

Oracle® Enterprise Manager

Virtual Infrastructure Plug-in Metric Reference Manual

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Preface

This manual is a compilation of the Oracle Virtual Infrastructure metrics provided in Oracle Enterprise Manager.

Audience

This document is intended for Oracle Enterprise Manager users interested in Oracle Virtual Infrastructure metrics.

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc>.

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Related Documents

For more information, see the following documents in the Oracle Enterprise Manager 12c documentation set:

- *Enterprise Manager Cloud Administration Guide*
- *Enterprise Manager Cloud Control Administrator's 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.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.

Convention	Meaning
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

How to Use This Manual

The Oracle Enterprise Manager Oracle Virtual Infrastructure Metric Reference Manual (hereafter referred to as the Oracle Virtual Infrastructure Metric Reference Manual) lists all the Oracle Virtual Infrastructure target metrics that Enterprise Manager monitors.

This preface describes:

- [Structure of This Manual](#)
- [Background Information on Metrics, Thresholds, and Alerts](#)
- [Troubleshooting Metrics](#)

Structure of This Manual

This manual contains a chapter for each target for which there are metrics.

The metrics in each chapter are in alphabetical order according to category.

Metric Information

The information for each metric comprises a description, summary of the metric's "vital statistics", data source (if available), and user action. The following list provides greater detail:

- **Description**
Explanation following the metric name. This text defines the metric and, when available, provides additional information pertinent to the metric.
- **Metric Summary**
Explains in table format the target version, collection frequency, default warning threshold, default critical threshold, and alert text for the metric.
- **Data Source**
How the metric is calculated. In some metrics, data source information is not available.
- **User Action**
Suggestions of how to solve the problem causing the alert.

Examples of Metric Summary Tables

This section provides examples of Metric Summary tables you will see in this guide.

When default thresholds are not defined for a metric, only the target version and collection frequency are available.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Definitions of Columns in Metric Summary Tables

As previously mentioned, the Metric Summary table is part of the overall metric information. The following table provides descriptions of columns in the Metric Summary table.

Column Header	Column Definition
Target Version	Version of the target, for example, 9.0.2.x and 10.1.0.x. The x at the end of a version (for example, 9.0.2.x) represents the subsequent patchsets associated with that release.
Collection Frequency	The rate at which the Management Agent collects data. The collection frequency for a metric comes from the Enterprise Manager default collection file for that target type.
Default Warning Threshold	Value that indicates whether a warning alert should be initiated. If the evaluation of the warning threshold value returns a result of TRUE for the specified number of consecutive occurrences defined for the metric, an alert triggers at the warning severity level.
Default Critical Threshold	Value that indicates whether a critical alert should be initiated. If the evaluation of the critical threshold value returns a result of TRUE for the specified number of consecutive occurrences defined for the metric, an alert triggers at the critical severity level.
Alert Text	Message indicating why the alert was generated. Words that display between percent signs (%) denote variables. For example, Disk Utilization for %keyValue% is %value% could translate to Disk Utilization for d0 is 80%.

Background Information on Metrics, Thresholds, and Alerts

An event is a significant occurrence on a managed target that typically indicates something has occurred outside normal operating conditions, such as a performance threshold violation, an unapproved change in application configuration files, or job failure. An event can also be raised to signal successful operations or a job successfully completed.

Existing Enterprise Manager customers may be familiar with metric alerts and metric collection errors. For Enterprise Manager 12c, metric alerts are a type of event. A metric alert event is generated when an alert occurs for a metric on a specific target (Example: CPU utilization for a host target) or a metric on a target and object combination (Example: Space usage on a specific tablespace of a database target.)

Thresholds are boundary values against which monitored metric values are compared. For example, for each disk device associated with the Disk Utilization (%) metric, you can define a different warning and critical threshold. Some of the thresholds are predefined by Oracle, others are not.

When a threshold is reached, an alert is generated. This alert is an indicator signifying that a particular condition has been encountered and is triggered when one of the following conditions is true:

- A threshold is reached.
- An alert has been cleared.

- The availability of a monitored service changes. For example, the availability of an application server changes from up to down.
- A specific condition occurs. For example, an alert is triggered whenever an error message is written to a database alert log file.

Alerts are detected through a polling-based mechanism by checking for the monitored condition from a separate process at regular, predefined intervals.

See Also: See the *Oracle Enterprise Manager Concepts* manual and the Enterprise Manager online help for additional information about metrics, thresholds, and alerts

Editing

Out of the box, Enterprise Manager comes with thresholds for critical metrics. Warning and critical thresholds are used to generate an alert, letting you know of impending problems so that you can address them in a timely manner.

To better suit the monitoring needs of your organization, you can edit the thresholds provided by Enterprise Manager and define new thresholds. When defining thresholds, the key is to choose acceptable values to avoid unnecessary alerts, while still being notified of issues in a timely manner.

You can establish thresholds that will provide pertinent information in a timely manner by defining metric baselines that reflect how your system runs for a normal period of time.

The metrics listed on the Edit Thresholds page are either default metrics provided by Oracle or metrics whose thresholds you can change.

Specifying Multiple Thresholds

The Specifying Multiple Thresholds functionality allows you to define various subsets of data that can have different thresholds. By specifying multiple thresholds, you can refine the data used to trigger alerts, which are one of the key benefits of using Enterprise Manager.

The key in specifying multiple thresholds is to determine how the comparison relates to the metric threshold as a whole. What benefit will be realized by defining a more stringent or lax threshold for that particular device, mount point, and so on?

For example, using the Average Disk I/O Service Time metric, you can define warning and critical thresholds to be applied to all disks (sd0 and sd1), or you can define different warning and critical thresholds for a specific disk (sd0). This allows you to adjust the thresholds for sd0 to be more stringent or lax for that particular disk.

Accessing Metrics Using the Cloud Control Console

To access metrics in the Cloud Control Console, use the All Metrics page associated with a particular target by doing the following:

1. From the Cloud Control Console, choose the target.
2. On the target's home page, click **All Metrics** in the Related Links section.
3. On the All Metrics page, choose the metric of interest.

Troubleshooting Metrics

In the unlikely situation that a metric does not report a correct value, you must determine if the problem is related to the:

- Metric providing the wrong values or failing with an error, or
- If the problem is *after* the Management Agent in the execution flow of the metric, that is, the metric value is correct but, for some reason, the data is not reaching the Oracle Management Service.

To aid you in this determination, Oracle provides the Metric Browser; a troubleshooting tool that can be used with Enterprise Manager to see the raw data being collected by the Management Agent.

Accessing the Metric Browser

When enabled, the Metric Browser can be accessed using a web browser, for example, Netscape, Firefox, and Internet Explorer, using a URL of the form:

```
http|https://agent_hostname:agent_port/emd/browser/main
```

for example

```
http://myServer.myDomain:3872/emd/browser/main
```

Note: You can determine the protocol (http or https), the host name, and the Management Agent port that should be used from the output of the following command (run on the Management Agent host):

```
agent_home/bin/emctl status agent
```

The Management Agent URL, listed in the output to that command, needs only to have *browser* placed between *emd* and *main*.

By default, the Metric Browser is disabled. When the Metric Browser is disabled, you receive the following error:

```
HTTP Error 403 - Forbidden if the metric browser has not been enabled.
```

How to Enable the Metric Browser and the Management Agent Browser for the Oracle Management Agent

Follow these steps to enable the Metric Browser.

1. The Metric Browser is enabled by setting the `enableMetricBrowser` property in the Management Agent's `emd.properties` file. The location of that file depends on the type of Management Agent you are working with:

- For the Cloud Control (central | standalone) Management Agent, the file is:

```
AGENT_HOME/sysman/config/emd.properties
```

- For a clustered (RAC) Management Agent install, the file is:

```
AGENT_HOME/hostname/sysman/config/emd.properties
```

- For the Database Control Management Agent, the file is:

```
DATABASE_HOME/hostname_SID/sysman/config/emd.properties
```

- For Application Server Control Management Agent, the file is:

```
AS_HOME/sysman/config/emd.properties
```

2. Make a backup copy of the `emd.properties` file.

3. Edit the file and locate the line that reads:

```
#To enable the metric browser, uncomment the following line
```

```
#This is a reloadable parameter
#
#enableMetricBrowser=true
```

4. Uncomment the line: `#enableMetricBrowser=true`, so that it reads:

```
enableMetricBrowser=true
```

5. Reload the Management Agent Configuration using the command:

```
AGENT_HOME/bin/emctl reload agent
```

6. After reloading the Management Agent, the Metric Browser will be enabled and therefore accessible using a browser.

Running the Metric Collection Outside the Management Agent

Running the metric collection outside the Management Agent is specific to each metric and requires a firsthand knowledge of each specific metric. Each metric has its own method of collecting its data and some metrics cannot be run *standalone* because they are calculated from other metrics.

An example of running the metric collection outside the Management Agent is the command line.

Oracle Compute Site

An Oracle Compute Site is a location running Oracle Compute Director with one or more clusters. This chapter describes the metrics defined for the Oracle Compute Site target type.

For more information about Oracle Compute Site targets, see the *Oracle Enterprise Manager Cloud Administration Guide*.

1.1 Load

This metric category describes the Oracle Compute Site Load metrics.

1.1.1 CPU Utilization (%)

This metric provides the average CPU utilization of all Dom0 in the site.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	CPU Utilization is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

1.1.2 Memory Utilization (%)

This metric displays the percentage of memory utilization of the Oracle Compute Site target.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Memory Utilization is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

1.2 Oracle Compute SNMP System Log Events

This metric category describes the metrics associated with SNMP system log events.

1.2.1 Event Time

This metric displays the time when the SNMP Event was generated.

Target Version	Collection Frequency
All Versions	N/A

1.2.2 Event Details

This metric displays the message that is received as part of the SNMP Trap.

Target Version	Collection Frequency
All Versions	N/A

1.2.3 Event Status

This metric displays the severity of the generated SNMP Event and this is the metric on which the thresholds are set. The following are the possible values for the Event status:

- emergency(0)
- alert(1)
- critical (2)
- error (3)
- warning (4)
- notice (5)
- informational (6)
- debug (7)

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	N/A	Not Defined	Not Defined	SNMP Critical System Log Detail: %ocEventDetails% (SNMP EventTime: %ocEventTime% (epoch format)).

1.3 Oracle Compute Orchestration Status

This metric category describes the metrics associated with the Oracle Compute Orchestration status.

1.3.1 Name

The metric displays the name of the Orchestration.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

1.3.2 Message

This metric captures errors or warnings only if they are available for the Orchestration.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

1.3.3 Status

This metric captures the state of the orchestration. Possible values for the state:

- ready
- stopping
- shutting_down
- warning
- stopped
- shut_down
- starting
- restarting
- error
- unavailable

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	error	Oracle Compute Orchestration : %keyvalue% is in error status.

1.4 Response

This metric category provides the status of the Oracle Compute Site target, that is, whether it is up or down.

1.4.1 Status

This metric displays the reported status of the Oracle Compute Site. The value of this metric determines if the target is up or down in Enterprise Manager.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 1 Minute	Not Defined	0	Oracle Compute %target% is down

1.5 Oracle Compute Service Count Information

This metric category describes the metrics associated with the Oracle Compute Service count information.

1.5.1 Service Name

This metric displays the name of the service running in the Compute Site.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

1.5.2 Absolute Maximum

This metric displays the maximum number of nodes on which the service can be hosted.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

1.5.3 Absolute Minimum

This metric displays the minimum number of nodes on which the service can be hosted.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

1.5.4 Current number of Nodes running the service

This metric displays the current number of nodes on which the service is being hosted.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Oracle Compute Service:%keyvalue% is running on %current_service_count% nodes, fallen below warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

1.5.5 Is Service Count in Range

This is a computed metric having possible values as Yes or No.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	No	Oracle Compute Service:%keyvalue% is running on %current_service_count% nodes and has either fallen below minimum value %abs_min% or risen above maximum value %abs_max%

Oracle Compute Cluster

An Oracle Compute cluster is a group of at least three physical nodes running Oracle Compute software on the same Ethernet domain. This chapter describes the metrics defined for the Oracle Compute cluster target type.

For more information about Oracle Compute Cluster targets, see the *Oracle Enterprise Manager Cloud Administration Guide*.

2.1 Load

This metric category describes the Oracle Compute Cluster Load metrics.

2.1.1 CPU Utilization (%)

This metric displays the average CPU utilization of all Dom0 in the site.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	CPU Utilization is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.1.2 Memory Utilization (%)

This metric displays the average memory utilization of all Dom0 in the site.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Memory Utilization is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.2 Oracle Compute Identifiers

This metric category describes the metrics associated with Oracle Compute Identifiers.

2.2.1 Server Name

This metric displays the name of the Oracle VM instance.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.2.2 Virtual Platform UUID

This metric displays the UUID of the Oracle compute node on which the VM instance is running.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.2.3 Virtual Platform IP Address

This metric displays the IP address of the Oracle compute node on which the VM instance is running.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.3 Oracle Server Response

This metric category describes the metrics associated with the response status of the target.

2.3.1 Target Identifier

This metric specifies the destination target instance to which the metric data will be forwarded.

Target Version	Collection Frequency
All Versions	Every 1 Minute

2.3.2 State

This metric displays the state of the Oracle compute node.

Target Version	Collection Frequency
All Versions	Every1 Minute

2.3.3 Status

This metric provides the value for Response:Status metric for the Oracle Server target instance

Target Version	Collection Frequency
All Versions	Every 1 Minute

2.4 Oracle Virtual Platform Response

This metric category describes the metrics associated with the response status of the Oracle Virtual Platform target instance.

2.4.1 Target Identifier

This metric specifies the destination target instance to which the metric data will be forwarded.

Target Version	Collection Frequency
All Versions	Every 1 Minute

2.4.2 State

This metric displays the state of the Oracle compute node.

Target Version	Collection Frequency
All Versions	Every 1 Minute

2.4.3 Status

This metric provides the value for the Response:Status metric for the Oracle Virtual Platform target instance

Target Version	Collection Frequency
All Versions	Every 1 Minute

2.5 Oracle Virtual Platform Load

This metric category describes the load metrics associated with the Oracle Virtual Platform.

2.5.1 Physical Server Memory Free (MB)

This metric displays the free memory in MB excluding the Dom0

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Oracle Virtual Platform's free memory is %value% MB, gone below warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.5.2 Physical Server Memory used (MB)

This metric displays the used memory in MB excluding the Dom0

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.5.3 Physical Server Memory utilization (%)

This metric displays the memory utilization in MB excluding the Dom0

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Oracle Virtual Platform's memory utilization is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.5.4 Physical Server Swap Memory used (MB)

This metric displays the Swap memory used in MB excluding the Dom0

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.5.5 Physical Server Swap utilization (%)

This metric displays the Swap memory utilization (%) excluding the Dom0

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Oracle Virtual Platform's swap utilization is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.5.6 Target Separator

The value for this field determines the destination target instance (Oracle Virtual Platform) to which the metric data will be forwarded.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.6 Dom0 Load

This metric category describes the Load metrics associated with the Dom0 (Control Domain).

2.6.1 CPU utilization (%)

This metric displays the CPU Utilization (%) of the Dom0.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Oracle Virtual Platform dom0 cpu utilization is %value%%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.6.2 Local Disk space utilization (%)

This metric displays the Disk space Utilization (%) of the Dom0

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.6.3 Logical memory free (MB)

This metric displays the Logical free memory in MB of the Dom0

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Oracle Virtual Platform dom0 free logical memory is %value% MB, gone below warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.6.4 Memory free (MB)

This metric displays the free memory in MB of the Dom0

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Oracle Virtual Platform dom0 free memory is %value% MB, gone below warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.6.5 Used Logical Memory (%)

This metric displays the logical memory utilization in (%) of the Dom0

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Oracle Virtual Platform dom0 used logical memory utilization is %value%%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.6.6 Memory used (MB)

This metric displays the used memory in MB of the Dom0

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.6.7 Memory utilization (%)

This metric displays the memory utilization in (%) of the Dom0

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Oracle Virtual Platform dom0 memory utilization is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.6.8 Number of virtual machines

This metric displays the number of virtual machines running on the virtual platform

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.6.9 Total Processes

This metric displays the number of process running on the Dom0

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Oracle Virtual Platform dom0 total processes is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.6.10 Swap space used (MB)

This metric displays the swap space used in megabytes of the Dom0

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Oracle Virtual Platform used swap space (MB) is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.6.11 Swap space utilization(%)

This metric displays the percentage of swap utilization in the Dom0

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Oracle Virtual Platform swap space utilization(%) is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.6.12 Target Separator

This metric determines the destination target instance (Oracle Virtual Platform) to which the metric data will be forwarded.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.7 Oracle Virtual Platform Network Activity

This metric category describes the metrics associated with Oracle Virtual Platform network activity.

2.7.1 Read throughput (MB per second)

This metric provides the read throughput of the disk in MB per second

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Oracle Virtual Platform's read throughput for %keyvalue% is %value% (KB per second), crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.7.2 Total throughput (MB per second)

This metric provides the total throughput of the disk in MB per second

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Oracle Virtual Platform's total throughput for %keyvalue% is %value% (KB per second), crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.7.3 Write throughput (MB per second)

This metric provides the write throughput of the disk in MB per second

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Oracle Virtual Platform's write throughput for %keyvalue% is %value% (KB per second), crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.7.4 Interface Name

This metric provides the name of the network interface

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.7.5 Target Separator (Network Activity)

This metric specifies the destination target instance (Oracle Virtual Platform) to which the metric data will be forwarded.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.8 Oracle Virtual Server Response

This metric category describes the metrics associated with the response status of the Oracle VM Instance target

2.8.1 Target Identifier

This metric specifies the destination target instance (Oracle VM Instance) to which the metric data will be forwarded.

Target Version	Collection Frequency
All Versions	Every 1 Minute

2.8.2 State

This metric displays the state of the Oracle VM Instance.

Target Version	Collection Frequency
All Versions	Every 1 Minute

2.8.3 Status

This metric provides the value for Response Status metric for the Oracle VM Instance target

Target Version	Collection Frequency
All Versions	Every 1 Minute

2.9 Oracle Virtual Server Load

This metric category describes the load metrics associated with the Oracle virtual server.

2.9.1 Relative CPU utilization of the virtual machine (%)

This metric displays the relative CPU Utilization (%) of the oracle VM Instance

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Oracle Server's relative cpu utilization is %value%%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.9.2 Target Separator

This metric specifies the destination target instance (Oracle VM Instance) to which the metric data will be forwarded.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Oracle Compute Orchestration

Orchestration is the automated management of your system components for high availability, monitoring, and persistence. An orchestration ties together the components you create into a single, manageable collection. This chapter describes the metrics defined for the Oracle Compute Orchestration target type.

For more information about Oracle Compute Orchestration targets, see the *Oracle Enterprise Manager Cloud Administration Guide*.

3.1 Oracle Compute Orchestration State

This metric category describes the metrics associated with the state of Oracle Compute Orchestration.

3.1.1 Message

This metric captures errors or warnings only if they are available for the Orchestration.

Target Version	Collection Frequency
All Versions	N/A ¹

¹ Uploads data only if there is a change in the state.

3.1.2 State

This metric captures the state of the orchestration. Possible values:

- ready
- stopping
- shutting_down
- warning
- stopped
- shut_down
- starting
- restarting
- error
- unavailable

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	N/A ¹	Not Defined	Not Defined	The state of orchestration is %value% matches either warning pattern (%warning_threshold%) or critical pattern(%critical_threshold%).%Message%

¹ Uploads data only if there is a change in the state.

3.2 Response

This metric category provides information about the status of the Oracle Compute Orchestration target.

3.2.1 Status

This metric provides the status of the Oracle Compute Orchestration target.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 1 Minute	Not Defined	0	Oracle Compute Orchestration %target% is down.

Oracle Virtual Platform

This chapter describes the metrics associated with the Oracle Virtual Platform target. The Oracle Virtual Platform is the host operating system that represents the hypervisor domain.

For more information about Oracle Virtual Platforms, see the *Oracle Enterprise Manager Cloud Administration Guide*.

4.1 Basic Configuration Details

This metric category provides information about the basic configuration of an Oracle Virtual Platform target.

These are configuration metrics and cannot be viewed from the **All Metrics** page in the Cloud Control UI.

4.1.1 Platform Version

This metric displays the version of the Xen platform running on the Domain 0 of the hypervisor.

Target Version	Collection Frequency
All Versions	Every 24 Hours

4.1.2 Allocated CPU

This metric displays the number of allocated Virtual CPUs to the Domain 0.

Target Version	Collection Frequency
All Versions	Every 24 Hours

4.1.3 Allocated Memory (MB)

This metric displays the amount of memory allocated to the Domain 0 in MB.

Target Version	Collection Frequency
All Versions	Every 24 Hours

4.2 Network Activity

This metric category provides the statistics of each network interface of the Oracle Virtual Platform target.

Multiple Thresholds

For this metric category, you can set different warning and critical threshold values for each Interface Name object.

If warning or critical threshold values are currently set for any Interface Name object, you can view those thresholds from the **All Metrics** page for this metric.

To specify or change warning or critical threshold values for each Interface Name object, use the **Modify Thresholds** page.

4.2.1 Interface NAME

This metric provides the name of the network interface.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

4.2.2 Total throughput (MB per second)

This metric displays the total read and write utilization (in percentage) with respect to the bandwidth of the network interface since the last collection.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 15 Minutes	Not Defined	Not Defined	Oracle Virtual Platform combined utilization is %value%%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

4.2.3 Read throughput (MB per second)

This metric displays the total read utilization (in percentage) with respect to the bandwidth of the network interface since the last collection.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 15 Minutes	Not Defined	Not Defined	Oracle Virtual Platform network %keyValue% read utilization is %value%%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

4.2.4 Write throughput (MB per second)

This metric displays the total write utilization (in percentage) with respect to the bandwidth of the network interface since the last collection.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 15 Minutes	Not Defined	Not Defined	Oracle Virtual Platform network %keyValue% write utilization is %value%%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

4.3 Network Activity Summary

This metric category provides the summary statistics of each network interface of the Oracle Virtual Platform target.

4.3.1 Highest Read Throughput (MB per second)

This metric displays the highest read rate (in MB/s) among all of the interfaces of the Oracle Virtual Platform.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 15 Minutes	Not Defined	Not Defined	Oracle Virtual Platform highest read rate (MB per second) among the network interfaces is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

4.3.2 Highest Total Throughput (MB per second)

This metric displays the highest total read and write rate (in MB/s) among all of the interfaces of the Oracle Virtual Platform.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 15 Minutes	Not Defined	Not Defined	Oracle Virtual Platform highest total throughput (MB per second) among the network interfaces is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

4.3.3 Highest Write Throughput (MB per second)

This metric displays the highest write rate (in MB/s) among all of the interfaces of the Oracle Virtual Platform.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 15 Minutes	Not Defined	Not Defined	Oracle Virtual Platform highest write rate (MB per second) among the network interfaces is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

4.3.4 Total throughput (MB per second)

This metric displays the total throughput on the interface in MB/s.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 15 Minutes	Not Defined	Not Defined	Oracle Virtual Platform all network interfaces total throughput (MB per second) is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

4.4 Network Configuration

This metric category provides information about each network interface of the Oracle Virtual Platform target.

These are configuration metrics and cannot be viewed from the **All Metrics** page in the Cloud Control UI.

4.4.1 Interface Name

This metric displays the name of the network interface.

Target Version	Collection Frequency
All Versions	Every 24 Hours

4.4.2 MAC Address

This metric displays the Media Access Control (MAC) address of the network interface.

Target Version	Collection Frequency
All Versions	Every 24 Hours

4.4.3 IP Address

This metric displays the IP address of the network interface.

Target Version	Collection Frequency
All Versions	Every 24 Hours

4.4.4 Gateway

This metric displays the address of the network gateway.

Target Version	Collection Frequency
All Versions	Every 24 Hours

4.4.5 Netmask

This metric displays the netmask address.

Target Version	Collection Frequency
All Versions	Every 24 Hours

4.4.6 Bandwidth

This metric displays the network bandwidth of the network interface in MB/s.

Target Version	Collection Frequency
All Versions	Every 24 Hours

4.5 Oracle Virtual Server

This metric category provides the identification details of all the Guest Virtual machines (Oracle Virtual Server targets) hosted by the hypervisor.

These are configuration metrics and cannot be viewed from the **All Metrics** page in the Cloud Control UI

4.5.1 Server Virtual Id

This metric displays the ID of the guest virtual server hosted on the hypervisor.

Target Version	Collection Frequency
All Versions	Every 24 Hours

4.6 Response

This metric category provides information about the status of the Oracle Virtual Platform target.

4.6.1 Status

This metric provides the status of the Oracle Virtual Platform target.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 1 Minute	Not Defined	0	Oracle Virtual Platform %target% is down

4.7 Server Load

This metric category describes the load metrics of the corresponding Oracle Server target.

4.7.1 Physical Server Memory Free (MB)

This metric displays the total physical memory available in MB, by all the guest virtual machines including Domain 0.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

4.7.2 Physical Server Memory used (MB)

This metric displays the total physical memory utilized in MB, by all the guest virtual machines including Domain 0.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 5 Minutes	Not Defined	Not Defined	Oracle Virtual Platform physical server memory used (MB) is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

4.7.3 Physical Server Memory utilization (%)

This metric displays the percentage of the total physical memory being utilized.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 5 Minutes	Not Defined	Not Defined	Oracle Virtual Platform memory utilization is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

4.7.4 Physical Server Swap Memory used (MB)

This metric displays the swap memory in megabytes being used on the physical server.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

4.7.5 Physical Server Swap utilization (%)

This metric displays the percentage of swap memory being used on the physical server.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Oracle Virtual Server

This chapter describes the metrics associated with the Oracle Virtual Server target. Oracle Virtual Servers are guest virtual machines managed by the hypervisor domain.

For more information about Oracle Virtual Servers, see the *Oracle Enterprise Manager Cloud Administration Guide*.

5.1 Basic Configuration Details

This metric category provides information about the basic configuration of an Oracle Virtual Server target.

These are configuration metrics and cannot be viewed from the **All Metrics** page in the Cloud Control UI.

5.1.1 Allocated CPU

This metric displays the number of allocated virtual CPUs to the guest virtual machine.

Target Version	Collection Frequency
All Versions	Every 24 Hours

5.1.2 Allocated Memory (MB)

This metric displays the amount of memory allocated to the guest virtual machine in MB.

Target Version	Collection Frequency
All Versions	Every 24 Hours

5.1.3 DNS Zone

This metric displays the DNS zone.

Target Version	Collection Frequency
All Versions	Every 24 Hours

5.1.4 Guest UUID

This metric displays the unique identifier (UUID) allocated to the guest virtual machine.

Target Version	Collection Frequency
All Versions	Every 24 Hours

5.1.5 IP Address

This metric displays the IP address of the guest virtual machine.

Target Version	Collection Frequency
All Versions	Every 24 Hours

5.2 Load

This metric category provides information about the load metrics of an Oracle Virtual Server target.

5.2.1 Relative CPU utilization of the virtual machine (%)

This metric displays the total virtual CPU (VCPU) usage in percentage.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 5 Minutes	Not Defined	Not Defined	Oracle Server's relative cpu utilization is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

5.3 Response

This metric category provides information about the status of the Oracle Virtual Server target.

5.3.1 Status

This metric provides the status of the Oracle Virtual Server target.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 1 Minute	Not Defined	0	Oracle Virtual Server %target% is down

This chapter describes the metrics associated with the Oracle Server target. The Oracle Server is the bare metal box running the hypervisor.

For more information about Oracle Server, see the *Oracle Enterprise Manager Cloud Administration Guide*.

6.1 Hardware Configuration

This metric category provides information about the hardware configuration of the Oracle Server target.

These are configuration metrics and cannot be viewed from the **All Metrics** page in the Cloud Control UI.

6.1.1 Machine Architecture

This metric displays the architecture of the installed CPUs, such as x86 64-bit.

Target Version	Collection Frequency
All Versions	Every 24 Hours

6.1.2 Clock Frequency (MHz)

This metric displays clock frequency of the installed CPU.

Target Version	Collection Frequency
All Versions	Every 24 Hours

6.1.3 CPU Count

This metric displays the total number of installed CPUs.

Target Version	Collection Frequency
All Versions	Every 24 Hours

6.1.4 Number of Sockets

This metric displays the total number of CPU sockets.

Target Version	Collection Frequency
All Versions	Every 24 Hours

6.1.5 Total CPU Cores

This metric displays the total number of CPU cores.

Target Version	Collection Frequency
All Versions	Every 24 Hours

6.1.6 CPU Cores Per Socket

This metric displays the CPU cores per socket.

Target Version	Collection Frequency
All Versions	Every 24 Hours

6.1.7 CPU Threads Per Core

This metric displays the number of CPU threads per core.

Target Version	Collection Frequency
All Versions	Every 24 Hours

6.1.8 Enabled CPU Cores

This metric displays the total number of enabled cores across all CPUs.

Target Version	Collection Frequency
All Versions	Every 24 Hours

6.1.9 Local Disk Space (GB)

This metric displays the total disk space.

Target Version	Collection Frequency
All Versions	Every 24 Hours

6.2 Network Configuration

This metric category provides information about the configuration of each network interface of the Oracle Server target.

These are configuration metrics and cannot be viewed from the **All Metrics** page in the Cloud Control UI.

6.2.1 Interface Name

This metric displays the name of the network interface.

Target Version	Collection Frequency
All Versions	Every 24 Hours

6.2.2 MAC Address

This metric displays the Media Access Control (MAC) address of the network interface.

Target Version	Collection Frequency
All Versions	Every 24 Hours

6.2.3 Bandwidth

This metric displays the bandwidth of the network interface in Mb/s.

Target Version	Collection Frequency
All Versions	Every 24 Hours

6.3 Response

This metric category provides information about the status of the Oracle Server target.

6.3.1 Status

This metric provides the status of the Oracle Server target.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 1 Minute	Not Defined	0	Oracle Server %target% is down

