Oracle API Gateway Integration Guide with Oracle Enterprise Manager 12c

Published: September 2015

Applies To

Oracle API Gateway 11.1.2.4.0

Contents

Introduction

This guide describes how to monitor Oracle API Gateway using the Oracle Enterprise Manager (OEM) Grid Control. Oracle API Gateway is bundled with an OEM plugin that polls Oracle API Gateway for its status and renders the result in OEM. This plugin has been tested and confirmed to work with OEM 12c.

This guide describes the following:

1. The Oracle API Gateway's OEM plugin is uploaded, and deployed into OEM.
2. The following Oracle API Gateway status is displayed in OEM:
   - Oracle API Gateway uptime, memory, and CPU usage
   - Web Service usage
   - Client usage (when the client is an authenticated subject)

Multiple Oracle API Gateway instances can be monitored by OEM.

Setup Used in this Guide

The following product versions are used in this guide:

- Oracle API Gateway
- Oracle Enterprise Manager 12c

Adding the Oracle API Gateway OEM Plugin to OEM

This section explains how to add the Oracle API Gateway metrics plugin to your OEM installation. The Oracle API Gateway plugin is supplied with the Oracle API Gateway in the following location:

<OAG_INSTALL_PATH>/system/conf/oracle-em/12.1.0.1.4_vordel.gateway.mtrc_2000_0.opar

Prerequisite before Adding the Plugin

Before adding the plugin, you must make sure that your OEM Software Library is configured.
If you have not already configured the Software Library, perform the following steps:

1. Create a directory on the host running OEM.
2. Select **Setup** → **Provisioning and Patching** → **Software Library**.
3. Add a new **OMS Shared Filesystem**, and specify the newly created directory.

Add the Plugin

To add the plugin to OEM, perform the following steps:

1. Log into the server where OEM is installed using SSH.
2. Copy the opar file to the /tmp folder on the same server.
3. Enter the emcli login command:
   <OEM_HOME>/oms/bin/emcli login -username=sysman -password=<password>
4. Enter the emcli import_update command:
   <OEM_HOME>/oms/bin/emcli import_update -
   file=/tmp/12.1.0.1.4_vordel.gateway.mtrc_2000_0opar .-omslocal
5. The command should complete with the following diagnostic message:

Processing update: Plugin - Oracle Enterprise Manager Plugin to define target type Gateway Metrics Service
Operation completed successfully. Update has been uploaded to Enterprise Manager. Please use the Self Update Home to manage this update.

Deploy the Plugin to the Management Server and Agent

Perform the following steps:

1. 1. Go to the OEM web interface at:
   https://<OEM_HOST>:<OEM_PORT>:/em
2. Log in.
3. Click the **Setup** menu at the top, and choose **Extensibility** → **Plugins**.
4. Locate **Gateway Metrics Plugin** in the table, and select it.
5. Deploy the plugin on the Management Server by clicking **Deploy On** → **Management Servers** in the table header.
6. Follow the steps in the wizard. In one of the steps, you must enter the password of the SYS user of the database that you used to setup OEM.
7. Deploy the plugin on the Agent by clicking **Deploy On** → **Management Agent**, and follow the steps in the wizard. When the deployment process is complete, you have successfully deployed the Oracle API Gateway Plugin to OEM.

Select the Target Configuration

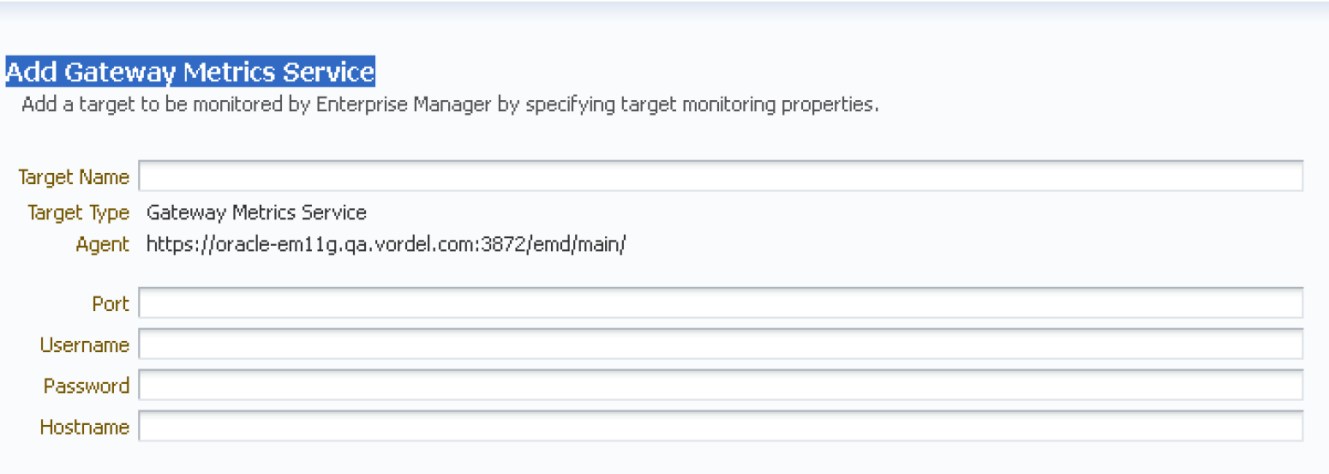
Perform the following steps:

1. When the plugin has been deployed to the agent, you must add it as a target. Click the **Targets** tab at the top of the page.
2. Click **Setup** menu at the top of the screen, then click **Add target > Add Targets Manually**.
3. On the new page, select **Add Non-Host Targets by Specifying Target Monitoring Properties**.
4. Select **Gateway Metrics Service** from the **Target Type** drop-down list.
5. Select the Monitoring Agent where you want to create the target by clicking the magnifying glass icon.
6. Click the **Add Manually** button, and the Add Gateway Metrics Service screen is displayed enabling you to configure the plugin.

Configure the Plugin to Connect to Oracle API Gateway

The plugin must now be configured to connect to Oracle API Gateway. Perform the following steps:

1. Enter a Target Name.
2. Enter the connection details of Oracle API Gateway. Screenshot 1 shows an example screen:



Screenshot 1: Oracle API Gateway Target Configuration in OEM

Table 1 describes each target configuration setting:

Entry	Description
Hostname	Hostname IP address or fully qualified domain name of the host on which Oracle API Gateway is running.
Port	The port number of the management interface of Oracle API Gateway. In a default installation, this is 8085.
Username	The administrator of Oracle API Gateway's user name. In a default installation, this is admin.
Password	The password corresponding to the username. In a default installation, this is changeme.

Table 1: Target Configuration Settings

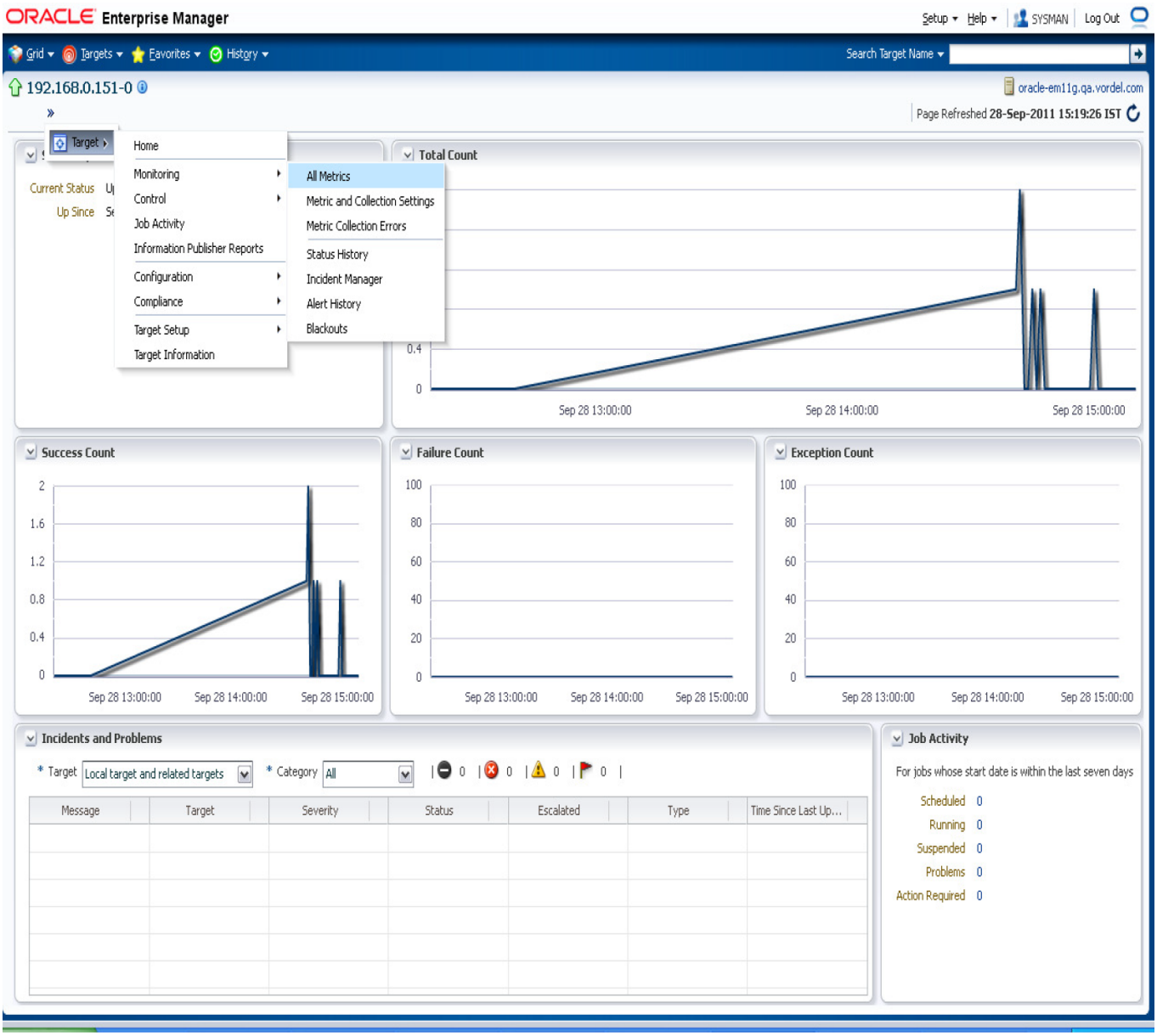
3. You can repeat this process if multiple targets need to be monitored. Repeat the steps in the Select the Target Configuration section, and configure the plugin as described.
4. Click **OK** when the configuration is complete.
5. At this point, the Oracle API Gateway target should be listed in OEM. Click the Oracle API Gateway target to view the status gathered by OEM.

Examples of Monitoring Oracle API Gateway in OEM

This section shows some example screenshots of monitoring Oracle API Gateway in OEM 12c.

Oracle API Gateway Home Page

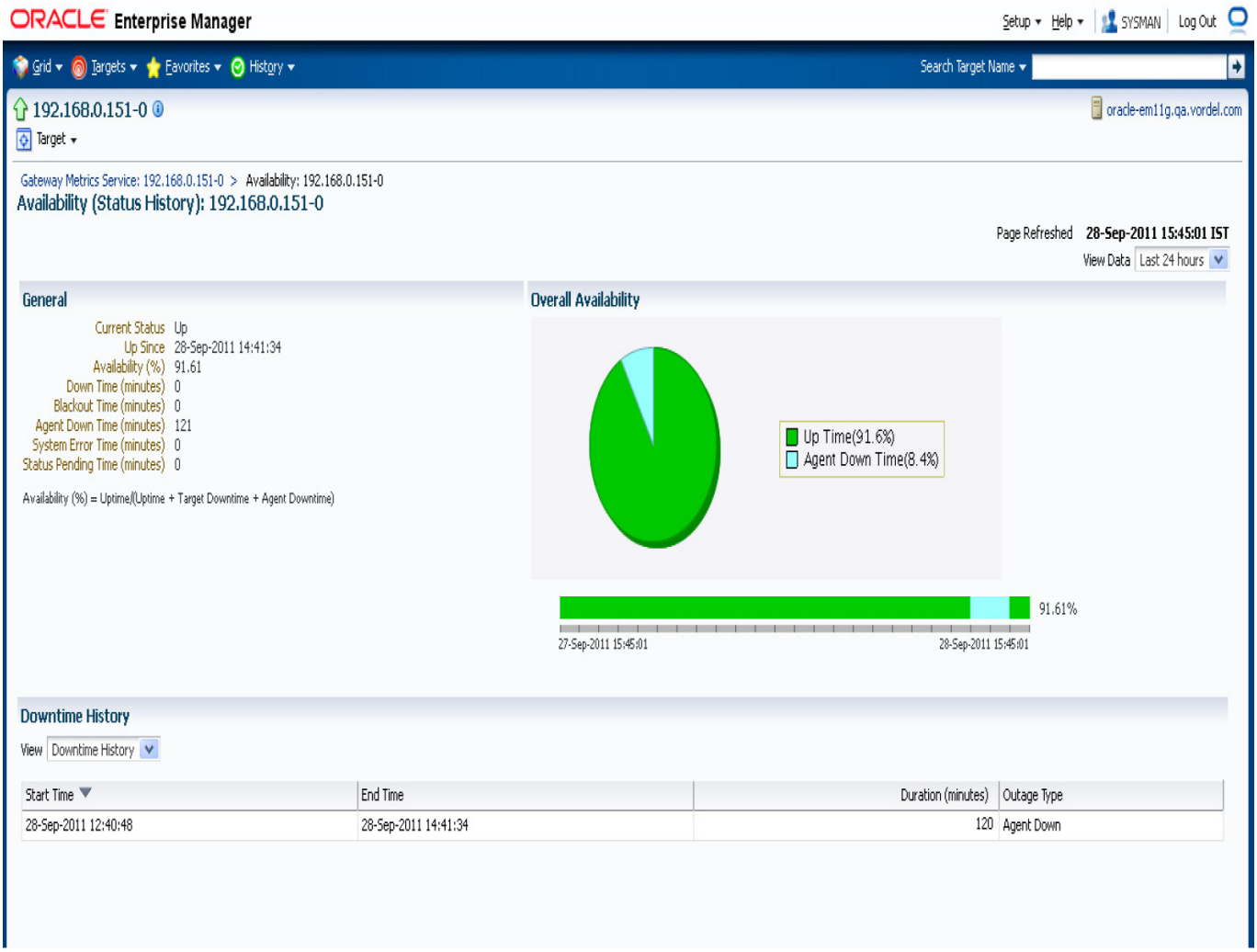
The home page of the monitored Oracle API Gateway instance is displayed in Screenshot 2. This page shows the uptime of Oracle API Gateway and the number of messages that have been successfully processed or rejected:



Screenshot 2: Oracle API Gateway Home Page in OEM

Availability

From the home page clicking **Target** → **Monitoring** → **Status** History displays the availability percentage count each time Oracle API Gateway is polled by the plugin.



Screenshot 3: Oracle API Gateway Availability Chart

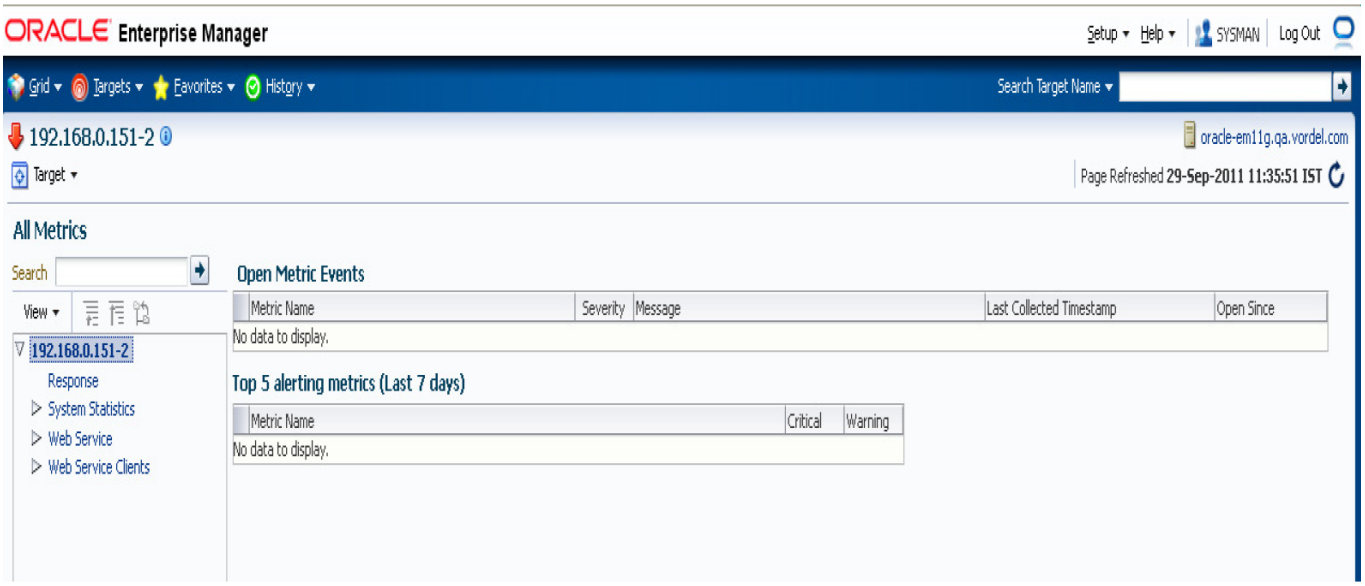
Viewing the Metrics Collected

To view the metrics collected from Oracle API Gateway, click **Target** → **Monitoring** → **All Metrics** at the top of the page.

The following data is monitored for Oracle API Gateway:

- **Response** availability of Oracle API Gateway
- **System Statistics** CPU usage, uptime, memory, and message counts
- **Web Service** Usage per web service
- **Web Service Clients** Client usage per web service

Screenshot 4 shows the summary of the metrics collected:



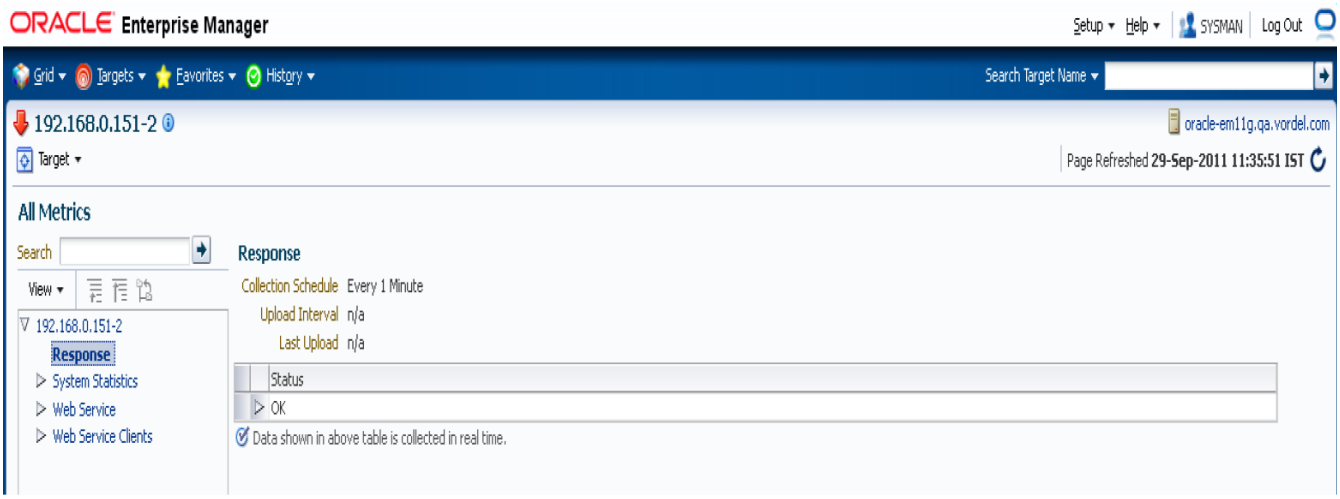
Screenshot 4: All Metrics Collected

Response

The **Response** can be successful or not. The plugin polls the Oracle API Gateway service to check its availability at each collection point. A chart is available from the home page to show the current and historical availability of Oracle API Gateway.

Name	Description
Response	The availability of Oracle API Gateway is either true or false.

Table 2: Response Metric



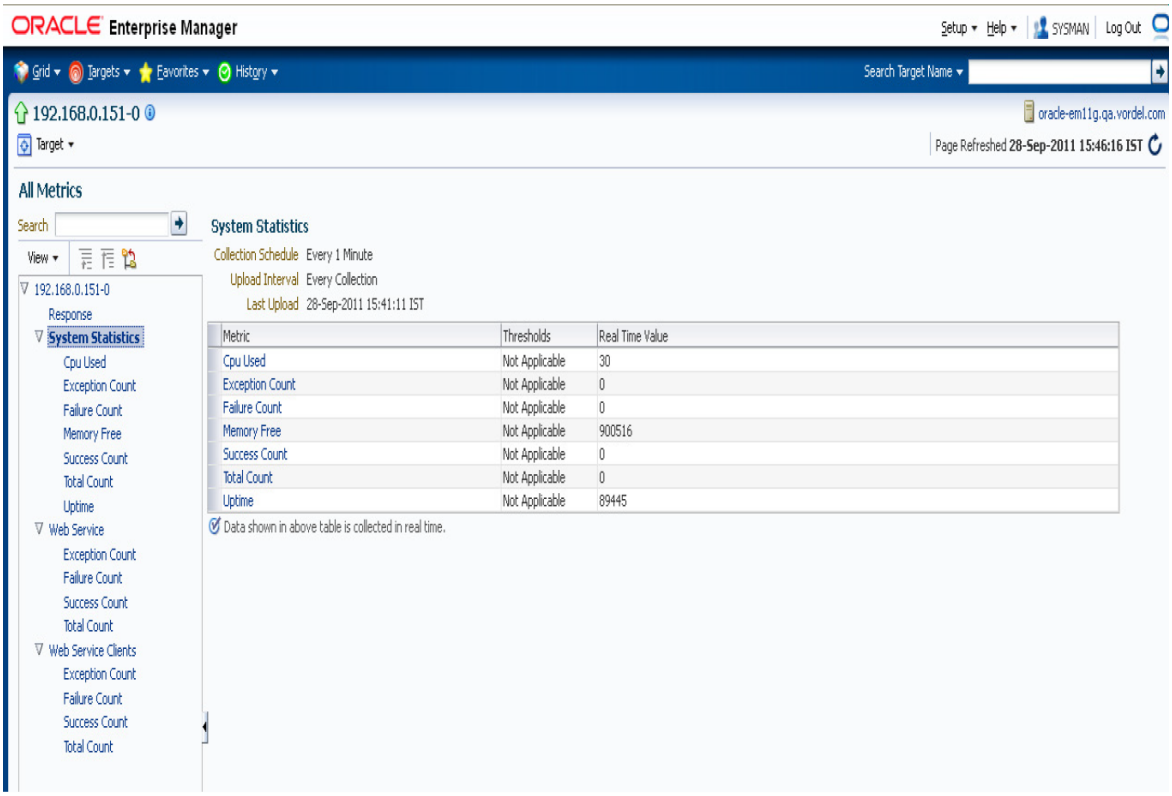
Screenshot 5: Response Metric Displayed

System Statistics

Clicking **System Statistics** displays the general metrics for Oracle API Gateway. For each target, there is a count maintained of Total, Successes, Failures and Exceptions.

Name	Description
CPU Usage	CPU usage of the Oracle API Gateway system
Exception Count	Count of Exception messages
Failure Count	Count of Failure messages
Memory Free	Amount of free memory on the Oracle API Gateway system
Success Count	Count of Successful messages
Total Count	Count of All messages processed through Oracle API Gateway
Uptime	Uptime of the Oracle API Gateway process

Table 3: System Statistics Metrics



Screenshot 6: System Statistics Metrics Displayed

Message Counters

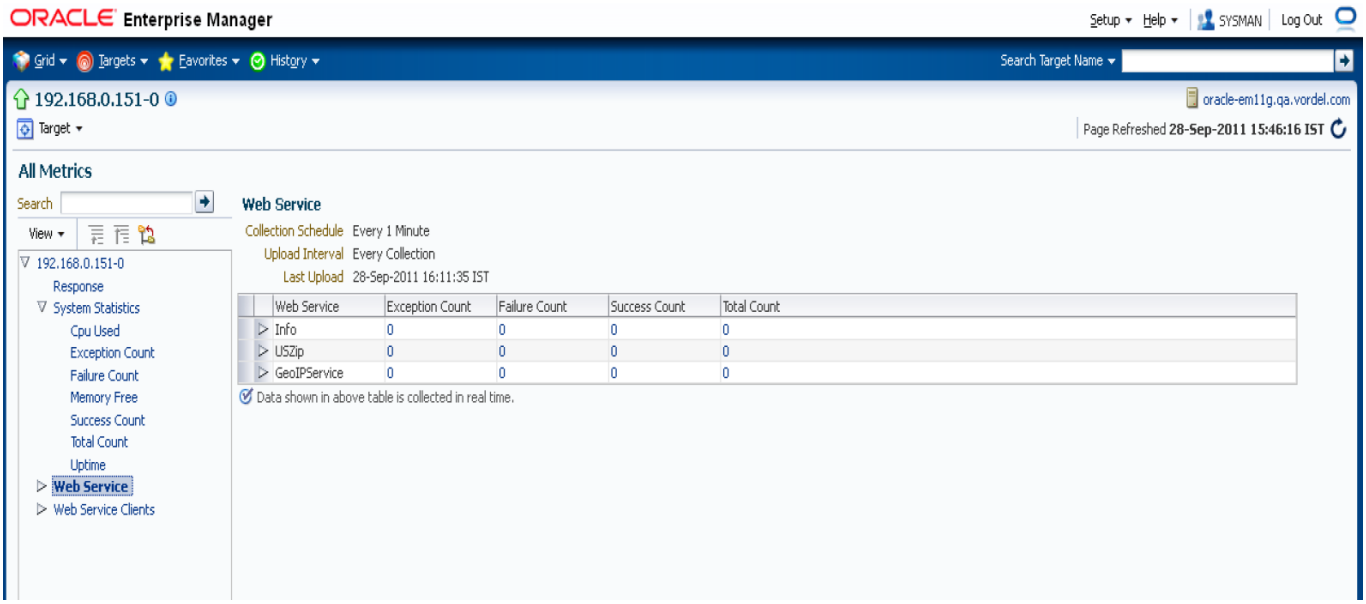
- The message counters are described as follows:
- A *Success Count* is where a filter in a policy processes a message and informs Oracle API Gateway to proceed filtering the message along the default route in the circuit.
- A *Failure Count* is where the filter decides to inform Oracle API Gateway to route the message along the alternative route (failure path).
- An *Exception Count*– if a filter aborts, the exception count increases. A filter aborts if it hits an abnormality in its processing (for example, if an LDAP directory is down).
- The *Total Count* is the combination of success, failures, and exceptions.

Web Service

Clicking Web Service displays a list of web service processes in Oracle API Gateway. For each web service listed, the associated metrics are displayed in the same row. Clicking the number in a particular column displays a graph of historical data for that metric and service.

Name	Description
Exception Count	Count Count of Exception messages
Failure Count	Count of Failure messages
Success Count	Count of Successful messages
Total Count	Totals of the Exception, Failure, and Success Counts

Table 4: Web Service Metrics



Screenshot 7: Web Service Metrics Displayed

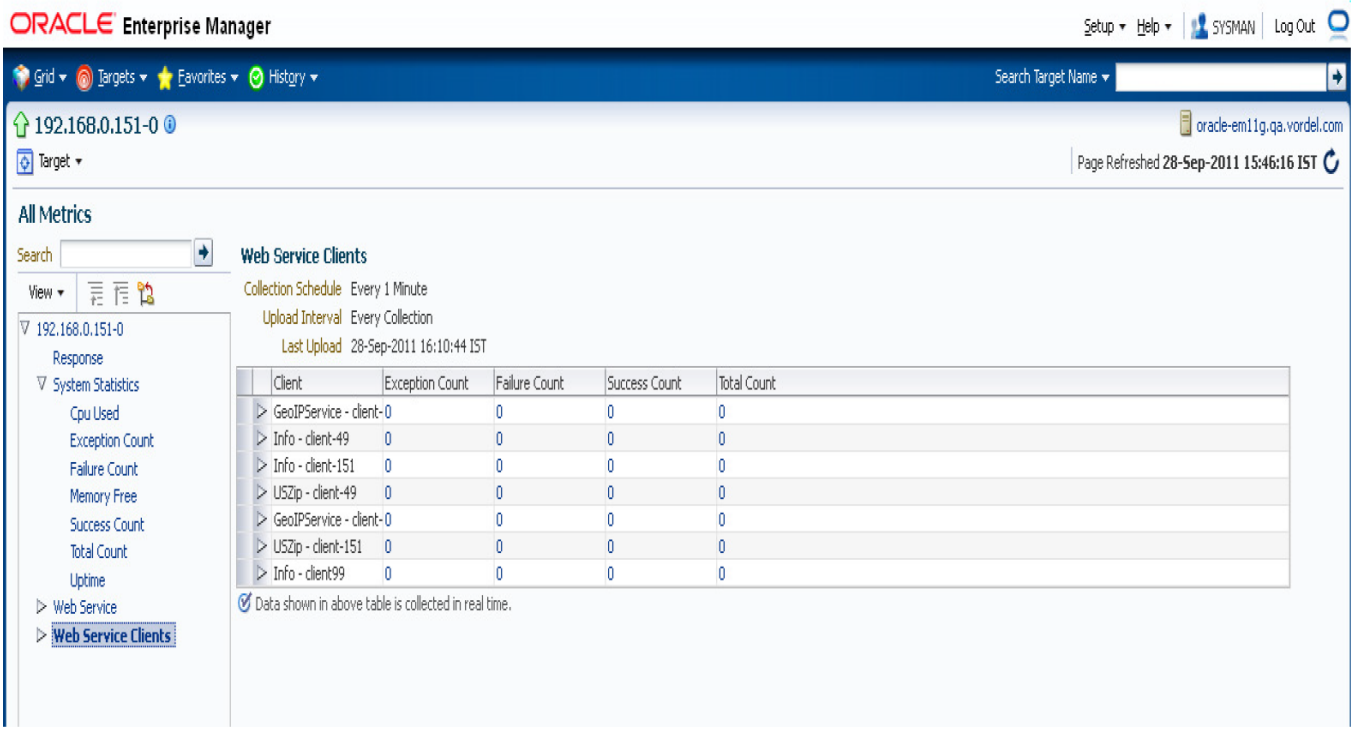
Web Service Client

Statistics for authenticated clients that connect to a Web Service are stored in the **Web Service Clients** metrics. Clicking the number in a particular column displays a graph of data for that metric with the Client Web Service usage. The names are delimited by a hyphen (-), the first part is the Web Service name, and the second part is the authenticated client's subject name.

Name	Description
Exception Count	Count Count of Exception messages
Failure Count	Count of Failure messages
Success Count	Count of Successful messages
Total Count	Totals of the Exception, Failure, and Success Counts

Table 5: Web Service Clients Metrics

Click the **Web Service Clients** link to view summary statistics for the last collection period:



Screenshot 8: Web Service Clients Metrics Summary

Conclusion

This document demonstrates how to configure Oracle API Gateway to integrate with Oracle Enterprise Manager 12c.
For other documents, guides and knowledgebase articles please visit http://docs.oracle.com.

Appendix A: Oracle API Gateway management adjustments

The management port of Oracle API Gateway by default runs on SSL. You will need to change this to run on standard http port. Also the management port binds to the localhost address only. This needs to be changed to bind to the network port also so that EM can connect.

Managedomain, change port to not use SSL
You can change the mgmt port to run on a non SSL port using the managedomain command

```
Select option: 6
Select Gateway Server instance:
  1) Gateway1 (Group1)
  2) Enter Gateway Server name and group
Enter selection from 1-2 [2]: 1
Enter a new name [Gateway1]:
Use SSL [y]: n
Enter a new local management port [8086]:
Setting scheme to 'http'.
Completed successfully.
```

Management Port Changes
Modify the mgmt.conf file in the conf directory of the Oracle API Gateway instance that you want to monitor.

Default

```
<InetInterface activetimeout="60000" address="localhost"
```

Working with Oracle EM remotely

```
<InetInterface activetimeout="60000" address="*"
```

Restart the Oracle API Gateway Instance.

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