for some reason, these directories are not available in the aforesaid path, then setup will attempt to create them. If the creation is successful, then the eG Forms 9i configuration will proceed uninterrupted. However, if the setup is unable to create these directories, then the following message will appear:

```
Configuration failed . . . Unable to create trace directory c:\Ora9ias\Forms90
```

```
Please create the directory c:\Ora9ias\Forms90 manually and proceed. . .
```

If such a message appears, the setup will automatically terminate. Then, manually create the trace and em directories in the specified path, and proceed with the configuration.

If the configuration fails, then the following message will appear:

```
Configuration failed . . . envfile configured does not exist
```

```
Please configure a valid envfile and proceed
```

12. As you can see, the error message indicates the non-existence of a certain “envfile”. Besides the cfg file, the administrator also creates a file with the extension “.env”. This file contains the environment settings of the Forms applications executed by a Forms servlet. The correct path to this env file has to be specified in the cfg file. The above-mentioned error message will appear, if the specified path is incorrect.

13. The administrator can create a single env file for a Forms servlet, or individual files for each of the applications executed by the Forms servlet. In the case of the former, the path to the env file must be specified in the global settings section of the cfg file of that Forms servlet. In the latter case, the path to each of the env files must be specified under the corresponding application-specific sections of the cfg file.
14. Figure 2.5 depicts a sample cfg file wherein the path to the env file has been specified.

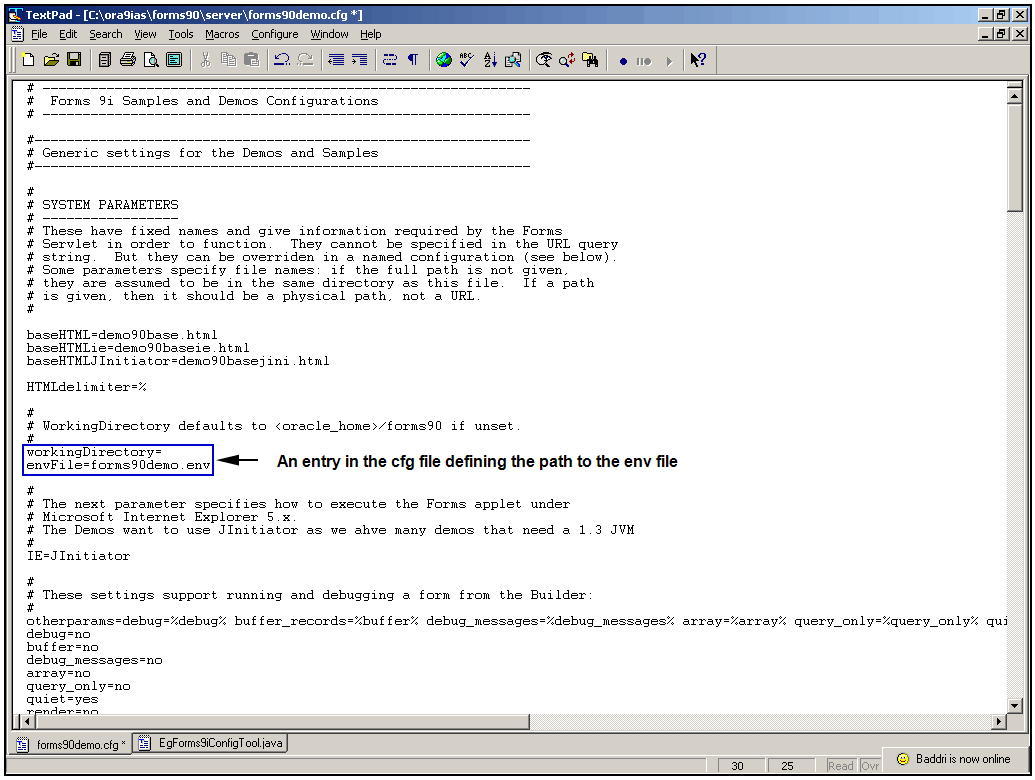

Figure 2.5: A cfg file with the path to the env file

15. If an incorrect path specification(s) is available in the cfg file, then configuration will fail, thereby automatically terminating the setup. When this happens, open the concerned cfg file and provide the correct path in it.

Note:

- If a parameter has been defined both in the global and application-specific sections of the cfg file, then the application-specific settings will override the global ones.
- If the env file exists in the same location as the cfg file, then the full path to the env file need not be specified in the cfg file. The name of the env file alone would suffice.

- When the Forms configuration is triggered, the setup automatically takes a backup of the original cfg and env files into files named as **<cfgfilename>.cfg.egbak** and **<envfilename>.env.egbak**. This is done so that the original files can be restored if the configuration is to be removed.
- Contact the Forms server administrator for details pertaining to the cfg and env files corresponding to that application.

16. If the configuration is successful, the setup will request you to confirm whether any other application requires monitoring. If so, enter **y** and specify the config file corresponding to the Forms servlet that executes the application. If not, enter **n**.

```
Does the Forms server use another configuration file?[Yes/No]:n
```

17. If you choose not to monitor another application, then the three options presented to you in step 1 will reappear.

```
eG Oracle Forms9i Configuration tool
Enter your choice
1. Configure forms server
2. Remove forms server Configuration
3. Quit
>3
```

Enter3 to quit the setup.

If the Forms server configuration is removed, tracing is disabled for the Forms server. When this is done, all the applications executed by a chosen Forms servlet will no longer be monitored by the eG Enterprise suite. To remove the Forms server configuration, do the following:

18. Execute the **Forms 9i** configuration tool using the menu sequence provided in step 1 above.
19. Of the list of options displayed, enter **2**, to remove the configuration.

```
eG Oracle Forms9i Configuration tool
Enter your choice
1. Configure forms server
2. Remove forms server Configuration
3. Quit
>2
```

20. The setup will now request you to specify the whole path to the location of the Oracle 9i application server installed on the host.

```
Please enter the Oracle home location for the Forms Server: c:\ora9ias
```

21. Specify the location of the cfg file of the Forms servlet, which is executing the applications for which **tracing** is to be disabled.

```
Please enter the location of the Forms configuration file:
c:\ora9ias\Forms90\server\forms90demo.cfg
```

If the configuration is removed successfully, the setup will request you to confirm whether any other application needs to be unmanaged. If so, enter **y** and specify the config file corresponding to the other Forms servlet. If not, enter **n**.

```
Does the Forms server use another configuration file?[Yes/No]:n
```

22. If you choose not to unmanage another application, then the three options presented to you in step 1 will reappear.

```
eG Oracle Forms9i Configuration tool

Enter your choice

1. Configure forms server

2. Remove forms server Configuration

3. Quit

>3
```

Enter **3** to quit the setup.

2.2 Managing the Oracle Forms Server

The eG Enterprise is capable of automatically discovering the Oracle Forms Server. The discovered firewall needs to be managed for monitoring. This can be achieved using the following steps;

1. Log into the eG administrative interface.
2. If a Oracle Forms Server is already discovered, then directly proceed towards managing it using the **COMPONENTS – MANAGE/UNMANAGE** page (Infrastructure -> Components -> Manage/Unmanage).
3. However, if it is yet to be discovered, then run discovery (Infrastructure -> Components -> Discover) to get it discovered or add the component manually using the **COMPONENTS** page (Infrastructure -> Components -> Add/Modify). Remember that components manually added are

managed automatically. Discovered components, however, are managed using the **COMPONENTS – MANAGE / UNMANAGE** page. Figure 2.6 and Figure 2.7 clearly illustrate the process of managing the *Oracle Forms Server.*

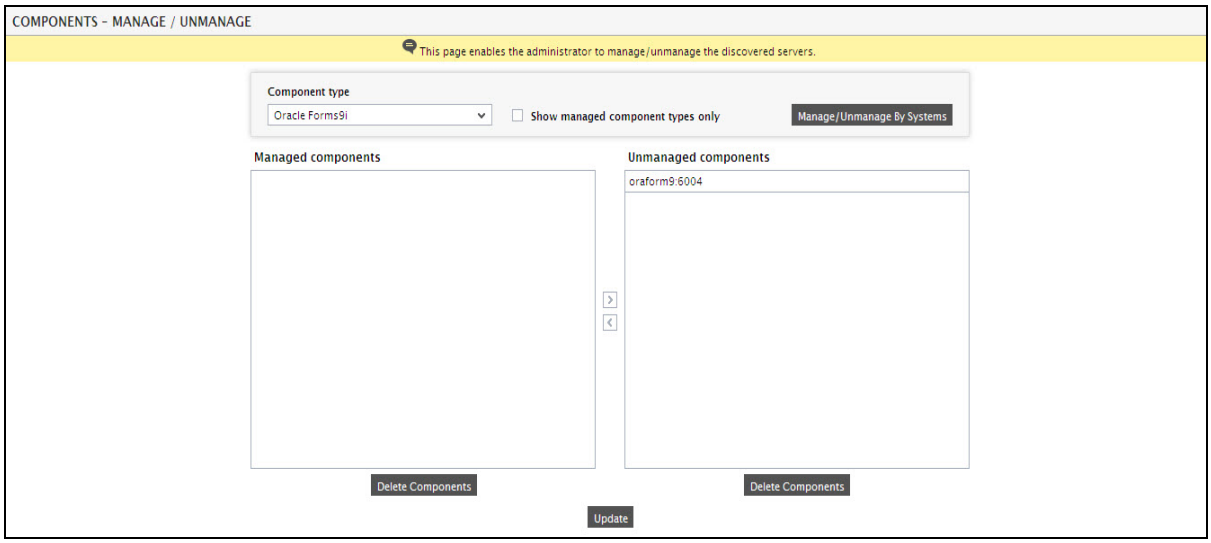

Figure 2.6: Selecting the Oracle Forms Server to be monitored

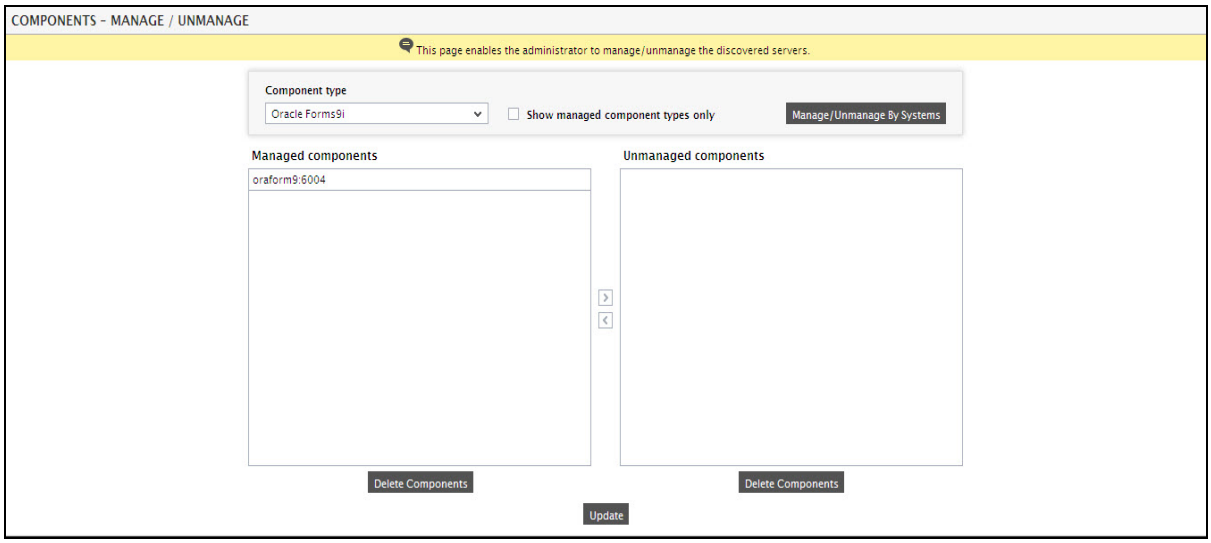

Figure 2.7: Managing the selected Oracle Forms Server

4. Next, try to sign out of the eG administrative interface. Upon doing so, a list of unconfigured tests will appear prompting you to configure the tests pertaining to the Oracle Forms server.

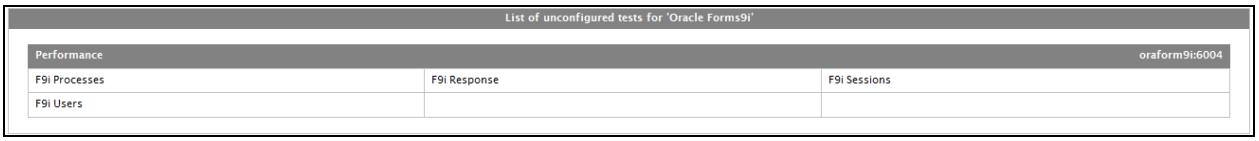

Figure 2.8: A list of unconfigured tests

5. Click on the test names to configure. To know how to configure the tests, refer to **Monitoring Oracle Forms Servers** chapter.
6. Finally, signout of the eG administrative interface.

Chapter 3: Monitoring Oracle Forms Servers

eG Enterprise provides an exclusive Oracle Forms9i monitoring model (see Figure 3.1) that executes tests on the Forms server to keep track of its internal health and external availability, and alerts administrators of impending performance issues.

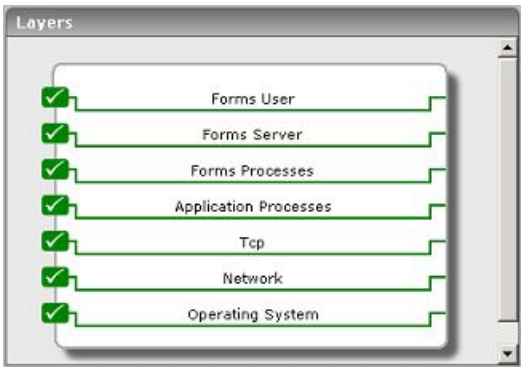

Figure 3.1: The layer model of an Oracle Forms server

The metrics that these tests collect from the Oracle Forms server, enable administrators to find quick and accurate answers to the following performance queries:

- Are all the critical Forms processes currently running?
- Is the resource consumption of the Forms processes optimal?
- How is the session load on the server? Are there too many sessions currently active on the server? Which users have initiated these sessions?
- Are there any idle sessions?
- What is the average session duration? Have sessions remained open for unreasonably long periods?
- Is the Forms server responding slowly to user requests? If so, which user do these requests pertain to?
- Is any user's processes consuming too much CPU and memory resources?

The sections to come will discuss the top 3 layers of Figure 3.1, as all other layers have been discussed elaborately in the *Monitoring Unix and Windows Servers* document.

Note:

Before attempting to monitor an Oracle Forms server, ensure that its **tracing capability** is enabled.

3.1 The Forms Processes Layer

This layer is associated with an **F9iProcess** test that reports how well the critical Forms server processes utilize the CPU and memory resources.

Figure 3.2: The tests associated with the Forms Processes layer

3.1.1 F9i Processes Test

This test reports the memory and CPU usage of the Oracle Forms 9i server processes.

Target of the test : An Oracle Forms Server

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every Oracle Forms server monitored.

Configurable parameters for the test

Parameter	Description
Test period	How often should the test be executed.
Host	The host for which the test is to be configured.
Port	The port number at which the specified Host listens to.
FormworkDir	The path to the install directory of the Oracle Forms 9i server. Typically, this will be the <ORAHOMEDIR>/Forms90/.
FormsRuntime	The value, "**ifweb90.exe**", is displayed here. This is the Forms server runtime executable.
OraHomeDir	The install directory of the Oracle 9i server. This specification becomes more important when more than one Oracle 9i AS installation exists on a host.

Parameter	Description
TrcCleanupTime	For Oracle 9i Forms monitoring, eG requires tracing to be enabled for the server. The trace files corresponding to completed sessions are automatically cleaned by the eG agent. The frequency with which these files are to be cleared from the server is to be specified in the TrcCleanupTime textbox. The default value displayed in the TrcCleanupTime text box is 30 minutes.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Number of processes running	Indicates the number of Forms processes currently running.	Number	This value indicates if too many or too few instances corresponding to the specified process are executing on the host.
CPU usage	Indicates the percentage of CPU time utilized by the Forms processes.	Percent	A very high value could indicate that the specified process is consuming excessive CPU resources.
Memory usage	Indicates the percentage of memory utilized by the Forms processes.	Percent	

3.2 The Forms Server Layer

This layer tracks the user sessions to the Forms server to identify sessions that have been open for an unreasonably long time. In addition, the layer also measures the responsiveness of the Forms server to client requests.

Figure 3.3: Tests associated with the Forms Server layer

3.2.1 F9i Sessions Test

This test monitors the user sessions to the Oracle Forms 9i server.

Target of the test : An Oracle Forms Server

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every Oracle Forms server monitored.

Configurable parameters for the test

Parameter	Description
Test period	How often should the test be executed.
Host	The host for which the test is to be configured.
Port	The port number at which the specified Host listens to.
FormworkDir	The path to the install directory of the Oracle Forms 9i server. Typically, this will be the <ORAHOMEDIR>/Forms90/.
FormsRuntime	The value, "**ifweb90.exe**", is displayed here. This is the Forms server runtime executable.
OraHomeDir	The install directory of the Oracle 9i server. This specification becomes more important when more than one Oracle 9i AS installation exists on a host.
TrcCleanupTime	For Oracle 9i Forms monitoring, eG requires tracing to be enabled for the server. The trace files corresponding to completed sessions are automatically cleaned by the eG agent. The frequency with which these files are to be cleared from the server is to be specified in the TrcCleanupTime textbox. The default value displayed in the TrcCleanupTime text box is 30 minutes.
SessionIdleTime	One of the measures returned by this test, is the number of idle sessions. While taking a count of idle sessions, the test will consider only those sessions that have remained idle for the duration specified in the SessionIdleTime text box. The default value displayed here is 10. This means that the test will track those sessions that have been idle for 10 minutes or more. You can change this value, if required.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Total sessions	Indicates the total number	Number	Tracking the value of this measure

Measurement	Description	Measurement Unit	Interpretation
	of Forms sessions currently running.		over time provides an idea of the workload of the Forms server.
Active sessions	Indicates the total number of currently active Forms sessions.	Number	A high value may indicate that there is a heavy processing load on the server.
Idle sessions	Indicates the total number of currently idle Forms sessions.	Number	
Sessions added	Indicates the total number of Forms sessions newly added in the last measurement period.	Number	
Sessions removed	Indicates the total number of Forms sessions removed in the last measurement period.	Number	This metric can indicate unusual session disconnects.
Avg session duration	Indicates the average duration of all current sessions.	Mins	By tracking the average duration of current sessions and the number of simultaneous sessions, a Forms administrator can obtain critical information for capacity planning.

3.2.2 F9i Response Test

This test measures the responsiveness of the Oracle Forms 9i server to user requests.

Target of the test : An Oracle Forms Server

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every Oracle Forms server monitored.

Configurable parameters for the test

Parameter	Description
Test period	How often should the test be executed.

Parameter	Description
Host	The host for which the test is to be configured.
Port	The port number at which the specified Host listens to.
FormworkDir	The path to the install directory of the Oracle Forms 9i server. Typically, this will be the <ORAHOMEDIR>/Forms90/.
FormsRuntime	The value, "**ifweb90.exe**", is displayed here. This is the Forms server runtime executable.
OraHomeDir	The install directory of the Oracle 9i server. This specification becomes more important when more than one Oracle 9i AS installation exists on a host.
TrcCleanupTime	For Oracle 9i Forms monitoring, eG requires tracing to be enabled for the server. The trace files corresponding to completed sessions are automatically cleaned by the eG agent. The frequency with which these files are to be cleared from the server is to be specified in the TrcCleanupTime textbox. The default value displayed in the TrcCleanupTime text box is 30 minutes.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Forms request rate	Indicates the rate of requests processed by the Forms server during the last measurement period.	Reqs/Sec	A high value may indicate that there is a heavy load on the Forms server
Database request rate	Indicates the rate of requests from the Forms server to the database server during the last measurement period	Reqs/Sec	A high value may indicate that there is a heavy load on the database server
Client/network response time	Indicates the average time spent by requests in the last measurement period waiting for responses from the client. This measure includes the client think time and the network latency.	Secs	A sudden increase in response time could indicate a heavy network traffic.
Forms server	Indicates the average	Secs	A sudden increase in response time is

Measurement	Description	Measurement Unit	Interpretation
response time	processing time of requests at the Forms server.		indicative of a potential performance bottleneck on the Forms server.
Database response time	Indicates the average response time of the database server for servicing requests passed to it from the Forms server.	Secs	A sudden increase in response time is indicative of a potential performance bottleneck on the database server.

3.3 The Forms User Layer

Use the **F9iUsers** test associated with this layer to track the user activity on the Forms server.

Figure 3.4: Tests associated with the Forms User layer

3.3.1 F9i Users Test

This test reports general statistics pertaining to the database users.

Target of the test : An Oracle Forms Server

Agent deploying the test : An internal agent

Outputs of the test : One set of results for every Oracle Forms server monitored.

Configurable parameters for the test

Parameter	Description
Test period	How often should the test be executed.

Parameter	Description
Host	The host for which the test is to be configured.
Port	The port number at which the specified Host listens to.
FormworkDir	The path to the install directory of the Oracle Forms 9i server. Typically, this will be the <ORAHOMEDIR>/Forms90/.
FormsRuntime	The value, "**ifweb90.exe**", is displayed here. This is the Forms server runtime executable.
OraHomeDir	The install directory of the Oracle 9i server. This specification becomes more important when more than one Oracle 9i AS installation exists on a host.
TrcCleanupTime	For Oracle 9i Forms monitoring, eG requires tracing to be enabled for the server. The trace files corresponding to completed sessions are automatically cleaned by the eG agent. The frequency with which these files are to be cleared from the server is to be specified in the TrcCleanupTime textbox. The default value displayed in the TrcCleanupTime text box is 30 minutes.

Measurements made by the test

Measurement	Description	Measurement Unit	Interpretation
Forms request rate	Indicates the rate of requests received by a Forms server for a specific user during the last measurement period.	Reqs/Sec	A comparison of this measure across users can be used to determine which user(s) are heavily using the Forms server.
Database request rate	Indicates the rate of requests to the database issued by the Forms server for a specific user during the last measurement period.	Reqs/Sec	A comparison of this measure across users can indicate the top users of the Forms database.
Client/network response time	Indicates the response time of the client and network for this database user.	Secs	A sudden increase in response time could be indicative of heavy network traffic.
Forms server response time	Indicates the response time of the Forms server for a particular database	Secs	A sudden increase in response time is indicative of a potential performance bottleneck in the Forms server.

Measurement	Description	Measurement Unit	Interpretation
	user.		
Database response time	Indicates the response time of the database for a particular database user.	Secs	A sudden increase in response time is indicative of a potential performance bottleneck on the database server.
Sessions	Indicates the total number of Forms sessions running for a particular database user.	Number	A high value may indicate that there is a high load on the server.
Avg session duration	Indicates the average duration of the Forms sessions running for a particular database user.	Mins	
Memory usage	Indicates the percentage of memory utilized by the Forms processes corresponding to a particular database user.	Percent	A sudden increase in memory utilization for a process may be indicative of memory leaks in the application.
CPU usage	Indicates the percentage of CPU time utilized by the Forms processes corresponding to a particular database user.	Percent	A very high value could indicate that the processes are consuming excessive CPU resources.

About eG Innovations

eG Innovations provides intelligent performance management solutions that automate and dramatically accelerate the discovery, diagnosis, and resolution of IT performance issues in on-premises, cloud and hybrid environments. Where traditional monitoring tools often fail to provide insight into the performance drivers of business services and user experience, eG Innovations provides total performance visibility across every layer and every tier of the IT infrastructure that supports the business service chain. From desktops to applications, from servers to network and storage, from virtualization to cloud, eG Innovations helps companies proactively discover, instantly diagnose, and rapidly resolve even the most challenging performance and user experience issues.

eG Innovations is dedicated to helping businesses across the globe transform IT service delivery into a competitive advantage and a center for productivity, growth and profit. Many of the world's largest businesses use eG Enterprise to enhance IT service performance, increase operational efficiency, ensure IT effectiveness and deliver on the ROI promise of transformational IT investments across physical, virtual and cloud environments.

To learn more visit www.eginnovations.com.

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