

Oracle® Enterprise Manager

Framework, Host, and Services Metric Reference Manual

13c Release 2

E74771-01

June 2016

E74771-01

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Preface

This manual is a compilation of the Enterprise Manager framework, host, and services target metrics provided in Oracle Enterprise Manager.

Audience

This document is intended for Oracle Enterprise Manager users interested in Enterprise Manager framework, host, and services target 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>.

Access to Oracle Support

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info> or visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs> if you are hearing impaired.

Related Documents

For more information, see the following documents in the Oracle Enterprise Manager 13c documentation set:

- *Enterprise Manager Cloud Control Basic Installation Guide*
- *Enterprise Manager Cloud Control Advanced Installation and Configuration Guide*
- *Oracle 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.

Convention	Meaning
<i>italic</i>	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.

How to Use This Manual

The *Oracle Enterprise Manager Framework, Host, and Services Metric Reference Manual* (hereafter referred to as the *Framework, Host, and Services Metric Reference Manual*) lists all the framework, host, and services 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 Enterprise Manager framework, host, and services 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 the *Oracle Enterprise Manager Framework, Host, and Services Metric Reference Manual*.

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.
Consecutive Number of Occurrences Preceding Notification	Consecutive number of times a metric's value reaches either the warning threshold or critical threshold before a notification is sent.
Alert Text	Message indicating why the alert was generated. Words that display between percent signs (%) denote variables. For example, <code>Disk Utilization for %keyValue% is %value%</code> could translate to <code>Disk Utilization for d0 is 80%</code> .

Abbreviations and Acronyms

To reduce the page count in this document, the following abbreviations and acronyms are used:

Abbreviation/Acronym	Name
Management Agent or Agent	Oracle Management Agent
Database	Oracle Database
Management Service or OMS	Oracle Management Service

Abbreviation/Acronym	Name
Management Repository or Repository	Oracle Management Repository

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 need to 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.

Agent

The Agent target type is a representation of the Oracle Management Agent. The Oracle Management Agent is the Management Agent used by Oracle Enterprise Manager. This target type exposes useful information required to monitor the performance of the Management Agent.

1.1 Agent Certificate Expiration Information

This metric category provides information about the Agent certificate.

1.1.1 CertificateExpirationDate

This metric displays the expiry date of the certificate.

Target Version	Collection Frequency
All Versions	Every 7 Days

1.1.2 No. of Days for Expiration

This metric displays the number of days before the certificate expires.

Table 1-1 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 7 Days	90	60	The Certificate for Agent is going to Expire in %value % days

1.2 Agent Disk Usage

1.2.1 Disk Usage for agent_inst/diag (%)

This metric displays the percentage of total disk space used by the agentStateDir/diag directory.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	1	Not Defined	Not Defined	(%) Disk Space Consumed by agentStateDir/diag Directory is %value% (%) of Total Disk Space

1.2.2 Disk Usage for agent_inst/sysman/emd (%)

This metric displays the percentage of total disk space used by the agentStateDir/sysman/emd directory.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	1	Not Defined	Not Defined	(%) Disk Space Consumed by agentStateDir/sysman/emd Directory is %value% (%) of Total Disk Space

1.2.3 Disk Usage for agent_inst/sysman/log (%)

This metric displays the percentage of total disk space used by the agentStateDir/sysman/log directory.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	1	Not Defined	Not Defined	(%) Disk Space Consumed by agentStateDir/sysman/log Directory is %value% (%) of Total Disk Space

1.3 Agent Process Statistics

The EMD Process Statistics provides information about the performance and resource consumption of the Management Agent process.

1.3.1 Agent Resident Memory Utilization (KB)

This metric displays the amount of resident memory used by the Management Agent and all of its child processes in KB.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

Varies. On UNIX platforms this is derived from the ps command.

User Action

The default warning and critical threshold values for this metric are set higher than what is expected to be necessary in many cases. You may give a lesser value for the warning and critical thresholds based on the number and types of targets that are being monitored by the Management Agent.

1.3.2 Agent Virtual Memory Utilization (KB)

This metric displays the amount of virtual memory used by the Management Agent and all of its child processes in KB.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

Varies. On UNIX platforms this is derived from the ps command.

User Action

The default warning and critical threshold values for this metric are set higher than what is expected to be necessary in many cases. You may give a lesser value for the warning and critical thresholds based on the number and types of targets that are being monitored by the Management Agent.

1.3.3 CPU Usage (%)

The CPU Usage metric provides the CPU consumption as a percentage of CPU time at any given moment in time. The number is a summation of the CPU consumption of the Management Agent process and any of its child processes (and their child processes and so on). Child processes are sometimes created by the Management Agent in the course of evaluating a metric or running a job.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Agent CPU consumption is %value%%%

Data Source

The source for this metric is the UNIX ps command.

User Action

A large CPU consumption will cause the entire system to slow down. The cause could be the Management Agent process itself or any of its child processes. To analyze what is causing the problem, use the Solaris "top" system command and look out for any Perl or Java processes that seem to be consuming excessive CPU (%).

1.3.4 Number Files Open

This metric records the number of files currently opened by the Management Agent process. The file types that constitute this number are: regular files, links, sockets, directories and name pipes.

Table 1-2 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Number files opened by Agent is %value%

Data Source

The source of this information is the UNIX `pfiles` command. On non-UNIX platforms this will not be collected. On Windows platforms, refer to the File Handles Open metric.

1.3.5 Number Handles Open

This metric records the number of file handles currently opened by the Management Agent process.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

This metric is collected on Windows platforms and is not collected on UNIX platforms. For UNIX, use the "Number Files Open" instead. It is gathered by an agent api.

User Action

None.

1.3.6 Number Threads Created

This metric shows the number of threads currently created by the Management Agent process.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The source of this metric is the UNIX `ps` command.

User Action

None

1.3.7 Process ID

The process ID is the process ID of the Management Agent.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The source of this is the Perl getppid function.

User Action

None

1.3.8 Resident Memory Utilization (%)

The Resident Memory Utilization is the physical memory usage as a percentage of total memory available.

Table 1-3 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Agent resident memory utilization is %value%%%

Data Source

The source of this information is the UNIX ps system command.

User Action

None

1.3.9 Resident Memory Utilization (KB)

This metric represents the amount of physical memory usage by the Management Agent process and all of its child processes in KB.

Table 1-4 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Agent resident memory utilization in KB is %value %

Data Source

The source of this data is the UNIX ps system command.

User Action

The default warning and critical threshold values for this metric are set higher than what is expected to be necessary in many cases. You will probably want to lower the warning and critical thresholds to values that work well for the number and types of targets that are being monitored by the Management Agent.

1.3.10 Schedule Attempts Percentage

This metric indicates the percentage of schedule attempts that were delayed beyond their collection intervals.

Table 1-5 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Schedule Attempts Percentage is %value%%

Data Source

Not applicable.

User Action

An alert on this column implies that either the collection frequency is too high or that the agent is very busy and cannot keep up with the collection schedule of some metrics. You must modify the collection schedules of the affected metrics.

1.3.11 Virtual Memory Utilization (KB)

The Virtual Memory Utilization (VMU) metric provides a sum of the VMU usage of the Management Agent and all of its child processes (and their child processes and so on). Child processes are sometimes created by the Management Agent in the course of evaluating a metric or running a job.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The source of this information is the UNIX ps system command.

User Action

Large virtual memory utilization will also slow the system down. On UNIX machines, use the "top" command to see what processes are consuming this memory. Look out for Perl and Java processes as well as the obvious emdaemon process (the Management Agent process itself.)

1.3.12 Virtual Memory Utilization Growth (%)

Virtual memory utilization growth (%) shows the *percentage* growth of the virtual memory percentage usage of the Management Agent process. For example: if at time t1 (t1 < t2) the usage was a% and at time t2 it was b%, the growth % would be $((b-1)/a)$ %.

Table 1-6 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Agent Virtual Memory Growth is %value%%%

Data Source

The source of the raw information is the UNIX ps command. From this, we calculate an average over four interval periods and use this as our comparison percentage (that is, how much has the virtual memory usage grown as a percentage of this average).

User Action

None.

1.4 EMD Additional Performance, Resource, Usage Metrics

This metric category provides additional information about the Management Agent's performance, resource, and usage.

1.4.1 Active Job Count

This metric displays the number of active jobs.

Target Version	Collection Frequency
All Versions	Every Minute

1.4.2 CPU Load (%)

This metric displays the percentage of CPU load percentage. CPU load represents the average number of processes waiting to be scheduled for CPU resources in the previous minute.

Target Version	Collection Frequency
All Versions	Every Minute

1.4.3 Dispatched Actions

This metric displays the number of requests made by the console of the Management Agent. These requests are called dispatched actions.

Target Version	Collection Frequency
All Versions	Every Minute

1.4.4 Java Heap Free (MB)

This metric displays the current MB of the Java heap that are free.

Target Version	Collection Frequency
All Versions	Every Minute

1.4.5 Java Heap Max

This metric displays the maximum number of megabytes of the Java heap used.

Target Version	Collection Frequency
All Versions	Every Minute

1.4.6 Java Heap Min

This metric displays the minimum number of megabytes of the Java heap used.

Target Version	Collection Frequency
All Versions	Every Minute

1.4.7 Java Heap Total (MB)

This metric displays the total number of megabytes of the Java heap used.

Target Version	Collection Frequency
All Versions	Every Minute

1.4.8 Java Heap Used (MB)

This metric displays the current megabytes of the Java heap in use

Target Version	Collection Frequency
All Versions	Every Minute

1.4.9 Minutes since Out-Of-Memory Agent Restart

This metric displays the number of minutes since the Management Agent restarted due to an out-of-memory exception.

Table 1-7 Metric Summary Table

Table 1-7 (Cont.) Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every Minute	Not Defined	Not Defined	Agent out of memory restart occurred within %value % minutes

1.5 EMD Performance, Resource, Usage Metrics

This metric category provides information about the Management Agent's performance, resource, and usage.

1.5.1 % of Collection Interval spent in Execution

This metric displays the time the Management Agent spent on average per collection as a percentage of the declared collection interval.

Target Version	Collection Frequency
All Versions	Every Minute

1.5.2 % of Java Heap Max Used

This metric displays the maximum percentage of the Java heap used.

Table 1-8 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every Minute	Not Defined	Not Defined	Agent Java Heap Used percentage is %value%

1.5.3 CPU - Used (%)

This metric displays the percentage of CPU used by the Management Agent.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every Minute	Not Defined	Not Defined	Agent CPU % is %value%

1.5.4 Collections scheduled for next hour

This metric displays the number of collections scheduled to run in the next hour.

Target Version	Collection Frequency
All Versions	Every Minute

1.5.5 HeartBeat Agent Time (ms)

This metric displays the ping response time to the Management Agent measured in milliseconds.

Target Version	Collection Frequency
All Versions	Every Minute

1.5.6 HeartBeat Network Time (ms)

This metric displays the ping response time to the network measured in milliseconds.

Target Version	Collection Frequency
All Versions	Every Minute

1.5.7 HeartBeat OMS Time (ms)

This metric displays the ping response time to the Oracle Management Service (OMS) measured in milliseconds.

Target Version	Collection Frequency
All Versions	Every Minute

1.5.8 Ping Response (ms)

This metric displays the entire round trip time for each ping response.

Target Version	Collection Frequency
All Versions	Every Minute

1.5.9 Transfer time from Agent to OMS (ms)

This metric displays the amount of time (in milliseconds) on average it takes to transfer 1KB of data to the OMS.

Target Version	Collection Frequency
All Versions	Every Minute

1.5.10 Upload Agent Time (ms)

This metric displays the amount of time on average its takes to perform the round trip between the Management Agent and loading subsystem

Target Version	Collection Frequency
All Versions	Every Minute

1.6 Incident

This metric category provides information about incidents.

1.6.1 Diagnostic Incident

This metric displays a diagnostic incident, which is a single occurrence of a problem (critical error) that occurred in the Management Agent process while using Enterprise Manager.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	1	Not Defined	.*	Internal error detected: %adr_problemKey%.

Data Source

Text describing a diagnostic incident is extracted from the database alert log, which is an XML file stored in the Automatic Diagnostic Repository (ADR) that stores a chronological list of database messages and errors.

User Action

Diagnostic incidents usually indicate software errors and should be reported to Oracle using the Enterprise Manager Support Workbench.

1.6.2 ECID

The Execution Context ID (ECID) tracks requests as they move through the application server. This information is useful for diagnostic purposes because it can be used to correlate related problems encountered by a single user attempting to accomplish a single task.

Target Version	Collection Frequency
All Versions	Every Minute

Data Source

The ECID is extracted from the database alert log.

User Action

Diagnostic incidents usually indicate software errors and should be reported to Oracle using the Enterprise Manager Support Workbench. When packaging problems using Support Workbench, the ECID will be used by Support Workbench to correlate and include any additional problems in the package.

1.6.3 Problem Key

This metric displays the alert log ADR problem key.

Target Version	Collection Frequency
All Versions	Every Minute

Data Source

The problem key is extracted from the database alert log.

1.7 Response

The Response metric reports on the availability of the Management Agent.

1.7.1 Nmo Setuid Status

This metric is UNIX-specific. The Management Agent checks whether the setuid bit is set on nmo.

For Enterprise Manager 12c (12.1.0.4.0), the Management Agent raises an alert 15 minutes from startup (clear or critical) and thereafter every 30 minutes until the alert is cleared. When the alert is cleared, the Management Agent only raises the alert when the Job fails because nmo is not setuid root.

For all releases earlier than Enterprise Manager 12c (12.1.0.4.0), the Management Agent raises the alert only when the Job fails because nmo is not setuid root. There are no alerts at startup.

Table 1-9 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	¹ 15 Minutes after startup	Not Defined	0	NMO not setuid-root (UNIX only). Run root.sh script to correct this problem. The next OS Command Job submitted will clear this alert.

¹ For Enterprise Manager 12c (12.1.0.4.0) only

Data Source

Not applicable.

User Action

The setuid bit must be set on nmo.

1.7.2 Status

This metric has a value of 1 if the Management Agent is up and running.

Table 1-10 Metric Summary Table

Table 1-10 (Cont.) Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	On startup	Not Defined	0	Not Defined

Data Source

Not applicable.

User Action

If the value of this metric is not 1, the Management Agent is down and contact with the Management Agent will not exist. In such situations, the Management Agent may need to be restarted.

1.8 Upload Statistics

The Upload Statistics metrics present information on the state of the upload manager and its performance.

1.8.1 Number of Files to Upload

This metric shows the number of XML files that are in the \$ORACLE_HOME/sysman/emd/upload directory waiting to be uploaded to the repository.

Target Version	Collection Frequency
All Versions	Every 10 Minutes

Data Source

The source of this information is the Management Agent itself.

User Action

A large number of files in this directory probably indicates that there is a problem uploading files to the repository. Check the emd.trc file for upload errors and act appropriately. The cause may also be a bad network or problems on the repository end.

1.8.2 Size of Files to Upload (MB)

The Size of Files to Upload metric presents the sum of the sizes of all XML files in the upload directory of the Management Agent.

Target Version	Collection Frequency
All Versions	Every 10 Minutes

Data Source

The source of this information is the Management Agent itself.

User Action

If this metric is large, check the upload directory. If this directory has very few files, it may be they are large. If it has many files, there may be a problem uploading data to the repository. This may be due to a bad network, bad repository or Management Agent. Check the emd.trc file in the log directory for upload error messages.

1.8.3 Upload Rate (KB/sec)

The upload rate is the average rate in KB/sec at which data is uploaded to the repository.

Target Version	Collection Frequency
All Versions	Every 10 Minutes

Data Source

The source of this information is the Management Agent itself.

User Action

If the rate is zero or close to zero, there may be problems uploading data or collecting data (because if collections stop for some reason, we have nothing to upload). Check the log files for collection and upload messages.

1.9 Upload System Monitor

This metric category provides information about the Upload System Monitor metrics.

1.9.1 Last Time Purge Has Occurred

This metric displays the last time at which the Management Agent had to purge files from the upload system due an issue such as OMS outage, backoff, or slowness.

Target Version	Collection Frequency
All Versions	Every 10 Minutes

1.9.2 Loader Declared Backoff Expiration

This metric displays the last time that the loader declared a backoff, that is, the agent stops uploading for a period of time. (The OMS indicates when to resume through the backoff expiration time).

Target Version	Collection Frequency
All Versions	Every 10 Minutes

1.9.3 Number of Files in the Data Channel Pending Upload

This metric displays the number of files pending upload to the OMS through the Data channel.

Table 1-11 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 10 Minutes	Not Defined	Not Defined	Agent metadata channel count is %value%

1.9.4 Number of Files in the Metadata Channel Pending Upload

This metric displays the number of files pending upload to the OMS through the Metadata channel.

Table 1-12 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 10 Minutes	Not Defined	Not Defined	Agent metadata channel count is %value%

1.9.5 Number of Files in the On Demand Channel Pending Upload

This metric displays the number of files pending upload to the OMS through the On Demand channel.

Table 1-13 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 10 Minutes	Not Defined	Not Defined	Agent metadata channel count is %value%

1.9.6 Number of Files in the Severity Channel Pending Upload

This metric displays the number of files pending upload to the OMS through the Severity channel.

Table 1-14 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 10 Minutes	Not Defined	Not Defined	Agent metadata channel count is %value%

1.9.7 Number of Files in the Upload on Fetch Channel Pending Upload

This metric displays the number of files pending upload to the OMS through the Fetch channel.

Table 1-15 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 10 Minutes	Not Defined	Not Defined	Agent metadata channel count is %value%

1.9.8 Number of Files Waiting to be Merged

This metric displays the number of files waiting to be merged. Enterprise Manager buffers the files (out-of-the-box and configurable) and merges every 15 minutes to get a larger file to send to the OMS.

Target Version	Collection Frequency
All Versions	Every 10 Minutes

1.10 User Identification

These metrics provide information about the user running the Management Agent.

1.10.1 Group Name

The name of the group the Management Agent is running under.

Target Version	Collection Frequency
All Versions	Every 168 Hours

Data Source

The source of this metric is the UNIX id command.

User Action

None.

1.10.2 Location

The Location metric shows the directory home of the Management Agent.

Target Version	Collection Frequency
All Versions	Every 168 Hours

Data Source

The source of this information is the ORACLE_HOME environment variable.

1.10.3 Other Groups

This metric lists the other groups the Management Agent user belongs to.

Target Version	Collection Frequency
All Versions	Every 168 Hours

Data Source

The source of this metric is the UNIX "id" command.

User Action

None.

1.10.4 User Name

The User Name metric provides information on the user that started the Management Agent process.

Target Version	Collection Frequency
All Versions	Every 168 Hours

Data Source

The source of this data is the UNIX id command.

User Action

None.

1.11 User Limit Info

The metrics in the User Limit Info category provide information about the system resources available to the Management Agent.

1.11.1 CoreDump (blocks)

The CoreDump metric shows the maximum size of a core dump file in 512 Kbytes blocks. A value of unlimited means that the only limit is the file system limit.

Target Version	Collection Frequency
All Versions	Every 168 Hours

Data Source

The source of this information is the UNIX ulimit command.

User Action

This metric shows the maximum size (in 512 Kbyte blocks) of a core dump file. To decrease or increase this limit, use the UNIX ulimit system command.

1.11.2 Data (kbytes)

This metric shows the maximum size of the Management Agent's heap in Kbytes.

Target Version	Collection Frequency
All Versions	Every 168 Hours

Data Source

The source for this information is the UNIX ulimit system command.

User Action

This metric shows the maximum heap size (in kbytes) made available to the Management Agent. To decrease or increase this limit, use the UNIX ulimit system command.

1.11.3 File (blocks)

The File metric lets you know the size of the largest single file allowed by the system the Management Agent is running on. The unit is 512 Kbyte blocks. A value of "unlimited" means that the limit is the file system limit.

Target Version	Collection Frequency
All Versions	Every 168 Hours

Data Source

The source for this information is the UNIX ulimit system command.

User Action

This metric shows the maximum file size (in blocks) allowed by the system that the Management Agent is running on. To decrease or increase this limit, use the UNIX ulimit system command.

1.11.4 NoFiles (descriptors)

The NoFiles metric shows the maximum number of file descriptors that the process can have.

Target Version	Collection Frequency
All Versions	Every 168 Hours

Data Source

The source of this information is the UNIX system call ulimit.

User Action

If this limit is small (compared to the operating system maximum), it can be changed for the Management Agent process.

1.11.5 Stack (kbytes)

This metric displays the maximum size of the Management Agent's stack in Kbytes.

Target Version	Collection Frequency
All Versions	Every 168 Hours

Data Source

The source for this information is the UNIX ulimit command.

User Action

This metric shows the maximum size (in kbytes) of the Management Agent's stack. To decrease or increase this limit, use the UNIX ulimit system command.

1.11.6 Time (seconds)

The time metric represents, in seconds, the maximum CPU seconds made available to the Management Agent process by the system it is running on. A value of "unlimited" means that the CPU time available to the Management Agent is unrestricted.

Target Version	Collection Frequency
All Versions	Every 168 Hours

Data Source

This information is obtained using the UNIX ulimit system command.

User Action

This metric shows the maximum CPU time (in seconds) made available to the Management Agent. To decrease or increase this limit, use the UNIX ulimit system command.

1.11.7 Virtual Mem (kbytes)

The Virtual Mem metric shows the maximum virtual memory size that can be occupied by the Management Agent process. If this value is "unlimited" then the only limit is the operating system limit.

Target Version	Collection Frequency
All Versions	Every 168 Hours

Data Source

The source of this information is the UNIX ulimit system command.

User Action

If the value of the Virtual Mem metric is too high or too low, you can change the restriction on virtual memory use by the Management Agent process using the limit UNIX command.

The host metrics chapter provides description, collection statistics, data source, multiple thresholds (where applicable), and user action information for each metric.

2.1 Aggregate Resource Usage Statistics (By Project)

This metric category provides data on aggregate resource usage on a per project basis. This metric category is available only for Solaris version 9 and later.

2.1.1 Cumulative CPU Wait Time (Seconds)

This metric displays the cumulative number of seconds that this process has spent waiting for CPU over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.1.2 Cumulative Data Page Fault Sleep Time (Seconds)

This metric displays the cumulative number of seconds that this process has spent sleeping in Data Page Faults over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.1.3 Cumulative Major Page Faults

This metric displays the cumulative number of Major Page Faults engendered by the process over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.1.4 Cumulative Minor Page Faults

This metric displays the cumulative number of Minor Page Faults engendered by the process over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.1.5 Cumulative Number Character IO (bytes) Read and Written

This metric displays the cumulative number of character I/O bytes Read and Written by the process over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.1.6 Cumulative Number Of Blocks Read

This metric displays the cumulative number of blocks Read by the process over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.1.7 Cumulative Number Of Blocks Written

This metric displays the cumulative number of blocks written by the process over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.1.8 Cumulative Number of Involuntary Context Switches

This metric displays the cumulative number of Involuntary Context Switches made by the process over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.1.9 Cumulative Number Of Messages Received

This metric displays the cumulative number of Messages Received by the process over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.1.10 Cumulative Number Of Messages Sent

This metric displays the cumulative number of Messages Sent by the process over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.1.11 Cumulative Number of Signals Received

This metric displays the cumulative number of Signals taken by the process over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.1.12 Cumulative Number of System Calls Made

This metric displays the cumulative number of system calls made by the process over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.1.13 Cumulative Number of Voluntary Context Switches

This metric displays the cumulative number of Voluntary Context Switches made by the process over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.1.14 Cumulative Project Lock-Wait Sleep Time (Seconds)

This metric displays the cumulative number of seconds that this process has spent sleeping on User Lock Waits over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.1.15 Cumulative Project Other Sleep Time (Seconds)

This metric displays the cumulative number of seconds that this process has spent sleeping in all other ways over its lifetime.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.1.16 Cumulative Stop Time (Seconds)

This metric displays the cumulative number of seconds that this process has spent Stopped over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.1.17 Cumulative Swap Operations

This metric displays the cumulative number of swap operations engendered by the process over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.1.18 Cumulative System Mode Time (seconds)

This metric displays the cumulative number of seconds that this process has spent in System mode over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.1.19 Cumulative System Page Fault Sleep Time (Seconds)

This metric displays the cumulative number of seconds that this process has spent sleeping in System Page Faults over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.1.20 Cumulative System Trap Time (seconds)

This metric displays the cumulative number of seconds that this process has spent in System Traps over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.1.21 Cumulative Text Page Fault Sleep Time (Seconds)

This metric displays the cumulative number of seconds that this process has spent sleeping in Text Page Faults over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.1.22 Cumulative User Mode Time (seconds)

This metric displays the cumulative number of seconds that this process has spent in User mode over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.1.23 Number of Processes Owned by Project

This metric displays the number of processes owned by the project measured in the aggregate.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.1.24 Project CPU Time (%)

This metric displays the percentage of CPU time used by the process.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
Solaris version 9 and later	Every 15 Minutes	Not Defined	Not Defined	User CPU Time is %value%%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.1.25 Project Name

This metric displays the project name.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.1.26 Project Process Memory Size (%)

This metric displays the ratio of the process resident set size to physical memory.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
Solaris version 9 and later	Every 15 Minutes	Not Defined	Not Defined	User Process Memory Size is %value%%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.1.27 Project's Total Process Heap Size (KiloBytes)

This metric displays the total number of KiloBytes of memory consumed by the process heap at the time that it is sampled.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.1.28 Project's Total Process Resident Set Size (KiloBytes)

This metric displays the resident set size of the process in kilobytes.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.1.29 Project's Total Process Virtual Memory Size (KiloBytes)

This metric displays the size of the process virtual address space in kilobytes.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.1.30 Total Number of Threads in Project's Processes

This metric displays the number of threads active in the current process.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.2 Aggregate Resource Usage Statistics (By User)

This metric category provides data on aggregate resource usage on a per user basis.

This metric category is available for Solaris version 9 and later only.

2.2.1 Cumulative CPU Wait Time (Seconds)

This metric displays the cumulative number of seconds that this process has spent waiting for CPU over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.2.2 Cumulative Data Page Fault Sleep Time (Seconds)

This metric displays the cumulative number of seconds that this process has spent sleeping in data page faults over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.2.3 Cumulative Major Page Faults

This metric displays the cumulative number of major page faults engendered by the process over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.2.4 Cumulative Minor Page Faults

This metric displays the cumulative number of minor page faults engendered by the process over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.2.5 Cumulative Number Character IO (bytes) Read and Written

This metric displays the cumulative number of character I/O bytes read and written by the process over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.2.6 Cumulative Number Of Blocks Read

This metric displays the cumulative number of blocks read by the process over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.2.7 Cumulative Number Of Blocks Written

This metric displays the cumulative number of blocks written by the process over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.2.8 Cumulative Number of Involuntary Context Switches

This metric displays the cumulative number of involuntary context switches made by the process over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.2.9 Cumulative Number Of Messages Received

This metric displays the cumulative number of messages received by the process over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.2.10 Cumulative Number Of Messages Sent

This metric displays the cumulative number of messages sent by the process over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.2.11 Cumulative Number of Signals Received

This metric displays the cumulative number of signals taken by the process over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.2.12 Cumulative Number of System Calls Made

This metric displays the cumulative number of system calls made by the process over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.2.13 Cumulative Number of Voluntary Context Switches

This metric displays the cumulative number of voluntary context switches made by the process over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.2.14 Cumulative Stop Time (Seconds)

This metric displays the cumulative number of seconds that this process has spent stopped over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.2.15 Cumulative System Mode Time (seconds)

This metric displays the cumulative number of seconds that this process has spent in system mode over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.2.16 Cumulative System Page Fault Sleep Time (Seconds)

This metric displays the cumulative number of seconds that this process has spent sleeping in system page faults over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.2.17 Cumulative System Trap Time (seconds)

This metric displays the cumulative number of seconds that this process has spent in system traps over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.2.18 Cumulative Swap Operations

This metric displays the cumulative number of swap operations engendered by the process over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.2.19 Cumulative Text Page Fault Sleep Time (Seconds)

This metric displays the cumulative number of seconds that this process has spent sleeping in text page faults over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.2.20 Cumulative User Lock-Wait Sleep Time (Seconds)

This metric displays the cumulative number of seconds that this process has spent sleeping on user lock waits over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.2.21 Cumulative User Mode Time (seconds)

This metric displays the cumulative number of seconds that this process has spent in user mode over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.2.22 Cumulative User Other Sleep Time (Seconds)

This metric displays the cumulative number of seconds that this process has spent sleeping in all other ways over its lifetime.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.2.23 Number of Processes Owned by User

This metric displays the number of processes owned by the user measured in the aggregate.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.2.24 Total Number of Threads in User's Processes

This metric displays the number of threads active in the current process.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.2.25 User CPU Time (%)

This metric displays the percent CPU time used by the process.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
Solaris version 9 and later	Every 15 Minutes	Not Defined	Not Defined	User CPU Time is %value%%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.2.26 User ID

This metric displays the ID associated with the user.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.2.27 User Process Memory Size (%)

This metric displays the ratio of the process resident set size to physical memory.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
Solaris version 9 and later	Every 15 Minutes	Not Defined	Not Defined	User Process Memory Size is %value% %%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.2.28 User's Total Process Heap Size (KiloBytes)

This metric displays the total number of kilobytes of memory consumed by the process heap at the time that it is sampled.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.2.29 User's Total Process Resident Set Size (KiloBytes)

This metric displays the resident set size of the process in kilobytes.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.2.30 User's Total Process Virtual Memory Size (KiloBytes)

This metric displays the size of the process virtual address space in kilobytes.

Target Version	Collection Frequency
Solaris version 9 and later	Every 15 Minutes

Data Source

The Solaris CIM Object Manager

User Action

Specific to your site.

2.3 Boot Environment Status

The metrics in this category provide information about the status of the boot environment.

2.3.1 Active On Reboot

This metric specifies if the boot environment will start up on the next reboot of the system.

Target Version	Collection Frequency
All Versions	Every 10 Minutes

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/sbin/beadm list -H

2.3.2 BE Name

This metric provides the name of the boot environment.

Target Version	Collection Frequency
All Versions	Every 10 Minutes

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/sbin/beadm list -H

2.3.3 Is Active

This metric specifies if the boot environment is active now.

Target Version	Collection Frequency
All Versions	Every 10 Minutes

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/sbin/beadm list -H

2.3.4 Is Bootable

This metric specifies if the boot environment is bootable.

Target Version	Collection Frequency
All Versions	Every 10 Minutes

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/sbin/beadm list -H

2.3.5 Size (MB)

This metric provides the size of the boot environment.

Target Version	Collection Frequency
All Versions	Every 10 Minutes

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/sbin/beadm list -H

2.4 Buffer Activity

The Buffer Activity metric category provides information about OS memory buffer usage. This metric reports buffer activity for transfers, accesses, and cache (kernel block buffer cache) hit ratios per second.

2.4.1 Buffer Cache Read Hit Ratio (%)

This metric represents the number of reads from block devices to buffer cache as a percentage of all buffer reads.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Buffer Cache Read Hit Ratio %value%%, has crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	sar command
HP	sar command
IBM AIX	sar command

User Action

Specific to your site.

2.4.2 Buffer Cache Reads (per second)

This metric represents the number of reads performed on the buffer cache per second.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 5 Minutes	Not Defined	Not Defined	Buffer Cache Reads (per second) is %value% , crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	sar command
HP	sar command
IBM AIX	sar command

User Action

Specific to your site.

2.4.3 Buffer Cache Write Hit Ratio (%)

This metric represents the number of writes from block devices to buffer cache as a percentage of all buffer writes.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Buffer Cache Write Hit Ratio %value%%, has crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	sar command
HP	sar command
HP Tru64	table() system call
IBM AIX	sar command

User Action

Specific to your site.

2.4.4 Buffer Cache Writes (per second)

This metric represents the number of writes performed on the buffer cache per second.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 5 Minutes	Not Defined	Not Defined	Buffer Cache Writes (per second) is %value% , crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	sar command
HP	sar command
IBM AIX	sar command

User Action

Specific to your site.

2.4.5 Physical I/O Reads (per second)

This metric represents the number of reads per second from character devices using physical I/O mechanisms.

Table 2-1 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 5 Minutes	Not Defined	Not Defined	Physical I/O Reads (per second) is %value% , crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	sar command
HP	sar command
Linux	not available
HP Tru64	table() system call
IBM AIX	sar command

Host	Data Source
Windows	not available

User Action

An unusually high value might indicate an abnormal situation, so it is important to set thresholds based on the average value observed over a period of time. An abnormally high value may cause performance issues. The user action varies from case to case, observe the running processes to track down any errant process. Placing highly active directories on different disks may help.

2.4.6 Physical I/O Writes (per second)

This metric represents the number of writes per second from character devices using physical I/O mechanisms.

Table 2-2 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 5 Minutes	Not Defined	Not Defined	Physical I/O Writes (per second) is %value% , crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold..

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	sar command
HP	sar command
Linux	not available
HP Tru64	table() system call
IBM AIX	sar command
Windows	not available

User Action

An unusually high value might indicate an abnormal situation, so it is important to set thresholds based on the average value observed over a period of time. An abnormally high value may cause performance issues. The user action varies from case to case, observe the running processes to track down any errant process. Placing highly active directories on different disks may help.

2.4.7 Physical Reads (per second)

This metric represents the number of physical reads per second from block devices to the system buffer cache.

Table 2-3 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 5 Minutes	Not Defined	Not Defined	Physical Reads (per second) is %value% , crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	sar command
HP	sar command
Linux	not available
HP Tru64	table() system call
IBM AIX	sar command
Windows	not available

User Action

An unusually high value might indicate an abnormal situation, so it is important to set thresholds based on the average value observed over a period of time. An abnormally high value may cause performance issues. The user action varies from case to case, observe the running processes to track down any errant process. Placing highly active directories on different disks may help.

2.4.8 Physical Writes (per second)

This metric represents the number of physical writes per second from block devices to the system buffer cache.

Table 2-4 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 5 Minutes	Not Defined	Not Defined	Physical Writes (per second) is %value% , crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	sar command
HP	sar command
Linux	not available
HP Tru64	table() system call
IBM AIX	sar command
Windows	not available

User Action

An unusually high value might indicate an abnormal situation, so it is important to set thresholds based on the average value observed over a period of time. An abnormally high value may cause performance issues. The user action varies from case to case, observe the running processes to track down any errant process. Placing highly active directories on different disks may help.

2.5 Compute Node Temperature

The metrics in this category provide information about the temperature of the compute node.

2.5.1 Compute Node Name

This metric displays the name of the compute node.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.5.2 System Ambient Temperature

This metric displays the ambient system temperature.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.6 CPUs Details

The CPUs Details configuration metrics provide information about the processors of the host. Configuration metrics are not available from the **All Metrics** page of the Cloud Control console.

To view the CPUs Details configuration metrics:

1. From the Cloud Control UI, select your Host target type.

2. Right-click the target type name, and select **Configuration**, then select **Last Collected**.

The metrics appear under Latest Configuration.

2.6.1 ECACHE in MB

This is the size of the Cache memory measured in MB.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

/proc/cpuinfo

User Action

None.

2.6.2 Frequency in MHZ

This is the clock frequency of the processor.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

/proc/cpuinfo

User Action

None.

2.6.3 Is HyperThread Enabled

This tells whether hyper threading is enabled for this processor.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

/proc/cpuinfo

User Action

None.

2.6.4 Implementation

Implementation type of processor.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

/proc/cpuinfo

User Action

None.

2.6.5 Number of CPUs

This is the count the number rows having the same information in other columns like vendor_name or num_cores. This is added to make at least one key in table.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

/proc/cpuinfo

User Action

None.

2.6.6 MASK

This is used to manufacture the CPU. Solaris prtdiag has CPU mask field. This column stores that information.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

/proc/cpuinfo

User Action

None.

2.6.7 Number of Cores per Physical CPU

This represents number of cores per physical CPU. For example. for dual core processors this count will be two and for quad core processor this count will be four.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

/proc/cpuinfo

User Action

None.

2.6.8 Revision

This is the revision.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

/proc/cpuinfo

User Action

None.

2.6.9 Number Of Threads Per Physical CPU

This effectively represents the number of logical processor per physical processors. For example, for one dual core processor with hyper thread enabled, this value will be four.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

/proc/cpuinfo

User Action

None.

2.6.10 Vendor Name

This is the vendor who manufactured the processors. For example Intel and AMD.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

/proc/cpuinfo

User Action

None.

2.7 CPU Frequency State

The metrics in this category provide information about the CPU frequency state.

2.7.1 CPU Clock Frequency in Mhz

This metric provides the CPU clock frequency in Mhz.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/powercat -d 1 -t 1

2.7.2 CPU Frequency State Percentage

This metric provides the percentage of time spent waiting.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/powercat -d 1 -t 1

2.8 CPU Power State

The metrics in this category provide information about the CPU power state.

2.8.1 CPU Power State

This metric displays the CPU power state.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/powercat -d 1 -t 1

2.8.2 Average Time in ms

This metric displays the average time in milliseconds spent in the CPU power state.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/powercat -d 1 -t 1

2.8.3 Percentage of Time Spent

This metric displays the percentage of time spent in the CPU power state.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/powercat -d 1 -t 1

2.9 CPU Overall Average Usage

The metric in this category provides information about the overall average CPU usage.

2.9.1 Overall Usage Percentage

This metric provides the percentage of the overall CPU usage.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	/usr/bin/mpstat 2 2
Linux	/usr/bin/mpstat -P ALL 2 2

2.10 CPU Usage

The CPU Usage metric category provides information about the percentage of time the CPU was in various states, for example, idle state and wait state. The metric also provides information about the percentage of CPU time spent in user and system mode. All data is per-CPU in a multi-CPU system.

On HP Tru64, this information is available as the cumulative total for all the CPUs and not for each CPU which is monitored in the Load metric. Hence, this metric is not available on HP Tru64.

2.10.1 CPU Idle Time (%)

This metric represents the percentage of time that the CPU was idle and the system did not have an outstanding disk I/O request. This metric checks the percentage of processor time in idle mode for the CPU(s) specified by the Host CPU parameter, such as `cpu_stat0`, `CPU0`, or `*` (for all CPUs on the system).

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	kernel statistics (class <code>cpu_stat</code>)
HP	<code>pstat_getprocessor()</code> system call
Linux	<code>/proc/stat</code>
HP Tru64	not available
IBM AIX	<code>oracle_kstat()</code> system call
Windows	performance data counters

User Action

An abnormally high value (determined on the basis of historical data) indicates an underutilized cpu. The user action varies from case to case.

2.10.2 CPU Interrupt Time (%)

This metric represents the percentage of time that the CPU receives and services hardware interruptions during representative intervals. This metric checks the percentage of processor time in interrupt mode for the CPU(s) specified by the Host CPU parameter, such as `cpu_stat0`, `CPU0`, or `*` (for all CPUs on the system).

This metric is available only on Windows.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Multiple Thresholds

For this metric you can set different warning and critical threshold values for each "CPU Number" object.

If warning or critical threshold values are currently set for any "CPU Number" object, those thresholds can be viewed on the Metric Detail page for this metric.

To specify or change warning or critical threshold values for each "CPU Number" object, use the Edit Thresholds page. See the Editing Thresholds topic in the Enterprise Manager online help for information on accessing the Edit Thresholds page.

Data Source

The data sources for this metric are Performance Data counters.

User Action

This indicates the amount of time spent by the processor in handling interrupts. If an unusually high value is observed, there is a possibility of some hardware

2.10.3 CPU Number

This metric provides the user-specified CPU number .

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.10.4 CPU System Time (%)

This metric represents the percentage of time that the CPU is running in system mode (kernel). This metric checks the percentage of processor time in system mode for the CPU(s) specified by the Host CPU parameter, such as `cpu_stat0`, `CPU0`, or `*` (for all CPUs on the system).

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
Linux	Every 15 Minutes	Not Defined	Not Defined	CPU System Time (%%) is %value% , crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data sources for this metric include the following:

Host	Data Source
Linux	/proc/stat

User Action

An abnormally high value (determined on the basis of historical data) indicates that the machine is doing a lot of work at the system (kernel) level. The user action varies from case to case.

2.10.5 CPU User Time (%)

This metric represents the portion of processor time running in user mode. This metric checks the percentage of processor time in user mode for the CPU(s) specified by the Host CPU parameter, such as cpu_stat0, CPU0, or * (for all CPUs on the system).

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
Linux	Every 15 Minutes	Not Defined	Not Defined	CPU User Time (%%) is %value% , crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data sources for this metric include the following:

Host	Data Source
Linux	/proc/stat

User Action

An abnormally high value (determined on the basis of historical data) indicates the cpu is doing a lot of work at the user (application) level. An examination of the top processes on the system may help identify problematic processes.

2.10.6 CPU Utilization (%) of a CPU

This figure represents the percentage utilization of a CPU

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 15 Minutes	Not Defined	Not Defined	CPU Utilization for %keyvalue% is %value%%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	kernel statistics (class cpu_stat)
HP	pstat_getprocessor() system call
Linux	/proc/stat
HP Tru64	not available
IBM AIX	oracle_kstat() system call
Windows	performance data counters

User Action

An abnormally high value (determined on the basis of historical data) indicates that the system is under heavy load. If the value is consistently high, consider reducing the load on the system.

2.10.7 CPU Wait Time (%)

This metric represents the percentage of time that the CPU was idle during which the system had an outstanding disk I/O request. This metric checks the percentage of processor time in wait mode for the CPU(s) specified by the Host CPU parameter, such as cpu_stat0, CPU0, or * (for all CPUs on the system).

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	not available
HP	pstat_getprocessor() system call
Linux	not available
HP Tru64	not available
IBM AIX	oracle_kstat() system call
Windows	performance data counters

User Action

A high value indicates that the cpu spends a lot of time waiting for disk i/o to complete. Examine the disk errors and disk activity metrics to see if there are any problems with disk performance. Consider keeping heavily accessed directories on separate disks.

2.11 Disk Activity

The Disk Activity metric category monitors the hard disk activity on the target being monitored. For each device on the system, this metric provides information about access to the device. This information includes: device name, disk utilization, write statistics, and read statistics for the device.

2.11.1 Average Disk I/O Service Time (ms)

This metric represents the sum of average wait time and average run time.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Average service time for disk %keyvalue% is %value% ms, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.11.2 Average Disk I/O Wait Time (ms)

This metric represents the average time spent by the command waiting on the queue for getting executed.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Average wait time for disk %keyvalue% is %value% ms, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Multiple Thresholds

For this metric you can set different warning and critical threshold values for each "Disk Device" object.

If warning or critical threshold values are currently set for any "Disk Device" object, those thresholds can be viewed on the Metric Detail page for this metric.

To specify or change warning or critical threshold values for each "Disk Device" object, use the Edit Thresholds page.

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	kernel statistics (class kstat_io)
HP	pstat_getdisk system call
Linux	not available
HP Tru64	table() system call
IBM AIX	oracle_kstat() system call
Windows	performance data counters

User Action

A high figure indicates a slow disk. Use the OS iostat -xn command to check wait time and service time for local disks and NFS mounted file systems. See also the CPU in IO-Wait (%) metric.

2.11.3 Average Outstanding Disk I/O Requests

This metric represents the average number of commands waiting for service (queue length).

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	kernel statistics (class kstat_io)
HP	pstat_getdisk system call
Linux	not available
HP Tru64	table() system call
IBM AIX	oracle_kstat() system call
Windows	performance data counters

User Action

Specific to your site.

2.11.4 Average Run Time (ms)

This metric represents the average time spent by the command on the active queue waiting for its execution to be completed.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	kernel statistics (class kstat_io)
HP	pstat_getdisk system call
Linux	not available
HP Tru64	table() system call
IBM AIX	oracle_kstat() system call
Windows	performance data counters

User Action

Specific to your site.

2.11.5 Bulk I/O Ticks

This metric represents the time spent in Input/Output operations (ms).

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

Linux: /proc/diskstats or /proc/partitions

User Action

Specific to your site.

2.11.6 Difference in Number of Reads

This metric represents the number of disk reads from the last collection.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

Linux: /proc/diskstats or /proc/partitions

User Action

Specific to your site.

2.11.7 Difference in Number of Writes

This metric represents the number of disk reads from the last collection.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

Linux: /proc/diskstats or /proc/partitions

User Action

Specific to your site.

2.11.8 Disk Blocks Transferred (per second)

This metric represents the transferred blocks per second.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.11.9 Disk Block Writes (per second)

This metric represents the number of blocks (512 bytes) written per second.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Disk Block Writes (per second) for disk %keyvalue% is %value% , crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	kernel statistics (class kstat_io)
HP	not available
Linux	iostat command
HP Tru64	table() system call
IBM AIX	oracle_kstat() system call
Windows	performance data counters

User Action

Specific to your site.

2.11.10 Disk Blocks Reads (per second)

This metric represents the number of blocks (512 bytes) read per second.

Note: On HP UNIX, this metric is named Disk Blocks Transferred (per second).

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Disk Blocks Reads (per second) for disk %keyvalue% is %value% , crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	kernel statistics (class kstat_io)
HP	pstat_getdisk system call
Linux	iostat command
HP Tru64	table() system call
IBM AIX	oracle_kstat() system call
Windows	performance data counters

User Action

Specific to your site.

2.11.11 Disk Device

This metric displays the name of a disk device.

Target Version	Evaluation and Collection Frequency
All Versions	Every 15 Minutes

2.11.12 Disk Device Busy (%)

This metric represents disk device busy percentage.

Note: On HP UNIX, this metric is named Device Busy (%).

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	80	95	Disk Device %keyValue% is %value%% busy.

2.11.13 Disk Reads (per second)

This metric represents the disk reads per second for the specified disk device.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
Linux	Every 15 Minutes	Not Defined	Not Defined	Disk Reads (per second) for disk %keyvalue% is %value% , crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	kernel statistics (class kstat_io)
HP	not available
Linux	iostat command
HP Tru64	table() system call
IBM AIX	oracle_kstat() system call
Windows	performance data counters

User Action

Specific to your site.

2.11.14 Disk Utilization (%)

This metric represents disk utilization percentage.

Host	Collection Frequency
Windows	Every 15 Minutes

2.11.15 Disk Writes (per second)

This metric represents the disk writes per second for the specified disk device.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
Linux	Every 15 Minutes	Not Defined	Not Defined	Disk Writes (per second) for disk %keyvalue% is %value% , crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	kernel statistics (class kstat_io)
HP	not available
Linux	iostat command
HP Tru64	table() system call
IBM AIX	oracle_kstat() system call
Windows	performance data counters

User Action

Specific to your site.

2.11.16 Transfers (per second)

This metric represents the number of transfers that occurred per second.

Host	Collection Frequency
HP, IBM AIX	Every 15 Minutes

2.12 Disk Activity Summary

The metrics in this category provide information about the summary of disk activity.

2.12.1 Max Average Disk I/O Service Time (ms) amongst all disks

This metric displays the longest service time for disk I/Os in milliseconds.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.12.2 Max Disk I/O (per sec) made by a single disk

This metric displays the maximum disk I/O per second.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.12.3 Total Disk I/O made across all disks (per second)

This metric displays how many disk I/Os are being performed per second.

Table 2-5 Metric Summary Table

Table 2-5 (Cont.) Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Total Disk I/O made across all disks is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.13 Disk Device Errors

The Disk Device Errors metric category provides the number of errors on the disk device.

Note: These metrics are available on Solaris only.

2.13.1 Device

This metric displays the name of the device.

Target Version	Collection Frequency
All Versions	Every 72 Hours

2.13.2 Hard Errors

This metric represents the error count of hard errors encountered while accessing the disk. Hard errors are considered serious and may be traced to misconfigured or bad disk devices.

Target Version	Collection Frequency
All Versions	Every 72 Hours

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	iostat -e command

User Action

Specific to your site.

2.13.3 Soft Errors

This metric represents the error count of soft errors encountered while accessing the disk. Soft errors are synonymous to warnings.

The following table shows how often the metric's value is collected.

Target Version	Collection Frequency
All Versions	Every 72 Hours

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	iostat -e command

User Action

Specific to your site.

2.13.4 Total

This metric represents the sum of all errors on the particular device

Target Version	Collection Frequency
All Versions	Every 72 Hours

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	iostat -e command

User Action

Specific to your site.

2.13.5 Transport Errors

This metric represents the error count of network errors encountered. This generally indicates a problem with the network layer

Target Version	Collection Frequency
All Versions	Every 72 Hours

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	iostat -e command

User Action

Specific to your site.

2.14 File Access System Calls

The File Access System Calls metric category provides information about the usage of file access system calls.

Note: This metric is available on Solaris, HP, and IBM AIX.

2.14.1 Blocks Read by Directory Search Routine (per second)

This metric represents the number of file system blocks read per second performing direct lookup.

Target Version	Collection Frequency
All Versions	Every 5 Seconds

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	sar command
HP	sar command
IBM AIX	sar command

The OS sar command is used to sample cumulative activity counters maintained by the OS. The data is obtained by sampling system counters once in a five-second interval. The results are essentially the number of lookupp() calls made over this five-second period divided by five.

User Action

None.

2.14.2 iget() Calls (per second)

This metric represents the number of system iget() calls made per second. iget is a file access system routine.

Target Version	Collection Frequency
All Versions	Every 5 Seconds

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	kernel memory structure (class cpu_vminfo
HP	sar command
IBM AIX	kernel memory structure (class cpu_vminfo

User Action

This data is obtained using the OS sar command, which is used to sample cumulative activity counters maintained by the OS. The data is obtained by sampling system counters once in a five-second interval. The results are essentially the number of iget() calls made over this five-second period divided by five.

2.14.3 lookupp() Calls (per second)

This metric represents the number of file system lookupp() (pathname translation) calls made per second.

Target Version	Collection Frequency
All Versions	Every 5 Seconds

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	sar command
HP	sar command
IBM AIX	sar command

The OS sar command is used to sample cumulative activity counters maintained by the OS. The data is obtained by sampling system counters once in a five-second interval. The results are essentially the number of lookupp() calls made over this five-second period divided by five.

User Action

None.

2.15 File and Directory Monitoring

The File and Directory Monitoring metric monitors various attributes of specific files and directories. Setting of key value specific thresholds triggers the monitoring of files or directories referred to in the given key value. The operator must specify key value specific thresholds to monitor any file or directory.

2.15.1 File or Directory Attribute Not Found

This metric reports issues encountered in fetching the attributes of the file or directory. Errors encountered in monitoring the files and directories specified by the key value based thresholds are reported.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	%file_attribute_not_found% .

Multiple Thresholds

For this metric you can set different warning and critical threshold values for each "File or Directory Name" object.

If warning or critical threshold values are currently set for any "File or Directory Name" object, those thresholds can be viewed on the Metric Detail page for this metric.

To specify or change warning or critical threshold values for each "File or Directory Name" object, use the Edit Thresholds page.

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	perl stat command for files; df for directories that are file system mount points; du for directories that are not file system mount points
HP	perl stat command for files; df for directories that are file system mount points; du for directories that are not file system mount points
Linux	perl stat command for files; df for directories that are file system mount points; du for directories that are not file system mount points

User Action

Looks for the attributes for file and directories like inode id, user id, and group id. If not found an alert is raised so that user can verify.

2.15.2 File or Directory Permissions

This metric fetches the octal value of file permissions on the different variations of UNIX operating systems including Linux. Setting a key value specific warning or critical threshold value against this metric would result in the monitoring of a critical file or directory. For example, to monitor the file permissions for file name /etc/passwd, you should set a threshold for /etc/passwd.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Current permissions for %file_name% are %file_permissions%, different from warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Multiple Thresholds

For this metric you can set different warning and critical threshold values for each "File or Directory Name" object.

If warning or critical threshold values are currently set for any "File or Directory Name" object, those thresholds can be viewed on the Metric Detail page for this metric.

To specify or change warning or critical threshold values for each "File or Directory Name" object, use the Edit Thresholds page.

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	perl stat command for files; df for directories that are file system mount points; du for directories that are not file system mount points
HP	perl stat command for files; df for directories that are file system mount points; du for directories that are not file system mount points
Linux	perl stat command for files; df for directories that are file system mount points; du for directories that are not file system mount points
IBM AIX	perl stat command for files; df for directories that are file system mount points; du for directories that are not file system mount points

User Action

An alert will be raised if the permissions for a file or directory have changed. User may want to verify the change.

2.15.3 File or Directory Name

This metric displays the name of this file or directory.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.15.4 File or Directory Size (KB)

This metric displays the current size of this file or directory in kilobytes.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.15.5 File or Directory Size (MB)

This metric fetches the current size of this file or directory in megabytes. Setting a key value specific warning or critical threshold value against this metric would result in monitoring of a critical file or directory. For example, to monitor the file permissions for directory /absolute_directory_path, you should set a threshold for /absolute_directory_path.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Size of %file_name% is %file_size% MB, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Multiple Thresholds

For this metric you can set different warning and critical threshold values for each "File or Directory Name" object.

If warning or critical threshold values are currently set for any "File or Directory Name" object, those thresholds can be viewed on the Metric Detail page for this metric.

To specify or change warning or critical threshold values for each "File or Directory Name" object, use the Edit Thresholds page.

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	perl stat command for files; df for directories that are file system mount points; du for directories that are not file system mount points
HP	perl stat command for files; df for directories that are file system mount points; du for directories that are not file system mount points
Linux	perl stat command for files; df for directories that are file system mount points; du for directories that are not file system mount points

Host	Data Source
IBM AIX	perl stat command for files; df for directories that are file system mount points; du for directories that are not file system mount points

User Action

If a threshold is exceeded, you may need to take action to adjust the file size or the threshold level.

2.15.6 File or Directory Size Change Rate (KB/minute)

This metric provides the value for the rate at which the file's size is changing. Setting a key value specific warning or critical threshold value against this metric would result in monitoring of the critical file or directory. For example, to monitor the file change rate for the file name `/absolute_file_path`, the operator should set a threshold for `/absolute_file_path`.

Table 2-6 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	%file_name% is growing at the rate of %file_sizechangerate% (KB/hour), crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Multiple Thresholds

For this metric you can set different warning and critical threshold values for each "File or Directory Name" object.

If warning or critical threshold values are currently set for any "File or Directory Name" object, those thresholds can be viewed on the Metric Detail page for this metric.

To specify or change warning or critical threshold values for each "File or Directory Name" object, use the Edit Thresholds page.

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	perl stat command for files; df for directories that are file system mount points; du for directories that are not file system mount points
HP	perl stat command for files; df for directories that are file system mount points; du for directories that are not file system mount points

Host	Data Source
Linux	perl stat command for files; df for directories that are file system mount points; du for directories that are not file system mount points
IBM AIX	perl stat command for files; df for directories that are file system mount points; du for directories that are not file system mount points

User Action

Rate of change of file/directory. An abnormally high value (determined on the basis of historical data) indicates sudden increase in size. Users may want to take some action based on alert.

2.16 File Systems

The File Systems configuration metrics list all file systems mounted in the host. Configuration metrics are not available from the **All Metrics** page of the Cloud Control console.

To view the File Systems configuration metrics:

1. From the Cloud Control UI, select your Host target type.
2. Right-click the target type name, and select **Configuration**, then select **Last Collected**.

The metrics appear under Latest Configuration.

2.16.1 Available Disk Space

This metric specifies the available disk space.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

/etc/mtab

User Action

None.

2.16.2 Disk Space (GB)

This metric provides the File System capacity in GB.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

/etc/mtab

User Action

None.

2.16.3 Local Drive

Applicable NT only.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

/etc/mtab

User Action

None.

2.16.4 Mount Location

This metric provides the mount location of the file system.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

/etc/mtab

User Action

None.

2.16.5 Mount Options

This metric contains details about the mount options. These could be similar to "rw,intr,largefiles,logging,xattr,onerror=panic."

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

/etc/mtab

User Action

None.

2.16.6 Resource Name

This is the device path of host. This can be `/dev/hd10opt`, `Local Disk (C:)`

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

`/etc/mtab`

User Action

None.

2.16.7 Type

This is the file system type. Examples include `nfs`, `ntfs`, and `jfs`.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

`/etc/mtab`

User Action

None.

2.17 Filesystems

The Filesystems metrics provide information about local file systems on the computer.

2.17.1 Filesystem

This metric represents the name of the disk device resource.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	<code>/etc/mnttab</code> file entries
HP	<code>bdf</code> command

Host	Data Source
Linux	df command
HP Tru64	df command
IBM AIX	/etc/mnttab file entries
Windows	not available

User Action

None.

2.17.2 Filesystem Size (MB)

This metric represents the total space (in megabytes) allocated in the file system.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	vminfo system
HP	bdf command
Linux	df command
HP Tru64	df command
IBM AIX	stavfs() system call
Windows	Windows API

User Action

None.

2.17.3 Filesystem Space Available (%)

This metric represents the percentage of free space available in the file system.

Table 2-7 Metric Summary Table

Table 2-7 (Cont.) Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	20	5	Filesystem %keyValue% has %value%%% available space, fallen below warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Multiple Thresholds

For this metric you can set different warning and critical threshold values for each "Mount Point" object.

If warning or critical threshold values are currently set for any "Mount Point" object, those thresholds can be viewed on the Metric Detail page for this metric.

To specify or change warning or critical threshold values for each "Mount Point" object, use the Edit Thresholds page.

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	stavfs() system call
HP	bdf command
Linux	df command
HP Tru64	df command
IBM AIX	stavfs() system call
Windows	Windows API

User Action

Use the OS `du -k` command to check which directories are taking up the most space (`du -k | sort -rn`).

2.17.4 Filesystem Space Available (MB)

This metric represents the amount (in MB) of free space available in the file system.

Table 2-8 Metric Summary Table

Table 2-8 (Cont.) Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	20	5	Filesystem %keyValue% has %value% MB free space, fallen below warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Multiple Thresholds

For this metric you can set different warning and critical threshold values for each "Mount Point" object.

If warning or critical threshold values are currently set for any "Mount Point" object, those thresholds can be viewed on the Metric Detail page for this metric.

To specify or change warning or critical threshold values for each "Mount Point" object, use the Edit Thresholds page.

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	stafvs() system call
HP	bdf command
Linux	df command
HP Tru64	df command
IBM AIX	stafvs() system call
Windows	Windows API

User Action

Use the OS `du -k` command to check which directories are taking up the most space (`du -k | sort -rn`).

2.17.5 Filesystem Space Used (MB)

This metric displays the total used space on the file system in MB.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.17.6 Filesystem Utilization (MB)

This metric represents the total space, expressed in megabytes, allocated in the file system.

This metric is available only on Windows.

Data Source

The data source for this metric is GetDiskFreeSpaceEx.

User Action

A high value indicates that the filesystem has very little free space remaining. User might want to manage the free space.

2.17.7 Mount Point

This metric displays the mount point of the file system.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.18 FMA Fault Activity

The configuration metrics in this category provide information about the Fault Management Activity (FMA) fault activity. Configuration metrics are not available from the **All Metrics** page of the Cloud Control console.

To view the FMA Fault Activity configuration metrics:

1. From the Cloud Control UI, select your Host target type.
2. Right-click the target type name, and select **Configuration**, then select **Last Collected**.

The metrics appear under Latest Configuration.

2.18.1 Fault ASR

This metric provides the Fault Automated System Reconfiguration (ASR).

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/sbin/fmadm faulty

2.18.2 Fault UUID

This metric provides the UUID that was assigned to this fault.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/sbin/fmadm faulty

2.18.3 Fault Action

This metric provides the action that was assigned to this fault.

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.18.4 Fault Description

This metric provides the description of the fault.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/sbin/fmadm faulty

2.18.5 Diag Engine

This metric provides the Diagnosis Engine that identified the problem.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/sbin/fmadm faulty

2.18.6 Fault Impact

This metric indicates whether or not an error has impacted the services provided by the device.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/sbin/fmadm faulty

2.18.7 Fault Message ID

This metric provides a message identifier that can be used to identify and view an associated knowledge article.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/sbin/fmadm faulty

2.18.8 Fault Response

This metric provides a response to the fault.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/sbin/fmadm faulty

2.18.9 Fault Severity

This metric provides the severity of the fault.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/sbin/fmadm faulty

2.18.10 Fault Status

This metric provides the status of the fault.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/sbin/fmadm faulty

2.18.11 Fault Time

This metric provides the timestamp associated with the fault occurrence.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/sbin/fmadm faulty

2.18.12 Suspect Certainty

This metric provides the probability (percentage) that the suspected event is the source of the problem.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/sbin/fmadm faulty

2.18.13 Suspect FRU Location

This metric provides the location of the suspected FRU.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/sbin/fmadm faulty

2.18.14 Suspect FRU Manufacturer

This metric provides the name of the manufacturer of the FRU suspected of causing a fault.

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.18.15 Suspect FRU Name

This metric provides the name of the FRU suspected of causing a fault.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/sbin/fmadm faulty

2.18.16 Suspect FRU Part Number

This metric provides the part number of the FRU suspected of causing a fault.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/sbin/fmadm faulty

2.18.17 Suspect FRU Resource

The metric provides the suspect FRU resource.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/sbin/fmadm faulty

2.18.18 Suspect FRU Revision

This metric provides the revision level of the FRU suspected of causing a fault.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/sbin/fmadm faulty

2.18.19 Suspect FRU Serial Number

This metric provides the serial number of the FRU suspected of causing a fault.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/sbin/fmadm faulty

2.18.20 Suspect Status

This metric provides the status of the FRU suspected of causing a fault.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/sbin/fmadm faulty

2.18.21 Suspect Fault Class

This metric provides the fault class, which represents a hierarchical classification string indicating the type of problem detected, as reported by the fault management subsystem.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/sbin/fmadm faulty

2.19 FMA SNMP Trap

The metrics in this category provide information about FMA SNMP traps.

2.19.1 Problem UUID

This metric provides the UUID that was assigned to this problem.

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.19.2 Fault Status

This metric provides the status of the fault.

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.19.3 Problem Code

This metric provides the code associated with the problem.

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.19.4 Problem URL

This metric provides a URL, which you can use to get additional information about the problem.

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.20 HCA Configuration

This section describes the HCA Configuration metrics. Configuration metrics are not available from the **All Metrics** page of the Cloud Control console.

To view the HCA Configuration metrics:

1. From the Cloud Control UI, select your Host target type.
2. Right-click the target type name, and select **Configuration**, then select **Last Collected**.

The metrics appear under Latest Configuration.

2.20.1 Channel Adapter Display Name

This metric provides the display name of a channel adapter.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

IS_KEY="TRUE"

Key identifying a channel adapter.

2.20.2 Channel Adapter Name

This metric provides the Channel Adapter name.

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.20.3 Channel Adapter Type

This metric provides the Channel Adapter Type.

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.20.4 Firmware version

This metric provides the firmware version of the HCA.

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.20.5 HCA Node GUID

This metric provides the Globally Unique Identifier of the HCA node.

Target Version	Collection Frequency
All Versions	Every 24 hours

2.20.6 Hardware Version

This metric provides the hardware version of the HCA.

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.20.7 IP Address

This metric provides the IP Address of the HCA.

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.20.8 IP Address 2

This metric provides the IP Address 2 of the HCA.

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.20.9 Number of Ports

This metric provides the number of ports in the HCA.

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.21 HCA Port Connections and Configuration

This section describes the HCA Port Connections and Configuration metrics. Configuration metrics are not available from the **All Metrics** page of the Cloud Control console.

To view the HCA Port Connections and Configuration metrics:

1. From the Cloud Control UI, select your Host target type.
2. Right-click the target type name, and select **Configuration**, then select **Last Collected**.

The metrics appear under Latest Configuration.

2.21.1 Channel Adapter Display Name

The Channel Adapter Display name.

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.21.2 Port Number

This metric displays the HCA port number.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.21.3 Switch GUID on the other end of the link

The Globally Unique Identifier of the switch to which this HCA port is connected.

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.21.4 Switch Port number on the other end of the link

The port number of the switch to which this HCA port is connected.

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.21.5 HCA Node GUID

The HCA Node Globally Unique Identifier.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.21.6 Port GUID

The HCA Port Globally Unique Identifier.

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.21.7 Enabled link speed (Gbps)

The enabled speed of this link (Gbps).

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.21.8 Enabled link width

The enabled width of this link (for example, 1X or 4X).

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.21.9 Supported link speed (Gbps)

The supported speed of this link (Gbps).

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.21.10 Supported link width

The supported width of this link (for example 1X or 4X).

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.22 HCA Port Errors

This section describes the HCA Port Errors metrics.

2.22.1 HCA Node GUID

This metric provides the HCA Node Globally Unique Identifier.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.22.2 Port Number

This metric provides the HCA port number.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.22.3 Excessive buffer overruns

This metric provides the number of errors of this type in the last collection interval.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Port %PortNumber% has %value% excessive buffer overruns, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.22.4 Link integrity errors

This metric provides the number of errors of this type in the last collection interval.

Table 2-9 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Port %PortNumber% has %value% link integrity errors, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.22.5 Link recovers

This metric provides the number of errors of this type in the last collection interval.

Table 2-10 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Port %PortNumber% has %value% link recovers, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.22.6 Received packets discarded due to constraints

This metric provides the number of received packets discarded due to constraints.

Table 2-11 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
----------------	-------------------------------------	---------------------------	----------------------------	------------

Table 2-11 (Cont.) Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Port %PortNumber% has %value% received packets discarded due to constraints, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.22.7 Received packets with error

This metric provides the number of errors of this type in the last collection interval.

Table 2-12 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Port %PortNumber% has %value% received packets containing an error, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.22.8 Received packets marked with the EBP delimiter

This metric shows the number of errors of this type in the last collection interval.

Table 2-13 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Port %PortNumber% has %value% received packets marked with the EBP delimiter, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.22.9 Symbol errors

This metric shows the number of errors of this type in the last collection interval.

Table 2-14 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
----------------	-------------------------------------	---------------------------	----------------------------	------------

Table 2-14 (Cont.) Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Port %PortNumber% has %value% symbol errors, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.22.10 Total errors

This metric provides the number of errors of this type in the last collection interval.

Table 2-15 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	10	Not Defined	Port %PortNumber% has %value% total errors, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.22.11 Incoming VL15 packets dropped due to resource limitation

This metric shows the number of errors of this type in the last collection interval.

Table 2-16 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Port %PortNumber% has %value% incoming VL15 packets dropped, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.22.12 Packets not transmitted due to constraints

This metric shows the number of errors of this type in the last collection interval.

Table 2-17 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
----------------	-------------------------------------	---------------------------	----------------------------	------------

Table 2-17 (Cont.) Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Port %PortNumber% has %value% packets not transmitted due to constraints, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.23 HCA Port State

This section describes the HCA Port State metrics.

2.23.1 HCA Node GUID

This metric displays the Globally Unique Identifier of the Host Channel Adapter node.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.23.2 Port Number

This metric displays the port number of the Host Channel Adapter.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.23.3 The Active Link Speed (Gbps)

This metric displays the active speed of this link (Gbps)

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.23.4 Is the link degraded?

This metric displays whether the link speed or width is less than the enabled speed or width respectively, then the link is operating in degraded mode.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	1	Port %PortNumber%(%ca_disp_name%) is running in degraded mode.

2.23.5 The active link width of the port based on the cable connectivity

This metric specifies the active width of this link (for example, 1X or 4X).

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.23.6 Physical link state

This metric specifies whether the physical link up or down.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.23.7 Link State

This metric specifies whether the link is up or down.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.24 HCA Port State (For Alerts)

This section describes the HCA Port State Alert metrics.

2.24.1 HCA Node GUID

This metric displays the host channel adapter (HCA) globally unique IDs (GUIDs).

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.24.2 Is Port disabled?

This metric indicates whether the HCA port is disabled.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	1	Port %PortNumber%(%ca_disp_name%) is disabled.

2.24.3 Is Port in 'polling' state?

This metric indicates whether the HCA port is checking or polling for a peer port.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	1	Port %PortNumber%(%ca_disp_name%) is polling for peer port. This could happen when the cable is unplugged from one of the ends or the other end port is disabled.

2.24.4 Port number

This metric displays the HCA port number.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.25 HCA Port Performance

The metrics in this category provides information about the performance of the host channel adapter (HCA) port.

2.25.1 HCA Node GUID

The HCA Node Globally Unique Identifier.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.25.2 Port Number

This metric displays the HCA port number.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.25.3 Number of packets received per sec

This metric displays the number of packets received per second.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.25.4 Number of bytes received per sec (KBPS)

This metric displays the number of bytes received per second.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.25.5 Link Throughput: bytes transmitted and received per sec (KBPS)

This metric displays the link throughput.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.25.6 Number of bytes transmitted per sec (KBPS)

This metric displays the number of bytes transmitted per second.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.25.7 Number of packets transmitted per sec

This metric displays the number of packets transmitted per second.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.26 Hosts File

This metric category collects IP addresses and aliases from each line of the `/etc/hosts` file.

Note:

This metric category is supported for Linux, Oracle Solaris on SPARC, Oracle Solaris on x86, IBM AIX on POWER Systems, HP-UX PA-RISC (64-bit), HP-UX Itanium

2.26.1 IP Address

This metric displays the IP address from the /etc/hosts file.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

/etc/hosts

User Action

Informational only.

2.26.2 Value

This metric displays the alias names for this IP address.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

/etc/hosts

User Action

Informational only.

2.27 IPCS Message Queues Status

The metrics in this category provide information about the status of the IPCS message queues.

2.27.1 ID

This metric provides the identifier for the facility entry.

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -qaZ

2.27.2 Cbytes in MB

This metric provides the number of megabytes in messages currently outstanding on the associated message queue.

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -qaZ

2.27.3 Qbytes in MB

This metric provides the maximum number of megabytes allowed in messages outstanding on the associated queue.

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -qaZ

2.27.4 Key

This metric provides the key that is used as an argument to create the facility entry.

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -qaZ

2.27.5 Cgroup

This metric provides the name of the group of the creator of the facility entry.

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -qaZ

2.27.6 Creator

This metric provides the login name of the creator of the facility entry.

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -qaZ

2.27.7 Ctime

This metric provides the time when the associated entry was created or last changed.

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -qaZ

2.27.8 Group

This metric provides the name of the group of the owner of the facility entry.

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -qaZ

2.27.9 Lrpid

This metric provides the identifier of the last process to have received a message from this message queue.

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -qaZ

2.27.10 Lspid

This metric provides the identifier of the last process to have sent a message to this message queue.

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -qaZ

2.27.11 Mode

This metric provides the facility access modes.

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -qaZ

2.27.12 Owner

This metric provides the login name of the owner of the facility entry.

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -qaZ

2.27.13 Qnum

This metric provides the number of messages in this queue.

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -qaZ

2.27.14 Rtime

This metric provides the last time a message was received from this queue.

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -qaZ

2.27.15 Stime

This metric provides the last time a message was sent to this queue.

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -qaZ

2.27.16 Zone

This metric provides the zone with which the facility is associated.

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -qaZ

2.28 IPCS Semaphores Status

The metrics in this category provide information about the IPCS semaphores status.

2.28.1 ID

This metric provides the identifier for the facility entry.

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -saZ

2.28.2 Key

This metric provides the key that is used as an argument to create the facility entry.

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -saZ

2.28.3 Group

This metric provides the name of the group of the owner of the facility entry.

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -saZ

2.28.4 Owner

This metric provides the login name of the owner of the facility entry.

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -saZ

2.28.5 Permissions

This metric provides the access permissions.

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -saZ

2.28.6 Cgroup

This metric provides the name of the group of the creator of the facility entry.

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -saZ

2.28.7 Creator

This metric provides the login name of the creator of the facility entry.

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -saZ

2.28.8 Ctime

This metric provides the time when the associated entry was created or last changed.

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -saZ

2.28.9 Number of Semaphores

This metric provide the number of semaphores in the set associated with the semaphore entry.

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -saZ

2.28.10 Otime

This metric provides the time the last semaphore operation on the set associated with the semaphore entry was completed.

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -saZ

2.28.11 Zone

This metric provides the zone with which the facility is associated.

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -saZ

2.29 IPCS Shared Memory Status

The metrics in this category provide information about the status of the IPCS shared memory.

2.29.1 ID

This metric provides the identifier for the facility entry.

Target Version	Collection Frequency
All Versions	Every Hour

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -maZ

2.29.2 Key

This metric provides the key. that is used as an argument to create the facility entry.

Target Version	Collection Frequency
All Versions	Every Hour

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -maZ

2.29.3 Group

This metric provides the name of the group of the owner of the facility entry.

Target Version	Collection Frequency
All Versions	Every Hour

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -maZ

2.29.4 Owner

This metric provides the login name of the owner of the facility entry.

Target Version	Collection Frequency
All Versions	Every Hour

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -maZ

2.29.5 Permissions

This metric provides the access permissions.

Target Version	Collection Frequency
All Versions	Every Hour

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -maZ

2.29.6 Segment Size in MB

This metric provides the size (in MB) of segments for shared memory

Target Version	Collection Frequency
All Versions	Every Hour

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -maZ

2.29.7 Atime

This metric provides the time the last attach on the associated shared memory segment was completed.

Target Version	Collection Frequency
All Versions	Every Hour

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -maZ

2.29.8 Cgroup

This metric provides the name of the group of the creator of the facility entry.

Target Version	Collection Frequency
All Versions	Every Hour

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -maZ

2.29.9 CPID

This metric provides the process ID of the creator of the shared memory entry.

Target Version	Collection Frequency
All Versions	Every Hour

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -maZ

2.29.10 Creator

This metric provides the login name of the creator of the facility entry.

Target Version	Collection Frequency
All Versions	Every Hour

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -maZ

2.29.11 Ctime

This metric provides the time when the associated entry was created or last changed.

Target Version	Collection Frequency
All Versions	Every Hour

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -maZ

2.29.12 Dtime

This metric provides the time the last detach on the associated shared memory segment was completed.

Target Version	Collection Frequency
All Versions	Every Hour

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -maZ

2.29.13 LPID

This metric provides the process ID of the last process to attach or detach the shared memory segment.

Target Version	Collection Frequency
All Versions	Every Hour

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -maZ

2.29.14 Number of Attached Processes

This metric provides the number of processes attached to the associated shared memory segment.

Table 2-18 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every Hour	Not Defined	Not Defined	IPCS Shared Memory attached processes %value % has gone above the warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -maZ

2.29.15 Zone

This metric provides the zone with which the facility is associated.

Target Version	Collection Frequency
All Versions	Every Hour

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/ipcs -maZ

2.30 IO Card Details

The metric category holds the information about the IO cards in the host, including PCI cards and USBs.

2.30.1 Bus Type

This metric provides the bus type of the IO card.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

lspci

User Action

None.

2.30.2 Frequency

This metric provides the clock frequency of the IO card.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

lspci

User Action

None.

2.30.3 Name

This metric represents the name of the IO card.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

lspci

User Action

None.

2.30.4 Number Of IO Cards

This metric displays the number of IO cards.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

lspci

User Action

None.

2.30.5 Revision

This metric represents the IO card revision.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

lspci

User Action

None.

2.30.6 Vendor Name

This metric represents the manufacturer name of IO card.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

lspci

User Action

None.

2.31 Kernel Memory

The Kernel Memory metric provides information on kernel memory allocation (KMA) activities.

This metric is available only on Solaris. The data source is the `sar` command. The data is obtained by sampling system counters once in a five-second interval.

2.31.1 Failed Requests for Large Kernel Memory

This metric represents the number of requests for large memory that failed, that is, requests that were not satisfied.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Data Source

The data sources for this metric includes the following:

Host	Data Source
Solaris	/usr/sbin/sar -k 2 The data is obtained by sampling system counters once in a five-second interval.

User Action

None.

2.31.2 Failed Requests for Oversize Kernel Memory

This metric represents the number of oversized requests made that could not be satisfied. Oversized memory requests are allocated dynamically so there is no pool for such requests.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	/usr/sbin/sar -k 2 The data is obtained by sampling system counters once in a five-second interval.

User Action

None.

2.31.3 Failed Requests for Small Kernel Memory

This metric represents the number of requests for small memory that failed, that is, requests that were not satisfied.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	/usr/sbin/sar -k 2 The data is obtained by sampling system counters once in a five-second interval.

User Action

None.

2.31.4 KMA Available for Large Memory Requests (Bytes)

This metric represents the amount of memory, in bytes, the kernel memory allocation (KMA) has for the large pool; the pool used for allocating and reserving large memory requests.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	/usr/sbin/sar -k 2 The data is obtained by sampling system counters once in a five-second interval.

User Action

None.

2.31.5 KMA for Oversize Memory Requests (Bytes)

This metric represents the amount of memory allocated for oversized memory requests.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	/usr/sbin/sar -k 2 The data is obtained by sampling system counters once in a five-second interval.

User Action

None.

2.31.6 KMA for Small Memory Requests

This metric represents the amount of memory, in bytes, the Kernel Memory Allocation has for the small pool; the pool used for allocating and reserving small memory requests.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	/usr/sbin/sar -k 2 The data is obtained by sampling system counters once in a five-second interval.

User Action

None.

2.31.7 Memory Allocated for Large Memory Requests (Bytes)

This metric represents the amount of memory, in bytes, the kernel allocated to satisfy large memory requests.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	/usr/sbin/sar -k 2 The data is obtained by sampling system counters once in a five-second interval.

User Action

None.

2.31.8 Memory Allocated for Small Memory Requests (Bytes)

This metric represents the amount of memory, in bytes, the kernel allocated to satisfy small memory requests.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/sbin/sar -k 2 The data is obtained by sampling system counters once in a five-second interval.

User Action

None.

2.32 Kernel Memory Usage

The metrics in this category provide information about the kernel memory usage.

2.32.1 Available Memory Pages

This metric provides the number of available memory pages.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/kstat -p unix:0:system_pages

2.32.2 Desfree Pages

This metric provides the number of desfree pages.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/kstat -p unix:0:system_pages

2.32.3 Desscan Pages

The metric provides the number of desscan pages.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/kstat -p unix:0:system_pages

2.32.4 Contiguous Kernel Memory Pages

This metric provides the number of contiguous kernel memory pages.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/kstat -p unix:0:system_pages

2.32.5 Fast Scan Pages

The metric provides the number of fast scan pages.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/kstat -p unix:0:system_pages

2.32.6 System Free Memory Pages

This metric provides the number of system free memory pages.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/kstat -p unix:0:system_pages

2.32.7 Kernel Base Pages

This metric provides the number of kernel base pages.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/kstat -p unix:0:system_pages

2.32.8 Kernel Memory (MB)

This metric provides the amount (in MB) of the kernel memory.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/kstat -p unix:0:system_pages

2.32.9 Lotsfree Pages

This metric provides the number of lotsfree pages.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/kstat -p unix:0:system_pages

2.32.10 Minfree Pages

This metric provides the number of minfree pages.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/kstat -p unix:0:system_pages

2.32.11 Kernel Memory Allocator Calls

This metric provides the number of kernel memory allocator calls.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/kstat -p unix:0:system_pages

2.32.12 Kernel Memory Allocation Pages

This metric provides the number of kernel memory allocation pages.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/kstat -p unix:0:system_pages

2.32.13 Kernel Memory Free Call Pages

This metric provides the number of kernel memory free call pages.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/kstat -p unix:0:system_pages

2.32.14 Kernel Memory Allocator Free Pages

This metric provides the number of kernel memory allocator free pages.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/kstat -p unix:0:system_pages

2.32.15 Number of Scanned Pages

This metric provides the number of scanned pages.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/kstat -p unix:0:system_pages

2.32.16 Total Pages Used by the Kernel

This metric provides the total number of pages used by the kernel.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/kstat -p unix:0:system_pages

2.32.17 Page Size In Bytes

This metric provides the page size in bytes.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/kstat -p unix:0:system_pages

2.32.18 System Free Pages

This metric provides the number of system free pages.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/kstat -p unix:0:system_pages

2.32.19 Locked Pages

This metric provides the number of locked pages.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/kstat -p unix:0:system_pages

2.32.20 Total Available Pages

This metric provides the total number of available pages.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/kstat -p unix:0:system_pages

2.32.21 Physical Pages

This metric provides the number of physical pages.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/kstat -p unix:0:system_pages

2.32.22 Pages Scanned per Second

This metric provides the number of pages scanned per second.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/kstat -p unix:0:system_pages

2.32.23 Timestamp for the Last Data Snapshot

This metric provides the timestamp for the last data snapshot.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/kstat -p unix:0:system_pages

2.32.24 ZFS ARC Cache Current Size (MB)

This metric provides the current size (in MB) of the ZFS Adaptive Replacement Cache (ARC).

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data source for this metric includes the following:

Host	Data Source
Solaris	/usr/bin/kstat -p unix:0:system_pages

2.33 Load

The Load metric provides information about the number of runnable processes on the system run queue. If this is greater than the number of CPUs on the system, then excess load exists.

2.33.1 Active Logical Memory, Kilobytes

This metric provides the value of the active logical memory.

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

2.33.2 Active Memory, Kilobytes

This metric displays the active memory size in kilobytes.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.33.3 CPU in I/O Wait (%)

This metric represents the average number of jobs waiting for I/O in the last interval.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	40	80	CPU I/O Wait is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

For the following hosts:

Host	Data Source
Solaris	kernel statistics
HP	pstat_getdynamic(), pstat_getprocessor(), pstat_getproc(), pstat_getstatic(), getutent(), pstat_getvminfo() system calls
Linux	uptime, free, getconf, ps, iostat, sar, w OS commands; /proc/stat
HP Tru64	table() system call, uptime, vmstat, psrinfo, ps, who, swapon OS commands
IBM AIX	oracle_kstat(), getutent(), getproc(), sysconf() system calls
Windows	performance data counters

User Action

A high percentage of I/O wait can indicate a hardware problem, a slow NFS server, or poor load-balancing among local file systems and disks. Check the system messages log for any hardware errors. Use the `iostat -xn` command or the `nfsstat -c` (NFS client-side statistics) command or both to determine which disks or file systems are slow to respond. Check to see if the problem is with one or more swap partitions, as lack of swap or poor disk load balancing can cause these to become overloaded. Depending on the specific problem, fixes may include: NFS client or server tuning, hardware replacement, moving applications to other file systems, adding swap space, or restructuring a file system for better performance.

2.33.4 CPU in System Mode (%)

For UNIX-based platforms, this metric represents the amount of CPU being used in SYSTEM mode as a percentage of total CPU processing power.

For Windows, this metric represents the percentage of time the process threads spent executing code in privileged mode.

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

Data Source

For the following hosts:

Host	Data Source
Solaris	kernel statistics
HP	pstat_getdynamic(), pstat_getprocessor(), pstat_getproc(), pstat_getstatic(), getutent(), pstat_getvminfo() system calls
Linux	uptime, free, getconf, ps, iostat, sar, w OS commands; /proc/stat
HP Tru64	table() system call, uptime, vmstat, psrinfo, ps, who, swapon OS commands
IBM AIX	oracle_kstat(), getutent(), getproc(), sysconf() system calls
Windows	performance data counters

User Action

An abnormally high value (determined on the basis of historical data) indicates that the machine is doing a lot of work at the system (kernel) level. The user action varies from case to case.

2.33.5 CPU in User Mode (%)

For UNIX-based platforms, this metric represents the amount of CPU being used in USER mode as a percentage of total CPU processing power. For Windows, this metric represents the percentage of time the processor spends in the user mode. This metric displays the average busy time as a percentage of the sample time.

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

Data Source

For the following hosts:

Host	Data Source
Solaris	kernel statistics
HP	pstat_getdynamic(), pstat_getprocessor(), pstat_getproc(), pstat_getstatic(), getutent(), pstat_getvminfo() system calls
Linux	uptime, free, getconf, ps, iostat, sar, w OS commands; /proc/stat
HP Tru64	table() system call, uptime, vmstat, psrinfo, ps, who, swapon OS commands
IBM AIX	oracle_kstat(), getutent(), getproc(), sysconf() system calls
Windows	performance data counters

User Action

An abnormally high value (determined on the basis of historical data) indicates the cpu is doing a lot of work at the user (application) level. An examination of the top processes on the system may help identify problematic processes.

2.33.6 CPU Interrupt Time (%)

This metric represents the percentage of time the processor spends receiving and servicing hardware interrupts during sample intervals. This value is an indirect indicator of the activity of devices that generate interrupts, such as the system clock, the mouse, disk drivers, data communication lines, network interface cards, and other peripheral devices. These devices normally interrupt the processor when they have completed a task or require attention. Normal thread execution is suspended during interrupts. Most system clocks interrupt the processor every 10 milliseconds, creating a background of interrupt activity. Suspends normal thread execution during interrupts.

This metric is available only on Windows.

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

Data Source

The data sources for this metric are Performance Data counters.

User Action

None.

2.33.7 CPU Queue Length

Processor Queue Length is the number of ready threads in the processor queue. There is a single queue for processor time even on computers with multiple processors. A sustained processor queue of less than 10 threads per processor is normally acceptable, dependent on the workload.

This metric is available only on Windows.

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

Data Source

The data sources for this metric are Performance Data counters.

User Action

A consistently high value indicates a number of CPU bound tasks. This information should be correlated with other metrics such as Page Transfer Rate. Tuning the system, accompanied with additional memory, should help.

2.33.8 CPU Utilization (%)

For UNIX-based platforms, this metric represents the amount of CPU utilization as a percentage of total CPU processing power available.

For Windows, this metric represents the percentage of time the CPU spends to execute a non-Idle thread. CPU Utilization (%) is the primary indicator of processor activity.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	80	95	CPU Utilization is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

For the following hosts:

Host	Data Source
Solaris	kernel statistics
HP	pstat_getdynamic(), pstat_getprocessor(), pstat_getproc(), pstat_getstatic(), getutent(), pstat_getvminfo() system calls
Linux	uptime, free, getconf, ps, iostat, sar, w OS commands; /proc/stat
HP Tru64	table() system call, uptime, vmstat, psrinfo, ps, who, swapon OS commands
IBM AIX	oracle_kstat(), getutent(), getproc(), sysconf() system calls
Windows	performance data counters

User Action

An abnormally high value (determined on the basis of historical data) indicates that the system is under heavy load. If the value is consistently high, consider reducing the load on the system.

2.33.9 Free Logical Memory (%)

This metric represents logical free memory in a system (discounting memory used for file system buffers). Note that this memory can potentially be freed, and may not be available immediately.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Logical Free Memory, %value%%, gone below warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

Solaris: vmstat

AIX: libperfstat

User Action

A very low value (determined on the basis of historical data) indicates that the system is running out of RAM and this could be due to one or more of the following reasons. The first is that there is more than the planned number of processes running on the system. The second is that the processes are taking a lot more memory than expected. The third reason is that a specific process is leaking memory consistently.

2.33.10 Free Memory (%)

This metric represents the available memory left after the current active memory is consumed out of total memory.

Table 2-19 Metric Summary Table

Table 2-19 (Cont.) Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Free Memory, %value%%, gone below warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

For the following hosts:

Host	Data Source
Solaris	kernel statistics
HP	pstat_getdynamic(), pstat_getprocessor(), pstat_getproc(), pstat_getstatic(), getutent(), pstat_getvminfo() system calls
Linux	uptime, free, getconf, ps, iostat, sar, w OS commands; /proc/stat
HP Tru64	table() system call, uptime, vmstat, psrinfo, ps, who, swapon OS commands
IBM AIX	oracle_kstat(), getutent(), getproc(), sysconf() system calls
Windows	Windows API

User Action

On Linux OS this value might always be close to 0%. Please refer Free logical memory (%) for actual free memory that is available for the users. User should not take any action based on the value of this metric

2.33.11 Free Memory, Kilobytes

This metric represents the amount of free memory in kilobytes.

Table 2-20 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	not defined	not defined	Free Memory Size %value%, gone below the warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.33.12 Logical Free Memory (%)

This metric represents free logical memory in a percentage.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Logical Free Memory, %value%%, gone below warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

AIX: libperfstat

User Action

A very low value (determined on the basis of historical data) indicates that the system is running out of RAM and this could be due to one or more of the following reasons. The first is that there is more than the planned number of processes running on the system. The second is that the processes are taking a lot more memory than expected. The third reason is that a specific process is leaking memory consistently.

2.33.13 Longest Service Time (ms)

This metric represents the maximum of the average service time of all disks. Units are represented in milliseconds.

Target Version	Collection Frequency
All Versions	Every 5 Seconds

Data Source

For the following hosts:

Host	Data Source
Solaris	kernel statistics
HP	pstat_getdynamic(), pstat_getprocessor(), pstat_getproc(), pstat_getstatic(), getutent(), pstat_getvminfo() system calls
Linux	uptime, free, getconf, ps, iostat, sar, w OS commands; /proc/stat
HP Tru64	table() system call, uptime, vmstat, psrinfo, ps, who, swapon OS commands
IBM AIX	oracle_kstat(), getutent(), getproc(), sysconf() system calls
Windows	Not available

2.33.14 Memory Page Scan Rate (per second)

For UNIX-based systems, this metric represents the number of pages per second scanned by the page stealing daemon.

For Windows, this metric represents the rate at which pages are read from or written to disk to resolve hard page faults. The metric is a primary indicator of the kinds of faults that cause system-wide delays.

Table 2-21 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Page scan rate is %value% /sec, crossed warning (%warning_threshold% /sec) or critical (%critical_threshold% /sec) threshold.

Data Source

For the following hosts:

Host	Data Source
Solaris	kernel statistics
HP	pstat_getdynamic(), pstat_getprocessor(), pstat_getproc(), pstat_getstatic(), getutent(), pstat_getvminfo() system calls
Linux	uptime, free, getconf, ps, iostat, sar, w OS commands; /proc/stat
HP Tru64	table() system call, uptime, vmstat, psrinfo, ps, who, swapon OS commands
IBM AIX	oracle_kstat(), getutent(), getproc(), sysconf() system calls
Windows	performance data counters

User Action

If this number is zero or close to zero, then you can be sure the system has sufficient memory. If scan rate is always high, then adding memory will definitely help.

2.33.15 Memory Utilization (%)

This metric represents the amount of used memory as a percentage of total memory.

Table 2-22 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	80	95	Memory Utilization is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

For the following hosts:

Host	Data Source
Solaris	kernel statistics
HP	pstat_getdynamic(), pstat_getprocessor(), pstat_getproc(), pstat_getstatic(), getutent(), pstat_getvminfo() system calls
Linux	uptime, free, getconf, ps, iostat, sar, w OS commands; /proc/stat
HP Tru64	table() system call, uptime, vmstat, psrinfo, ps, who, swapon OS commands
IBM AIX	oracle_kstat(), getutent(), getproc(), sysconf() system calls
Windows	Windows API

User Action

For Linux OS, this value might always be close to 100%. See [Free Logical Memory \(%\)](#) for actual free memory that is available for users. Do not take any action based on the value of this metric.

2.33.16 Page Transfers Rate

This metric indicates the rate at which pages are read from or written to disk to resolve hard page faults. It is a primary indicator of the kinds of faults that cause system wide delays. It is counted in numbers of pages. It includes pages retrieved to satisfy faults in the file system cache (usually requested by applications) non-cached mapped memory files.

This metric is available only on Windows.

Data Source

The data sources for this metric are Windows Performance counters.

User Action

High transfer rates indicate a memory contention. Adding memory would help.

2.33.17 Run Queue Length (1 minute average)

This metric represents the average number of processes in memory and subject to be run in the last interval. This metric checks the run queue.

This metric is not available on Windows.

Table 2-23 Metric Summary Table

Table 2-23 (Cont.) Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	CPU Load (Run Queue Length averaged over 1 minute) is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

For the following hosts:

Host	Data Source
Solaris	kernel statistics
HP	pstat_getdynamic(), pstat_getprocessor(), pstat_getproc(), pstat_getstatic(), getutent(), pstat_getvminfo() system calls
Linux	uptime, free, getconf, ps, iostat, sar, w OS commands; /proc/stat
HP Tru64	table() system call, uptime, vmstat, psrinfo, ps, who, swapon OS commands
IBM AIX	oracle_kstat(), getutent(), getproc(), sysconf() system calls

User Action

Check the load on the system using the UNIX uptime or top commands. Also, check for processes using too much CPU time by using the top and ps -ef commands. Note that the issue may be a large number of instances of one or more processes, rather than a few processes each taking up a large amount of CPU time. Kill processes using excessive CPU time.

2.33.18 Run Queue Length (5 minute average)

This metric represents the average number of processes in memory and subject to be run in the last interval. This metric checks the run queue.

This metric is not available on Windows.

Table 2-24 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	CPU Load (Run Queue Length averaged over 5 minutes) is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

For the following hosts:

Host	Data Source
Solaris	kernel statistics
HP	pstat_getdynamic(), pstat_getprocessor(), pstat_getproc(), pstat_getstatic(), getutent(), pstat_getvminfo() system calls
Linux	uptime, free, getconf, ps, iostat, sar, w OS commands; /proc/stat
HP Tru64	table() system call, uptime, vmstat, psrinfo, ps, who, swapon OS commands
IBM AIX	oracle_kstat(), getutent(), getproc(), sysconf() system calls

User Action

Check the load on the system using the UNIX uptime or top commands. Also, check for processes using too much CPU time by using the top and ps -ef commands. Note that the issue may be a large number of instances of one or more processes, rather than a few processes each taking up a large amount of CPU time. Kill processes using excessive CPU time.

2.33.19 Run Queue Length (15 minute average)

This metric represents the average number of processes in memory and subject to be run in the last interval. This metric checks the run queue.

This metric is not available on Windows.

Table 2-25 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	CPU Load (Run Queue Length averaged over 15 minutes) is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

For the following hosts:

Host	Data Source
Solaris	kernel statistics
HP	pstat_getdynamic(), pstat_getprocessor(), pstat_getproc(), pstat_getstatic(), getutent(), pstat_getvminfo() system calls
Linux	uptime, free, getconf, ps, iostat, sar, w OS commands; /proc/stat
HP Tru64	table() system call, uptime, vmstat, psrinfo, ps, who, swapon OS commands

Host	Data Source
IBM AIX	oracle_kstat(), gettutent(), getproc(), sysconf() system calls

User Action

Check the load on the system using the UNIX uptime or top commands. Also, check for processes using too much CPU time by using the top and ps -ef commands. Note that the issue may be a large number of instances of one or more processes, rather than a few processes each taking up a large amount of CPU time. Kill processes using excessive CPU time.

2.33.20 Swap Free (KB)

This metric represents the amount of free swap space available (in KB).

Table 2-26 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Free Swap, %value% KB, gone below warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.33.21 Swap Utilization (%)

For UNIX-based platforms, this metric represents the percentage of swapped memory in use for the last interval.

For Windows, this metric represents the percentage of page file instance used.

Table 2-27 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	80	95	Swap Utilization is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

For the following hosts:

Host	Data Source
Solaris	kernel statistics
HP	pstat_getdynamic(), pstat_getprocessor(), pstat_getproc(), pstat_getstatic(), getutent(), pstat_getvminfo() system calls
Linux	uptime, free, getconf, ps, iostat, sar, w OS commands; /proc/stat
HP Tru64	table() system call, uptime, vmstat, psrinfo, ps, who, swapon OS commands
IBM AIX	oracle_kstat(), getutent(), getproc(), sysconf() system calls
Windows	Windows API and Performance data counters

User Action

For UNIX-based platforms, check the swap usage using the UNIX top command or the Solaris swap -l command. Additional swap can be added to an existing file system by creating a swap file and then adding the file to the system swap pool. (See documentation for your UNIX OS). If swap is mounted on /tmp, space can be freed by removing any junk files in /tmp. If it is not possible to add file system swap or free up enough space, additional swap will have to be added by adding a raw disk partition to the swap pool. See UNIX documentation for procedures.

For Windows, check the page file usage and add an additional page file if current limits are insufficient.

2.33.22 Swap Utilization, Kilobytes

For UNIX-based platforms, this metric represents the amount of swapped memory in use for the last interval.

For Windows, this metric represents the amount of page file instance used.

Table 2-28 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	80	95	Swap Utilization %value% KB, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.33.23 Total Processes

This metric represents the total number of processes currently running on the system. This metric checks the number of processes running on the system.

Table 2-29 Metric Summary Table

Table 2-29 (Cont.) Metric Summary Table

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

Data Source

For the following hosts:

Host	Data Source
Solaris	kernel statistics
HP	pstat_getdynamic(), pstat_getprocessor(), pstat_getproc(), pstat_getstatic(), getutent(), pstat_getvminfo() system calls
Linux	uptime, free, getconf, ps, iostat, sar, w OS commands; /proc/stat
HP Tru64	table() system call, uptime, vmstat, psrinfo, ps, who, swapon OS commands
IBM AIX	oracle_kstat(), getutent(), getproc(), sysconf() system calls
Windows	performance data counters

User Action

An abnormally high value (determined on the basis of historical data) indicates that the system is under heavy load. If the value is consistently high, consider reducing the load on the system by stopping the number of processes.

2.33.24 Total Swap, Kilobytes

Total amount of page file space available to be allocated by processes. Paging files are shared by all processes and the lack of space in paging files can prevent processes from allocating memory.

This metric is available only on Windows.

Data Source

Performance Data counters and Windows API GlobalMemoryStatusEx

User Action

An abnormally high value (determined on the basis of historical data) indicates that the system is doing a lot of swapping by moving data either to or from the disk. This typically will slow down the system because of the relatively slower access to the disk. The reason for this could be one or more of the following:

- There are many processes running on the system competing for a limited RAM and this results in more swapping. User can try to reduce the load by stopping some process
- A process occupying more memory than expected leading to a shortage of available memory

Typically these kinds of problems are solved by adding more RAM.

2.33.25 Total Users

This metric represents the total number of users currently logged into the system. This metric checks the number of users running on the system.

Table 2-30 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	not defined	not defined	Number of users is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

For the following hosts:

Host	Data Source
Solaris	kernel statistics
HP	pstat_getdynamic(), pstat_getprocessor(), pstat_getproc(), pstat_getstatic(), getutent(), pstat_getvminfo() system calls
Linux	uptime, free, getconf, ps, iostat, sar, w OS commands; /proc/stat
HP Tru64	table() system call, uptime, vmstat, psrinfo, ps, who, swapon OS commands
IBM AIX	oracle_kstat(), getutent(), getproc(), sysconf() system calls
Windows	not available

User Action

An abnormally high value (determined on the basis of historical data) indicates that the system is under heavy load. If the value is consistently high, consider reducing the load on the system by restricting or removing active users from the system.

2.33.26 Used Logical Memory (%)

This metric represents the percentage of the Active Logical memory.

Table 2-31 Metric Summary Table

Table 2-31 (Cont.) Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Used Logical Memory, %value%%, gone above warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

For the following hosts:

Host	Data Source
Linux	COMPUTE_EXPR="(100.0 - logicMemfreePct)" where: logicMemfreePct: COMPUTE_EXPR="(100* freeLogicMem / realMem)" freeLogicMem: COMPUTE_EXPR="freeMem+buffers+cached" realMem, freeMem, buffers, cached are calculated using <code>/proc/meminfo</code>
IBM AIX	COMPUTE_EXPR="(100.0 - logicMemfreePct)" where: logicMemfreePct: COMPUTE_EXPR="(100* freeLogicMem / realMem)" freeLogicMem: COMPUTE_EXPR="(freeMemRaw + memFilesUsed) / 1024.0" realMem, freeMemRaw, memFilesUsed are calculated using <code>sysconf()</code>

User Action

If this alert is raised, then you must analyze the problem to determine the root cause and resolve the underlying issue.

2.33.27 Used Swap, Kilobytes

This metric represents the size in kilobytes of the page file instance used.

This metric is available only on Windows.

Data Source

Performance Data counters and Windows API GlobalMemoryStatusEx.

User Action

An abnormally high value (determined on the basis of historical data) indicates that the system is doing a lot of swapping by moving data either to or from the disk. This typically will slow down the system because of the relatively slower access to the disk. The reason for this could be one or more of the following:

- There are many processes running on the system competing for a limited RAM and this results in more swapping. User can try to reduce the load by stopping some process

- A process occupying more memory than expected leading to a shortage of available memory

Typically these kinds of problems are solved by adding more RAM.

2.34 Log File Monitor

The Log File Monitor metric category allows the operator to monitor one or more log files for the occurrence of one or more Perl patterns in the content. In addition, the operator can specify a Perl pattern to be ignored for the log file. Periodic scanning will be performed against new content added since the last scan, lines matching the *ignore pattern* will be ignored first, then lines matching specified *match patterns* will result in one record being uploaded to the Management Repository for each pattern. The user can set a threshold against the number of lines matching this pattern. File rotation will be handled within the given file.

2.34.1 First Occurrence

This metric displays the time of the first occurrence of the specified pattern.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.34.2 Ignore Pattern in Perl

This metric displays the Perl pattern to be ignored in the log file.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.34.3 Last Occurrence

This metric displays the time of the last occurrence of the specified pattern.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.34.4 Log File Name

This metric displays the name of the log file.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.34.5 Log File Pattern Matched Content

This metric returns the actual content if this file has been specifically registered for content uploading. Otherwise, it returns the count of lines that matched the pattern specified.

The operator can list the names of files or directories to be never monitored in `EMDROOT/sysman/config/lfm_efiles` file. The operator can list the names of the files or directories whose contents can be uploaded into the Management Repository in `EMDROOT/sysman/config/lfm_ifiles` file.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

Oracle-provided Perl program that scans files for the occurrence of user-specified Perl patterns.

User Action

None.

2.34.6 Log File Pattern Matched Line Count

This metric returns the number of lines matching the pattern specified in this file. Setting warning or critical thresholds against this column for a specific {log file name, match pattern in Perl, ignore pattern in Perl} triggers the monitoring of specified criteria against this log file.

Table 2-32 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	%log_file_message% Crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Multiple Thresholds

For this metric you can set different warning and critical threshold values for each unique combination of "Log File Name", "Match Pattern in Perl", "Ignore Pattern in Perl", and "Time Stamp" objects.

If warning or critical threshold values are currently set for any unique combination of "Log File Name", "Match Pattern in Perl", "Ignore Pattern in Perl", and "Time Stamp" objects, those thresholds can be viewed on the Metric Detail page for this metric.

To specify or change warning or critical threshold values for each unique combination of "Log File Name", "Match Pattern in Perl", "Ignore Pattern in Perl", and "Time Stamp" objects, use the Edit Thresholds page.

Data Source

Oracle-supplied Perl program monitors the log files for user specified criteria.

User Action

None.

2.34.7 Match Pattern in Perl

This metric displays the Perl pattern to be matched in the log file.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.34.8 Time Stamp

This metric displays the time stamp of the log file.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.35 LPAR Performance on AIX

This metric category provides information about Logical Partitioning (LPAR) performance on IBM AIX systems.

2.35.1 CPU Utilization (%)

This metric represents the amount of CPU utilization as a percentage of total CPU processing power available..

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.35.2 Entitlement consumed (%)

This metric represents the percentage of the LPAR's CPU entitlement consumed.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Entitlement consumed is is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.35.3 Idle %

This metric represents the percentage of the entitled processing capacity unused while the partition was idle and did not have any outstanding disk I/O request.

Table 2-33 Metric Summary Table

Table 2-33 (Cont.) Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	CPU in idle mode for LPAR Performance metric is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.35.4 Physical Processor Consumed

This metric represents the number of physical processors consumed.

Table 2-34 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Physical Processor Consumed is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.35.5 Sys %

This metric represents the percentage of the entitled processing capacity used while executing at the system level (kernel).

Table 2-35 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	CPU in sys mode for LPAR Performance metric is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.35.6 User %

This metric represents the percentage of the entitled processing capacity used while executing at the user level (application).

Table 2-36 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
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Table 2-36 (Cont.) Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
AIX 5.3.0.0, 6.1.0.0, 7.1.0.0	Every 15 Minutes	Not Defined	Not Defined	CPU in user mode for LPAR Performance metric is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.35.7 Wait %

This metric represents the percentage of the entitled processing capacity unused while the partition was idle and had outstanding disk I/O request(s).

Table 2-37 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	CPU in wait mode for LPAR Performance metric is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.36 Memory Usage

The metrics in this category provide information about memory usage.

2.36.1 Free Memory (MB)

This metric provides the amount of free memory available in MB.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.36.2 Free Memory Percentage

This metric provides the available memory left after the current active memory is consumed out of total memory.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.36.3 Total Memory (MB)

This metric provides the total amount of memory in MB.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.36.4 Used Memory (MB)

This metric provides the amount of used memory in MB.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.36.5 Used Memory Percentage

This metric provides the amount of used memory as a percentage of total memory.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.36.6 Zfs ARC Cache (MB)

This metric provides the current size (in MB) of the ZFS Adaptive Replacement Cache (ARC).

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.36.7 Zfs ARC Cache Percentage

This metric provides the current size of the ZFS ARC as a percentage of the total size.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.37 Memory Usage Details

The metrics in this category provide information about memory usage.

2.37.1 Memory Type

This metric provides the memory type.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.37.2 Memory Cap for this type (MB) (if supported)

This metric provides the restriction or limit (MB) for this memory type (if memory cap is set).

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.37.3 Memory Cap Percentage

This metric provides the memory restriction as a percentage of the total memory.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.37.4 Memory Size of this type (MB)

This metric provides the total memory size (MB) of this memory type.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.37.5 Memory Percentage of this type as a percent of total or cap

This metric provides percentage of memory used related to the total memory or the memory restriction if memory cap is set.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.38 Message and Semaphore Activity

The Message and Semaphore Activity metric category provides information about the message and semaphore activity of the host system being monitored.

2.38.1 msgrcv() System Calls (per second)

This metric represents the number of msgrcv system calls made per second. The msgrcv system call reads a message from one queue to another user-defined queue.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	sar command
HP	sar command
HP Tru64	ipcs command
IBM AIX	sar command

User Action

None.

2.38.2 semop() System Calls (per second)

This metric represents the number of semop system calls made per second. The semop system call is used to perform semaphore operations on a set of semaphores.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Data Source

The data sources for this metric include the following:

Host	Data Source
Solaris	sar command
HP	sar command
HP Tru64	ipcs command
IBM AIX	sar command

User Action

None.

2.39 Network Datalinks Bandwidth

The metrics in this category provide information about the network datalinks bandwidth. These configuration metrics are not available from the **All Metrics** page of the Cloud Control console.

To view the Network Datalinks Bandwidth configuration metrics:

1. From the Cloud Control UI, select your Host target type.
2. Right-click the target type name, and select **Configuration**, then select **Last Collected**.

The metrics appear under **Latest Configuration**.

2.39.1 Datalink Name

This metric provides the datalink name.

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.39.2 Datalink Relative Bandwidth Priority

This metric provides the relative bandwidth priority.

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.39.3 Datalink Differentiated Service Field

This metric provides the differentiated service field.

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.39.4 Datalink Flow name

This metric displays the name of the datalink flow.

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.39.5 Local address for flow

This metric displays the local address for the datalink flow.

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.39.6 Service specified by the local port

This metric displays the service specified by the local port.

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.39.7 Datalink Maximum Bandwidth in Kbps

This metric displays the maximum bandwidth of the datalink.

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.39.8 Remote address for flow

This metric displays the remote address for the datalink flow.

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.39.9 Service specified by the remote port

This metric displays the service specified by the remote port.

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.39.10 Datalink Transport Protocol

This metric displays the datalink transport protocol.

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.40 Network Datalinks Performance

The metrics in this category provide information about the Network Datalinks performance.

2.40.1 Datalink Name

This metric provides the datalink name.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.40.2 Collisions

This metric provides the number of collisions.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.40.3 Inbound Broadcast Octets

This metric provides the number of inbound broadcast octets.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.40.4 Inbound Broadcasts

This metric provides the number of inbound broadcasts.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.40.5 Inbound Dropped Octets

This metric provides the number of inbound dropped octets.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.40.6 Inbound Drops

This metric provides the number of inbound drops.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.40.7 Inbound Errors

This metric provides the number of inbound errors.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.40.8 Inbound Multicast Octets

This metric provides the number of inbound multicast octets.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.40.9 Inbound Multicasts

This metric provides the number of inbound multicasts.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.40.10 Inbound Octets

This metric provides the number of inbound octets.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.40.11 Inbound Packets

This metric provides the number of inbound packets.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.40.12 Outbound Broadcast Octets

This metric provides the number of outbound broadcast octets

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.40.13 Outbound Broadcasts

This metric provides the number of outbound broadcasts.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.40.14 Outbound Dropped Octets

This metric provides the number of outbound dropped octets.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.40.15 Outbound Drops

This metric provides the number of outbound drops since the last collection.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.40.16 Outbound Errors

This metric provides the number of outbound errors

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.40.17 Outbound Multicast Octets

This metric provides the number of outbound multicast octets.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.40.18 Outbound Multicasts

This metric provides the number of outbound multicasts.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.40.19 Outbound Octets

This metric provides the number of outbound octets.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.40.20 Outbound Octets Rate

This metric provides the average of the outbound octet rate for this interface.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.40.21 Outbound Packets

This metric provides the number of outbound packets.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.40.22 State

This metric provides the link state.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.40.23 Status

This metric provides the status of the datalink.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.41 Network Interfaces

This metric category describes the metrics associated with network interfaces.

2.41.1 Network Interface Collisions (%)

This metric represents the number of collisions per second. This metric checks the rate of collisions on the network interface specified by the network device names parameter, such as le0 or * (for all network interfaces).

Target Version	Collection Frequency
Sun Solaris, AIX, HP-UX	Every 15 Minutes

Table 2-38 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
Linux	Every 15 Minutes	Not Defined	Not Defined	Network Interface Collisions (%%) for %keyvalue% is %value% , crossed warning (%warning_threshold% (%%)) or critical (%critical_threshold% (%%)) threshold.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	kernel memory structures (kstat)
HP	netstat, lanscan, and lanadmin commands
Linux	netstat command and /proc/net/dev
HP Tru64	netstat command
IBM AIX	oracle_kstat() system call

User Action

Use the OS netstat -i command to check the performance of the interface. Also, check the system messages file for messages relating to duplex setting by using the OS grep -i command and searching for the word 'duplex'.

2.41.2 Network Interface Combined Utilization (%)

This metric represents the percentage of network bandwidth being used by reading and writing from and to the network for full-duplex network connections.

Table 2-39 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Network utilization for %keyvalue% is %value%%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Multiple Thresholds

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

If warning or critical threshold values are currently set for any "Network Interface Name" object, those thresholds can be viewed on the Metric Detail page for this metric.

To specify or change warning or critical threshold values for each "Network Interface Name" object, use the Edit Thresholds page.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	kernel memory structures (kstat)
HP	netstat, lanscan, and lanadmin commands
Linux	netstat command and /proc/net/dev

Host	Data Source
HP Tru64	netstat command
IBM AIX	oracle_kstat() system call
Windows	not available

User Action

Use the OS netstat -i command to check the performance of the interface. Also, check the system messages file for messages relating to duplex setting by using the OS grep -i command and searching for the word 'duplex'.

2.41.3 Network Interface Name

This metric provides the name of the network interface.

Target Version	Collection Frequency
All versions	Every 15 Minutes

2.41.4 Network Interface Input Errors (%)

This metric represents the number of input errors, per second, encountered on the device for unsuccessful reception due to hardware/network errors. This metric checks the rate of input errors on the network interface specified by the network device names parameter, such as le0 or * (for all network interfaces).

Target Version	Collection Frequency
Sun Solaris, AIX, HP-UX	Every 15 Minutes

Table 2-40 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
Linux	Every 15 Minutes	Not Defined	Not Defined	Network Interface Input Errors (%%) for %keyvalue% is %value% , crossed warning (%warning_threshold% (%%)) or critical (%critical_threshold% (%%)) threshold.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	kernel memory structures (kstat)
HP	netstat, lanscan, and lanadmin commands

Host	Data Source
Linux	netstat command and /proc/net/dev
HP Tru64	netstat command
IBM AIX	oracle_kstat() system call

User Action

Use the OS netstat -i command to check the performance of the interface. Also, check the system messages file for messages relating to duplex setting by using the OS grep -i command and searching for the word 'duplex'.

2.41.5 Network Interface Output Errors (%)

Represents the number of output errors per second. This metric checks the rate of output errors on the network interface specified by the network device names parameter, such as le0 or * (for all network interfaces).

Target Version	Collection Frequency
All versions	Every 15 Minutes

Table 2-41 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
Linux	Every 15 Minutes	Not Defined	Not Defined	Network Interface Output Errors (%%) for %keyvalue% is %value% , crossed warning (%warning_threshold% (%%)) or critical (%critical_threshold% (%%)) threshold.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	kernel memory structures (kstat)
HP	netstat, lanscan, and lanadmin commands
Linux	netstat command and /proc/net/dev
HP Tru64	netstat command
IBM AIX	oracle_kstat() system call

User Action

Use the OS `netstat -i` command to check the performance of the interface. Also, check the system messages file for messages relating to duplex setting by using the OS `grep -i` command and searching for the word 'duplex'.

2.41.6 Network Interface Read (MB/s)

This metric represents the amount of megabytes per second read from the specific interface.

Target Version	Collection Frequency
Sun Solaris, AIX, HP-UX	Every 15 Minutes

Table 2-42 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
Linux	Every 15 Minutes	Not Defined	Not Defined	Network Interface Read (MB/s) for %keyvalue% is %value% , crossed warning (%warning_threshold% MB/sec) or critical (%critical_threshold% MB/sec) threshold.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	kernel memory structures (kstat)
HP	netstat, lanscan, and lanadmin commands
Linux	netstat command and /proc/net/dev
IBM AIX	perfstat system call

User Action

Use the OS `netstat -i` command to check the performance of the interface. Also, check the system messages file for messages relating to duplex setting by using the OS `grep -i` command and searching for the word 'duplex'.

2.41.7 Network Interface Read Utilization (%)

This metric represents the amount of network bandwidth being used for reading from the network as a percentage of total read capacity.

Target Version	Collection Frequency
Sun Solaris, AIX, HP-UX	Every 15 Minutes

Table 2-43 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
Linux	Every 15 Minutes	Not Defined	Not Defined	Network Interface Read Utilization (%%) for %keyvalue% is %value% , crossed warning (%warning_threshold% (%%)) or critical (%critical_threshold% (%%)) threshold.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	kernel memory structures (kstat)
HP	netstat, lanscan, and lanadmin commands
Linux	netstat command and /proc/net/dev
IBM AIX	perfstat system call

User Action

Use the OS netstat -i command to check the performance of the interface. Also, check the system messages file for messages relating to duplex setting by using the OS grep -i command and searching for the word 'duplex'.

2.41.8 Network Interface Total Error Rate (%)

This metric represents the number of total errors per second, encountered on the network interface. It is the rate of read and write errors encountered on the network interface.

Table 2-44 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Network Error Rate for %keyvalue% is %value%%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Multiple Thresholds

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

If warning or critical threshold values are currently set for any "Network Interface Name" object, those thresholds can be viewed on the Metric Detail page for this metric.

To specify or change warning or critical threshold values for each "Network Interface Name" object, use the Edit Thresholds page.

Data Source

It is computed as the sum of Network Interface Input Errors (%) and Network Interface Output Errors (%).

User Action

Use the OS `netstat -i` command to check the performance of the interface. Also, check the system messages file for messages relating to duplex setting by using the OS `grep -i` command and searching for the word 'duplex'.

2.41.9 Network Interface Total I/O Rate (MB/sec)

This metric represents the total I/O rate on the network interface. It is measured as the sum of Network Interface Read (MB/s) and Network Interface Write (MB/s).

Table 2-45 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Network I/O Rate for %keyvalue% is %value%MB/Sec, crossed warning (%warning_threshold%MB/Sec) or critical (%critical_threshold%MB/Sec) threshold.

Multiple Thresholds

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

If warning or critical threshold values are currently set for any "Network Interface Name" object, those thresholds can be viewed on the Metric Detail page for this metric.

To specify or change warning or critical threshold values for each "Network Interface Name" object, use the Edit Thresholds page.

Data Source

It is computed as the sum of Network Interface Read (MB/s) and Network Interface Write (MB/s).

User Action

Use the OS `netstat -i` command to check the performance of the interface. Also, check the system messages file for messages relating to duplex setting by using the OS `grep -i` command and searching for the word 'duplex'.

2.41.10 Network Interface Write (MB/s)

This metric represents the amount of megabytes per second written to the specific interface.

The following table shows how often the metric's value is collected.

Target Version	Collection Frequency
Sun Solaris, AIX, HP-UX, Windows	Every 15 Minutes

Table 2-46 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
Linux	Every 15 Minutes	Not Defined	Not Defined	Network Interface Write (MB/s) for %keyvalue% is %value% , crossed warning (%warning_threshold% (MB/s)) or critical (%critical_threshold% (MB/s)) threshold.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	kernel memory structures (kstat)
HP	netstat, lanscan, and lanadmin commands
Linux	netstat command and /proc/net/dev
HP Tru64	netstat command
IBM AIX	oracle_kstat() system call
Windows	not available

User Action

Use the OS netstat -i command to check the performance of the interface. Also, check the system messages file for messages relating to duplex setting by using the OS grep -i command and searching for the word 'duplex'.

2.41.11 Network Interface Write Utilization (%)

This metric represents the amount of network bandwidth being used for writing to the network as a percentage of total read capacity.

Target Version	Collection Frequency
Sun Solaris, AIX, HP-UX, Windows	Every 15 Minutes

Table 2-47 Metric Summary Table

Table 2-47 (Cont.) Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
Linux	Every 15 Minutes	Not Defined	Not Defined	Network Interface Write Utilization (%%) for %keyvalue% is %value% , crossed warning (%warning_threshold% (%%)) or critical (%critical_threshold% (%%)) threshold.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	kernel memory structures (kstat)
HP	netstat, lanscan, and lanadmin commands
Linux	netstat command and /proc/net/dev
HP Tru64	not available
IBM AIX	perfstat system call
Windows	not available

User Action

Use the OS netstat -i command to check the performance of the interface. Also, check the system messages file for messages relating to duplex setting by using the OS grep -i command and searching for the word 'duplex'.

2.42 Network Interfaces Bandwidth

The metrics in this category provide information about the network interfaces bandwidth.

2.42.1 Interface Name

This metric provides the name of the network interface.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.42.2 Collisions Percentage

This metric provides the total network collisions (in percentage) of the network interface since the last collection.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.42.3 10 minute Input/Output Average

This metric provides the average input/output operations over 10 minutes.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.42.4 10 minute Percentage Activity Average

This metric provides the average percentage of activity over 10 minutes.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.42.5 Bandwidth (KB/sec)

This metric provides the amount of bandwidth used since the last collection.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.42.6 10 minute Input Average

This metric provides the average input operations over 10 minutes.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.42.7 Input Errors Percentage

This metric provide the percentage of input errors on the interface.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.42.8 Input/Output Errors Percentage

This metric provides the percentage of input/output errors.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.42.9 10 minute Output Average

This metric provides the average input operations over 10 minutes.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.42.10 Output Errors Percentage

This metric provides the percentage of output errors on the interface.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.43 Network Interface Bonds

This metric category relates to bonded network interface cards. Slave interface cards have the same information as bonded cards.

2.43.1 Bond Name

Name of the bond.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.43.2 Mode of the Bond

Mode of the bonds. This can be balance-alb.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.43.3 Options of the Bond

Options/properties of the bond. This can be something like "miimon=100 max_bonds=4."

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.43.4 Primary Slave

Primary slave of the bond. The Network Interface Card which is the primary slave of the bond.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.43.5 Secondary Slaves

Comma separated list of secondary slaves.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.44 Network Interface Cards

This metric category relates to network interface cards, both unbonded and bonded interface cards. Slave interface cards have the same information as bonded cards.

2.44.1 BroadCast Address

This metric displays the broadcast address of the local area network.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

ifconfig

User Action

None.

2.44.2 Default Gateway

This metric displays the default gateway configured for this host.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

ifconfig

User Action

None.

2.44.3 Description

This metric displays a description of the Network Interface Card.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

ifconfig

User Action

None.

2.44.4 Is DHCP Enabled

This metric represents whether this Network Interface Card (NIC) is configured for dynamic or static ip addresses

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

ifconfig

User Action

None.

2.44.5 Is NIC Physical

This metric indicates whether this Network Interface Card (NIC) is a physical NIC.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

ifconfig

User Action

None.

2.44.6 Flags

This metric displays the Network interface card's flags.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

ifconfig

User Action

None.

2.44.7 Hostname Aliases

This metric represents the aliases for the host corresponding to this Network Interface Card.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

arp

User Action

None.

2.44.8 IP Address

This metric provides the IP address associated with this Network Interface Card. This is an IPV4 address.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

ifconfig

User Action

None

2.44.9 IPV6 Addresses

This is a comma-separated list of IPV6 addresses.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

ifconfig

User Action

None.

2.44.10 MAC Address

This metric provides the unique address of the Network Interface Card.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

ifconfig

User Action

None.

2.44.11 NetMask

This is the subnet mask inet address.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

ifconfig

User Action

None.

2.44.12 Maximum Transfer Unit

This metric provides the maximum packet size that to be sent it from this Network Interface Card. This is in bytes.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

ifconfig

User Action

None.

2.44.13 Name

This metric provides the Network interface card name.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

ifconfig

User Action

None.

2.45 Network Interfaces Performance

The metrics in this category provide information about the network interfaces performance.

2.45.1 Collisions

This metric provides the number of collisions.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.45.2 Inbound Drops

This metric provides the number of inbound drops.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.45.3 Inbound Errors

This metric provides the number of inbound errors.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.45.4 Frame Errors

This metric provides the number of frame errors.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.45.5 Inbound Octets

This metric provides the number of inbound octets.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.45.6 Inbound Octets Rate

This metric provides the average of the inbound octet rate for this interface.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.45.7 Inbound Overruns

This metric provides the number of overruns since the last collection.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.45.8 Inbound Packets

This metric provides the number of inbound packets.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.45.9 Interface Name

This metric provides the name of the interface, unique within the context of the target.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.45.10 Interface is NOT UP

This metric provides the name of the interface, unique within the context of the target.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.45.11 Interface is UP

This metric displays the interface state transitioned to UP.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.45.12 Outbound Carrier Errors

This metric provides the number of outbound carrier errors.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.45.13 Outbound Drops

This metric provides the number of outbound drops since the last collection

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.45.14 Outbound Errors

This metric provides the number of outbound errors.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.45.15 Outbound Octets

This metric provides the number of outbound octets.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.45.16 Outbound Octets Rate

This metric provides the average of the outbound octet rate for this interface.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.45.17 Outbound Overruns

This metric provides the number of outbound overruns since the last collection.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.45.18 Outbound Packets

This metric provides the number of outbound packets.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.45.19 State

This metric provides the link state.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.45.20 Status

This metric provides the status of the network interface.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.46 Network Interfaces Summary

The Network Interfaces Summary metric category provides information about all network interfaces.

2.46.1 All Network Interfaces Combined Utilization (%)

This metric represents the combined utilization in percentage across all the network interfaces.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Network Interface Combined Utilization (%) for %keyvalue% is %value% , crossed warning (%warning_threshold% (%)) or critical (%critical_threshold% (%)) threshold.

2.46.2 All Network Interfaces Read Rate (MB/sec)

This metric represents the amount of megabytes per second read from all the network interfaces.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Total Network Interface Read (MB/sec) for is %value% , crossed warning (%warning_threshold% (MB/sec)) or critical (%critical_threshold% (MB/sec)) threshold.

2.46.3 All Network Interfaces Read Utilization (%)

This metric represents the percentage in reading utilization across all network interfaces.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Total Network Read Utilization (%) for is %value% , crossed warning (%warning_threshold% (%)) or critical (%critical_threshold% (%)) threshold.

2.46.4 All Network Interfaces Total I/O Rate (MB/sec)

This metric represents the total I/O rate on all the network interfaces. It is measured as the sum of All Network Interfaces Write Rate (MB/sec) and All Network Interfaces Read Rate (MB/sec).

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Total Network Interface Read/Write (MB/sec) for is %value% , crossed warning (%warning_threshold% (MB/sec)) or critical (%critical_threshold% (MB/sec)) threshold.

2.46.5 All Network Interfaces Write Rate (MB/sec)

This metric represents the amount of megabytes per second written to all the interfaces.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Network Interface Write (MB/s) for %keyvalue% is %value% , crossed warning (%warning_threshold% (MB/s)) or critical (%critical_threshold% (MB/s)) threshold.

2.46.6 All Network Interfaces Write Utilization (%)

This metric represents the percentage in writing utilization across all network interfaces.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Total Network Write Utilization (%) for is %value% , crossed warning (%warning_threshold% (%)) or critical (%critical_threshold% (%)) threshold.

2.47 New Disk Activity Summary IO in Bytes

The metrics in this category provide information about the new disk activity summary IO.

2.47.1 Total Disk I/O bytes across all disks in bytes (per second)

This metric provides the total number of disk I/O bytes across all disks in bytes per second.

2.48 New Disk Activity Summary IO in ops per second

The metrics in this category provide information about the new disk activity summary IO.

2.48.1 Total Disk I/O ops across all disks (per second)

This metric provides the total number of disk I/O ops across all disks per second

2.49 New CPU Usage

The metrics in this category provide information about new CPU usage.

2.49.1 Cpu ID

This metric provides the CPU ID.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.49.2 Context Switches Per Second

This metric provides the number of context switches per second.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.49.3 IO Waiting Time Percentage

This metric provides the percentage of IO waiting time.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.49.4 Interrupts Per Second

This metric provides the number of interrupts per second.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.49.5 Soft Interrupts Time Percentage

This metric provides the percentage of the sort interrupts time.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.49.6 System Time Percentage

This metric provides the percentage of system time.

Table 2-48 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 60 Minutes	Not Defined	Not Defined	CPU System Time (%%) is %value% , crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.49.7 Usage Cap

This metric provides the usage restriction or cap.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.49.8 Usage Cap Percentage

This metric provides the usage restriction as a percentage of the total CPU usage.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.49.9 User Time Percentage

This metric provides the percentage of user time.

Table 2-49 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 60 Minutes	Not Defined	Not Defined	CPU User Time (%%) is %value% , crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.49.10 CPU Utilization (%) of a cpu

This metric provides the amount of CPU utilization as a percentage of total CPU processing power available.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 60 Minutes	Not Defined	Not Defined	CPU Utilization for %keyvalue% is %value%%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.49.11 Idle Time Percentage

This metric provides the percentage of time that the CPU was idle and the system did not have an outstanding disk I/O request.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.49.12 Hard Interrupts Percentage

This metric provides the percentage of hard interrupts.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.49.13 Hypervisor Waiting Percentage

This metric provides the percentage of hypervisor waiting time.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.50 New Paging Activity

The metrics in this category provide information about new paging activity.

2.50.1 Pages Put on Freelist by Page Stealing Daemon (per second)

This metric provides the number of pages put on the freelist per second by the page stealing daemon.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.50.2 Page-in Requests (per second)

This metric provides the number of page-in requests per second.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.50.3 Page-out Requests (per second)

This metric provides the page-out requests per second.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.50.4 Pages Scanned by Page Stealing Daemon (per second)

This metric provides the number of pages scanned per second by the page stealing daemon.

Table 2-50 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 60 Minutes	Not Defined	Not Defined	Pages Paged-In (per second) %value%, has crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.50.5 Pages Paged-in (per second)

This metric provides the number of paged-in pages per second.

Table 2-51 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 60 Minutes	Not Defined	Not Defined	Pages Paged-in (per second) is %value% , crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.50.6 Pages Paged-out (per second)

This metric provides the number of paged-out pages per second.

Table 2-52 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
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Table 2-52 (Cont.) Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 60 Minutes	Not Defined	Not Defined	Pages Paged-out (per second) %value%, has crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold..

2.50.7 Page Faults from Software Lock Requests

This metric provides the number of page faults from software lock requests.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.50.8 igets with Page Flushes(%)

This metric provides the percentage of igets with page flushes.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.50.9 Address Translation Page Faults (per second)

This metric provides the number of address translation page faults per second.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.51 Operating System

This metric category contains the operating summary information. There will be one row per host.

2.51.1 Address Length (Bits)

This metric provides the OS address length. This is either 32 bit or 64 bit.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

uname -a

User Action

None.

2.51.2 Base Version

This metric provides the base version of the OS.

Target Version	Collection Frequency
All Versions	Every 24 Hours

User Action

None.

2.51.3 Current OS Run Level

This metric displays the current OS run level.

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.51.4 Is DB Machine Member

This metric indicates if the host is a member database machine. When the host is a member database machine, this column has a value of 1.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

uname -a

User Action

None.

2.51.5 Is Exalogic Member

This metric indicates if it is an Exalogic member.

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.51.6 Default OS Run Level

Default Run level of the OS running on the host. Whenever the OS is booted, it will be booted to this run level.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

uname -a

User Action

None.

2.51.7 Distributor Version

This metric displays the distributor version.

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.51.8 Maximum Process Virtual Memory (MB)

This metric specifies the maximum process virtual memory (MB).

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.51.9 Max Swap Space (MB)

This metric represents Maximum swap space available for the OS.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

uname -a

User Action

None

2.51.10 Name

This metric represents the name of the OS.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

/etc/enterprise-release for OEL

/etc/redhat-release for redhat

/etc/UnitedLinux-release

/etc/SuSE-release

User Action

None.

2.51.11 Platform ID

This metric represents the platform id number.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

uname -a

User Action

None.

2.51.12 Platform Version ID

This metric specifies the version ID of the platform.

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.51.13 Timezone

This metric specifies the time zone.

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.51.14 Timezone Delta

This metric displays the timezone delta between UTC and current timezone

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.51.15 Timezone Region

This metric specifies the time zone region.

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.51.16 Update Level

This metric provides the latest update level of this OS.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

uname -a

User Action

None.

2.51.17 Vendor Name

This metric represents the OS vendor name.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

/etc/enterprise-release for OEL

/etc/redhat-release for redhat

/etc/UnitedLinux-release

User Action

None.

2.52 Operating System Components

This metric stores the information about OS components, including Patches, Bundles, and Packages.

2.52.1 Description

Description of the component

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

/bin/rpm

User Action

None.

2.52.2 Installation Date

Installation date of the component.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

/bin/rpm

User Action

None.

2.52.3 Name

Name of the OS component.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

/bin/rpm

User Action

None.

2.52.4 Type

Type of OS components. This can be Patch, Bundle, Package.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

/bin/rpm

User Action

None.

2.52.5 Version

Version of the component.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

/bin/rpm

User Action

None.

2.53 Operating System Properties

This metric lists some of the OS properties, including OPEN_MAX, Semaphore values, and kernel.pid_max.

2.53.1 Name

Name of configuration variable of the OS, for example OPEN_MAX.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

/bin/getconf, ulimit

2.53.2 Source

This is the source of the property info. This can be similar to /sbin/sysctl or /usr/bin/getconf.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

/bin/getconf , ulimit

2.53.3 Value

This is the value of the property.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

/bin/getconf , ulimit

2.54 Operating System Registered Software

This metric contains details of all the OS Registered Software.

2.54.1 Description

Any vendor description for the software.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

/bin/rpm

User Action

Informational only.

2.54.2 ID

ID of Software installed in the host. Only applicable for NT/Windows.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

/bin/rpm

User Action

Informational only.

2.54.3 Installation Date

Installation date of the software.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

/bin/rpm

User Action

Informational only.

2.54.4 Installed Location

The location where the software is installed.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

/bin/rpm

User Action

Informational only.

2.54.5 Media Type

Installation or distribution source of the installed product. For example, the package name, bundling application, or distro.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

/bin/rpm

User Action

Informational only.

2.54.6 Name

Name of installed software.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

/bin/rpm

User Action

Informational only.

2.54.7 Vendor Name

Vendor who provided the software

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

/bin/rpm

User Action

Informational only.

2.54.8 Vendor Specific Information

Anything related to software

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

/bin/rpm

User Action

Informational only.

2.54.9 Version

Any vendor description for the software.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

/bin/rpm

User Action

Informational only.

2.54.10 Virtual Machine Name/Identifier

This metric represents the Solaris zone name in which the product is installed.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

/bin/rpm

User Action

Informational only.

2.54.11 Parent Product Identifier

Parent ID of the installed product. Applicable to the Sun Service Tag product taxonomy

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

/bin/rpm

User Action

Informational only.

2.54.12 Product Parent Name

Descriptive parent name of the installed product. Applicable to the Sun Service Tag product taxonomy

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

/bin/rpm

User Action

Informational only.

2.54.13 Software Architecture

CPU/OS architecture the application is designed to run on e.g., Solaris SPARC (64bit)

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

/bin/rpm

User Action

Informational only.

2.54.14 Registry Source

Where the Registry Source is

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.55 Operating System Service Status

The metrics in this category provide information about the operating system service status.

2.55.1 Service FMRI Identifier

This metric provides the Fault Management Resource Identifier (FMRI).

Target Version	Collection Frequency
All Versions	Every 6 Hours

Data Source

The data source for the metrics in this category includes the following:

Host	Data Source
Solaris	/usr/bin/svcs -a -o STATE,FMRI

2.55.2 Contract Id

This metric provides the contract identifier.

Target Version	Collection Frequency
All Versions	Every 6 Hours

Data Source

The data source for the metrics in this category includes the following:

Host	Data Source
Solaris	/usr/bin/svcs -a -o STATE,FMRI

2.55.3 Error Log

This metric provides the name and location of the error log file.

Target Version	Collection Frequency
All Versions	Every 6 Hours

Data Source

The data source for the metrics in this category includes the following:

Host	Data Source
Solaris	/usr/bin/svcs -a -o STATE,FMRI

2.55.4 Is Insecure

This metric indicates whether this service is listening on an open port. Valid values are TRUE or FALSE.

Target Version	Collection Frequency
All Versions	Every 6 Hours

2.55.5 Next Service State

This metric provides the next service state.

Target Version	Collection Frequency
All Versions	Every 6 Hours

Data Source

The data source for the metrics in this category includes the following:

Host	Data Source
Solaris	/usr/bin/svcs -a -o STATE,FMRI

2.55.6 Service Enabled

This metric specifies if the service is enabled.

Target Version	Collection Frequency
All Versions	Every 6 Hours

Data Source

The data source for the metrics in this category includes the following:

Host	Data Source
Solaris	/usr/bin/svcs -a -o STATE,FMRI

2.55.7 Service State

This metric provides the service state.

Table 2-53 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 6 Hours	DISABLE D disabled	MAINTENANC E maintenance	Service status is %value%, Service name is %ServiceId%

Data Source

The data source for the metrics in this category includes the following:

Host	Data Source
Solaris	/usr/bin/svcs -a -o STATE,FMRI

2.55.8 Service Time

This metric provides the service time.

Target Version	Collection Frequency
All Versions	Every 6 Hours

Data Source

The data source for the metrics in this category includes the following:

Host	Data Source
Solaris	/usr/bin/svcs -a -o STATE,FMRI

2.56 Operating System ULIMITS

This metric category contains details of the operating system ULIMITS.

2.56.1 CoreDump (blocks)

Limits the size of a "core" file left behind when a process encounters a segmentation fault or other unexpected fatal error.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.56.2 Time (seconds)

Maximum CPU time a process can use before it get terminated. CPU time is the amount of time the CPU actual spends executing processor instructions and is often much less than the total program "runs time".

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.56.3 Data (kbytes)

Limits the amount of memory that a process can allocate on the heap, as with malloc, calloc, C++ "new," and most object creation in higher-level languages. Specified in kilobytes.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.56.4 File (blocks)

Maximum size of the file a process can create. Number will be in 512 bytes (one block).

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.56.5 NoFiles (descriptors)

This number represents maximum number of files that can be opened at a time.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.56.6 Stack (kbytes)

Limits the amount of memory a process can allocate on the stack, as in the case of local variables in C, C++, and many other languages.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.56.7 Virtual Mem (kbytes)

Maximum memory that can be allocated to a process. This includes all types of memory, including the stack, the heap, and memory-mapped files. Attempts to allocate memory in excess of this limit will fail with an out-of-memory error.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.57 Oracle Engineered Systems

This metric category provides information about Solaris Engineered Systems. These configuration metrics are not available from the **All Metrics** page of the Cloud Control console.

To view the Oracle Engineered Systems configuration metrics:

1. From the Cloud Control UI, select your Host target type.
2. Right-click the target type name, and select **Configuration**, then select **Last Collected**.

The metrics appear under **Latest Configuration**.

Note:

These metrics are supported for Solaris hosts only.

Configuration history is turned off for all these metrics but configuration comparison is available.

2.57.1 Engineered System Identifier

This metric displays the Oracle Engineered System Identifier. This is the serial number of the Engineered System specified during production.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Solaris Virtualization Technology Metrics” .

Data Source

rack/serial_number property from the oes/id Oracle Solaris Service Management Facility (SMF) service.

User Action

Informational only.

2.57.2 Engineered System Name

This metric displays the Oracle Engineered system name and optionally the build ID.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Solaris Virtualization Technology Metrics” .

Data Source

oes/type and configuration/build properties from the oes/id SMF service.

User Action

Informational only.

2.57.3 Engineered System Version

This metric can display the hardware or software version, revision or other details associated with this Engineered system.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Solaris Virtualization Technology Metrics” .

Data Source

oes/node, configuration/name and configuration/domain_type properties from the oes/id SMF service.

User Action

Informational only.

2.58 Paging Activity

The Paging Activity metric category provides the amount of paging activity on the system.

2.58.1 Active Pages

This metric displays the number of active pages.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
Linux	Every 15 Minutes	Not Defined	Not Defined	Active Pages are %value% , crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.58.2 Active Pages (per second)

This metric displays the number of active pages per second.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	kernel statistics (class misc cpu_stat)
HP	pstat_getvminfo() system call
HP Tru64	table() system call and vmstat command
IBM AIX	oracle_kstat() system call

User Action

Informational only.

2.58.3 Address Translation Page Faults (per second)

This metric represents the minor page faults by way of hat_fault() per second. This metric checks the number of faults for the CPU(s) specified by the Host CPU(s) parameter, such as cpu_stat0 or * (for all CPUs on the system).

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	kernel statistics (class misc cpu_stat)
HP	pstat_getvminfo() system call
HP Tru64	table() system call and vmstat command
IBM AIX	oracle_kstat() system call

User Action

Informational only.

2.58.4 Cache Faults (per second)

The Cache Faults/sec is the rate at which faults occur when a page sought in the file system cache is not found and must be retrieved from elsewhere in memory (a soft fault) or from disk (a hard fault). The file system cache is an area of physical memory that stores recently used pages of data for applications. Cache activity is a reliable indicator of most application I/O operations. This metric shows the number of faults, without regard for the number of pages faulted in each operation.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Windows	Performance Data counters

User Action

Informational only.

2.58.5 Copy-on-write Faults (per second)

Copy-on-Write faults/sec is the rate at which page faults are caused by attempts to write that have been satisfied by coping of the page from elsewhere in physical memory. This is an economical way of sharing data since pages are only copied when they are written to; otherwise, the page is shared. This metric shows the number of copies, without regard for the number of pages copied in each operation.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Windows	Performance Data counters

User Action

Informational only

2.58.6 Demand Zero Faults (per second)

Demand Zero Faults/sec is the rate at which a zeroed page is required to satisfy the fault. Zeroed pages, pages emptied of previously stored data and filled with zeros, are a security feature of Windows that prevent processes from seeing data stored by earlier processes that used the memory space. Windows maintains a list of zeroed pages to accelerate this process. This metric shows the number of faults, without regard to the number of pages retrieved to satisfy the fault.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Windows	Performance Data counters

User Action

Informational only.

2.58.7 igets with Page Flushes(%)

This metric represents the percentage of UFS inodes taken off the freelist by iget which had reusable pages associated with them. These pages are flushed and cannot be reclaimed by processes.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	kernel statistics (class misc cpu_stat)

Host	Data Source
HP	pstat_getvminfo system call
IBM AIX	oracle_kstat() system call

User Action

Informational only.

2.58.8 Inactive Clean Pages

This metric displays the number of clean inactive pages.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	kernel statistics (class misc cpu_stat)
HP	pstat_getvminfo() system call
HP Tru64	table() system call and vmstat command
IBM AIX	oracle_kstat() system call

User Action

Informational only.

2.58.9 Inactive Clean Pages (per second)

This metric displays the number of clean inactive page per second..

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	kernel statistics (class misc cpu_stat)
HP	pstat_getvminfo() system call

Host	Data Source
HP Tru64	table() system call and vmstat command
IBM AIX	oracle_kstat() system call

User Action

Informational only.

2.58.10 Inactive Dirty Pages

This metric displays the number of dirty inactive pages.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	kernel statistics (class misc cpu_stat)
HP	pstat_getvminfo() system call
HP Tru64	table() system call and vmstat command
IBM AIX	oracle_kstat() system call

User Action

Informational only.

2.58.11 Page Faults (per second)

Page Faults/sec is the average number of pages faulted per second. It is measured in number of pages faulted per second because only one page is faulted in each fault operation, hence this is also equal to the number of page fault operations. This metric includes both hard faults (those that require disk access) and soft faults (where the faulted page is found elsewhere in physical memory.) Most processors can handle large numbers of soft faults without significant consequence. However, hard faults, which require disk access, can cause significant delays.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Windows	Performance Data Counters

User Action

Informational only.

2.58.12 Page Faults from Software Lock Requests

This metric represents the number of protection faults per second. These faults occur when a program attempts to access memory it should not access, receives a segmentation violation signal, and dumps a core file. This metric checks the number of faults for the CPU(s) specified by the Host CPU(s) parameter, such as `cpu_stat0` or * (for all CPUs on the system).

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	kernel statistics (class misc <code>cpu_stat</code>)
HP	<code>pstat_getvminfo</code> system call
HP Tru64	<code>table()</code> system call and <code>vmstat</code> command
IBM AIX	<code>perfstat</code> system call

User Action

Informational only.

2.58.13 Page-in Requests (per second)

For UNIX-based systems, represents the number of page read ins per second (read from disk to resolve fault memory references) by the virtual memory manager. Along with Page Outs, this statistic represents the amount of real I/O initiated by the virtual memory manager. This metric checks the number of page read ins for the CPU(s) specified by the Host CPU(s) parameter, such as `cpu_stat0` or * (for all CPUs on the system). For Windows, this metric is the rate at which the disk was read to resolve hard page faults. It shows the number of reads operations, without regard to the number of pages retrieved in each operation. Hard page faults occur when a process references a page in virtual memory that is not in working set or elsewhere in physical memory, and must be retrieved from disk. This metric is a primary indicator of the kinds of faults that cause system wide delays. It includes read operations to satisfy faults in the file system cache (usually requested by applications) and in non-cached mapped memory files.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	kernel statistics (class misc cpu_stat)
HP	pstat_getvminfo system call
HP Tru64	table() system call and vmstat command
IBM AIX	oracle_kstat() system call
Windows	performance data counters

User Action

Informational only.

2.58.14 Page-Out Requests (per second)

For UNIX-based systems, represents the number of page write outs to disk per second. This metric checks the number of page write outs for the CPU(s) specified by the Host CPU(s) parameter, such as cpu_stat0 or * (for all CPUs on the system). For Windows, this metric is the rate at which pages are written to disk to free up space in physical memory. Pages are written to disk only if they are changed while in physical memory, so they are likely to hold data, not code. This metric shows write operations, without regard to the number of pages written in each operation.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	kernel statistics (class misc cpu_stat)
HP	pstat_getvminfo system call
HP Tru64	vmstat command
IBM AIX	oracle_kstat() system call
Windows	performance data counters

User Action

Informational only.

2.58.15 Pages Paged-in (per second)

For UNIX-based systems, represents the number of pages paged in (read from disk to resolve fault memory references) per second. This metric checks the number of pages paged in for the CPU(s) specified by the Host CPU(s) parameter, such as `cpu_stat0` or * (for all CPUs on the system). For Windows, this metric is the rate at which pages are read from disk to resolve hard page faults. Hard page faults occur when a process refers to a page in virtual memory that is not in its working set or elsewhere in physical memory, and must be retrieved from disk. When a page is faulted, the system tries to read multiple contiguous pages into memory to maximize the benefit of the read operation.

Target Version	Collection Frequency
Sun Solaris, AIX, HP-UX, Windows	Every 15 Minutes

Table 2-54 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
Linux	Every 15 Minutes	Not Defined	Not Defined	Pages Paged-in (per second) is %value% , crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	kernel statistics (class misc <code>cpu_stat</code>)
HP	<code>pstat_getvm</code> system call
Linux	<code>sar</code> command
HP Tru64	<code>table()</code> system call and <code>vmstat</code> command
IBM AIX	<code>oracle_kstat()</code> system call
Windows	performance data counters

User Action

Informational only.

2.58.16 Pages Paged-out (per second)

For UNIX-based systems, represents the number of pages written out (per second) by the virtual memory manager. Along with Page Outs, this statistic represents the

amount of real I/O initiated by the virtual memory manager. This metric checks the number of pages paged out for the CPU(s) specified by the Host CPU(s) parameter, such as `cpu_stat0` or `*` (for all CPUs on the system). For Windows, this metric is the rate at which pages are written to disk to free up space in physical memory. Pages are written back to disk only if they are changed in physical memory, so they are likely to hold data, not code. A high rate of pages output might indicate a memory shortage. Windows writes more pages back to disk to free up space when physical memory is in short supply.

Table 2-55 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Pages Paged-out (per second) %value%, has crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	kernel statistics (class misc <code>cpu_stat</code>)
HP	<code>pstat_getvminfo()</code> system call
Linux	<code>sar</code> command
HP Tru64	<code>vmstat</code> command
IBM AIX	<code>oracle_kstat()</code> system call
Windows	performance data counters

User Action

Informational only.

2.58.17 Pages Put on Freelist by Page Stealing Daemon (per second)

This metric represents the number of pages that are determined unused, by the pageout daemon (also called the page stealing daemon), and put on the list of free pages.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	kernel statistics (class misc cpu_stat)
HP	pstat_getvminfo system call
Linux	not available
HP Tru64	table() system call and vmstat command
IBM AIX	oracle_kstat() system call
Windows	not available

User Action

Informational only.

2.58.18 Pages Scanned by Page Stealing Daemon (per second)

This metric represents the scan rate is the number of pages per second scanned by the page stealing daemon.

Table 2-56 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Pages Paged-In (per second) %value%, has crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	kernel statistics (class misc cpu_stat)
HP	pstat_getvminfo() system call
Linux	not available
HP Tru64	table() system call and vmstat command
IBM AIX	oracle_kstat() system call
Windows	not available

User Action

If this number is zero or closer to zero, then you can be sure the system has sufficient memory. If the number is always high, then adding memory will definitely help.

2.58.19 Transition Faults (per second)

Transition Faults/sec is the rate at which page faults are resolved by recovering pages that were being used by another process sharing the page, or were on the modified page list or the standby list, or were being written to disk at the time of the page fault. The pages were recovered without additional disk activity. Transition faults are counted in numbers of faults; because only one page is faulted in each operation, it is also equal to the number of pages faulted.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Windows	performance data counters

User Action

Informational only.

2.59 Process IPCS Usage

The metrics in this category provide information about the process IPCS usage.

2.59.1 Ipcslid

This metric provides the IPCS identifier.

Target Version	Collection Frequency
All Versions	Every Hour

2.59.2 Type

This metric provides the type of interprocess communication (IPC).

Target Version	Collection Frequency
All Versions	Every Hour

2.59.3 Pid

This metric provides the process ID.

Target Version	Collection Frequency
All Versions	Every Hour

2.59.4 Process Status

This metric provides the process status.

Target Version	Collection Frequency
All Versions	Every Hour

2.60 Top Processes

The Top Processes metric category is a listing of (up to) 20 processes that include 10 processes consuming the largest percentage of memory and 10 processes consuming the most percentage of CPU time. The processes are listed in the order of memory consumption.

2.60.1 Command and Arguments

This metric represents the command and all its arguments.

Data Source

For the following hosts:

Host	Data Source
Solaris	ps command, for example, ps -efo args
HP	ps command, for example, ps -efo args
Linux	ps command, for example, ps -efo args
HP Tru64	ps command, for example, ps -efo args
IBM AIX	ps command, for example, ps -efo args
Windows	performance data counters

User Action

None.

2.60.2 CPU Time for Top Processes

This metric represents the CPU utilization time in seconds.

Data Source

For the following hosts:

Host	Data Source
Solaris	ps command, for example, ps -efo time
HP	ps command, for example, ps -efo time

Host	Data Source
Linux	ps command, for example, ps -efo time
HP Tru64	ps command, for example, ps -efo time
IBM AIX	ps command, for example, ps -efo time
Windows	performance data counters

User Action

None.

2.60.3 CPU Utilization for Top Processes (%)

This metric represents the percentage of CPU time consumed by the process.

Data Source

For the following hosts:

Host	Data Source
Solaris	ps command, for example, ps -efo pcpu
HP	ps command, for example, ps -efo pmem
Linux	ps command, for example, ps -efo pcpu
HP Tru64	ps command, for example, ps -efo pcpu
IBM AIX	ps command, for example, ps -efo pcpu
Windows	performance data counters

User Action

None.

2.60.4 Memory Utilization for Top Processes (%)

This metric represents the percentage of memory consumed by the process.

Data Source

For the following hosts:

Host	Data Source
Solaris	ps command, for example, ps -efo pmem
HP	ps command, for example, ps -efo pmem
Linux	ps command, for example, ps -efo pmem

Host	Data Source
HP Tru64	ps command, for example, ps -efo pmem
IBM AIX	ps command, for example, ps -efo pmem
Windows	performance data counters

User Action

None.

2.60.5 Physical Memory Utilization (KB)

This metric represents the number of kilobytes of physical memory being used.

Data Source

For the following hosts:

Host	Data Source
Solaris	kernel memory structure (class vminfo)
HP	ps command
Linux	ps command
HP Tru64	ps command
IBM AIX	kernel memory structure (struct vminfo)
Windows	Windows API

User Action

None.

2.60.6 Process ID

This metric displays the process identifier.

Data Source

For the following hosts:

Host	Data Source
Solaris	ps command, for example, ps -efo args
HP	ps command, for example, ps -efo args
Linux	ps command, for example, ps -efo args
HP Tru64	ps command, for example, ps -efo args

Host	Data Source
IBM AIX	ps command, for example, ps -efo args
Windows	performance data counters

User Action

None.

2.60.7 Process User ID

This metric represents the user name that owns the process, that is, the user ID of the process being reported on.

Data Source

For the following hosts:

Host	Data Source
Solaris	ps command, for example, ps -efo user
HP	ps command
Linux	ps command, for example, ps -efo user
HP Tru64	ps command, for example, ps -efo user
IBM AIX	ps command, for example, ps -efo user
Windows	Windows API

User Action

None.

2.60.8 Virtual Memory Utilization (KB)

This metric represents the total size of the process in virtual memory in kilobytes (KB).

Data Source

For the following hosts:

Host	Data Source
Solaris	ps command, for example, ps -efo vsz
HP	ps command, for example, ps -efo vsz
Linux	ps command, for example, ps -efo vsz
HP Tru64	ps command, for example, ps -efo vsz
IBM AIX	ps command, for example, ps -efo vsz

Host	Data Source
Windows	Windows API

User Action

None.

2.61 Process, Inode, File Tables Statistics

The Process, Inode, File Tables Stats metric category provides information about the process, inode, and file tables status.

2.61.1 File Table Overflow Occurrences

This metric represents the number of times the system file table overflowed, that is, the number of times that the OS could not find any available entries in the table in the sampling period chosen to collect the data.

The OS sar command is used to sample cumulative activity counters maintained by the OS. The data is obtained by sampling system counters once in a five-second interval.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	sar command
HP	sar command
HP Tru64	table() system call
IBM AIX	sar command

User Action

None.

2.61.2 Inode Table Overflow Occurrences

This metric represents the number of times the inode table overflowed, that is, the number of times the OS could not find any available inode table entries.

The OS sar command is used to sample cumulative activity counters maintained by the OS. The data is obtained by sampling system counters once in a five-second interval.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	sar command
HP	sar command
HP Tru64	table() system call
IBM AIX	sar command

User Action

None.

2.61.3 Maximum Size of Inode Table

This metric represents the maximum size of the inode table.

The OS sar command is used to sample cumulative activity counters maintained by the OS. The data is obtained by sampling system counters once in a five-second interval.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	sar command
HP	sar command
HP Tru64	table() system call
IBM AIX	sar command

User Action

None.

2.61.4 Maximum Size of Process Table

This metric represents the maximum size of the process table.

The OS sar command is used to sample cumulative activity counters maintained by the OS. The data is obtained by sampling system counters once in a five-second interval.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	sar command

Host	Data Source
HP	sar command
HP Tru64	table() system call
IBM AIX	sar command

User Action

None.

2.61.5 Maximum Size of System File Table

This metric represents the maximum size of the system file table.

The OS sar command is used to sample cumulative activity counters maintained by the OS. The data is obtained by sampling system counters once in a five-second interval.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	sar command
HP	sar command
HP Tru64	table() system call
IBM AIX	sar command

User Action

None.

2.61.6 Number Of Allocated Disk Quota Entries

This metric represents the number of allocated disk quota entries.

Table 2-57 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Number Of Allocated Disk Quota Entries is %value% , crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Linux	sar command

User Action

None.

2.61.7 Number of pseudo-terminals used by the system

This metric provides the total number of pseudo-terminals used by the system.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.61.8 Number Of Queued RT Signals

This metric provides the number of queued RT signals.

Table 2-58 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Number Of Queued RT Signals is %value% , crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Linux	sar command

User Action

None.

2.61.9 Number Of Super Block Handlers Allocated

This metric provides the number of allocated super block handlers.

Table 2-59 Metric Summary Table

Table 2-59 (Cont.) Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Allocated Super Block Handlers %value%%, has crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Linux	sar command

User Action

None.

2.61.10 Number Of Used File Handles

This metric represents the current size of the system file table.

Table 2-60 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Number Of Used File Handles is %value% , crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Linux	sar command

User Action

None.

2.61.11 Percentage Of Allocated Disk Quota Entries

This metric represents the Percentage Of Allocated Disk Quota Entries against the maximum number of cached disk quota entries that can be allocated.

Table 2-61 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	not defined	not defined	Allocated Disk Quota Entries %value%%, has crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Linux	sar command

User Action

None.

2.61.12 Percentage Of Allocated Super Block Handlers

This metric represents the Percentage Of Allocated Super Block Handlers against the maximum number of super block handlers that Linux can allocate.

Table 2-62 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	not defined	not defined	Allocated Disk Quota Entries %value%%, has crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Linux	sar command

User Action

None.

2.61.13 Percentage Of Queued RT Signals

This metric represents the percentage of queued RT signals.

Table 2-63 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Queued RT Signals %value%%, has crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Linux	sar command

User Action

None.

2.61.14 Percentage Of Used File Handles

This metric represents the percentage of used file handles against the maximum number of file handles that the Linux kernel can allocate.

Table 2-64 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Used File Handles %value%%, has crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Linux	sar command

User Action

None.

2.61.15 Process Table Overflow Occurrences

This metric represents the number of times the process table overflowed, that is, the number of times the OS could not find any process table entries in a five-second interval.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	sar command
HP	sar command
HP Tru64	table() system call
IBM AIX	sar command

User Action

None.

2.61.16 Size of Inode Table

This metric represents the current size of the inode table.

Table 2-65 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Size of Inode Table is %value% , crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	sar command
HP	sar command
Linux	sar command

Host	Data Source
HP Tru64	table() system call
IBM AIX	sar command

User Action

None.

2.61.17 Size of Process Table

This metric represents the current size of the process table.

Metric Summary

The following table shows how often the metric's value is collected.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	sar command
HP	sar command
Linux	sar command
HP Tru64	table() system call
IBM AIX	sar command

2.61.18 Size of System File Table

This metric provides the size of the system file table.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
Linux	Every 5 Minutes	Not Defined	Not Defined	Number Of Used File Handles is %value% , crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.61.19 Unused cache entries in the directory cache

This metric provides the number of unused cache entries in the directory cache.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.62 Processor Group Usage

The metrics in this category provide information about processor group usage.

2.62.1 Hardware Load Percentage

This metric provides the hardware load as a percentage.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.62.2 Idle Time Percentage

This metric provides the percentage of time that no software threads ran on CPUs in the processor group.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.62.3 Processor Group Identifier

This metric displays the ID associated with the processor group.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.62.4 Software Load Percentage

This metric provides the software load as a percentage.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.62.5 System Time Percentage

This metric provides the percentage of time that software threads ran in system mode on CPUs in the processor group during interval.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.62.6 User Time Percentage

This metric provides the percentage of time that software threads ran in user mode on CPUs in the processor group during interval.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.63 Processor Set Usage

The metrics in this category provide information about the processor set usage.

2.63.1 Current Number of Processors

This metric displays the current number of processors.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.63.2 Processor Set Name

This metric provides name of the processor set.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.63.3 Idle Time Percentage

This metric provides the percentage of time that the CPU was idle and the system did not have an outstanding disk I/O request.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.63.4 Process Time Percentage

This metric provides the percentage of process time.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.63.5 System Time Percentage

This metric provides the percentage of time the process has spent in system mode.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.63.6 User Time Percentage

This metric provides the percentage of time the process has spent in user mode.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.64 Processor Set Zone Usage

The metrics in this category provide information about the processor set zone usage.

2.64.1 Processor Set Name

This metric provides the name of the processor set.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.64.2 Zone Name

This metric provides the name of the zone.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.64.3 Cpu Time in Milliseconds

This metric provides the amount of CPU time used by the processor set.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.64.4 Cpu Time Percentage

This metric provides the percentage of CPU time used by the processor set.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.64.5 Processor Set Schedulers

This metric provides the processor set schedulers.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.64.6 Number of Shares allocated in Processor Set

This metric provides the number of shares allocated to the processor set.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.64.7 Shares allocated in Processor Set Percentage

This metric provides the percentage of shares allocated to the processor set.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.64.8 Percentage used of the shares allocated

This metric provides the percentage of used allocated shares.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.64.9 Cap

This metric provides the restriction or cap.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.64.10 Cap Percentage

This metric provides the restriction or cap as a percentage.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.65 Program Resource Utilization

The Program Resource Utilization metric category provides flexible resource monitoring functionality. The operator must specify the criteria for the programs to be monitored by specifying key value specific thresholds. Values for the key value columns {program name, owner} define the unique criteria to be monitored for resource utilization in the system.

By default, no programs will be tracked by this metric. Key Values entered as part of a key value specific threshold setting define the criteria for monitoring and tracking.

2.65.1 Owner

This metric displays the name of the user running the given process.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	ps command
HP	ps command
Linux	ps command
HP Tru64	ps command

Host	Data Source
IBM AIX	ps command
Windows	ps command

User Action

None.

2.65.2 Program's Max CPU Time Accumulated (Minutes)

This metric represents the maximum CPU time accumulated by the most active process matching the {program name, owner} key value criteria.

Table 2-66 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Process %prog_max_cpu_time_pid% matched by the program name "%prog_name%" and owner "%owner%" has accumulated %prog_max_cpu_time% minutes of cpu time. This duration has crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Multiple Thresholds

For this metric you can set different warning and critical threshold values for each unique combination of "Program Name" and "Owner" objects.

If warning or critical threshold values are currently set for any unique combination of "Program Name" and "Owner" objects, those thresholds can be viewed on the Metric Detail page for this metric.

To specify or change warning or critical threshold values for each unique combination of "Program Name" and "Owner" objects, use the Edit Thresholds page.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	ps command
HP	ps command
Linux	ps command
HP Tru64	ps command
IBM AIX	ps command

User Action

None.

2.65.3 Program's Max CPU Time Accumulated PID

This metric displays the identifier of the process that has accumulated the most CPU time matching the {program name, owner} key value criteria.

Target Version	Evaluation and Collection Frequency
All Versions	Every 5 Minutes

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	ps command
HP	ps command
Linux	ps command
HP Tru64	ps command
IBM AIX	ps command

User Action

None.

2.65.4 Program's Max CPU Utilization (%)

This metric represents the maximum percentage of CPU utilized by a single process matching the {program name, owner} key value criteria since last scan.

Table 2-67 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Process %prog_max_cpu_util_pid% running program %prog_name% is utilizing %prog_max_cpu_util%% cpu. This percentage crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Multiple Thresholds

For this metric you can set different warning and critical threshold values for each unique combination of "Program Name" and "Owner" objects.

If warning or critical threshold values are currently set for any unique combination of "Program Name" and "Owner" objects, those thresholds can be viewed on the Metric Detail page for this metric.

To specify or change warning or critical threshold values for each unique combination of "Program Name" and "Owner" objects, use the Edit Thresholds page.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	ps command
HP	ps command
Linux	ps command
HP Tru64	ps command
IBM AIX	ps command

User Action

None.

2.65.5 Program's Max Process Count

This metric fetches the current number of processes matching the {program name, owner} key value criteria. It can be used for setting warning or critical thresholds to monitor for maximum number of processes that a given {program name, owner} key value criteria crosses.

Table 2-68 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	%prog_max_process_count% processes are matched by the program name "%prog_name%" and owner "%owner%". They have crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Multiple Thresholds

For this metric you can set different warning and critical threshold values for each unique combination of "Program Name" and "Owner" objects.

If warning or critical threshold values are currently set for any unique combination of "Program Name" and "Owner" objects, those thresholds can be viewed on the Metric Detail page for this metric.

To specify or change warning or critical threshold values for each unique combination of "Program Name" and "Owner" objects, use the Edit Thresholds page.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	ps command
HP	ps command
Linux	ps command
HP Tru64	ps command
IBM AIX	ps command

User Action

None.

2.65.6 Program's Max Resident Memory (MB)

This metric represents the maximum resident memory occupied by a single process matching the {program name, owner} key value criteria. It can be used for setting warning or critical thresholds to monitor for maximum value a given {program name, owner} key value criteria crosses.

Table 2-69 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Process %prog_max_rss_pid% matched by the program name "%prog_name%" and owner "%owner%" is utilizing %prog_max_rss% (MB) of resident memory. It has crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Multiple Thresholds

For this metric you can set different warning and critical threshold values for each unique combination of "Program Name" and "Owner" objects.

If warning or critical threshold values are currently set for any unique combination of "Program Name" and "Owner" objects, those thresholds can be viewed on the Metric Detail page for this metric.

To specify or change warning or critical threshold values for each unique combination of "Program Name" and "Owner" objects, use the Edit Thresholds page.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	ps command
HP	ps command
Linux	ps command
HP Tru64	ps command
IBM AIX	ps command

User Action

None.

2.65.7 Program's Max Resident Memory PID

This metric provides the identifier of the process with the maximum resident memory occupied by a single process matching the {program name, owner} key value criteria.

Target Version	Evaluation and Collection Frequency
All Versions	Every 5 Minutes

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	ps command
HP	ps command
Linux	ps command
HP Tru64	ps command
IBM AIX	ps command

User Action

None.

2.65.8 Program's Min Process Count

Fetches the current number of processes matching the {program name, owner} key value criteria. It can be used for setting warning or critical thresholds to monitor for minimum number of processes that a given {program name, owner} key value criteria should never go under.

The following table shows how often the metric's value is collected and compared against the default thresholds. The 'Consecutive Number of Occurrences Preceding Notification' column indicates the consecutive number of times the comparison against thresholds should hold TRUE before an alert is generated.

Table 2-70 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	%prog_min_process_count% processes are matched by the program name "%prog_name%" and owner "%owner%". They have fallen below warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Multiple Thresholds

For this metric you can set different warning and critical threshold values for each unique combination of "Program Name" and "Owner" objects.

If warning or critical threshold values are currently set for any unique combination of "Program Name" and "Owner" objects, those thresholds can be viewed on the Metric Detail page for this metric.

To specify or change warning or critical threshold values for each unique combination of "Program Name" and "Owner" objects, use the Edit Thresholds page.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	ps command
HP	ps command
Linux	ps command
HP Tru64	ps command
IBM AIX	ps command

User Action

None.

2.65.9 Program Name

This metric provides the name of the program.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.65.10 Program's Total CPU Time Accumulated (Minutes)

This metric represents the total CPU time accumulated by all active process matching the {program name, owner} key value criteria.

Table 2-71 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	%prog_max_process_count% processes matched by the program name "%prog_name%" and owner "%owner%" have accumulated %prog_total_cpu_time% minutes of cpu time. This duration has crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Multiple Thresholds

For this metric you can set different warning and critical threshold values for each unique combination of "Program Name" and "Owner" objects.

If warning or critical threshold values are currently set for any unique combination of "Program Name" and "Owner" objects, those thresholds can be viewed on the Metric Detail page for this metric.

To specify or change warning or critical threshold values for each unique combination of "Program Name" and "Owner" objects, use the Edit Thresholds page.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	ps command
HP	ps command
Linux	ps command
HP Tru64	ps command
IBM AIX	ps command

User Action

None.

2.65.11 Program's Total CPU Utilization (%)

This metric represents the percentage of CPU time utilized by all active process matching the {program name, owner} key value criteria since last collection.

Table 2-72 Metric Summary Table

Table 2-72 (Cont.) Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	%prog_max_process_count% processes matched by the program name "%prog_name%" and owner "%owner%" are utilizing %prog_total_cpu_util%% of the cpu. It has crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Multiple Thresholds

For this metric you can set different warning and critical threshold values for each unique combination of "Program Name" and "Owner" objects.

If warning or critical threshold values are currently set for any unique combination of "Program Name" and "Owner" objects, those thresholds can be viewed on the Metric Detail page for this metric.

To specify or change warning or critical threshold values for each unique combination of "Program Name" and "Owner" objects, use the Edit Thresholds page.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	ps command
HP	ps command
Linux	ps command
HP Tru64	ps command
IBM AIX	ps command

User Action

None.

2.66 Response

This metric provides the status of the host, that is, whether it is up or down.

2.66.1 Status

The metric indicates whether the host is reachable. A host could be unreachable due to various reasons. The network is down or the Management Agent on the host is down (which could be because the host itself is shut down).

2.67 Response of Reliable Datagram Sockets protocol layer

This metric category provides the status of the Reliable Datagram Sockets (RDS) protocol layer.

2.67.1 Status

This metric indicates whether the host can be contacted using the RDS ping utility.

Table 2-73 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	0	Failed to RDS (Reliable Datagram Sockets) ping on host %target%.

2.68 Services

This section provides details on the Windows Services metrics.

2.68.1 Name of the Service

This metric displays a unique identifier of the service that provides an indication of the functionality that is managed.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.68.2 Fully-qualified path to the service binary file that implements the service

This metric displays a fully qualified path to the service binary file that implements the service. For example, C:\Windows\Oracle\monitor.sys.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.68.3 Description of the service

This metric provides a description of the object

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.68.4 Display name of the service

This metric provides the display name of the service. This string has a maximum length of 256 characters. The name is case-preserved in the Service Control Manager

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.68.5 Process identifier of the service

This metric displays the process identifier of the service.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.68.6 Start mode

This metric displays the start mode of the Windows base service. Possible values are Boot, System, Auto, Manual, and Disabled.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.68.7 Account name under which a service runs

This metric provides an account name under which a service runs. Depending on the service type, the account name may be in the form of DomainName\Username

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.68.8 Is service started

This metric specifies if the service started. Possible values are true and false.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.68.9 Current state of the base service

This metric displays the current state of the base service. The following are the possible values:

- Stopped
- Start Pending
- Stop Pending
- Running
- Continue Pending

- Pause Pending
- Paused
- Unknown

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	State for the service:(%name%) is (%state%) matches warning threshold (%warning_threshold%) or critical threshold (%critical_threshold%)

2.68.10 Current status (operational and nonoperational) of the service

Current status of the object. This includes both operational and non-operations status provided by the service. The following are the possible values:

- OK
- Error
- Degraded
- Unknown
- Pred Fail
- Starting
- Stopping
- Service

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Status for the service:(%name%) is (%status%) matches warning threshold (%warning_threshold%) or critical threshold (%critical_threshold%)

2.69 Solaris Virtualization Technology

This section provides information about the metric categories and metrics relating to Solaris Virtualization technologies.

These metrics support the following Solaris Virtualization technologies:

- Zones
 - Non-global zone
 - Global zone
- Virtual Box

Solaris running as Guest OS

- Oracle VM for x86
 - domU
- Oracle VM for SPARC (Logical Domains (LDOMs))
 - Guest
 - Control
 - I/O
 - Services
 - Root

2.69.1 Enabling Solaris Virtualization Technology Metrics

Solaris Virtualization metrics use Oracle Certified monitoring templates to enable or disable scheduled collections. By default these metrics are disabled and are not collected.

For more information about monitoring templates, see the *Oracle Enterprise Manager Cloud Control Administrator's Guide*.

To enable the Solaris Virtualization configuration metrics:

1. From the Cloud Control console, select **Setup**, then **Security**, and then **Privilege Delegation**. On this page, you can either set the privilege delegation for each host manually or you can create a Privilege Delegation Setting template.

Privilege delegation for each host must have the SUDO setting enabled with the appropriate SUDO command filled in (for example, `/usr/local/bin/sudo`).

Note:

SUDO setup must pass the LD_LIBRARY_PATH environment variable to **root**.

2. Select **Setup**, then **Security**, and then **Monitoring Credentials**. From this page, select the Host target type and click **Manage Monitoring Credentials**.
3. For each entry with the credential "Privileged Host Monitoring Credentials", select the entry and click **Set Credentials**. You will be asked for a credential set to use. Ensure you add "sudo" to Run Privilege and "root" to the Run As entry.
4. Click **Test and Save**.
5. Then from the **Enterprise** menu, select **Monitoring**, and then **Monitoring Templates**.
6. Select **Display Oracle Certified Templates** and from the Target Type list, select **Host**.
7. From the results, select **Oracle Certified - Enable Solaris Host Virtualization metrics**, then click **Apply**.

8. Under **Destination Targets**, click **Add** to add the required Host targets, then click **Select**, and then click **OK**.

2.69.2 Solaris OVM for SPARC Configuration

This metric category provides information about the Solaris OVM for SPARC configuration metrics.

These configuration metrics are not available from the **All Metrics** page of the Cloud Control console.

To view the Solaris OVM for SPARC configuration metrics:

1. From the Cloud Control UI, select your Host target type.
2. Right-click the target type name, and select **Configuration**, then select **Last Collected**.

The metrics appear under **Latest Configuration**.

2.69.2.1 CPU Count

This metric displays a number that represents available CPU count for this domain.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Solaris Virtualization Technology Metrics” .

Data Source

The `ncpu` field retrieved using the command-line interface for the Logical Domains Manager utility (`ldm(1M)`).

User Action

Informational only

2.69.2.2 Domain Type

This metric displays a list of the roles that a logical domain can perform.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Solaris Virtualization Technology Metrics” .

Data Source

DOMAINROLE field retrieved using the `virtinfo(1M)` utility.

User Action

Informational only

2.69.2.3 Domain Unique Identifier

This metric displays the domain name from the `ldm(1M)` utility or `DOMANUUUID` field retrieved using the `virtinfo(1M)` utility.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Solaris Virtualization Technology Metrics” .

Data Source

Domain Name from the `ldm(1M)` utility or `DOMAINUUID` field retrieved using the `virtinfo(1M)` utility.

User Action

Informational only

2.69.2.4 IO Type

This metric displays the comma separated list of all IO types used by the domain.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Solaris Virtualization Technology Metrics” .

Data Source

Comma separated list of unique IO types retrieved using the `ldm(1M)` utility.

User Action

Informational only

2.69.2.5 Jumbo Frames Used

This metric displays 1 or 0. 1 indicates if any of the virtual switch (VSW) or virtual network (VNET) network devices have an maximum transmission unit (MTU) greater than 1500.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Solaris Virtualization Technology Metrics” .

Data Source

Check based on the MTU value retrieved by the `ldm(1M)` utility.

User Action

Informational only

2.69.2.6 Maximum CPU Cores

This metric specifies the maximum number of cores that are permitted to be assigned to a domain.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Solaris Virtualization Technology Metrics” .

Data Source

max-cores property retrieved using the `ldm(1M)` utility.

User Action

Informational only

2.69.2.7 Migration Mode

This metric displays the type of the migration mode. It can be generic or native.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Solaris Virtualization Technology Metrics” .

Data Source

Generic or native value from the `cpu-arch` property retrieved using the `ldm(1M)` utility.

User Action

Informational only

2.69.2.8 Serial Number

This metric displays the chassis serial number retrieved by the `virtinfo(1M)` utility.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Solaris Virtualization Technology Metrics” .

Data Source

DOMAINCHASSIS field retrieved using the `virtinfo(1M)` utility.

User Action

Informational only

2.69.2.9 Whole CPU per Allocation

This metric specifies that CPU cores are allocated to a domain rather than to virtual CPUs.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Solaris Virtualization Technology Metrics” .

Data Source

whole-core property retrieved using the `ldm (1M)` utility.

User Action

Informational only

2.69.3 Solaris Zones Configuration

This metric category provides information about the Solaris Zones Configuration metrics.

These configuration metrics are not available from the **All Metrics** page of the Cloud Control console.

To view the Solaris Zones configuration metrics:

1. From the Cloud Control UI, select your Host target type.
2. Right-click the target type name, and select **Configuration**, then select **Last Collected**.

The metrics appear under **Latest Configuration**.

2.69.3.1 Assigned CPUs (cpu.sys_id)

This metric displays the system-assigned processor set ID for the processor set used by the zone.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Solaris Virtualization Technology Metrics” .

Data Source

`cpu.sys_id` property for used pset retrieved by the `pooladm(1M)` command.

User Action

Informational only

2.69.3.2 Capped CPU Limit

This metric displays the value to control an absolute limit on the amount of CPU resources that can be consumed by a zone.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Solaris Virtualization Technology Metrics” .

Data Source

capped-cpu/ncpus property retrieved by the `zonecfg(1M)` utility.

User Action

Informational only

2.69.3.3 Current Number of CPUs (pset.size)

This metric displays the current number of CPUs in the processor set used by the zone.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Solaris Virtualization Technology Metrics” .

Data Source

pset.size property for used pset retrieved by the `pooladm(1M)` command.

User Action

Informational only

2.69.3.4 Host Name

This metric displays the host name of a zone.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Solaris Virtualization Technology Metrics” .

Data Source

`hostOSD::getHostName()`

User Action

Informational only

2.69.3.5 IP Type

This metric displays the IP type used by the zone. There are two IP types available for non-global zones:

- shared-IP
- exclusive-IP

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Solaris Virtualization Technology Metrics” .

Data Source

zoneadm(1M).

User Action

Informational only

2.69.3.6 Locked Memory Limit (MB)

This metric displays the value to control lock memory used by processes in the non-global zone.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Solaris Virtualization Technology Metrics” .

Data Source

The capped-memory/locked property retrieved by the zonecfg(1M) utility.

User Action

Informational only

2.69.3.7 Maximum Number of Allowed CPUs (pset.max)

This metric displays the limits on the number of processors that can be allocated to a processor set used by a zone.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Solaris Virtualization Technology Metrics” .

Data Source

pset.max property for used pset retrieved by the pooladm(1M) command.

User Action

Informational only

2.69.3.8 Maximum Number of Processes Allowed

This metric displays the value to control maximum number of processes in the non-global zone.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Solaris Virtualization Technology Metrics” .

Data Source

max-processes property retrieved by the `zonecfg(1M)` utility.

User Action

Informational only

2.69.3.9 Number of Dedicated CPUs

This metric displays the value specifying the number of the system's processors that should be dedicated to a non-global zone while it is running.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Solaris Virtualization Technology Metrics” .

Data Source

dedicated-cpu/ncpus property retrieved by the `zonecfg(1M)` utility.

User Action

Informational only

2.69.3.10 Physical Memory Limit (MB)

This metric displays the value to regulate physical memory consumption used by processes in the non-global zone.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Solaris Virtualization Technology Metrics” .

Data Source

capped-memory/physical property retrieved by the `zonecfg(1M)` utility.

User Action

Informational only

2.69.3.11 Processor Set Name

This metric displays the processor set name within the resource pool currently used by a zone.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Solaris Virtualization Technology Metrics” .

Data Source

pset name for used pool name retrieved by the `pooladm(1M)` command.

User Action

Informational only

2.69.3.12 Resource Pool Name

This metric displays the resource pool name used by a zone.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Solaris Virtualization Technology Metrics” .

Data Source

pool property retrieved by the `zonecfg(1M)` utility.

User Action

Informational only

2.69.3.13 Swap Memory Limit (MB)

This metric displays a value to control swap space used by the non-global zone.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Solaris Virtualization Technology Metrics” .

Data Source

capped-memory/swap property retrieved by the `zonecfg(1M)` utility.

User Action

Informational only

2.69.3.14 Zone Brand

This metric displays the brand of the zone.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Solaris Virtualization Technology Metrics” .

Data Source

zoneadm(1M).

User Action

Informational only

2.69.3.15 Zone Name

This metric displays the name of the zone.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

zoneadm(1M)

User Action

Informational only

2.69.3.16 Zone Privilege Restrictions

This metric lists the privileges for this non-global zone. In the nonglobal zone, processes are restricted to a subset of privileges. Privilege restriction prevents a zone from performing operations that might affect other zones. The set of privileges limits the capabilities of privileged users within the zone.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Solaris Virtualization Technology Metrics” .

Data Source

limitpriv property retrieved by the zonecfg(1M) utility.

User Action

Informational only

2.69.3.17 Zone State

This metric displays the status of the zone, such as running, configured, ready, and installed.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Solaris Virtualization Technology Metrics” .

Data Source

zoneadm(1M).

User Action

Informational only

2.69.3.18 Zone Unique Identifier

This metric displays the zone universally unique identifier (UUID), zone name, or unique identifier from the `smbios(1M)` utility.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Solaris Virtualization Technology Metrics” .

Data Source

Zone UUID, zone name, or UUID from the `smbios` utility.

zoneadm(1M) or `smbios(1M)` UUID

User Action

Informational only

2.69.4 Solaris Zones SMF Services Configuration

This metric category provides information about the Solaris Zones SMF Services Configuration metrics.

These configuration metrics are not available from the **All Metrics** page of the Cloud Control console.

To view the Solaris Zones SMF Services configuration metrics:

1. From the Cloud Control UI, select your Host target type.
2. Right-click the target type name, and select **Configuration**, then select **Last Collected**.

The metrics appear under **Latest Configuration**.

2.69.4.1 Zone Name

This metric displays the name of the current zone.

Target Version	Collection Frequency
All Versions	Every 24 Hours

2.69.4.2 Zone SMF Service FMRI

This metric displays the Fault Management Resource Identifier (FMRI) column for each Oracle Solaris Service Management Facility (SMF) service in all running zones *except* for services in a disabled state.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The `svcs(1)` command used with the `zlogin(1)` command.

User Action

Informational only

2.69.4.3 Zone SMF Service State

This metric displays the STATE column for each SMF service in all running zones *except* for services in a disabled state.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The `svcs(1)` command used with the `zlogin(1)` command.

User Action

Informational only

2.69.4.4 Zone Unique Identifier

This metric displays the zone UUID, zone name, or unique identifier from the `smbios(1M)` utility.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

zone UUID, zone name or UUID from `smbios`.
`zoneadm(1M)` or `smbios(1M)` UUID

User Action

Informational only

2.69.5 Virtualization Technologies

This metric category provides information about the Virtualization Technologies metrics. It collects generic details about virtualization technologies found on the system.

These configuration metrics are not available from the **All Metrics** page of the Cloud Control console.

To view the Virtualization Technologies configuration metrics:

1. From the Cloud Control UI, select your Host target type.
2. Right-click the target type name, and select **Configuration**, then select **Last Collected**.

The metrics appear under **Latest Configuration**.

2.69.5.1 Virtualization Technology Details

This metric can display the hardware or software version, revision, or any other information associated with the selected virtualization technology.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

`ldm(1M)`, `smbios(1M)`, `zoneadm(1M)`

User Action

Informational only

2.69.5.2 Virtualization Technology Identifier

This metric can display a UUID, or another unique identifier preceded by the Virtualization Technology prefix.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

Prefixed with virtualization technology name UUID from the `smbios(1M)` utility, zone name or UUID, Oracle VM for SPARC domain UUID or domain name.

smbios(1M), zoneadm(1M), virtinfo(1M), ldm(1M)

User Action

Informational only

2.69.5.3 Virtualization Technology Name

This metric displays the Virtualization Technology name.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

Script static data, zoneadm(1M), ldm(1M)

User Action

Informational only

2.70 Storage Area Network

This metric category provides information about the Storage Area Network configuration metrics. Configuration metrics are not available from the **All Metrics** page of the Cloud Control console.

To view the Storage Area Network configuration metrics:

1. From the Cloud Control UI, select your Host target type.
2. Right-click the target type name, and select **Configuration**, then select **Last Collected**.

The metrics appear under **Latest Configuration**.

Note:

These metrics are supported for Linux and Solaris hosts only.

By default, these metrics are disabled and will not be collected.

2.70.1 Enabling Storage Area Network Metrics

Storage Area Network metrics use Oracle Certified monitoring templates to enable or disable scheduled collections. By default these metrics are disabled.

For more information about monitoring templates, see the *Oracle Enterprise Manager Cloud Control Administrator's Guide*.

To enable these configuration metrics:

1. From the Cloud Control console, select **Setup**, then **Security**, and then **Privilege Delegation**. On this page you can either set privilege delegation for each host manually or you can create a Privilege Delegation Setting Template.

Privilege delegation for each host must have the SUDO setting enabled with the appropriate SUDO command filled in (for example, `/usr/local/bin/sudo`).

2. Select **Setup**, then **Security**, and then **Monitoring Credentials**. From this page, select the Host target type and click **Manage Monitoring Credentials**.
3. For each entry with the credential "Privileged Host Monitoring Credentials", select the entry and click **Set Credentials**. You will be asked for a credential set to use. Ensure you add "sudo" to Run Privilege and "root" to the Run As entry.
4. Click **Test and Save**.
5. Then from the **Enterprise** menu, select **Monitoring**, and then **Monitoring Templates**.
6. Select **Display Oracle Certified Templates** and from the Target Type list, select **Host**.
7. From the results, select **Oracle Certified Template for SAN metrics - Enable**, then click **Apply**.
8. Under **Destination Targets**, click **Add** to add the required Host targets, then click **Select**, and then click **OK**.

2.70.2 Fibre Channel Supported

This metric specifies whether the Fibre Channel protocol is supported.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see " Enabling Storage Area Network Metrics ".

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	fcinfo hba-port command
Linux	From sysfs, <code>/sys/class</code> directory

2.70.3 iSCSI Supported

This metric specifies whether Internet Small Computer System Interface (iSCSI) protocol is supported.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see " Enabling Storage Area Network Metrics ".

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	iscsiadm list initiator-node command
Linux	/etc/initiatorname.iscsi file

2.70.4 Multipath Software

This metric displays the name of the multipath software.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Storage Area Network Metrics” .

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	powermt command or mpathadm command
Linux	powermt command or multipath command

2.70.5 HBA Ports

This metric subcategory provides information about the Storage Area Network (SAN) devices.

2.70.5.1 Port Name (WWPN)

This metric displays the World Wide Port Name (WWPN) assigned to a port in a Fibre Channel fabric.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Storage Area Network Metrics” .

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	fcinfo hba-port command
Linux	From sysfs, /sys/class/fc_host/host*/

2.70.5.2 Fabric Name

This metric displays the name of the SAN fabric. The SAN fabric enables any-server-to-any-storage device connectivity through the use of Fibre Channel switching technology.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Storage Area Network Metrics” .

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	fcinfo hba-port command
Linux	From sysfs, /sys/class/fc_host/host*/

2.70.5.3 Maximum Frame Size

This metric displays the maximum frame size for the fibre channel frame.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Storage Area Network Metrics” .

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	fcinfo hba-port command
Linux	From sysfs, /sys/class/fc_host/host*/

2.70.5.4 Model Description

This metric displays the model description of the HBA.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Storage Area Network Metrics” .

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	fcinfo hba-port command
Linux	From sysfs, /sys/class/fc_host/host*/

2.70.5.5 Node Name (WWNN)

This metric displays the World Wide Node Name (WWNN) assigned to a node in a Fibre Channel fabric.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Storage Area Network Metrics” .

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	fcinfo hba-port command
Linux	From sysfs, /sys/class/fc_host/host*/

2.70.5.6 Port ID

This metric displays the port ID of the HBA.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Storage Area Network Metrics” .

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	fcinfo hba-port command
Linux	From sysfs, /sys/class/fc_host/host*/

2.70.5.7 Port State

This metric indicates the status of the HBA.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Storage Area Network Metrics” .

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	fcinfo hba-port command
Linux	From sysfs, /sys/class/fc_host/host*/

2.70.5.8 Port Type

This metric displays the type of Fibre Channel port.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Storage Area Network Metrics” .

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	fcinfo hba-port command
Linux	From sysfs, /sys/class/fc_host/host*/

2.70.5.9 Speed

This metric displays the speed of the HBA.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Storage Area Network Metrics” .

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	fcinfo hba-port command
Linux	From sysfs, /sys/class/fc_host/host*/

2.70.5.10 Supported Classes

This metric displays the classes supported by the HBA.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Storage Area Network Metrics” .

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	fcinfo hba-port command
Linux	From sysfs, /sys/class/fc_host/host*/

2.70.5.11 Supported Speeds

This metric displays the speeds supported by the HBA.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Storage Area Network Metrics” .

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	fcinfo hba-port command
Linux	From sysfs, /sys/class/fc_host/host*/

2.70.5.12 Target ID Bind Type

This metric displays the bind type of the target ID and specifies the method of binding for each port.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Storage Area Network Metrics” .

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	fcinfo hba-port command
Linux	From sysfs, /sys/class/fc_host/host*/

2.70.5.13 Vendor

This metric displays the manufacturer or vendor of the HBA.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Storage Area Network Metrics” .

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	fcinfo hba-port command
Linux	lspci -vmm command

2.70.6 iSCSI Initiators

This metric subcategory provides information about the Storage Area Network (SAN) devices.

2.70.6.1 Property Name

This metric displays the type of property name such as IQN (iSCSI Qualified Name).

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Storage Area Network Metrics” .

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	iscsiadm list initiator-node command
Linux	/etc/initiatorname.iscsi file

2.70.6.2 Property Value

This metric displays the value of the property name.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Storage Area Network Metrics” .

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	iscsiadm list initiator-node command
Linux	/etc/initiatorname.iscsi file

2.70.7 SAN Devices

This metric category provides information about the Storage Area Network (SAN) devices. These are configuration metrics and cannot be viewed from the **All Metrics** page in the Cloud Control UI.

Note:

These metrics are supported for Linux and Solaris hosts only.

2.70.7.1 Disk Path

This metric displays the disk path to the SAN device.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Storage Area Network Metrics” .

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	iscsiadm / fcinfo command
Linux	/sys/class/ directory

2.70.7.2 LUN

This metric displays the Logical Unit Number (LUN). The LUN is a disk presented to a computer system by a storage array.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Storage Area Network Metrics” .

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	iscsiadm / fcinfo command
Linux	/sys/class/ directory

2.70.7.3 LUN UUID

This metric displays the unique ID assigned to a LUN.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Storage Area Network Metrics” .

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	mpathadm or powermt and inquiry.pp command
Linux	multipath or powermt and scsi_id command

2.70.7.4 SAN Protocol

This metric displays the SAN protocol.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Storage Area Network Metrics” .

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	iscsiadm / fcinfo command
Linux	/sys/class/ directory

2.70.7.5 Pseudo Disk Path

This metric displays the path to the pseudo device used by multipathing to facilitate the sharing and balancing of I/O operations across all of the available I/O paths.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Storage Area Network Metrics” .

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	mpathadm or powermt command
Linux	multipath or powermt command

2.70.7.6 Storage Server IQN

This metric displays the iSCSI Qualified Name (IQN) of the storage server.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Storage Area Network Metrics” .

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	iscsiadm command
Linux	/sys/class/ directory

2.70.7.7 Storage Server WWNN

This metric displays the World Wide Node Name (WWNN) assigned to the storage server.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Storage Area Network Metrics” .

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	fcinfo command
Linux	/sys/class/ directory

2.70.7.8 Storage Server WWPN

This metric displays the World Wide Port Name (WWPN) of the storage server.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Storage Area Network Metrics” .

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	fcinfo command
Linux	/sys/class/ directory

2.70.7.9 Vendor

This metric displays the vendor or manufacturer of the SAN device.

Target Version	Collection Frequency
All Versions	Every 24 Hours when enabled. For more information, see “Enabling Storage Area Network Metrics” .

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	iscsiadm / fcinfo command
Linux	/sys/class/ directory

2.71 Storage Summary

The Storage Summary metrics collectively represent the summary of storage data on a host target. These metrics are derived from the various metrics collected and uploaded into the Oracle Management Repository by the Management Agent. They are computed every time the Management Agent populates the Management Repository with storage data. This collection is also triggered automatically whenever the user manually refreshes the host storage data from the Storage Details page.

2.71.1 ASM Storage Allocated (GB)

This metric represents the total storage allocated to Oracle databases from Automatic Storage Management (ASM) instances on the host.

Target Version	Collection Frequency
3.0 and higher	Every 24 hours or when the user manually refreshes storage data from the Storage Details page.

User Action

For more details on how these metrics are computed see the "About Storage Computation Formulas" topic in the Enterprise Manager online help. The online help also provides information about ASM, databases, disks, file systems, volumes, and storage details.

2.71.2 ASM Storage Metric Collection Errors

This metric represents the number of metric collection errors attributed to the storage related metrics of the Automatic Storage Management (ASM) targets on the host.

Target Version	Collection Frequency
3.0 and higher	Every 24 hours or when the user manually refreshes storage data from the Storage Details page.

Data Source

These metrics are available on the Linux and Solaris hosts.

User Action

For more details on how these metrics are computed see the "About Storage Computation Formulas" topic in the Enterprise Manager online help. The online help also provides information about ASM, databases, disks, file systems, volumes, and storage details.

2.71.3 ASM Storage Overhead (GB)

This metric represents the storage overhead of Automatic Storage Management (ASM) targets on the host.

Target Version	Collection Frequency
3.0 and higher	Every 24 hours or when the user manually refreshes storage data from the Storage Details page.

Data Source

These metrics are available on the Linux and Solaris hosts.

User Action

For more details on how these metrics are computed see the "About Storage Computation Formulas" topic in the Enterprise Manager online help. The online help also provides information about ASM, databases, disks, file systems, volumes, and storage details.

2.71.4 ASM Storage Unallocated (GB)

This metric represents the storage available in Automatic Storage Management (ASM) targets on the host for allocating to databases.

Target Version	Collection Frequency
3.0 and higher	Every 24 hours or when the user manually refreshes storage data from the Storage Details page.

Data Source

These metrics are available on the Linux and Solaris hosts.

User Action

For more details on how these metrics are computed see the "About Storage Computation Formulas" topic in the Enterprise Manager online help. The online help also provides information about ASM, databases, disks, file systems, volumes, and storage details.

2.71.5 Databases Storage Free (GB)

This metric represents the total free storage available in the databases on the host.

Target Version	Collection Frequency
3.0 and higher	Every 24 hours or when the user manually refreshes storage data from the Storage Details page.

Data Source

These metrics are available on the Linux and Solaris hosts.

User Action

For more details on how these metrics are computed see the "About Storage Computation Formulas" topic in the Enterprise Manager online help. The online help also provides information about ASM, databases, disks, file systems, volumes, and storage details.

2.71.6 Databases Storage Metric Collection Errors

This metric represents the metric collection errors of storage related metrics of databases on the host.

Target Version	Collection Frequency
3.0 and higher	Every 24 hours or when the user manually refreshes storage data from the Storage Details page.

Data Source

These metrics are available on the Linux and Solaris hosts.

User Action

For more details on how these metrics are computed see the "About Storage Computation Formulas" topic in the Enterprise Manager online help. The online help

also provides information about ASM, databases, disks, file systems, volumes, and storage details.

2.71.7 Databases Storage Used (GB)

This metric represents the total free storage available in the databases on the host.

Target Version	Collection Frequency
3.0 and higher	Every 24 hours or when the user manually refreshes storage data from the Storage Details page.

Data Source

These metrics are available on the Linux and Solaris hosts.

User Action

For more details on how these metrics are computed see the "About Storage Computation Formulas" topic in the Enterprise Manager online help. The online help also provides information about ASM, databases, disks, file systems, volumes, and storage details.

2.71.8 Disk Storage Allocated (GB)

This metric represents the storage allocated from the total disk storage available on the host.

Target Version	Collection Frequency
3.0 and higher	Every 24 hours or when the user manually refreshes storage data from the Storage Details page.

Data Source

These metrics are available on the Linux and Solaris hosts.

User Action

For more details on how these metrics are computed see the "About Storage Computation Formulas" topic in the Enterprise Manager online help. The online help also provides information about ASM, databases, disks, file systems, volumes, and storage details.

2.71.9 Disk Storage Unallocated (GB)

This metric represents the storage that is available for allocation in disks on the host.

Target Version	Collection Frequency
3.0 and higher	Every 24 hours or when the user manually refreshes storage data from the Storage Details page.

Data Source

These metrics are available on the Linux and Solaris hosts.

User Action

For more details on how these metrics are computed see the "About Storage Computation Formulas" topic in the Enterprise Manager online help. The online help also provides information about ASM, databases, disks, file systems, volumes, and storage details.

2.71.10 Host Storage Metric Collection Errors

This metric represents the total number of storage related metric collection errors of the host target.

Target Version	Collection Frequency
3.0 and higher	Every 24 hours or when the user manually refreshes storage data from the Storage Details page.

Data Source

These metrics are available on the Linux and Solaris hosts.

User Action

For more details on how these metrics are computed see the "About Storage Computation Formulas" topic in the Enterprise Manager online help. The online help also provides information about ASM, databases, disks, file systems, volumes, and storage details.

2.71.11 Hosts Summarized

The possible values for this metric are:

- 1 (one) if this host storage was computed successfully (sometimes with partial errors)
- 0 (zero) if the storage computation did not proceed at all due to some reasons (for example, failure to collect critical storage metric data).

Target Version	Collection Frequency
3.0 and higher	Every 24 hours or when the user manually refreshes storage data from the Storage Details page.

Data Source

These metrics are available on the Linux and Solaris hosts.

User Action

For more details on how these metrics are computed see the "About Storage Computation Formulas" topic in the Enterprise Manager online help. The online help

also provides information about ASM, databases, disks, file systems, volumes, and storage details.

2.71.12 Local File Systems Storage Free (GB)

This metric represents the total free storage in all distinct local file systems on the host.

Target Version	Collection Frequency
3.0 and higher	Every 24 hours or when the user manually refreshes storage data from the Storage Details page.

Data Source

These metrics are available on the Linux and Solaris hosts.

User Action

For more details on how these metrics are computed see the "About Storage Computation Formulas" topic in the Enterprise Manager online help. The online help also provides information about ASM, databases, disks, file systems, volumes, and storage details.

2.71.13 Local File Systems Storage Used (GB)

This metric represents the total used space in all distinct local file systems on the host.

Target Version	Collection Frequency
3.0 and higher	Every 24 hours or when the user manually refreshes storage data from the Storage Details page.

Data Source

These metrics are available on the Linux and Solaris hosts.

User Action

For more details on how these metrics are computed see the "About Storage Computation Formulas" topic in the Enterprise Manager online help. The online help also provides information about ASM, databases, disks, file systems, volumes, and storage details.

2.71.14 Number of ASM Instances Summarized

This metric represents the total number of Automatic Storage Management (ASM) instances, the storage data of which was used in computing storage summary of this host.

Target Version	Collection Frequency
3.0 and higher	Every 24 hours or when the user manually refreshes storage data from the Storage Details page.

Data Source

These metrics are available on the Linux and Solaris hosts.

User Action

For more details on how these metrics are computed see the "About Storage Computation Formulas" topic in the Enterprise Manager online help. The online help also provides information about ASM, databases, disks, file systems, volumes, and storage details.

2.71.15 Number of Databases Summarized

This metric represents the total number of databases, the storage data of which was used in computing storage summary of this host.

Target Version	Collection Frequency
3.0 and higher	Every 24 hours or when the user manually refreshes storage data from the Storage Details page.

Data Source

These metrics are available on the Linux and Solaris hosts.

User Action

For more details on how these metrics are computed see the "About Storage Computation Formulas" topic in the Enterprise Manager online help. The online help also provides information about ASM, databases, disks, file systems, volumes, and storage details.

2.71.16 Other Mapping Errors

This metric represents the storage metric mapping issues on the host excluding the unmonitored server mapping errors.

Target Version	Collection Frequency
3.0 and higher	Every 24 hours or when the user manually refreshes storage data from the Storage Details page.

Data Source

These metrics are available on the Linux and Solaris hosts.

User Action

For more details on how these metrics are computed see the "About Storage Computation Formulas" topic in the Enterprise Manager online help. The online help also provides information about ASM, databases, disks, file systems, volumes, and storage details.

2.71.17 Total Number of ASM Instances

This metric represents the total number of Automatic Storage Management (ASM) instances on the host.

Target Version	Collection Frequency
3.0 and higher	Every 24 hours or when the user manually refreshes storage data from the Storage Details page.

Data Source

These metrics are available on the Linux and Solaris hosts.

User Action

For more details on how these metrics are computed see the "About Storage Computation Formulas" topic in the Enterprise Manager online help. The online help also provides information about ASM, databases, disks, file systems, volumes, and storage details.

2.71.18 Total Number of Databases

This metric represents the total number of databases on the host.

Target Version	Collection Frequency
3.0 and higher	Every 24 hours or when the user manually refreshes storage data from the Storage Details page.

Data Source

These metrics are available on the Linux and Solaris hosts.

User Action

For more details on how these metrics are computed see the "About Storage Computation Formulas" topic in the Enterprise Manager online help. The online help also provides information about ASM, databases, disks, file systems, volumes, and storage details.

2.71.19 Total Storage Allocated (GB)

This metric represents the total storage allocated from the host-visible storage available on the host.

Target Version	Collection Frequency
3.0 and higher	Every 24 hours or when the user manually refreshes storage data from the Storage Details page.

Data Source

These metrics are available on the Linux and Solaris hosts.

User Action

For more details on how these metrics are computed see the "About Storage Computation Formulas" topic in the Enterprise Manager online help. The online help also provides information about ASM, databases, disks, file systems, volumes, and storage details.

2.71.20 Total Storage Free (GB)

This metric represents the free storage available from the total allocated storage on the host.

Target Version	Collection Frequency
3.0 and higher	Every 24 hours or when the user manually refreshes storage data from the Storage Details page.

Data Source

These metrics are available on the Linux and Solaris hosts.

User Action

For more details on how these metrics are computed see the "About Storage Computation Formulas" topic in the Enterprise Manager online help. The online help also provides information about ASM, databases, disks, file systems, volumes, and storage details.

2.71.21 Total Storage Overhead (GB)

This metric represents the overhead associated with storage on the host.

Target Version	Collection Frequency
3.0 and higher	Every 24 hours or when the user manually refreshes storage data from the Storage Details page.

Data Source

These metrics are available on the Linux and Solaris hosts.

User Action

For more details on how these metrics are computed see the "About Storage Computation Formulas" topic in the Enterprise Manager online help. The online help also provides information about ASM, databases, disks, file systems, volumes, and storage details.

2.71.22 Total Storage Unallocated (GB)

This metric represents the total unallocated storage on the host.

Target Version	Collection Frequency
3.0 and higher	Every 24 hours or when the user manually refreshes storage data from the Storage Details page.

Data Source

These metrics are available on the Linux and Solaris hosts.

User Action

For more details on how these metrics are computed see the "About Storage Computation Formulas" topic in the Enterprise Manager online help. The online help also provides information about ASM, databases, disks, file systems, volumes, and storage details.

2.71.23 Total Storage Used (GB)

This metric represents the total storage used in the file systems and databases on the host.

Target Version	Collection Frequency
3.0 and higher	Every 24 hours or when the user manually refreshes storage data from the Storage Details page.

Data Source

These metrics are available on the Linux and Solaris hosts.

User Action

For more details on how these metrics are computed see the "About Storage Computation Formulas" topic in the Enterprise Manager online help. The online help also provides information about ASM, databases, disks, file systems, volumes, and storage details.

2.71.24 Unmonitored NFS Server Mapping Errors

This metric represents the total number of storage mapping issues that result from unmonitored Network File Systems (NFS) servers.

Target Version	Collection Frequency
3.0 and higher	Every 24 hours or when the user manually refreshes storage data from the Storage Details page.

Data Source

These metrics are available on the Linux and Solaris hosts.

User Action

For more details on how these metrics are computed see the "About Storage Computation Formulas" topic in the Enterprise Manager online help. The online help also provides information about ASM, databases, disks, file systems, volumes, and storage details.

2.71.25 Volumes Storage Allocated (GB)

This metric represents the total storage allocated from the volumes available on the host.

Target Version	Collection Frequency
3.0 and higher	Every 24 hours or when the user manually refreshes storage data from the Storage Details page.

Data Source

These metrics are available on the Linux and Solaris hosts.

User Action

For more details on how these metrics are computed see the "About Storage Computation Formulas" topic in the Enterprise Manager online help. The online help also provides information about ASM, databases, disks, file systems, volumes, and storage details.

2.71.26 Volumes Storage Overhead (GB)

This metric represents the storage overhead in the volumes on the host.

Target Version	Collection Frequency
3.0 and higher	Every 24 hours or when the user manually refreshes storage data from the Storage Details page.

Data Source

These metrics are available on the Linux and Solaris hosts.

User Action

For more details on how these metrics are computed see the "About Storage Computation Formulas" topic in the Enterprise Manager online help. The online help also provides information about ASM, databases, disks, file systems, volumes, and storage details.

2.71.27 Volumes Storage Unallocated (GB)

This metric represents the storage available for allocation in the volumes on the host.

Target Version	Collection Frequency
3.0 and higher	Every 24 hours or when the user manually refreshes storage data from the Storage Details page.

Data Source

These metrics are available on the Linux and Solaris hosts.

User Action

For more details on how these metrics are computed see the "About Storage Computation Formulas" topic in the Enterprise Manager online help. The online help also provides information about ASM, databases, disks, file systems, volumes, and storage details.

2.71.28 Writeable NFS Storage Free (GB)

This metric represents the total free space available in all distinct writeable NFS mounts on the host.

Target Version	Collection Frequency
3.0 and higher	Every 24 hours or when the user manually refreshes storage data from the Storage Details page.

Data Source

These metrics are available on the Linux and Solaris hosts.

User Action

For more details on how these metrics are computed see the "About Storage Computation Formulas" topic in the Enterprise Manager online help. The online help also provides information about ASM, databases, disks, file systems, volumes, and storage details.

2.71.29 Writeable NFS Storage Used (GB)

This metric represents the storage used in all writeable NFS mounts on the host.

Target Version	Collection Frequency
3.0 and higher	Every 24 hours or when the user manually refreshes storage data from the Storage Details page.

Data Source

These metrics are available on the Linux and Solaris hosts.

User Action

For more details on how these metrics are computed see the "About Storage Computation Formulas" topic in the Enterprise Manager online help. The online help

also provides information about ASM, databases, disks, file systems, volumes, and storage details.

2.72 Storage Support

This metric category is used to decide if the OS being monitored is supported. It's also used to inform the user if the number of Storage entities (Disks / FileSystems / Volumes) being monitored is within the applicable limits so as not to affect the performance of the Management Agent.

2.72.1 Supported

The metric is used to enable or disable the collection, depending on the OS supported or the number of storage entities being monitored.

The operating systems supported are Linux, Solaris, AIX, and HP-UX.

The maximum number of storage entities monitored is set to 100 in the configuration file located in `EMAgent/sysman/emd/emagent_storage.config`. The Disks/Files/Volumes to be monitored can be added in the configuration file. If the storage entities are more than 100, the response time of the Management Agent increases.

Data Source

Not available

User Action

Edit the configuration file (`emagent/sysman/emd/emagent_storage.config`), and add the Disks, Filesystems, and Volumes to be monitored.

2.73 Swap Area Status

The Swap Area Status metric category provides the status of the swap memory on the system.

2.73.1 Swap File

This metric displays the name of the swap file.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	<code>/usr/sbin/swap -l</code>
HP	<code>swapinfo</code>
Linux	<code>/sbin/swapon -s</code>

Host	Data Source
HP Tru64	swapon
IBM AIX	lsps

User Action

None.

2.73.2 Swap Free

This metric represents the number of 1K blocks in the swap area that is not allocated.

Table 2-74 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 24 hours	Not Defined	Not Defined	Swap Free Size %value% has gone below the warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Multiple Thresholds

For this metric you can set different warning and critical threshold values for each "Swap File" object. If warning or critical threshold values are currently set for any "Swap File" object, those thresholds can be viewed on the Metric Detail page for this metric. To specify or change warning or critical threshold values for each "Swap File" object, use the Edit Thresholds page. See Editing Thresholds for information on accessing the Edit Thresholds page.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	/usr/sbin/swap -l
HP	swapinfo
Linux	/sbin/swapon -s
HP Tru64	swapon
IBM AIX	lsps

User Action

Check the swap usage using the UNIX top command or the Solaris swap -l command. Additional swap can be added to an existing file system by creating a swap file and then adding the file to the system swap pool. (See documentation for your UNIX OS). If swap is mounted on /tmp, space can be freed by removing any junk files in /tmp. If

it is not possible to add file system swap or free up enough space, additional swap will have to be added by adding a raw disk partition to the swap pool. See UNIX documentation for procedures.

2.73.3 Swap Size

This metric represents the size of the swap file.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	/usr/sbin/swap -l
HP	swapinfo
Linux	/sbin/swapon -s
HP Tru64	swapon
IBM AIX	lspv

User Action

None.

2.74 Swap Usage

The metrics in this category provide information about swap usage.

2.74.1 Free Swap Space in MB

This metric provides the amount of free swap space.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	/usr/sbin/swap -s
Linux	/usr/bin/free -m

2.74.2 Free Swap Space Percentage

This metric provides the free swap space as a percentage of the total swap space.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	/usr/sbin/swap -s
Linux	/usr/bin/free -m

2.74.3 Total Swap Space in MB

This metric provides the total amount of swap space.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	/usr/sbin/swap -s
Linux	/usr/bin/free -m

2.74.4 Used Swap Space in MB

This metric provides the amount of used swap space.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	/usr/sbin/swap -s

Host	Data Source
Linux	/usr/bin/free -m

2.74.5 Used Swap Space Percentage

This metric provides the amount of used swap space as a percentage of the total swap space.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	/usr/sbin/swap -s
Linux	/usr/bin/free -m

2.75 Switch/Swap Activity

The Switch/Swap Activity metric category displays the metric reports on the system switching and swapping activity.

2.75.1 Process Context Switches (per second)

This metric displays the number of process context switches per second

Table 2-75 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 minutes	Not Defined	Not Defined	Process Context Switches (per second) %value% , has crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	sar command
HP	sar command

Host	Data Source
IBM AIX	sar command

The OS sar command is used to sample cumulative activity counters maintained by the OS. Also, the data is obtained by sampling system counters once in a five-second interval. The results are essentially the number of processes swapped in over this five-second period divided by five.

User Action

None.

2.75.2 Swapins Transfers (per second)

This metric represents the number of 512-byte units transferred for swapins per second.

Table 2-76 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 minutes	Not Defined	Not Defined	Swapins Transfers (per second) %value% , has crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	sar command
HP	sar command
Linux	sar command
IBM AIX	sar command

The OS sar command is used to sample cumulative activity counters maintained by the OS. Also, the data is obtained by sampling system counters once in a five-second interval. The results are essentially the number of processes swapped in over this five-second period divided by five.

User Action

None.

2.75.3 Swapout Transfers (per second)

This metric represents the number of 512-byte units transferred for swapouts per second.

Table 2-77 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 minutes	Not Defined	Not Defined	Swapins Transfers (per second) %value% , has crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	sar command
HP	sar command
Linux	sar command
IBM AIX	sar command

The OS sar command is used to sample cumulative activity counters maintained by the OS. Also, the data is obtained by sampling system counters once in a five-second interval. The results are essentially the number of processes swapped in over this five-second period divided by five.

User Action

None.

2.75.4 System Swapins (per second)

This metric represents the number of process swapins per second.

Table 2-78 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 minutes	Not Defined	Not Defined	System Swapins (per second) %value% , has crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	sar command
HP	sar command
Linux	sar command
IBM AIX	sar command

The OS sar command is used to sample cumulative activity counters maintained by the OS. Also, the data is obtained by sampling system counters once in a five-second interval. The results are essentially the number of processes swapped in over this five-second period divided by five.

User Action

None.

2.75.5 System Swapouts (per second)

This metric represents the number of process swapouts per second.

Table 2-79 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 minutes	Not Defined	Not Defined	System Swapouts (per second) %value% , has crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	sar command
HP	sar command
Linux	sar command
IBM AIX	sar command

The OS sar command is used to sample cumulative activity counters maintained by the OS. Also, the data is obtained by sampling system counters once in a five-second interval. The results are essentially the number of processes swapped in over this five-second period divided by five.

User Action

None.

2.75.6 Total System Swaps(per second)

This metric displays the total number of system swaps per second.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

2.76 System Calls

The System Calls metric category provides statistics about the system calls made over a five-second interval.

2.76.1 Characters Transferred by Read System Calls (per second)

This metric represents the number of characters transferred by read system calls (block devices only) per second.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	sar command
HP	sar command
Linux	not available
HP Tru64	table() system call
IBM AIX	sar command
Windows	not available

The OS sar command is used to sample cumulative activity counters maintained by the OS. Also, the data is obtained by sampling system counters once in a five-second interval. The results are essentially the number of processes swapped in over this five-second period divided by five.

User Action

None.

2.76.2 Characters Transferred by Write System Calls (per second)

This metric represents the number of characters transferred by write system calls (block devices only) per second.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	sar command
HP	sar command
Linux	not available
HP Tru64	table() system call
IBM AIX	sar command
Windows	not available

The OS sar command is used to sample cumulative activity counters maintained by the OS. Also, the data is obtained by sampling system counters once in a five-second interval. The results are essentially the number of processes swapped in over this five-second period divided by five.

User Action

None.

2.76.3 exec() System Calls (per second)

This metric represents the number of exec() system calls made per second.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	sar command
HP	sar command
Linux	not available
HP Tru64	table() system call
IBM AIX	sar command
Windows	not available

The OS sar command is used to sample cumulative activity counters maintained by the OS. Also, the data is obtained by sampling system counters once in a five-second interval. The results are essentially the number of processes swapped in over this five-second period divided by five.

User Action

None.

2.76.4 fork() System Calls (per second)

This metric represents the number of fork() system calls made per second.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	sar command
HP	sar command
Linux	not available
HP Tru64	table() system call
IBM AIX	sar command
Windows	not available

The OS sar command is used to sample cumulative activity counters maintained by the OS. Also, the data is obtained by sampling system counters once in a five-second interval. The results are essentially the number of processes swapped in over this five-second period divided by five.

User Action

None.

2.76.5 read() System Calls (per second)

This metric represents the number of read() system calls made per second.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	sar command
HP	sar command
Linux	not available
HP Tru64	table() system call
IBM AIX	sar command
Windows	not available

The OS sar command is used to sample cumulative activity counters maintained by the OS. Also, the data is obtained by sampling system counters once in a five-second interval. The results are essentially the number of processes swapped in over this five-second period divided by five.

User Action

None.

2.76.6 System Calls (per second)

This metric represents the number of system calls made per second. This includes system calls of all types.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	sar command
HP	sar command
Linux	not available
HP Tru64	table() system call
IBM AIX	sar command
Windows	not available

The OS sar command is used to sample cumulative activity counters maintained by the OS. Also, the data is obtained by sampling system counters once in a five-second interval. The results are essentially the number of processes swapped in over this five-second period divided by five.

User Action

None.

2.76.7 write() System Calls (per second)

This metric represents the number of write() system calls made per second.

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	sar command
HP	sar command
Linux	not available
HP Tru64	table() system call
IBM AIX	sar command
Windows	not available

The OS sar command is used to sample cumulative activity counters maintained by the OS. Also, the data is obtained by sampling system counters once in a five-second

interval. The results are essentially the number of processes swapped in over this five-second period divided by five.

User Action

None.

2.77 System Load

The metrics in this category provide information about system load.

2.77.1 Total CPU Cores

This metric provides the total number of CPU cores.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.77.2 Total Number of Processes

This metric provides the total number of processes.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.77.3 Total Users

The metric provides the total number of users.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.77.4 Run Queue Length (15 minute average)

This metric provides the average number of processes in memory and subject to be run in the last interval. This metric checks the run queue.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.77.5 Run Queue Length (15 minute average, per core)

This metric provides the average number of processes in memory per core and subject to be run in the last interval. This metric checks the run queue.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.77.6 Run Queue Length (1 minute average)

This metric provides the average number of processes in memory and subject to be run in the last interval. This metric checks the run queue.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.77.7 Run Queue Length (1 minute average, per core)

This metric provides the average number of processes in memory per core and subject to be run in the last interval. This metric checks the run queue.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.77.8 Run Queue Length (5 minute average)

This metric represents the average number of processes in memory and subject to be run in the last interval. This metric checks the run queue.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.77.9 Run Queue Length (5 minute average, per core)

This metric provides the average number of processes in memory per core and subject to be run in the last interval. This metric checks the run queue.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

2.78 System Times

The metrics in this category provide information about system times.

2.78.1 System Last Boot Time

This metric provides the system's last boot time.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	/usr/bin/date +%D %r %Z'
	/usr/bin/who -b
	/usr/bin/uptime
Linux	/bin/date +%D %r %Z'
	/usr/bin/who -b
	/usr/bin/uptime

2.78.2 System Running Time (Minutes)

This metric provides the current system running time (in minutes) since the last time the system was started.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	/usr/bin/date +%D %r %Z'
	/usr/bin/who -b
	/usr/bin/uptime
Linux	/bin/date +%D %r %Z'
	/usr/bin/who -b
	/usr/bin/uptime

2.78.3 System Time

This metric provides the current date and time of the system.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data sources for the metrics in this category include the following:

Host	Data Source
Solaris	/usr/bin/date +%D %r %Z'
	/usr/bin/who -b
	/usr/bin/uptime

Host	Data Source
Linux	/bin/date +%D %r %Z' /usr/bin/who -b /usr/bin/uptime

2.79 Total Disk Usage

This metric category provides information about the disk space usage.

2.79.1 Total Disk Available (%) (across all local filesystems)

This metric displays the total percentage of free disk space across all local file systems.

Table 2-80 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	TotalDiskUsage %keyValue% has %value%%% available space, fallen below warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.79.2 Total Disk Size (across all local filesystems in MB)

This metric displays the total disk size (in MB) across all local file systems.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

For the following hosts:

Host	Data Source
Solaris	sar command
HP	sar command
Linux	not available
HP Tru64	table() system call
IBM AIX	sar command
Windows	not available

User Action

None.

2.79.3 Total Disk Space Available (across all local filesystems in MB)

This metric displays the total amount of free disk space (in MB) across all local file systems.

Table 2-81 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	TotalDiskUsage %keyValue% has %value%%% available space, fallen below warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

2.79.4 Total Disk Space Utilized (across all local filesystems in MB)

This metric represents the total amount of disk space used (in MB) across all local file systems.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

For the following hosts:

Host	Data Source
Solaris	sar command
HP	sar command
Linux	not available
HP Tru64	table() system call
IBM AIX	sar command
Windows	not available

User Action

None.

2.79.5 Total Disk Utilized (%) (across all local filesystems)

This metric displays the total percentage of utilized disk across all local file systems

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

For the following hosts:

Host	Data Source
Solaris	sar command
HP	sar command
Linux	not available
HP Tru64	table() system call
IBM AIX	sar command
Windows	not available

User Action

None.

2.80 TTY Activity

This metric reports TTY device activity.

2.80.1 Incoming Character Interrupts (per second)

This metric represents the number of received incoming character interrupts per second.

Target Version	Collection Frequency
All Versions	Every 5 Seconds

Data Source

For the following hosts:

Host	Data Source
Solaris	sar command
HP	sar command
Linux	not available

Host	Data Source
HP Tru64	table() system call
IBM AIX	sar command
Windows	not available

The OS sar command is used to sample cumulative activity counters maintained by the OS. The data is obtained by sampling system counters once in a five-second interval.

User Action

None.

2.80.2 Input Characters Processed by canon()

This metric represents the input characters processed by canon() per second.

Target Version	Collection Frequency
All Versions	Every 5 Seconds

Data Source

For the following hosts:

Host	Data Source
Solaris	sar command
HP	sar command
Linux	not available
HP Tru64	table() system call
IBM AIX	sar command
Windows	not available

The OS sar command is used to sample cumulative activity counters maintained by the OS. The data is obtained by sampling system counters once in a five-second interval.

User Action

None.

2.80.3 Modem Interrupt Rate (per second)

This metric represents the modem interrupt rate.

Target Version	Collection Frequency
All Versions	Every 5 Seconds

Data Source

For the following hosts:

Host	Data Source
Solaris	sar command
HP	sar command
Linux	not available
HP Tru64	table() system call
IBM AIX	sar command
Windows	not available

The OS sar command is used to sample cumulative activity counters maintained by the OS. The data is obtained by sampling system counters once in a five-second interval.

User Action

None.

2.80.4 Outgoing Character Interrupts (per second)

This metric represents the number of transmit outgoing character interrupts per second.

Target Version	Collection Frequency
All Versions	Every 5 Seconds

Data Source

For the following hosts:

Host	Data Source
Solaris	sar command
HP	sar command
Linux	not available
HP Tru64	table() system call
IBM AIX	sar command

Host	Data Source
Windows	not available

The OS sar command is used to sample cumulative activity counters maintained by the OS. The data is obtained by sampling system counters once in a five-second interval.

User Action

None.

2.80.5 TTY Output Characters (per second)

This metric represents the number of output characters per second.

Target Version	Collection Frequency
All Versions	Every 5 Seconds

Data Source

For the following hosts:

Host	Data Source
Solaris	sar command
HP	sar command
Linux	not available
HP Tru64	table() system call
IBM AIX	sar command
Windows	not available

The OS sar command is used to sample cumulative activity counters maintained by the OS. The data is obtained by sampling system counters once in a five-second interval.

User Action

None.

2.80.6 TTY Raw Input (chars/s)

This metric represents the raw input characters per second.

Target Version	Collection Frequency
All Versions	Every 5 Seconds

Data Source

For the following hosts:

Host	Data Source
Solaris	sar command
HP	sar command
Linux	not available
HP Tru64	table() system call
IBM AIX	sar command
Windows	not available

The OS sar command is used to sample cumulative activity counters maintained by the OS. The data is obtained by sampling system counters once in a five-second interval.

User Action

None.

2.81 Users

The Users metric category provides information about the users currently on the system being monitored.

2.81.1 Number of Logons

This metric represents the number of times a user with a certain user name is logged on to the host target.

Table 2-82 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Number of Logons is %value% , crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

For Solaris, HP, Linux, HP Tru64, and IBM AIX, the number of times a user is logged on is obtained from the OS w command.

For Windows, the source of information is Windows API.

User Action

None.

2.81.2 User Name

This metric displays the user name associated with the login to the host target..

Target Version	Collection Frequency
All Versions	Every 15 Minutes

2.82 User Defined Metrics

The UDM metric allows you to execute your own scripts. The data returned by these scripts can be compared against thresholds and generate severity alerts similar to alerts in predefined metrics. UDM is similar to the Oracle 9i Management Agent's UDE functionality.

2.82.1 User Defined Numeric Metric

This metric contains a value if the value type is NUMBER. Otherwise, the value is "", if the value is STRING.

Data Source

User defined script.

User Action

None.

2.82.2 User Defined String Metric

This metric contains a value if the value type is STRING. Otherwise, the value is "", if the value is NUMBER.

Data Source

User defined script.

User Action

None.

2.83 Virtualization

This metric category displays information about Virtualization configuration metrics. The value of the collected metrics depends on the platform.

2.83.1 Oracle Solaris on Sparc and Oracle Solaris on x86

The following properties will be collected for Solaris platforms. The collections vary depending on the type of virtualization technology implemented.

Property Name	Property Value	Description
Virtual	Yes No Unknown	Indicates whether this host is running on physical or virtual hardware
Virtual Processors	Site specific	Indicates the number of allocated virtual processors
Zone Names	List of all zone names (for global zone Non global name	Provides a list of all the zone names for the global zone or else provides the nonglobal name.
Logical Domains Manager	Site specific	Indicates the version number of the Logical Domain Manager
Domain Names	Site specific	Provides a comma-separated Domain Names list
dedicated-cpu	True False	Uses the <code>dedicated-cpu</code> resource (specifies whether a subset of the system's processors should be dedicated to a non-global zone while it is running)
capped-cpu	True False	Uses the <code>capped-cpu</code> resource (provides an absolute limit on the amount of CPU resources that can be consumed by a project or a zone)
ncpus	Site specific	Indicates the number or range of CPUs
Pool Name	Site specific	Pool name
pset.min	Site specific	Indicates the minimum number of CPUs for this processor set
pset.max	Site specific	Indicates the maximum number of CPUs for this processor set
cpu.sys_id	Site specific	Indicates the CPU <code>sys_id</code>
Pool name list	Site specific	Provides a list of pool names
Pset name list	Site specific	Provides a list of processor sets

2.83.2 IBM AIX

The following properties will be collected for IBM AIX:

Version	Property Name	Property Value
5.3 - 6.0	Virtual	Yes No Unknown
5.3 - 6.0	Node Name	Site specific

Version	Property Name	Property Value
5.3 - 6.0	Partition Name	Site specific
5.3 - 6.0	Partition Number	Site specific
5.3 - 6.0	Type	Site specific
5.3 - 6.0	Mode	Site specific
5.3 - 6.0	Entitled Capacity	Site specific
5.3 - 6.0	Partition Group-ID	Site specific
5.3 - 6.0	Shared Pool ID	Site specific
5.3 - 6.0	Online Virtual CPUs	Site specific
5.3 - 6.0	Active Physical CPUs in system	Site specific
5.3 - 6.0	Active CPUs in Pool	Site specific
5-3 - 6.1 and later	WPAR Key	Site specific
5-3 - 6.1 and later	WPAR Configured ID	Site specific
5-3 - 6.1 and later	WPAR Maximum Logical CPUs	Site specific
5-3 - 6.1 and later	WPAR Maximum Virtual CPUs	Site specific
5-3 - 6.1 and later	WPAR Percentage CPU Limit	Site specific

2.83.3 Microsoft Windows

The following properties will be collected for Microsoft Windows:

Property Name	Property Value	Description
Virtual	Yes No Unknown	Indicates whether this host is running on physical or virtual hardware
Model	Site specific	Indicates the model details such as HVM domU
Virtual Machine	Site specific	Indicates the type of virtual machine such as Xen

2.83.4 Linux

The following property will be collected for Linux:

Property Name	Property Value	Description
Virtual	Yes	Indicates whether this host is running on physical or virtual hardware
	No	
	Unknown	

2.84 Windows Events Log

The purpose of this metric is to collect those entries from all available Windows NT event log files whose type is either Error or Warning. A critical or a warning alert is raised only for System and Security Event log file entries.

Note: Since log files continue to grow, this metric outputs log events which had been written to the log file after the last collection time, that is, only those records are written out whose timeGenerated (time when the event was generated) is after the last collection time until the last record of the log file. If this metric is collected for the first time, only the events generated on the *current date* are outputted.

This metric is available only on Windows.

2.84.1 Category

This metric displays a list of all categories for the events matching Log Name, Source, and Event ID defined for the monitored object. The actual category of the event can be found in the Windows event log message.

Target Version	Collection Frequency
3.0 and higher	Every 15 Minutes

Data Source

Windows Management Instrumentation (WMI)

User Action

None.

2.84.2 Date-Time

This is the time at which point the metric scanned through the event logs. This metric is available only on Windows.

Target Version	Collection Frequency
3.0 and higher	Every 15 Minutes

Data Source

Windows Management Instrumentation (WMI)

User Action

None.

2.84.3 Event ID

This is the Perl pattern to match the string defined for the Event ID in the monitored objects. The actual Event ID of the event can be found in the Windows event log message. This metric is available for Windows only.

Target Version	Collection Frequency
3.0 and later	Every 15 Minutes

Data Source

Windows Management Instrumentation (WMI)

User Action

None.

2.84.4 Log Name

This metric provides the name for the event log record.

Target Version	Collection Frequency
3.0 and later	Every 15 Minutes

Data Source

Windows Management Instrumentation (WMI)

User Action

None.

2.84.5 Record Number

This metric provides the record number for the event log record.

Target Version	Collection Frequency
3.0 and later	Every 15 Minutes

Data Source

Windows Management Instrumentation (WMI)

User Action

None.

2.84.6 Source

This metric provides the name of the software that logs the event.

Target Version	Collection Frequency
3.0 and later	Every 15 Minutes

Data Source

Windows Management Instrumentation (WMI)

User Action

None.

2.84.7 Windows Event Log Message

This metric is a digest of all the events that match the Log Name, Source, and Event ID specified for the monitored object. After the above filtering is done, grouping of these events is done on Log Name, Source, Event ID, Category, and User to get the count of error events and warning events. The column has the details of the events in the following format:

[LogName: Source:Event ID:Category:User : :]

Example: [Application:Symantec AntiVirus:2: : :error=2:] [Application:Symantec AntiVirus:3: : :warning =1]

To get the exact message about the events that satisfied the criteria set on the monitored object, the Event viewer provided by Microsoft Windows must be used.

This metric is available only on Windows.

Table 2-83 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
3.0 and later	Every 15 Minutes	Not Defined	Not Defined	Message is of following format.Logfile:SourceName:EventCode:CategoryString:User:ErrorCount:WarningCount [%message%]

Data Source

Windows Management Instrumentation (WMI)

User Action

None.

2.84.8 Windows Event Severity

This metric displays the seriousness of the event. Possible values are: Warning and Error.

This metric is available for Windows only.

Table 2-84 Metric Summary Table

Table 2-84 (Cont.) Metric Summary Table

Target Version	Key	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	logfile: "system"	Every 15 Minutes	warning	error	X1User[%user%]:Category[%categorystring%]:Description[%message%]

Multiple Thresholds

For this metric you can set different warning and critical threshold values for each unique combination of "Log Name", "Source", and "Event ID" objects.

If warning or critical threshold values are currently set for any unique combination of "Log Name", "Source", and "Event ID" objects, those thresholds can be viewed on the Metric Detail page for this metric.

To specify or change warning or critical threshold values for each unique combination of "Log Name", "Source", and "Event ID" objects, use the Edit Thresholds page.

Data Source

WMI Operating System Classes

User Action

None.

2.84.9 User

This metric provides the user account.

Target Version	Collection Frequency
3.0 and later	Every 15 Minutes

Data Source

Windows Management Instrumentation (WMI)

User Action

None.

2.85 ZFS ARC Cache Usage

The metrics in this category provide information about ZFS ARC Cache usage.

2.85.1 ARC Cache Demand Data Misses Per Second (KB)

This metric provides the number of demand data misses per second.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Data Source

The data source for the metrics in this category include the following:

Host	Data Source
Solaris	/usr/bin/kstat -p zfs:0:arcstats

2.85.2 ARC Cache Demand Data Misses Percentage

This metric provides the percentage of demand data misses.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Data Source

The data source for the metrics in this category include the following:

Host	Data Source
Solaris	/usr/bin/kstat -p zfs:0:arcstats

2.85.3 ARC Cache MetaData (MB)

This metric provides the current size of the ZFS metadata.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Data Source

The data source for the metrics in this category include the following:

Host	Data Source
Solaris	/usr/bin/kstat -p zfs:0:arcstats

2.85.4 ARC Cache MetaData Percentage

This metric provides the percentage size of the ZFS metadata.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Data Source

The data source for the metrics in this category include the following:

Host	Data Source
Solaris	/usr/bin/kstat -p zfs:0:arcstats

2.85.5 ARC Cache Read Misses Per Second (KB)

This metric provides the number of read misses per second.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Data Source

The data source for the metrics in this category include the following:

Host	Data Source
Solaris	/usr/bin/kstat -p zfs:0:arcstats

2.85.6 ARC Cache Read Misses Percentage

This metric provides the percentage of read misses.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Data Source

The data source for the metrics in this category include the following:

Host	Data Source
Solaris	/usr/bin/kstat -p zfs:0:arcstats

2.85.7 ARC Cache MetaData Data Misses Per Second (KB)

This metric provides the number of metadata misses per second.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Data Source

The data source for the metrics in this category include the following:

Host	Data Source
Solaris	/usr/bin/kstat -p zfs:0:arcstats

2.85.8 ARC Cache MetaData Data Misses Percentage

This metric provides the percentage of the metadata misses per second.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Data Source

The data source for the metrics in this category include the following:

Host	Data Source
Solaris	/usr/bin/kstat -p zfs:0:arcstats

2.85.9 ARC Cache Prefetch Data Misses Per Second (KB)

This metric provides the number of prefetch data misses per second.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Data Source

The data source for the metrics in this category include the following:

Host	Data Source
Solaris	/usr/bin/kstat -p zfs:0:arcstats

2.85.10 ARC Cache Prefetch Data Misses Percentage

This metric provides the percentage of prefetch data misses.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Data Source

The data source for the metrics in this category include the following:

Host	Data Source
Solaris	/usr/bin/kstat -p zfs:0:arcstats

2.85.11 ARC Cache Read Access Per Second (MB)

This metric provides the number of reads per second.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Data Source

The data source for the metrics in this category include the following:

Host	Data Source
Solaris	/usr/bin/kstat -p zfs:0:arcstats

2.85.12 ARC Cache current size (MB)

This metric provide the current size of the ARC cache.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Data Source

The data source for the metrics in this category include the following:

Host	Data Source
Solaris	/usr/bin/kstat -p zfs:0:arcstats

2.86 Zombie Processes

The Zombie Processes metric category monitors the orphaned processes in the different variations of UNIX systems.

2.86.1 Processes in Zombie State (%)

This metric represents the percentage of all processes running on the system that are currently in zombie state.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	%value%% of all processes are in zombie state, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data sources for this metric include the following:

Host	Data Source
HP	ps command
Linux	ps command

User Action

None.

OMS and Repository

The OMS and Repository, Oracle Management Service, OMS Console, and OMS Platform targets expose metrics that are useful for monitoring the Oracle Enterprise Manager Management Service (OMS) and Management Repository.

3.1 Active Agents

This category of metrics provides information on active agents.

3.1.1 Number of Active Agents

The number of active agents in the repository. If this number is 0, then Enterprise Manager is not monitoring any external targets. May be a problem if unexpected.

Data Source

The number of agents whose status is up in the `mgmt_current_availability` table.

User Action

If no agents are running, determine the reasons they are down, correct if needed and restart. Log files in the agent's `$ORACLE_HOME/sysman/log` directory can provide information about possible causes of agent shutdown.

3.2 Active Loader Status

This category provides information on Loader usage and performance, including throughput and rows processed in last hour.

3.2.1 Rows Processed in the Last Hour

This is the number of rows processed.

Data Source

The `mgmt_system_performance_log` table in the Management Repository.

User Action

If this number continues to rise over time, then the user may want to consider adding another Management Service or increasing the number of loader threads for this Management Service. To increase the number of loader threads, add or change the `em.loader.threadPoolSize` entry in the `emoms.properties` file. The default number of threads is 2. Values between 2 and 10 are common.

3.2.2 Total Loader Runtime in the Last Hour (seconds)

This is the amount of time in seconds that the loader thread has been running in the past hour.

Data Source

The `mgmt_system_performance_log` table in the Management Repository.

User Action

If this number is steadily increasing along with the Loader Throughput (rows per hour) metric, then perform the actions described in the User Action section of the help topic for the Loader Throughput (rows per hour) metric. If this number increases but the loader throughput does not, check for resource constraints, such as high CPU utilization by some process, deadlocks in the Management Repository database, or processor memory problems.

3.3 Active Management Servlets

This category of metrics provides information on Active Management Servlets Category.

3.3.1 Notifications Processed

The total number of notifications delivered by the Management Service over the previous 10 minutes. The metric is collected every 10 mins and no alerts will be generated.

Data Source

The `mgmt_system_performance_log` table in the Management Repository.

User Action

If the number of notifications processed is continually increasing over several days, then you may want to consider adding another Management Service.

3.3.2 Page Hits (per minute)

This indicates average number of EM console accesses in a minute. The metric is collected every 10 mins and alerts will not be generated.

Data Source

This metric is obtained using the following query of the `mgmt_oms_parameters` table in the Management Repository.

```
SELECT value FROM mgmt_oms_parameters
where name='loaderOldestFile'
```

User Action

None.

3.4 Agent Status

This category of metrics provides information on the agent status.

3.4.1 Number of Agent Restarts

The number of times the agent has been restarted in the past 24 hrs.

Data Source

Derived by:

```
(SELECT t.target_name, COUNT(*) down_count
FROM mgmt_availability a, mgmt_targets t
WHERE a.start_collection_timestamp = a.end_collection_timestamp
AND a.target_guid = t.target_guid
AND t.target_type = MGMT_GLOBAL.G_AGENT_TARGET_TYPE
AND a.start_collection_timestamp > SYSDATE-1
GROUP BY t.target_name)
```

User Action

If this number is high, check the agent logs to see if a system condition exists causing the system to bounce. If an agent is constantly restarting, the Targets Not Uploading Data metric may also be set for targets on the agents with restart problems. Restart problems may be due to system resource constraints or configuration problems.

3.5 Configuration

This category of metrics provides information on configuration.

3.5.1 Number of Administrators

The number of administrators defined for Enterprise Manager.

Data Source

The mgmt_created_users table in the Management Repository.

3.5.2 Number of Groups

The number of groups defined for Enterprise Manager.

Data Source

The mgmt_targets table in the Management Repository.

User Action

If you have a problem viewing the All Targets page, you may want to check the number of roles and groups.

3.5.3 Number of Roles

The number of roles defined for Enterprise Manager.

Data Source

The mgmt_roles table in the Management Repository.

User Action

If you have a problem viewing the All Targets page, you may want to check the number of roles and groups.

3.5.4 Number of Targets

The number of targets defined for Enterprise Manager.

Data Source

The mgmt_targets table in the Management Repository.

User Action

This metric is informational only

3.5.5 Repository Tablespace Used

This is the total number of MB that the Management Repository tablespaces are currently using.

Data Source

The dba_data_files table in the Management Repository.

User Action

This metric is informational only.

3.5.6 Target Addition Rate (Last Hour)

The rate at which targets are being created. The target addition rate should be greatest shortly after EM is installed and then should increase briefly whenever a new agent is added. If the rate is increasing abnormally, you should check for abnormal agent or administrator activity and verify that the targets are useful. Check to see that group creation is not being over utilized.

Data Source

The metric is derived from the mgmt_target table, the current target count - target count at last sampling.

User Action

This metric is informational only.

3.5.7 Total Repository Tablespace

The total MB allocated to the Management Repository tablespaces. This will always be greater than or equal to the space used.

Data Source

The dba_free_space table in the Management Repository.

User Action

This metric is informational only.

3.5.8 User Addition Rate (Last Hour)

The rate at which users are being created. The target addition rate should be low. If the rate is increasing abnormally, you should check for abnormal administrator activity.

Data Source

The metric is derived from the mgmt_created_users table, the current user count - user count at last sampling.

User Action

This metric is informational only.

3.6 DBMS Job Status

This category of metrics provides information on the DBMS job status.

3.6.1 DBMS Job Invalid Schedule

This metric flags a DBMS job whose schedule is invalid. A schedule is marked 'Invalid' if it is scheduled for more than one hour in the past, or more than one year in the future. An invalid schedule means that the job is in serious trouble.

Data Source

The user_schedule_jobs table in the Management Repository.

User Action

None.

3.6.2 DBMS Job Processing Time (% of Last Hour)

The percentage of the past hour the job has been running.

Data Source

The mgmt_system_performance_log table in the Management Repository.

User Action

If the value of this metric is greater than 50%, then there may be a problem with the job. Check the System Errors page for errors reported by the job. Check the Alerts log for any alerts related to the job.

3.6.3 DBMS Job UpDown

The down condition equates to the dbms_job "broken" state. The Up Arrow means not broken.

Data Source

The broken column is from the all_users table in the Management Repository.

User Action

Determine the reason for the dbms job failure. Once the reason for the failure has been determined and corrected, the job can be restarted through the dbms_job.run command.

To determine the reason the dbms job failed, take the following steps (replacing myjob with the displayed name of the down job):

1. Copy down the DBMS Job Name that is down from the row in the table. This DBMS Job Name is 'yourDBMSjobname' in the following example.
2. Log onto the database as the repository owner.
3. Issue the following SQL statement:

```
select dbms_jobname
      from mgmt_performance_names
     where display_name='yourDBMSjobname' ;
```

4. If the dbms_jobname is 'myjob', then issue the following SQL statement:

```
select job
      from all_jobs
     where what='myjob' ;
```

5. Using the job id returned, look for ORA-12012 messages for this jobid in the alerts log and trace files and try to determine and correct the problem.

The job can be manually restarted through the following database command:

```
execute dbms_job.run (jobid);
```

3.6.4 DBMS Job Throughput Per Second

The number of notifications delivered per second, averaged over the past hour.

Data Source

The mgmt_system_performance_log table in the Management Repository.

User Action

This metric is informational only.

3.7 Event Status

This metric category provides information about the repository metrics that track the health of an event system.

Note:

The event system maintains queues in a database queue table (em_event_bus_table) for processing events and its corresponding database view is aq\$em_event_bus_table.

3.7.1 Average Event Dequeue Time (Milliseconds)

This metric displays the average time taken to dequeue a message from the event queues.

Data Source

The data for this metric comes from entries in `mgmt_system_performance_log` where `name= 'DequeueTime'`

User Action

If the average event dequeue time is consistently higher for more than an hour, then it might indicate that the database queue table (`em_event_bus_table`) requires maintenance.

3.7.2 Average Event Processing Time (Seconds)

This metric displays the average time taken to apply the incident rules to an event or an incident or a problem.

Data Source

The data for this metric comes from entries in `mgmt_system_performance_log` where `name= 'ProcessingTime'`

User Action

If the average event processing time is continually increasing for more than an hour, then remove any unnecessary or out-of-date incident rules. Fix any operational issues present in the Management Repository database. You might have to add an additional Management Service to increase the event system capacity.

3.7.3 Event Queue Query Time (Seconds)

This metric displays the average time taken to query the event bus (`aq $em_event_bus_table`).

Data Source

The data for this metric comes from entries in `mgmt_system_performance_log` where `name= 'QueryTime'`.

User Action

If the average event queue query time is consistently higher for more than an hour, then it might indicate that the database queue table (`em_event_bus_table`) requires maintenance.

3.7.4 Average Event Queue Wait Time (Seconds)

This metric displays the average time an event or an incident or a problem waits in the event queue before it is picked up for applying incident rules.

Data Source

The data for this metric comes from entries in `mgmt_system_performance_log` where `name= 'Latency'`

User Action

If the average latency is continually increasing, then remove any unnecessary or out-of-date incident rules. Fix any operational issues present in the Management Repository database. You might have to add an additional Management Service to increase the event system capacity.

3.7.5 Event System UpDown

This metric displays the status of the event system. If there are events waiting to be processed in the event queues and no events were processed for more than 5 minutes, then the event system is DOWN. Otherwise, the event system is UP.

Data Source

The data for this metric comes from entries in the `aq$em_event_bus_table` view and the `em_event_bus_queues` table.

User Action

Restart the Management Service. This might resolve the issue.

3.7.6 Queues With Invalid Listener

If any of the event queues is assigned a nonexistent Management Service, then this metric can have a positive count. Otherwise, it is 0.

Data Source

The data for this metric comes from entries in `em_event_bus_queues`, `em_event_coordinators` and `mgmt_failover_table`.

User Action

If the value stays positive continually for more than half an hour, then restart Oracle Management Service, which might resolve the issue.

3.7.7 Queues With No Listener

If any event queue is not assigned to a Management Service, this metric has a positive value. Otherwise, it is 0.

Data Source

The data for this metric comes from entries in `em_event_bus_queues`, `em_event_coordinators` and `mgmt_failover_table`.

User Action

If the value stays positive continually for at least half an hour, then restart Oracle Management Service, which might resolve the issue.

3.7.8 Total Events Pending

This metric displays the number of events waiting to be processed in event queues.

Data Source

The data for this metric comes from entries in `aq$em_event_bus_table`, where `consumer_name` does not start with 'ADM' and `msg_state` is 'READY'.

User Action

If the value stays high continually for at least half an hour, you might be experiencing an event flood and the issue could be temporary. Fix any operational issues present in the Management Repository database. You might need to add an additional Oracle Management Service to increase the event system capacity.

3.7.9 Total Events Processed (Last Hour)

This metric is a total number of events currently waiting to be processed in event queues.

Data Source

The data for this metric comes from entries in `aq$em_event_bus_table`, where `consumer_name` does not start with 'ADM' and `msg_state` is 'READY'.

User Action

If the value stays high continually, you might experience an event flood. You might have to add an additional Oracle Management Service to increase the event system capacity.

3.8 Event Performance

This metric category provides information about the repository metrics, which track the performance of the event system for each queue type.

- Queue type 'H' represents high priority queues. High priority queues are used for processing target availability events.
- Queue Type 'M' represents medium priority queues. Medium priority queues are used for processing events such as metric alerts, which have noninformational severities, such as CRITICAL or WARNING.
- Queue type 'L' represents low priority queues. Low priority queues are used for processing INFORMATIONAL events.

3.8.1 Event Processing Time (% of Last Hour)

This metric measures the percentage of CPU time elapsed while processing the load from the queues of a specific queue type.

Data Source

The data for this metric comes from entries in `mgmt_system_performance_log` where `name= 'ProcessingTime'`.

User Action

If the value stays high continually, you might experience an event flood. You might have to add an additional Oracle Management Service to increase the event system capacity.

3.8.2 Events Processed (Last Hour)

This metric displays the number of events currently waiting to be processed in event system queues of a specific queue type.

Data Source

The data for this metric comes from entries in the `mgmt_system_performance_log` where `name= 'ProcessingTime'`.

User Action

If the value stays high continually, you might experience an event flood. You might have to add an additional Oracle Management Service to increase the event system capacity.

3.8.3 Pending Event Count

This metric displays the number of events currently waiting to be processed in event system queues of a specific queue type.

Data Source

The data for this metric comes from entries in `aq$em_event_bus_table`, where `consumer_name` starts with a specific queue type value and `msg_state` is 'READY'.

User Action

If the value stays high continually, you might experience an event flood. You might have to add an additional Oracle Management Service to increase the event system capacity.

3.9 Expired Agent initiated (emctl) Blackouts

This metric category provides information about expired blackouts started from the Enterprise Manager command line utility (`emctl`).

3.9.1 Blackout Name

This metric displays the name of the blackout

Target Version	Collection Frequency
All Versions	Every Hour

3.9.2 Agent URL

This metric displays the URL of the Management Agent that is installed on the host.

Target Version	Collection Frequency
All Versions	Every Hour

3.9.3 Number of Targets affected

This metric displays the number of targets affected by the expired blackout.

Table 3-1 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every Hour	0	Not Defined	Agent with url %emd_url% has an expired blackout (%blackout_name%) with (%target_count%) affected targets.

3.10 Incident

This category of metrics provides information on the Incident target

3.10.1 Alert Log Error Trace File

The alert log error trace file is the name of an associated server trace file generated when the problem generating this incident occurred. If no additional trace file was generated, this field will be blank.

The following table shows how often the metric's value is collected.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

The alert log error trace file name is extracted from the database alert log.

User Action

The alert log error trace file name is provided so that the user can look in this file for more information about the problem that occurred.

3.10.2 Alert Log Name

The fully specified (includes directory path) name of the current XML alert log file.

The following table shows how often the metric's value is collected.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

This name is retrieved by searching the OMS ADR_HOME/alert directory for the most recent (current) log file.

User Action

The alert log file name is provided so that the user can look in this file for more information about the problem that occurred.

3.10.3 Diagnostic Incident

A diagnostic incident is a single occurrence of a problem (critical error) that occurred in the OMS process while using Enterprise Manager.

The following table shows how often the metric's value is collected.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

Text describing a diagnostic incident is extracted from the database alert log, which is an XML file stored in the Automatic Diagnostic Repository (ADR) that stores a chronological list of database messages and errors.

User Action

Diagnostic incidents usually indicate software errors and should be reported to Oracle using the Enterprise Manager Support Workbench.

3.10.4 ECID

The Execution Context ID (ECID) tracks requests as they move through the application server. This information is useful for diagnostic purposes because it can be used to correlate related problems encountered by a single user attempting to accomplish a single task.

The following table shows how often the metric's value is collected.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The ECID is extracted from the database alert log.

User Action

Diagnostic incidents usually indicate software errors and should be reported to Oracle using the Enterprise Manager Support Workbench. When packaging problems using Support Workbench, the ECID will be used by Support Workbench to correlate and include any additional problems in the package.

3.10.5 Impact

An optional field (may be empty) assessing the impact of the problem that occurred. The following table shows how often the metric's value is collected.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The impact is extracted from the database alert log.

User Action

This field is purely informational. Diagnostic incidents usually indicate software errors and should be reported to Oracle using the Enterprise Manager Support Workbench.

3.10.6 Incident ID

The Incident ID is a number that uniquely identifies a diagnostic incident (single occurrence of a problem).

The following table shows how often the metric's value is collected.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

The incident ID is extracted from the database alert log.

User Action

Diagnostic incidents usually indicate software errors and should be reported to Oracle using the Enterprise Manager Support Workbench. Problems are one or more occurrences of the same incident. Using Support Workbench, the incident ID can be used to select the correct Problem to package and send to Oracle. Using the command line tool ADRCI, the incident ID can also be used with the show incident command to get details about the incident.

3.11 Job Dispatcher Performance

This category of metrics provides information on the performance of job dispatcher.

3.11.1 Job Dispatcher Processing Time (% of Last Hour)

The job dispatcher is responsible for scheduling jobs as required. It starts up periodically and checks if jobs need to be run. If job dispatcher is running more than the threshold levels, then it is having problems handling the job load.

Data Source

This is the sum of the amount of time the job has run over the last hour from the `mgmt_system_performance_log` table in the Management Repository divided by one hour, multiplied by 100 to arrive at the percent.

User Action

This metric is informational only.

3.11.2 Job Steps Per Second

The number of job steps processed per second by the job dispatcher, averaged over the past hour and sampled every 10 minutes.

Data Source

The `mgmt_job_execution` table in the Management Repository.

User Action

This metric is informational only.

3.12 Metric Collection Errors Cleared (Per Day)

This metric category provides information about the metric collection errors cleared each day.

3.12.1 Number Of Errors Cleared

This metric displays number of metric collection errors cleared for the day.

Target Version	Collection Frequency
All Versions	Every Day

3.13 Metric Collection Errors Reported (Per Day)

This metric category provides information about the metric collection errors reported each day.

3.13.1 Number Of Errors Reported

This metric displays the number of metric collection errors reported each day.

Table 3-2 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every Day	Not Defined	Not Defined	Number of metric collection error %value %, crossed warning (%warning_threshold %) or critical (%critical_threshold%) threshold.

3.14 Notification Delivery Performance

This metric category provides information about repository metrics that report various performance measures for notification methods in use. Supported notification methods include:

- EMAIL
- OSCMD
- PLSQL
- SNMP
- SNMPV3 (release 12c (12.1.0.4 and later))
- JAVA
- TICKET

3.14.1 Average Notification Time (seconds)

This metric displays the average time taken in seconds to deliver the notification from the time this issue was published to Enterprise Manager.

Data Source

- The data for this metric comes from the `em_notify_requests` and `em_notify_deliveries` tables (Release 12c (12.1.0.4 and later))
- The data for this metric comes from entries in `mgmt_system_performance_log` where `name=method_name` | `_OMS_SECONDS`

User Action

If the average notification time is steadily increasing, verify that the notification methods specified are performing as expected. Remove any unnecessary or out-of-date incident rules.

3.14.2 Notification Processing Time (% of Last Hour)

This metric displays the percentage of CPU (elapsed time) that the notification system was active in sending notifications.

User Action

- The data for this metric comes from the `em_notify_requests` and `em_notify_deliveries` tables (Release 12c (12.1.0.4 and later))
- The data for this metric comes from entries in `mgmt_system_performance_log` where `name=method_name` | `DELIVERY_MILLIS` (All releases earlier than 12c (12.1.0.4))

User Action

If the notification processing time is steadily increasing, then verify that the notification methods are performing as expected. Remove any unnecessary or out-of-date incident rules.

3.14.3 Notification Processed (Last Hour)

This metric displays the total number of notifications delivered by the Management Service over the past hour.

Data Source

- The data for this metric comes from the `em_notify_requests` and `em_notify_deliveries` tables (Release 12c (12.1.0.4 and later))
- The data for this metric comes from entries in `mgmt_system_performance_log` where `name=method_name || DELIVERY_MILLIS` (All releases earlier than 12c (12.1.0.4))

User Action

If the number of notifications processed is continually increasing over several days, then you might want to consider adding another Management Service.

3.14.4 Pending Notification Count

This metric displays the total number of notifications pending delivery.

Data Source

- The data for this metric comes from the `em_notify_requests` and `em_notify_deliveries` tables (Release 12c (12.1.0.4 and later))
- The data for this metric comes from `aq$em_notify_qtable` where `consumer_name` like '`method_name%`' (All releases earlier than 12c (12.1.0.4))

User Action

If the number of notifications pending is continually increasing, then fix any operational issues. You might have to add an additional Management Service to increase the notification system capacity.

3.15 Notification Status

This is a Management Agent metric intended to send out-of-band notifications when the notification system is determined to be in a critical state. Note that the notification system uses a database queue table (`em_notify_qtable`) for managing its delivery work load and its corresponding database view is `AQ$EM_NOTIFY_QTABLE`.

3.15.1 Notification UpDown

If one of the following conditions exist, then the metric's value is DOWN. Otherwise, it is UP.

- If more than 500 notifications are waiting to be completed for more than 1 hour
- If an advanced notification device has not processed notifications for more than one hour and it has requested for notifications to be retried later

Table 3-3 Metric Summary Table

Table 3-3 (Cont.) Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	DOWN	%Message%

Data Source

- If more than 500 notifications are waiting to be completed for more than one hour, then data is obtained from aq\$em_notify_qtable:

```
SELECT count(1)
FROM aq$em_notify_qtable
WHERE msg_state='READY'
AND consumer_name not like 'ADM%'
AND consumer_name not like 'RCA1'
AND enq_time <= sysdate - (1/24);
```

- If an advanced notification device has not processed notifications for more than one hour and it has requested for notifications to be retried later, then data is obtained from the em_notify_requeue table:

```
SELECT count(1)
FROM (SELECT device_id, min(insertion_timestamp) as first_ts
FROM EM_NOTIFY_REQUEUE
GROUP BY device_id) a
WHERE a.first_ts > sysdate - (1/24);
```

User Action

- If the pending notifications count is high, then check if notification methods are performing as expected. Remove any unnecessary or out-of-date incident rules. You might have to add an additional Management Service to increase the notification system capacity.
- If an advanced notification method is requesting for notifications to be retried later, then fix the underlying issue so that it stops requesting retries.

3.16 Overall Status

This metric category provides information about the overall status of the Management Repository.

3.16.1 Overall Backoff Requests in the Last 10 Mins

This metric displays the number of backoff requests in the last 10 minutes.

Table 3-4 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 10 Minutes	Not Defined	Not Defined	Not Defined

3.16.2 Overall Upload Backlog (Files)

This metric displays the number of files in the upload backlog.

Table 3-5 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 10 Minutes	Not Defined	Not Defined	Not Defined

3.16.3 Overall Rows Processed by Loader in the Last Hour

This metric displays the number of rows processed by the data loader in the last hour.

Table 3-6 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 10 Minutes	Not Defined	Not Defined	Not Defined

3.16.4 Overall Upload Backlog (MB)

This metric displays the size (in MB) of the upload backlog.

Table 3-7 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 10 Minutes	Not Defined	Not Defined	Not Defined

3.16.5 Unmonitored Targets (%)

This metric displays the percentage of targets that are not monitored.

Table 3-8 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 10 Minutes	25	50	Not Defined

3.16.6 Overall Upload Rate (MB/sec)

This metric displays the rate of data upload to the Management Repository.

Table 3-9 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 10 Minutes	Not Defined	Not Defined	Not Defined

3.17 Pending Monitoring Jobs

This metric category provides information about pending monitoring jobs.

3.17.1 Pending Template Applies

This metric displays the number of pending templates that will apply to your target.

For more information about Monitoring Templates, see *Oracle Enterprise Manager Cloud Control Administrator's Guide*.

Table 3-10 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 10 Minutes	Not Defined	Not Defined	Number of pending template apply jobs %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold

3.17.2 Pending Metric Extension Deployments

This metric displays the number of metric extensions pending deployment.

For more information about Metric Extensions, see *Oracle Enterprise Manager Cloud Control Administrator's Guide*

Table 3-11 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 10 Minutes	Not Defined	Not Defined	Number of pending metric extension deployment jobs %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold

3.18 Repository Collections Performance

This category of metrics provides information on the performance of repository collections. They are collected by background dbms jobs in the repository database called collection workers. Repository metrics are sub divided into long and short running metrics. These are called task classes (short task class and long task class). Some collection workers (Default 1) process the short task class and some (Default 1)

process long task class. Repository collection performance metrics measure the performance data for repository metric collections for each task class. This metric is a repository metric and hence collected by the collection workers.

3.18.1 Average Collection Duration (seconds)

The total amount of time in seconds the collection workers were running in last 10 minutes. This is an indicator of the load on the repository collection subsystem. This could be due to two reasons, the number of collections have increased or some of the metrics are taking a long time to complete. This needs to be related with collections processed metric to find out if number of collections have increased or metrics are taking a long time.

Data Source

The data for this metrics come from entries in mgmt_system_performance log where job_name=MGMT_COLLECTION.Collection Subsystem.

3.18.2 Collections Processed

The total number of collections that were processed in the last 10 minutes.

Data Source

The data for this metrics come from entries in mgmt_system_performance log where job_name=MGMT_COLLECTION.Collection Subsystem

3.18.3 Collections Waiting To Run

The total number of collections that were waiting to run at the point this metric was collected. An increasing value would mean the collection workers are falling behind and would need to be increased. The collections waiting to run could be high initially on system startup and should ideally go down towards zero.

Data Source

The data for this metrics come from entries in mgmt_collection_tasks table which holds all the list of collections.

User Action

This metric is informational only.

3.18.4 Number of Collection Workers

The total number of workers that were processing the collections.

Data Source

The data for this metric come from entries in mgmt_collection_workers table.

User Action

This metric is informational only.

3.18.5 Total Throughput Across Collection Workers

The total number of collections per second processed by all the collection workers.

Data Source

The data for this metrics come from entries in mgmt_system_performance log where job_name=MGMT_COLLECTION.Collection Subsystem.

User Action

This metric is informational only.

3.19 Repository Collection Task Performance

This metric provides information about the performance of repository collection tasks.

3.19.1 Run Duration (Seconds)

This metric displays the run duration (in seconds) for the collection task.

Table 3-12 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 10 Minutes	Not Defined	Not Defined	Run duration for task id/metric %metric_name% of target type %task_target_type% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold

3.20 Repository Job Dispatcher

This category of metrics provides information on the Repository Job Dispatcher.

3.20.1 Job Step Backlog

The number of job steps that were ready to be scheduled but could not be because all the dispatchers were busy.

When this number grows steadily, it means the job scheduler is not able to keep up with the workload.

User Action

This is the sum of job steps whose next scheduled time is in the past - job steps eligible to run but not yet running. If the graph of this number increases steadily over time, the user should take one of the following actions:

- Increase the `em.jobs.shortPoolSize`, `em.jobs.longPoolSize` and `em.jobs.systemPoolSize` properties in the `web.xml` file. The `web.xml` file specifies the number of threads allocated to process different types of job steps. The short pool size should be larger than the long pool size.

Property	Default Value	Recommended Value	Description
<code>em.jobs.shortPoolSize</code>	10	10 50	Steps taking less than 15 minutes
<code>em.jobs.longPoolSize</code>	8	8 - 30	Steps taking more than 15 minutes

Property	Default Value	Recommended Value	Description
em.jobs.systemPoolSize	8	8 - 20	Internal jobs (e.g. agent ping)

- Add another Management Service on a different host.
- Check the job step contents to see if they can be made more efficient.

3.21 Repository Operation Status

This metric category provides information about the operational status of the Management Repository. Repository metrics are subdivided into long and short running metrics.

3.21.1 Repository Job Scheduler Status

This metric displays the status of the Repository Job Scheduler.

Table 3-13 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	DOWN	Repository job scheduler is %value%

3.21.2 Long Running Metric Collection Status

This metric displays the status of the long running metric collections.

Table 3-14 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	PARTIALLY UP	DOWN	Long running metric collection status is %value%

3.21.3 Short Running Metric Collection Status

This metric displays the status of the short running metric collections.

Table 3-15 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	PARTIALLY UP	DOWN	Short running metric collection status is %value%

3.22 Repository Sessions

This category of metrics provides information on the Repository sessions.

3.22.1 Repository Session Count

A count of the number of sessions between the Management Service and Management Repository database.

Data Source

The gv\$session system view.

User Action

This metric is informational only.

3.23 Response

This page indicates whether Enterprise Manager is up or down. It contains historical information for periods in which it was down.

3.23.1 Status

This metric indicates whether Enterprise Manager is up or down. If you have configured the agent monitoring the oracle_emrep target with a valid email address, you will receive an email notification when Enterprise Manager is down.

The following table shows how often the metric's value is collected and compared against the default thresholds.

Table 3-16 Metric Summary Table

Target Version	Evaluation and Collection Frequency	Upload Frequency	Operator	Default Warning Threshold	Default Critical Threshold	Consecutive Number of Occurrences Preceding Notification	Alert Text
All Versions	Every 5 Minutes	Not Uploaded	=	Not Defined	0	1	%Message%

Data Source

sysman/admin/scripts/emreprepl

User Action

This metric checks for the following:

- Is the Management Repository database up and accessible?
If the Management Repository database is down, start it. If 'Invalid Username or Password' error is displayed, verify that the name and password for the oracle_emrep target is the same as the repository owner's name and password.
- Is at least one Management Service running?
If a Management Service is not running, start one.

- Is the Repository Metrics dbms job running?

If the DBMS job is down or has an invalid schedule, it should be restarted by following the instructions in the User Action section of the help topic for the DBMS Job Bad Schedule metric.

3.24 Service Initialization Errors

This category provides information on any initialization errors encountered by services like loader or events.

3.24.1 Service Status

This metric is generated if any of the OMS services (such as Loader, Notification, or PingRecorder) failed to get initialized during the OMS startup. At present this metric is used only by Loader service.

This metric has two key columns and one non-key columns:

- The key columns are Management Service and Service Name. The key values uniquely identify the Service instance that has initialization errors.
- The non-key column is Service Status. This column indicates whether the Service is running fine or encountered an error during OMS startup.

Oracle Home

The Oracle home directory metrics provide description, collection statistics, data source, multiple thresholds (where applicable), and user action information for each metric.

4.1 Bugs Fixed by a Patch

A patch consists of one or more bug fixes. This metric collects all the bugs fixed within that patch applied on the Oracle home directory.

4.1.1 Bug Number

This metric displays the bug number in the patch. There can be multiple bugs fixed in a patch.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.1.2 Bug Description

This metric displays a brief description of the bug in the patch.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.1.3 Patch ID

This metric displays the patch number which contains one or more bug fixes. The patch id may be the same for more than one patch.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.1.4 Patch Language

This is the language of the patch. Generally it is "en" (English)

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.1.5 Patch UPI

This is the Unique Patch Identifier. Some patches might have the same patch ID but a different patch identifier. This will be used to issue patch advisories.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.2 Component Dependency

A component within an Oracle home might be dependent on another component. This metric collects the dependency information between the components within an Oracle home directory.

4.2.1 Component Name

This is the internal name of the component installed in Oracle home.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.2.2 Component Version

This is the base version of component installed in Oracle home.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.2.3 Depende Name

This is the internal name of the dependent component installed in the same or different Oracle home.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.2.4 Depende Version

This is the base version of the dependent component installed in same or different Oracle home.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.2.5 Depende Home GUID

This is the home globally unique identifier of the Oracle home where the dependent component is installed.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.3 Component Install Type

Every installed component has its own install type. This information is created by the product installation and collected by this metric.

4.3.1 Component Name

This is the internal name of the component installed in Oracle home.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.3.2 Component Version

This is the base version of component installed in Oracle home.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.3.3 Name ID

This is install type Name ID.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.3.4 Description ID

This is the install type Description ID.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.3.5 Install Type Name

This is the type of install (such as Basic, EE, and so on)

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.4 CRS Node list

This metric collects the node information on the nodes that participate in the cluster installation.

4.4.1 Node

This metric displays the node host name which constitutes the nodes in the CRS cluster

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.5 Files affected by a Patch

Each patch affects one or more components and each component is made up of many files. This metric collects information about various files which are affected by the application of this patch to the Oracle home directory.

4.5.1 Component Name

This metric displays the internal name of the component installed in the Oracle home directory.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.5.2 Component Version

This metric displays the base version of the component installed in the Oracle home directory.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.5.3 File Name

This metric displays the name of a file affected by the patch.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.5.4 Patch ID

This metric displays the patch number which contains one or more bug fixes

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.5.5 Patch Language

This metric displays the language of the patch. Generally it is "en" (English).

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.5.6 Patch UPI

This metric displays the Unique Patch Identifier (UPI). Some patches might have the same patch ID but different patch identifiers. This is used to issue patch advisories.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.6 Oracle Home Clone Properties

This metric collects all the properties which are later used in cloning and provisioning that Oracle home directory.

4.6.1 Property Name

This is the name of the property used for cloning

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.6.2 Property Value

This is the clone property value.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.7 Oracle Home Components

An Oracle home installation consists of many components. This metric collects details of all the components installed, including their version and installation date.

4.7.1 Component Name

This metric displays the internal name of the component installed in the Oracle home directory.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.7.2 Component Version

This is the base version of component installed in the Oracle home directory.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.7.3 Current Version

This metric displays the current updated version of the component. The version of the component can be updated by "Patchset Updates" or "Patchsets"

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.7.4 Description

This metric displays a brief description of the component.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.7.5 External Name

This metric displays the external name of the component.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.7.6 Installed Location

This metric displays the location where the component is installed.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.7.7 Installer Version

This metric displays the version of the installer used at the time of installation.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.7.8 Install Time

This metric displays the date and time of the installation.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.7.9 Is Top Level

This metric specifies where it is a top level component [0/1]. There is at least one top level component in any Oracle home directory.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.7.10 Languages

This metric displays a list of the languages supported by the component installation.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.7.11 Minimum Deinstaller Version

The metric displays the minimum OUI installer to be used to remove the component.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.8 Oracle Home Dependency

Earlier versions of the Oracle Universal Installer (OUI) permitted one component within an Oracle home directory to be dependent on another component in another Oracle home directory. This metric collects that dependency information.

4.8.1 Depende Home Location

In case of inter dependency between Oracle home directories, this metric displays the location of the other Oracle home directory.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.9 Oracle Home Info

This metric category collects all generic properties for an Oracle home directory such as the ARU ID, size of the Oracle home directory or the OUI_ID.

4.9.1 ARU ID

This metric displays the Automated Release Update (ARU) ID of the Oracle home installation. This is used to determine the platform and version of Operating System while issuing patch advisories from ARU.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.9.2 Home Location

This metric displays the complete path to where the Oracle home directory is installed.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.9.3 Home Base

This metric displays the middleware home directory (in the case of Oracle Fusion Applications products) and the composite home location (in the case of members of composite homes). A composite home directory is the location where the core and plug-in Oracle home directories are installed.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.9.4 Home Size

This metric displays the estimated size of Oracle home as in inventory measured in kilobytes.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.9.5 Home Type

This is the Oracle home type. Its "O" for OUI-installed Oracle home directories and "W" for Oracle WebLogic home directories.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.9.6 Inventory

This is the Central inventory location where the Oracle home directory is registered.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.9.7 Is Clonable

This shows whether this Oracle home directory is clonable. Oracle WebLogic home directories are always clonable. OUI-installed Oracle home directories are clonable only if all the components inside that Oracle home directory are clonable.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.9.8 Is CRS

This metric specifies whether this is a Cluster Ready Services (CRS) installation [0/1].

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.9.9 OH Group

This is the operating system group name of the user who installed the Oracle home directory.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.9.10 OH Group ID

This is the operating system group ID of the user who installed the Oracle home directory.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.9.11 OH Owner

This is the operating system owner name of the user who installed the Oracle home directory.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.9.12 OH Owner Groups

All the operating system group names to which the user belongs.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.9.13 OH Owner Groups ID

All the operating system group IDs to which the user belongs.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.9.14 OH Owner ID

This is the operating system owner ID of the user who installed the Oracle home directory.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.9.15 Oracle Base

This is the Oracle Base where the Oracle home directories are installed.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.9.16 OUI Home GUID

This is the OUI Oracle Home Globally unique identifier. This is unique across all Oracle product installations.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.9.17 OUI Home Name

This is the readable name of the Oracle home directory.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.9.18 OUI Platform ID

This is the Platform ID of an Oracle home directory. This was used in releases 10.1 or earlier. This has been replaced with ARU_ID, still useful for older installations.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.10 Oracle Patch

This metric collects all the patches which have been applied to the Oracle home directory.

4.10.1 Description

This is a description of a patch.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.10.2 Install Time

This is the installation time when the patch was installed.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.10.3 Installer Version

This is the OUI installer used for the installation of the patch.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.10.4 Is Online

This metric specifies whether the patch is an online or offline patch. An online patch is a patch that can be applied to live running database instance.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.10.5 Is PSU

This metric specifies if this is a patchset update. Patchset updates are like onoffs, but they can change the minor version of the component

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.10.6 Is Rollbackable

This metric specifies whether the patch can be rolled back [0/1].

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.10.7 Patch ID

This is the patch number which contains one or more bug fixes. This ID might be the same for more than one patch.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.10.8 Patch Language

This metric specifies the language of the patch. Generally, it is "en" (English).

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.10.9 Patch UPI

This is the Unique Patch Identifier (UPI). Some patches might have the same patch ID, but different patch identifiers. This will be used to issue patch advisories.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.10.10 Profile

The profile name is used for Oracle Fusion Application patches only.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.10.11 XML Inventory Location

This is the patch XML inventory location in the Oracle home directory.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.11 Oracle Patchsets

Oracle Patchset consists of many PS_Patches for each component (also known as Versioned Patch). Patchsets are always cumulative; that is, all the components within the patchset have the incremented version number after the application of that patchset. This metric collects that information.

4.11.1 Description

This is a brief description of the patchset. A patchset contains one or more versioned patches.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.11.2 External Name

This is the external name of the patchset.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.11.3 Installer Version

This is the OUI installer version used for the installation of the patchset.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.11.4 Install Time

This is the installation time of the patchset.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.11.5 Inventory Location

This is the inventory location of the patchset.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.11.6 Minimum Deinstaller Version

This is the minimum OUI installer version to be used for removing the versioned patch.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.11.7 Patchset Name

This is the internal name of the patchset.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.11.8 Patchset Version

This is the patchset version.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.12 Oracle Versioned Patch

An Oracle patchset consists of many versioned patches corresponding to various components within that Oracle home directory. This metric collects information of all the components affected by the patchset and their versions.

4.12.1 Base Component Version

This is the base component version, on which the versioned patch is applied.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.12.2 Description

This is a brief description of the versioned patch.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.12.3 External Name

This is the external name of the versioned patch.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.12.4 Installed Location

This is the path showing where the versioned patch is installed.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.12.5 Installer Version

This is the OUI installer version used at the time of installation.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.12.6 Install Time

This is the time when the versioned patch was installed.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.12.7 Languages

This metric lists the languages supported by the versioned patch.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.12.8 Minimum Deinstaller Version

This is the minimum OUI installer to be used when removing the versioned patch.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.12.9 Patchset Name

This is the patchset name which contains this versioned patch.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.12.10 Patchset Version

This is the patchset version which contains this versioned patch.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.12.11 VPATCH Name

This is the versioned patch name (should be the same as the Component Name, on which the Versioned Patch is applied).

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.12.12 VPATCH Version

This is the version of the versioned patch.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.13 Patched Component

A patch consists of many bug fixes, each of which will have fixes for various components. This metric collects all the information of various components which are fixed by that patch.

4.13.1 Component Name

This is the internal name of the component which is being patched by the One Off.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.13.2 Component Version

This is the base version of the component which is being patched.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.13.3 From Version

This exists only in Patchset Updates and corresponds to the version of the component being patched.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.13.4 Patch ID

This metric specifies the patch ID number. The patch ID might be the same for more than one patch.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.13.5 Patch Language

This metric specifies the patch language. Generally it is "en" (English).

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.13.6 Patch UPI

This metric specifies the Unique Patch Identifier. Some patches might have the same patch ID but a different patch identifier. This will be used to issue patch advisories.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.13.7 To Version

This exists only in Patchset Updates (PSU) and corresponds to the new version of the component after the PSU has been applied.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data is picked up from the inventory.

User Action

None.

4.14 Response

This metric collects the availability of the Oracle home directory, whether an Oracle home directory exists, and if it is readable.

4.14.1 Status

The metric indicates whether the Oracle home directory is reachable.

Services Metrics

This chapter describes the Services Metrics.

5.1 CalDAV Metrics

This metric is a container for a set of metrics you can use to measure the performance of your Calendar Server (CalDAV) service.

5.1.1 [CalDAV] Calendar Access Verification Time

This metric indicates the time taken (in milliseconds) to verify the calendar access of the CalDAV URL.

5.1.2 [CalDAV] Event Add Time

This metric indicates the time taken (in milliseconds) to add a calendar event.

5.1.3 [CalDAV] Task Add Time

This metric indicates the time taken (in milliseconds) to add a calendar task.

5.1.4 [CalDAV] Connect Time

This metric indicates the time taken (in milliseconds) to connect to the CalDAV server.

5.1.5 [CalDAV] Content Listing Time

This metric indicates the time taken (in milliseconds) to list the contents of the folder.

5.1.6 [CalDAV] Event Delete Time

This metric indicates the time taken (in milliseconds) to delete a calendar task.

5.1.7 [CalDAV] Task Delete Time

This metric indicates the time taken (in milliseconds) to delete a calendar task.

5.1.8 [CalDAV] Status

This metric indicates whether the transaction made through the CalDAV service was successful.

5.1.9 [CalDAV] Total Time (ms)

This metric indicates the total time to complete the transaction made through the CalDAV service.

5.1.10 [CalDAV] Events Week View Time (ms)

This metric indicates the time taken to list the calendar events for a week.

5.1.11 [CalDAV] Tasks Week View Time (ms)

This metric indicates the time taken to list the calendar tasked for a week.

5.1.12 [CalDAV] Status Message

This metric indicates the description of the status.

5.2 DNS Response Metrics

The following sections list the DNS Response metrics, their descriptions, and user actions.

User Action

If TTL values are low, then you may consider configuring your DNS service to allow caching for longer periods of time.

5.2.1 [DNS] Number of Retries

This metric indicates the total number of retries before a DNS lookup is successful.

User Action

If TTL values are low, then you may consider configuring your DNS service to allow caching for longer periods of time.

5.2.2 [DNS] Number of Results

This metric indicates a response to a DNS request may contain multiple answers. This indicates the number of answers (such as the number of IP addresses) in the response from the DNS service.

User Action

If the number of results is not what it should be, then you will need to examine your DNS service's configuration.

5.2.3 [DNS] Status

This metric indicates whether the query was successful.

User Action

Consult the Results metric for details.

5.2.4 [DNS] Total Connect Time (ms)

This metric indicates the time taken to connect to the DNS service. This metric is collected for queries using the TCP protocol.

User Action

A slow Total Connect Time suggests that network congestion is a problem.

5.2.5 [DNS] Total Response Time (ms)

This metric indicates the total time required to receive a response from the DNS service.

User Action

Unusually slow response times can occur if the DNS server has to perform a lookup before it can respond. If the total response time is consistently slow, then either the network may be slow, or the DNS server may be having trouble generating a response. Try using traceroute to diagnose network issues

5.2.6 [DNS] TTL (seconds)

This metric indicates a response to a DNS request may contain multiple answers. Each answer in a DNS response has a TTL (Time To Live) that indicates the number seconds that the answer may be cached by a client. The TTL value reported here is the minimum TTL of all the answers in the DNS response.

User Action

If TTL values are low, then you may consider configuring your DNS service to allow caching for longer periods of time.

5.2.7 DNS Results

This metric indicates the results of the DNS query. In the event of a status down, the reason for the status down will be displayed here.

5.3 FTP Response Metrics

This metric is container for a set of metrics you can use to measure the performance of your FTP service test.

5.3.1 [FTP] Connect Time (ms)

This metric indicates the time taken to establish a connection with the FTP service.

5.3.2 [FTP] Download Rate (KB/second)

This metric indicates the rate at which the data is downloaded from the FTP service.

5.3.3 [FTP] Download Time (ms)

This metric indicates the total time taken to download a file from the service.

5.3.4 [FTP] Login Time (ms)

This metric indicates the time required to login to the FTP service.

5.3.5 [FTP] NOOP Time (ms)

This metric indicates the time required to perform a NOOP. A NOOP ("No Operation") is a request that the FTP service respond with an "OK" status. A NOOP is similar to network round-trip time because generating a response to a NOOP requires minimal effort.

5.3.6 [FTP] Number of Retries

This metric indicates the number of retries required before the test was successful.

5.3.7 [FTP] Status

This metric indicates that all requests succeeded and that the downloaded file matched the uploaded file.

5.3.8 [FTP] Status Description

This metric displays details on the reason for any service failure.

5.3.9 [FTP] Total Time (ms)

This metric indicates the total time required to test the FTP service.

5.3.10 [FTP] Upload Time (ms)

This metric indicates the time taken to upload a file to the service.

5.3.11 [FTP] Upload Rate (ms)

This metric indicates the rate at which the data is downloaded from the FTP service.

5.4 HTTP Raw Metrics

The following sections lists the HTTP Raw metrics, their descriptions, and user actions.

5.4.1 HTTP Raw Time Per Connection

This metric measures the average connect time for all pages in the transaction. This is calculated as: $\text{Total Connect Time} / \text{Number of Connections Made}$. The Connect Time is one of the phases of a transaction that can help you isolate and fix response time problems.

User Action

The average connect time, when reviewed over a period of time, can indicate whether network congestion or other connectivity issues are the cause of poor web application response time.

5.4.2 HTTP Raw Broken URL Count

This metric measures the number of errors encountered when displaying content for the pages accessed by the transaction, step or step group. For example, missing GIF images or style sheets will increase the value of the Broken Count metric.

User Action

Use this metric to measure the quality of the pages being served by your web application. For example, high values for the Broken Count metric can indicate that files have been moved or that relative links in the application are broken.

5.4.3 HTTP Raw Broken URL Details

This metric is not currently collected by Oracle Enterprise Manager and is for internal use only.

5.4.4 HTTP Raw Connect Time (ms)

Enterprise Manager breaks down each transaction into individual phases. Performance metrics for each phase of the transaction, step or step group can help you pinpoint the cause of a slow response time alert. Connect Time is the total time spent in the transaction connecting to the server. There may be multiple connections made during a transaction. Time spent connecting for requests that result in redirects count as Redirect Time rather than Connect Time.

User Action

Significant Connect Time values are usually caused by a slow network or a busy web server. Significant Connect Time values may also indicate that there are too many connections made during the transaction. Consider enabling HTTP persistent connections if the application does not already have them enabled.

5.4.5 HTTP Raw First Byte Time per Page (ms)

This is the First Byte Time divided by the number of pages in the step, step group, or transaction.

User Action

A high First Byte Time per Page suggests that there may be high network latency between the agent and the service. Some applications generate an entire page before sending the first byte of that page. For such applications, a high First Byte Time could also indicate that the servers are taking a long time to generate each page.

5.4.6 HTTP Raw HTML Time (ms)

Enterprise Manager breaks down each step, step group, or transaction into individual phases. Performance metrics for each phase can help you pinpoint the cause of a slow response time alert. This metric measures the HTML Time, which is the amount of time it takes to transfer the HTML coding of the page to the browser. This metric does not include the time spent transferring images or other page content.

User Action

Slow HTML time could indicate that the application is taking a long time to finish generating each page. Alternatively, slow HTML time could indicate that network bandwidth between the agent and the service is low.

5.4.7 HTTP Raw Non-HTML Time (ms)

This is the amount of time it takes to transfer the non-HTML content such as images to the browser.

User Action

Slow Non-HTML time could indicate that the application is taking a long time to generate images. Alternatively, slow HTML time could indicate that network bandwidth between the agent and the service is low. Consider reducing the number of distinct images in the application.

5.4.8 HTTP Raw Perceived Slowest Page / Page Element Time (ms)

This metric indicates the amount of time that it would take a web browser to play the slowest page in the step, step group, or transaction. This is a good metric for setting thresholds because it is the closest active measurement of what the user-experience is likely to be.

User Action

Use this metric to identify problem pages. After you identify a page or transaction that's slow to respond to user requests, you can drill down and analyze each phase of the transaction to isolate and repair the problem.

5.4.9 HTTP Raw Perceived Time per Page / Page Element (ms)

This metric indicates the average amount of time that it would take a web browser to play each page in the step, step group, or transaction. This is a good metric for setting thresholds because it is the closest active measurement of what the user-experience is likely to be. Because it is normalized on a per-page basis, Perceived Time per Page is also a good metric for comparing the relative performance of different transactions.

User Action

Use this metric to identify problem transactions. After you identify a transaction that's slow to respond to user requests, you can drill down and analyze each phase of the transaction to isolate and repair the problem.

5.4.10 HTTP Raw Perceived Total Time (ms)

This metric indicates the overall time spent to process the step, step group, or transaction. This includes all the phases of the step / step group / transaction, including Connect Time, Redirect Time, First Byte Time, HTML Time, and Non-HTML Time. This metric calculates total transaction time by assuming all contents of a page are fetched in a serial manner.

User Action

Use the Total Time Metric to identify problem transactions. After you identify a transaction that's slow to respond to user requests, you can drill down and analyze each phase of the transaction to isolate and repair the problem.

5.4.11 HTTP Raw Redirect Time (ms)

Enterprise Manager breaks down each transaction into individual phases. Performance metrics for each phase of the transaction can help you pinpoint the cause of a slow response time alert. Some pages automatically redirect the HTTP request to another page. Redirect time represents the total time of all redirects within a transaction. The time taken to redirect the request can affect the overall response time of the page.

User Action

Significant time taken to redirect the HTTP request. If the redirect is causing the performance problems, consider alternative solutions to sending the user to another HTML page.

5.4.12 HTTP Raw Row Type

This metric indicates whether the metric is collected for step, step group, or transaction.

5.4.13 HTTP Raw Status

This metric indicates whether the web transaction was successful.

5.4.14 HTTP Raw Status Description

If the beacon is unable to run the step, step group, or transaction successfully, this metric returns a description of the error.

5.4.15 HTTP Raw Total Time (ms)

This metric indicates the overall time spent to process the step, step group, or transaction. This includes all the phases of the transaction, including Connect Time, Redirect Time, First Byte Time, HTML Time, and Non-HTML Time. This metric calculates total transaction time by assuming all contents of a page are fetched in a serial manner.

User Action

Use the Total Time Metric to identify problem transactions. After you identify a transaction that is slow to respond to user requests, you can drill down and analyze each phase of the transaction to isolate and repair the problem.

5.4.16 HTTP Raw Transfer Rate (KB per second)

The transfer rate indicates how quickly data is being transferred from the web server to the client browser. This is computed as: Total Kilobytes Received / Total Transaction Time.

User Action

Slow transfer rate can be caused by network congestion or other connectivity issues.

5.4.17 HTTP Raw First Byte Time

Enterprise Manager breaks down each transaction, step or step group into individual phases. Performance metrics for each phase can help you pinpoint the cause of a slow response time alert. This metric measures the First Byte Time, which is the total time taken between the last byte of the request sent and the first byte of the response received by the server for all requests made. This includes the network latency and the time for the server to respond.

User Action

As with the Connect Time and Redirect Time, this metric can help you pinpoint whether or not the page content or web application software is causing the slow response time, as opposed to the actual time it takes to transfer one byte of information to the browser. A high First Byte Time suggests that there may be high network latency between the agent and the service. Some applications generate an entire page before sending the first byte of that page. For such applications, a high First Byte Time could also indicate that the servers are taking a long time to generate each page.

5.4.18 HTTP Raw URL

This metric indicates the URL associated with the step.

5.4.19 HTTP Raw DNS Time

This metric is not supported for this version of Enterprise Manager.

5.5 HTTP Step Group Metrics

The following sections lists the HTTP Step Group metrics, their descriptions, and user actions.

5.5.1 [HTTP Step Group] Connect Time (ms)

Enterprise Manager breaks down each step group into individual phases. Performance metrics for each phase of the step group can help you pinpoint the cause of a slow response time alert. Connect Time is the total time spent in the transaction connecting to the server. There may be multiple connections made during a transaction. Time spend connecting for requests that result in redirects count as Redirect Time rather than Connect Time.

User Action

Significant Connect Time values are usually caused by a slow network or a busy web server. Significant Connect Time values may also indicate that there are too many connections made during the transaction. Consider enabling HTTP persistent connections if the application does not already have them enabled.

5.5.2 [HTTP Step Group] Broken URL Count

This metric measures the number of errors encountered when displaying content for the pages accessed by the step group. For example, missing GIF images or style sheets will increase the value of the Broken Count metric.

User Action

Use this metric to measure the quality of the pages being served by your web application. For example, high values for the Broken Count metric can indicate that files have been moved or that relative links in the application are broken.

5.5.3 [HTTP Step Group] First Byte Time (ms)

Enterprise Manager breaks down each step group into individual phases. Performance metrics for each phase of the transaction can help you pinpoint the cause of a slow response time alert. This metric measures the First Byte Time, which is the total time taken between the last byte of the request sent and the first byte of the response received by the server for all requests made. This includes the network latency and the time for the server to respond.

User Action

As with the Connect Time and Redirect Time, this metric can help you pinpoint whether or not the page content or web application software is causing the slow response time, as opposed to the actual time it takes to transfer one byte of information to the browser. A high First Byte Time suggests that there may be high network latency between the agent and the service. Some applications generate an entire page before sending the first byte of that page. For such applications, a high

First Byte Time could also indicate that the servers are taking a long time to generate each page.

5.5.4 [HTTP Step Group] Broken URL Details

This metric is not currently collected by Oracle Enterprise Manager and is for internal use only.

5.5.5 [HTTP Step Group] First Byte Time per Page (ms)

This is the First Byte Time divided by the number of pages in the step group.

User Action

A high First Byte Time per Page suggests that there may be high network latency between the agent and the service. Some applications generate an entire page before sending the first byte of that page. For such applications, a high First Byte Time could also indicate that the servers are taking a long time to generate each page.

5.5.6 [HTTP Step Group] HTML Time (ms)

Enterprise Manager breaks down each step group into individual phases. Performance metrics for each phase of the transaction can help you pinpoint the cause of a slow response time alert. This metric measures the HTML Time, which is the amount of time it takes to transfer the HTML coding of the page to the browser. This metric does not include the time spent transferring images or other page content.

User Action

Slow HTML time could indicate that the application is taking a long time to finish generating each page. Alternatively, slow HTML time could indicate that network bandwidth between the agent and the service is low.

5.5.7 [HTTP Step Group] DNS Time

This metric is not supported for this version of Enterprise Manager.

5.5.8 [HTTP Step Group] Non-HTML Time (ms)

This is the amount of time it takes to transfer the non-HTML content such as images to the browser.

User Action

Slow Non-HTML time could indicate that the application is taking a long time to generate images. Alternatively, slow HTML time could indicate that network bandwidth between the agent and the service is low. Consider reducing the number of distinct images in the application.

5.5.9 [HTTP Step Group] Perceived Slowest Page Time (ms)

This metric indicates the amount of time that it would take a web browser to play the slowest page in a step group. This is a good metric for setting thresholds because it is the closest active measurement of what the user-experience is likely to be.

User Action

Use this metric to identify problem pages. After you identify a page or transaction that's slow to response respond to user requests, you can drill down and analyze each phase of the transaction to isolate and repair the problem

5.5.10 [HTTP Step Group] Perceived Time per Page (ms)

This metric indicates the average amount of time that it would take a web browser to play each page in the step group. This is a good metric for setting thresholds because it is the closest active measurement of what the user-experience is likely to be. Because it is normalized on a per-page basis, Perceived Time per Page is also a good metric for comparing the relative performance of different transactions.

User Action

Use this metric to identify problem transactions. After you identify a transaction that's slow to respond to user requests, you can drill down and analyze each phase of the step group to isolate and repair the problem.

5.5.11 [HTTP Step Group] Perceived Total Time (ms)

This metric indicates the amount of time that it would take a web browser to play the step group. This is a good metric for setting thresholds because it is the closest active measurement of what the user-experience is likely to be.

User Action

Use this metric to identify problem transactions. After you identify a step group that's slow to respond to user requests, you can drill down and analyze each phase of the step group to isolate and repair the problem.

5.5.12 [HTTP Step Group] Redirect Time (ms)

Enterprise Manager breaks down each step group into individual phases. Performance metrics for each phase of the step group can help you pinpoint the cause of a slow response time alert. Some pages automatically redirect the HTTP request to another page. Redirect time represents the total time of all redirects within a step group. The time taken to redirect the request can affect the overall response time of the page.

User Action

Significant time taken to redirect the HTTP request. If the redirect is causing the performance problems, consider alternative solutions to sending the user to another HTML page.

5.5.13 [HTTP Step Group] Status

This metric indicates whether the web transaction was successful.

5.5.14 [HTTP Step Group] Status Description

If the beacon is unable to run the step group successfully, this metric returns a description of the error that prevented the step group from running.

5.5.15 [HTTP Step Group] Time per Connection (ms)

This is the Connect Time divided by the number of connections made while playing a step group.

User Action

Slow Time per Connection has nothing to do with the content of the page itself. It is likely caused by a slow network or a busy web server, which prevents the request

from getting to the web server in a timely manner. Transactions that use HTTPS will typically have a much higher Time per Connection than transactions that use HTTP.

5.5.16 [HTTP Step Group] Transfer Rate (KB per second)

The transfer rate indicates how quickly data is being transferred from the web server to the client browser. This is computed as: Total Kilobytes Received / Total Transaction Time.

User Action

Slow transfer rate can be caused by network congestion or other connectivity issues.

5.5.17 [HTTP Step Group] Total Time (ms)

This metric indicates the overall time spent in processing the step group. This includes all the phases of the transaction, including Connect Time, Redirect Time, First Byte Time, HTML Time, and Non-HTML Time. This metric calculates total transaction time by assuming all contents of a page are fetched in a serial manner.

User Action

Use the Total Time Metric to identify problem transactions. After you identify a transaction that's slow to respond to user requests, you can drill down and analyze each phase of the transaction to isolate and repair the problem.

5.6 HTTP Transaction Metrics

The following sections lists the HTTP Transaction metrics, their descriptions, and user actions.

5.6.1 [HTTP Transaction] Connect Time (ms)

Enterprise Manager breaks down each transaction into individual phases. Performance metrics for each phase of the transaction can help you pinpoint the cause of a slow response time alert. Connect Time is the total time spent in the transaction connecting to the server. There may be multiple connections made during a transaction. Time spend connecting for requests that result in redirects count as Redirect Time rather than Connect Time.

User Action

Significant Connect Time values are usually caused by a slow network or a busy web server. Significant Connect Time values may also indicate that there are too many connections made during the transaction. Consider enabling HTTP persistent connections if the application does not already have them enabled.

5.6.2 [HTTP Transaction] First Byte Time (ms)

Enterprise Manager breaks down each transaction into individual phases. Performance metrics for each phase of the transaction can help you pinpoint the cause of a slow response time alert. This metric measures the First Byte Time, which is the total time taken between the last byte of the request sent and the first byte of the response received by the server for all requests made. This includes the network latency and the time for the server to respond.

User Action

As with the Connect Time and Redirect Time, this metric can help you pinpoint whether or not the page content or web application software is causing the slow response time, as opposed to the actual time it takes to transfer one byte of information to the browser. A high First Byte Time suggests that there may be high network latency between the agent and the service. Some applications generate an entire page before sending the first byte of that page. For such applications, a high First Byte Time could also indicate that the servers are taking a long time to generate each page.

5.6.3 [HTTP Transaction] First Byte Time per Page (ms)

This is the First Byte Time divided by the number of pages in the transaction.

User Action

A high First Byte Time per Page suggests that there may be high network latency between the agent and the service. Some applications generate an entire page before sending the first byte of that page. For such applications, a high First Byte Time could also indicate that the servers are taking a long time to generate each page.

5.6.4 [HTTP Transaction] Non-HTML Time (ms)

This metric indicates the amount of time it takes to transfer the non-HTML content such as images to the browser.

User Action

Slow Non-HTML time could indicate that the application is taking a long time to generate images. Alternatively, slow HTML time could indicate that network bandwidth between the agent and the service is low. Consider reducing the number of distinct images in the application.

5.6.5 [HTTP Transaction] HTML Time (ms)

Enterprise Manager breaks down each transaction into individual phases. Performance metrics for each phase of the transaction can help you pinpoint the cause of a slow response time alert. This metric measures the HTML Time, which is the amount of time it takes to transfer the HTML coding of the page to the browser. This metric does not include the time spent transferring images or other page content.

User Action

Slow HTML time could indicate that the application is taking a long time to finish generating each page. Alternatively, slow HTML time could indicate that network bandwidth between the agent and the service is low.

5.6.6 [HTTP Transaction] Perceived Slowest Page Time (ms)

This metric indicates the amount of time that it would take a web browser to play the slowest page in the transaction. This is a good metric for setting thresholds because it is the closest active measurement of what the user-experience is likely to be.

User Action

Use this metric to identify problem pages. After you identify a page or transaction that is slow to respond to user requests, you can drill down and analyze each phase of the transaction to isolate and repair the problem.

5.6.7 [HTTP Transaction] Perceived Time per Page (ms)

The average amount of time that it would take a web browser to play each page in the transaction. This is a good metric for setting thresholds because it is the closest active measurement of what the user-experience is likely to be. Because it is normalized on a per-page basis, Perceived Time per Page is also a good metric for comparing the relative performance of different transactions.

User Action

Use this metric to identify problem transactions. After you identify a transaction that's slow to respond to user requests, you can drill down and analyze each phase of the transaction to isolate and repair the problem.

5.6.8 [HTTP Transaction] Perceived Total Time

This metric indicates the amount of time that it would take a web browser to play the transaction. This is a good metric for setting thresholds because it is the closest active measurement of what the user-experience is likely to be.

User Action

Use this metric to identify problem transactions. After you identify a transaction that's slow to respond to user requests, you can drill down and analyze each phase of the transaction to isolate and repair the problem.

5.6.9 [HTTP Transaction] Redirect Time (ms)

Enterprise Manager breaks down each transaction into individual phases. Performance metrics for each phase of the transaction can help you pinpoint the cause of a slow response time alert. Some pages automatically redirect the HTTP request to another page. Redirect time represents the total time of all redirects within a transaction. The time taken to redirect the request can affect the overall response time of the page.

User Action

Significant time taken to redirect the HTTP request. If the redirect is causing the performance problems, consider alternative solutions to sending the user to another HTML page.

5.6.10 [HTTP Transaction] Status

This metric indicates whether the web transaction was successful.

5.6.11 [HTTP Transaction] Status Description

If the beacon is unable to run the transaction successfully, this metric returns a description of the error that prevented the transaction from running.

5.6.12 [HTTP Transaction] Time per Connection (ms)

This is the Connect Time divided by the number of connections made while playing a transaction.

User Action

Slow Time per Connection has nothing to do with the content of the page itself. It is likely caused by a slow network or a busy web server, which prevents the request

from getting to the web server in a timely manner. Transactions that use HTTPS will typically have a much higher Time per Connection than transactions that use HTTP.

5.6.13 [HTTP Transaction] Total Time (ms)

This metric indicates the overall time spent to process the transaction. This includes all the phases of the transaction, including Connect Time, Redirect Time, First Byte Time, HTML Time, and Non-HTML Time. This metric calculates total transaction time by assuming all contents of a page are fetched in a serial manner.

User Action

Use the Total Time Metric to identify problem transactions. After you identify a transaction that's slow to respond to user requests, you can drill down and analyze each phase of the transaction to isolate and repair the problem.

5.6.14 [HTTP Transaction] Transfer Rate (KB per second)

The transfer rate indicates how quickly data is being transferred from the web server to the client browser. This is computed as: Total Kilobytes Received / Total Transaction Time.

User Action

Slow transfer rate can be caused by network congestion or other connectivity issues.

5.7 HTTP User Action Metrics

The following sections lists the HTTP User Action metrics, their descriptions, and user actions.

5.7.1 [HTTP Step] Connect Time (ms)

Enterprise Manager breaks down each step into individual phases. Performance metrics for each phase of the transaction can help you pinpoint the cause of a slow response time alert. Connect Time is the total time spent in the transaction connecting to the server. There may be multiple connections made during a transaction. Time spend connecting for requests that result in redirects count as Redirect Time rather than Connect Time.

User Action

Significant Connect Time values are usually caused by a slow network or a busy web server. Significant Connect Time values may also indicate that there are too many connections made during the transaction. Consider enabling HTTP persistent connections if the application does not already have them enabled.

5.7.2 [HTTP Step] Broken URL Count

This metric measures the number of errors encountered when displaying content for the pages accessed by the step. For example, missing GIF images or style sheets will increase the value of the Broken Count metric.

User Action

Use this metric to measure the quality of the pages being served by your web application. For example, high values for the Broken Count metric can indicate that files have been moved or that relative links in the application are broken.

5.7.3 [HTTP Step] Broken URL Content

This metric is not currently collected by Oracle Enterprise Manager and is for internal use only.

5.7.4 [HTTP Step] DNS Time

This metric is not supported for this version of Enterprise Manager.

5.7.5 [HTTP Step] First Byte Time (ms)

Enterprise Manager breaks down each step element. Performance metrics for each step element can help you pinpoint the cause of a slow response time alert. This metric measures the First Byte Time, which is the total time taken between the last byte of the request sent and the first byte of the response received by the server for all requests made. This includes the network latency and the time for the server to respond.

User Action

As with the Connect Time and Redirect Time, this metric can help you pinpoint whether or not the page content or web application software is causing the slow response time, as opposed to the actual time it takes to transfer one byte of information to the browser. A high First Byte Time suggests that there may be high network latency between the agent and the service. Some applications generate an entire page before sending the first byte of that page. For such applications, a high First Byte Time could also indicate that the servers are taking a long time to generate each page.

5.7.6 [HTTP Step] First Byte Time per Page Element (ms)

This is the First Byte Time divided by the number of step elements.

User Action

A high First Byte Time per Page suggests that there may be high network latency between the agent and the service. Some applications generate an entire page before sending the first byte of that page. For such applications, a high First Byte Time could also indicate that the servers are taking a long time to generate each page.

5.7.7 [HTTP Step] HTML Time (ms)

Enterprise Manager breaks down each step. Performance metrics for each step element can help you pinpoint the cause of a slow response time alert. This metric measures the HTML Time, which is the amount of time it takes to transfer the HTML coding of the page to the browser. This metric does not include the time spent transferring images or other page content.

User Action

Slow HTML time could indicate that the application is taking a long time to finish generating each page. Alternatively, slow HTML time could indicate that network bandwidth between the agent and the service is low.

5.7.8 [HTTP Step] Non-HTML Time (ms)

This metric indicates the amount of time it takes to transfer the non-HTML content such as images to the browser.

User Action

Slow Non-HTML time could indicate that the application is taking a long time to generate images. Alternatively, slow HTML time could indicate that network bandwidth between the agent and the service is low. Consider reducing the number of distinct images in the application.

5.7.9 [HTTP Step] Perceived Slowest Page Element Time (ms)

This metric indicates the amount of time that it would take a web browser to play the slowest step element. This is a good metric for setting thresholds because it is the closest active measurement of what the user-experience is likely to be.

User Action

Use this metric to identify problem pages. After you identify a page or a step that is slow to respond to user requests, you can drill down and analyze each phase of the transaction to isolate and repair the problem.

5.7.10 [HTTP Step] Perceived Time per Page Element (ms)

This metric indicates the average amount of time that it would take a web browser to play each step element. This is a good metric for setting thresholds because it is the closest active measurement of what the user-experience is likely to be. Because it is normalized on a per-page basis, Perceived Time per Page is also a good metric for comparing the relative performance of different transactions.

User Action

Use this metric to identify problem transactions. After you identify a transaction that's slow to respond to user requests, you can drill down and analyze each phase of the step group to isolate and repair the problem.

5.7.11 [HTTP Step] Perceived Total Time (ms)

This metric indicates the amount of time that it would take a web browser to play the step element. This is a good metric for setting thresholds because it is the closest active measurement of what the user-experience is likely to be.

User Action

Use this metric to identify problem transactions. After you identify a step group that's slow to respond to user requests, you can drill down and analyze each phase of the step to isolate and repair the problem.

5.7.12 [HTTP Step] Redirect Time (ms)

Enterprise Manager breaks down each step into individual phases. Performance metrics for each phase of the step can help you pinpoint the cause of a slow response time alert. Some pages automatically redirect the HTTP request to another page. Redirect time represents the total time of all redirects within a step. The time taken to redirect the request can affect the overall response time of the page.

User Action

Significant time taken to redirect the HTTP request. If the redirect is causing the performance problems, consider alternative solutions to sending the user to another HTML page.

5.7.13 [HTTP Step] Status

This metric indicates whether the web transaction was successful.

5.7.14 [HTTP] Status Description

If the beacon is unable to run the transaction successfully, this metric returns a description of the error that prevented the transaction from running.

5.7.15 [HTTP Step] Time per Connection (ms)

This metric indicates the Connect Time divided by the number of connections made while playing a step.

User Action

Slow Time per Connection has nothing to do with the content of the page itself. It is likely caused by a slow network or a busy web server, which prevents the request from getting to the web server in a timely manner. Transactions that use HTTPS will typically have a much higher Time per Connection than transactions that use HTTP.

5.7.16 [HTTP Step] Total Time (ms)

This metric indicates the overall time spent in processing the step. This includes all the phases of the transaction, including Connect Time, Redirect Time, First Byte Time, HTML Time, and Non-HTML Time. This metric calculates total transaction time by assuming all contents of a page are fetched in a serial manner.

User Action

Use the Total Time Metric to identify problem transactions. After you identify a transaction that's slow to respond to user requests, you can drill down and analyze each phase of the transaction to isolate and repair the problem.

5.7.17 [HTTP Step] Transfer Rate (KB per second)

The transfer rate indicates how quickly data is being transferred from the web server to the client browser. This is computed as: Total Kilobytes Received / Total Transaction Time.

User Action

Slow transfer rate can be caused by network congestion or other connectivity issues.

5.7.18 [HTTP Step] URL

This is the URL associated with the step.

5.8 ICMP Echo Response Metrics

The following sections lists the ICMP Echo Response metrics, their descriptions, and user actions.

5.8.1 [ICMP Ping] Last Host

This metric indicates the last node that was reached successfully while traversing to the final destination.

User Action

If the last host is not your destination node, there may be an indication that network problems exist between the last host and the destination node. Validate that the host is up and that none of your routers are down.

5.8.2 [ICMP Ping] Number of Hops

This metric indicates the number of network nodes traversed to reach the host.

User Action

If this number is higher than you think it should be, examine your network configuration. Your routers may be routing packets improperly.

5.8.3 [ICMP Ping] Packets Dropped (%)

This metric indicates the percentage of packets that could not reach their destination.

User Action

Packets are usually dropped due to a congested network. Remove the source of the congestion or upgrade your network bandwidth.

5.8.4 [ICMP Ping] Response Time (ms)

This metric indicates the average amount of time that the agent waited before receiving a response for each "ping" sent to the host.

User Action

Slow response time could indicate that there is some network congestion or that a packet takes a long time to reach the host. Investigate your network configuration. When Response Time is high, the Number of Hops is usually also high.

5.8.5 [ICMP Ping] Status

This metric indicates that the host is reachable from the agent.

5.9 IMAP Response Metrics

This metric is a container for a set of metrics you can use to measure the performance of the IMAP service test.

5.9.1 [IMAP] Connect Time (ms)

This metric indicates the time it took (in milliseconds) to open an IMAP connection.

5.9.2 [IMAP] Login Time (ms)

This metric indicates the time it took (in milliseconds) to log into an IMAP Service.

5.9.3 [IMAP] Status

This metric indicates the current status of the IMAP service, either Up, Down, Status Pending, or Agent Unreachable.

5.9.4 [IMAP] Status Message

This metric indicates the current status of the IMAP service, either Up, Down, Status Pending, or Agent Unreachable.

5.9.5 [IMAP] Time to Read Email (ms)

This metric indicates the time it took (in milliseconds) to read an e-mail message.

5.9.6 [IMAP] Time to List Folders (ms)

This metric indicates the time it took (in milliseconds) to list the e-mail folders.

5.9.7 [IMAP] Timing (ms)

This metric indicates the total time it took (in milliseconds) to open an IMAP connection, log into the IMAP service, list the e-mail folders, and read an e-mail message.

5.9.8 Email Undelete Time

This metric indicates the total time taken (in milliseconds) to undelete an e-mail.

5.9.9 Email Delete Time

This metric indicates the total time taken (in milliseconds) to delete an e-mail.

5.10 JDBC Response Metrics

The following lists the JDBC response metrics and their descriptions.

5.10.1 [JDBC] Status

This metric indicates whether the query made through JDBC connection went through successfully.

5.10.2 [JDBC] Total Time (ms)

This metric indicates the total time taken to connect to the database through JDBC and run the query. It is the sum of connect time, prepare time, execute time, fetch time, and close time.

5.10.3 [JDBC] Connect Time (ms)

This metric indicates the total time taken to connect to the database.

5.10.4 [JDBC] Prepare Time (ms)

This metric indicates the time taken to prepare the JDBC statement. This usually includes fetching metadata for the object types in the query.

5.10.5 [JDBC] Execute Time (ms)

This metric indicates the time taken to execute the JDBC statement.

5.10.6 [JDBC] Fetch Time (ms)

This metric indicates the time taken to retrieve data from the server.

5.10.7 [JDBC] Close Time (ms)

This metric indicates the time taken to close the connection.

5.10.8 [JDBC] Number of Rows Fetched

This metric indicates the total number of rows fetched during a query.

5.10.9 [JDBC] Total Time per Row (ms)

This metric indicates the time taken to perform the entire test divided by the number of rows fetched (Total Time/Number of Rows Fetched).

5.10.10 [JDBC] Fetch Time per Row (ms)

This metric indicates the time taken to fetch each row (Fetch Time/Number of Rows Fetched).

5.10.11 [JDBC] Status Description

This metric provides a description of the status.

5.11 LDAP Response Metric

This metric is a container for a set of metrics you can use to measure the performance of your LDAP service test.

5.11.1 [LDAP] Address Search Time (ms)

This metric indicates the time it took (in milliseconds) to perform an e-mail addressing search against an LDAP server.

5.11.2 [LDAP] Base Search Time (ms)

This metric indicates the time it took (in milliseconds) to perform a base search against an LDAP server.

5.11.3 [LDAP] Compare Time (ms)

This metric indicates the time it took (in milliseconds) to perform a compare operation against an LDAP server. This operation simulates logging in LDAP activity.

5.11.4 [LDAP] Connect Time (ms)

This metric indicates the time it took (in milliseconds) to open an LDAP connection.

5.11.5 [LDAP] Message Search Time (ms)

This metric indicates the time it took (in milliseconds) to perform an e-mail message search against an LDAP server.

5.11.6 [LDAP] Status

This metric indicates the current status of the LDAP service, either Up, Down, Status Pending, or Agent Unreachable.

5.11.7 [LDAP] Status Message

This metric displays a detailed description of the status of the LDAP service when the service status is down.

5.12 NNTP Response Metrics

The following table lists the NNTP Response metrics and their descriptions.

5.12.1 [NNTP] Connect Time (ms)

This metric indicates the time it took (in milliseconds) to open an NNTP connection.

5.12.2 [NNTP] Status

This metric provides the current status of the NNTP service, either Up, Down, Status Pending, or Agent Unreachable.

5.12.3 [NNTP] Status Message

This metric provides a detailed description of the status of the NNTP service when the service status is down.

5.12.4 [NNTP] Time to post news article (ms)

This metric indicates the time it took (in milliseconds) to post a message to the news group through the NNTP service.

5.12.5 [NNTP] Time to retrieve news article (ms)

This metric indicates the time it took (in milliseconds) to retrieve a message from the NNTP service.

5.12.6 [NNTP] Total Time

This metric indicates the total time it took (in milliseconds) to open an NNTP connection, log in, retrieve a message and post a message to the news group.

5.13 OATS Raw Metrics

This metric is a container for a set of metrics you can use to measure the performance of your Oracle Application Testing Suite (OATS) transaction service test and its associated steps.

5.13.1 [OpenScript] Status

This metric indicates whether the OATS transaction was successful.

5.13.2 [OpenScript] Total Time (ms)

This metric indicates the overall time spent to process the OATS transaction. This includes all the phases of the transaction, including Connect Time, Redirect Time, Body Download Time, Forms Total Time, and DNS Lookup Time. The metric calculates total transaction time by assuming all the contents of a page are fetched in a serial manner.

5.13.3 [OpenScript] Connect Time (ms)

This metric displays the total time spent in the transaction connecting to the server.

5.13.4 [OpenScript] First Byte Time (ms)

This metric measures the First Byte Time, which is the total time taken between the last byte of the request sent and the first byte of the response received by the server for all requests made. This includes the network latency and the time for the server to respond.

5.13.5 [OpenScript] Body Download Time (ms)

This metric measures the time taken to load the contents of the page from the server.

5.13.6 [OpenScript] Forms Total Time (ms)

This metric measures the total time taken to perform certain Forms operations such as Commit, Query, Runform and others.

5.13.7 [OpenScript] Forms Server Time (ms)

This metric measures the time taken by the Forms operation on the server.

5.13.8 [OpenScript] Forms Database Time (ms)

This is the database time required to perform certain Forms operations such as Commit, Query, Runform and others.

5.13.9 [OpenScript] DNS Lookup Time (ms)

This metric measures the time taken for DNS lookup.

5.13.10 [OpenScript] Status Description

This metric gives the details on the reason for any service failure.

5.14 OATS Transaction Metrics

This metric is container for a set of metrics you can use to measure the performance of your OATS transaction service test.

5.14.1 [OpenScript] Status

This metric indicates whether the OATS transaction was successful.

5.14.2 [OpenScript] Total Time (ms)

This metric indicates the overall time spent to process the OATS transaction. This includes all the phases of the transaction, including Connect Time, Redirect Time, Body Download Time, Forms Total Time, and DNS Lookup Time. The metric calculates the total transaction time by assuming all the contents of a page are fetched in a serial manner.

5.14.3 [OpenScript] Connect Time (ms)

This metric displays the total time spent in the transaction connecting to the server.

5.14.4 [OpenScript] First Byte Time (ms)

This metric measures the First Byte Time, which is the total time taken between the last byte of the request sent and the first byte of the response received by the server for all requests made. This includes the network latency and the time for the server to respond.

5.14.5 [OpenScript] Body Download Time (ms)

This metric measures the time taken to load the contents of the page from the server.

5.14.6 [OpenScript] Forms Total Time (ms)

This metric measures the total time taken to perform certain Forms operations such as Commit, Query, Runform and others.

5.14.7 [OpenScript] Forms Server Time (ms)

This metric measures the time taken by the Forms operation on the server.

5.14.8 [OpenScript] Forms Database Time (ms)

This is the database time required to perform certain Forms operations such as Commit, Query, Runform and others.

5.14.9 [OpenScript] DNS Lookup Time (ms)

This metric measures the time taken for DNS lookup.

5.14.10 [OpenScript] Status Description

This metric gives the details on the reason for any service failure.

5.15 OATS Step Metrics

This metric is container for a set of metrics you can use to measure the performance of an associated step of your OATS transaction service test.

5.15.1 [OpenScript] Status

This metric indicates whether the OATS transaction was successful.

5.15.2 [OpenScript] Total Time (ms)

This metric indicates the overall time spent to process the OATS transaction. This includes all the phases of the transaction, including Connect Time, Redirect Time, Body Download Time, Forms Total Time, and DNS Lookup Time. The metric calculates total transaction time by assuming all the contents of a page are fetched in a serial manner.

5.15.3 [OpenScript] Connect Time (ms)

This metric is the total time spent in the transaction connecting to the server.

5.15.4 [OpenScript] First Byte Time (ms)

This metric measures the First Byte Time, which is the total time taken between the last byte of the request sent and the first byte of the response received by the server for all requests made. This includes the network latency and the time for the server to respond.

5.15.5 [OpenScript] Body Download Time (ms)

This metric measures the time taken to load the contents of the page from the server.

5.15.6 [OpenScript] Forms Total Time (ms)

This metric measures the total time taken to perform certain Forms operations such as Commit, Query, Runform and others.

5.15.7 [OpenScript] Forms Server Time (ms)

This metric measures the time taken by the Forms operation on the server.

5.15.8 [OpenScript] Forms Database Time (ms)

This is the database time required to perform certain Forms operations such as Commit, Query, Runform and others.

5.15.9 [OpenScript] DNS Lookup Time (ms)

This metric measures the time taken for DNS lookup.

5.15.10 [OpenScript] Status Description

This metric gives the details on the reason for any service failure.

5.16 OS Response Metrics

This metric is a container for a set of metrics you can use to measure the performance of the custom script.

5.16.1 [Custom Script] Number of Retries

This metric indicates the total number of retries before the script is successfully executed.

5.16.2 [Custom Script] Status

This metric indicates the status of the service test. The test is successful if the return code of the script is 0.

5.16.3 [Custom Script] Total Time (ms)

This metric indicates the total time required to run the script.

5.16.4 [Custom Script] Custom Metric 1

A numeric value should be generated for each line of the custom script. This column corresponds to the first line generated by the script.

5.16.5 [Custom Script] Custom Metric 2

A numeric value should be generated for each line of the custom script. This column corresponds to the second line generated by the script.

5.16.6 [Custom Script] Custom Metric 3

A numeric value should be generated for each line of the custom script. This column corresponds to the third line generated by the script.

5.16.7 [Custom Script] Custom Metric 4

A numeric value should be generated for each line of the custom script. This column corresponds to the fourth line generated by the script.

5.16.8 [Custom Script] Custom Metric 5

A numeric value should be generated for each line of the custom script. This column corresponds to the fifth line generated by the script.

5.16.9 [Custom Script] Custom Metric 6

A numeric value should be generated for each line of the custom script. This column corresponds to the sixth line generated by the script.

5.16.10 [Custom Script] Custom Metric 7

A numeric value should be generated for each line of the custom script. This column corresponds to the seventh line generated by the script.

5.16.11 [Custom Script] Custom Metric 8

A numeric value should be generated for each line of the custom script. This column corresponds to the eighth line generated by the script.

5.16.12 [Custom Script] Custom Metric 9

A numeric value should be generated for each line of the custom script. This column corresponds to the ninth line generated by the script.

5.16.13 [Custom Script] Custom Metric 10

A numeric value should be generated for each line of the custom script. This column corresponds to the last line generated by the script.

5.17 POP Response Metrics

This metric is a container for a set of metrics you can use to measure the performance of the POP service test.

5.17.1 [POP] Connect Time (ms)

This metric indicates the time it took (in milliseconds) to open a POP connection.

5.17.2 [POP] Login Time (ms)

This metric indicates the time it took (in milliseconds) to log into the POP service.

5.17.3 [POP] Status

This metric displays the current status of the POP service, either Up, Down, Status Pending, or Agent Unreachable.

5.17.4 [POP] Status Message

This metric provides a detailed description of the status of the POP service when the service status is down.

5.17.5 [POP] Time to Read Email (ms)

This metric indicates the time it took (in milliseconds) to read a short e-mail message.

5.17.6 [POP] Timing (ms)

This metric indicates the total time it took (in milliseconds) to open a POP connection, log in, and read a short e-mail message.

5.18 Port Checker Metrics

The following sections list the Port Checker metrics, their descriptions, and user actions.

5.18.1 [Port Checker] Status

This metric indicates whether agent could successfully connect to the Expected Open Ports or it could not connect to the Expected Closed Ports.

5.18.2 [Port Checker] Unexpectedly Closed Ports

This metric displays a set of ports that were unexpectedly closed.

User Action

Check that there is no firewall blocking these ports. Check that the server listening on these ports is up.

5.18.3 [Port Checker] Unexpectedly Open Ports

This metric displays a set of ports that were unexpectedly open.

User Action

If you have a firewall blocking these ports, check your firewall configuration.

5.19 SMTP Response Metrics

This metric is a container for a set of metrics you can use to measure the performance of the SMTP service test.

5.19.1 [SMTP] Connect Time (ms)

This metric indicates the time it took (in milliseconds) to open an SMTP connection.

5.19.2 [SMTP] Message Delivery Time

This metric is the time it took (in milliseconds) to deliver the email. This includes the time at which the email was initiated by the sender till the time it was delivered to the receiver's email account.

5.19.3 [SMTP] Status

This metric displays the current status of the SMTP service, either Up, Down, Status Pending, or Agent Unreachable.

5.19.4 [SMTP] Status Message

This metric displays a detailed description of the status of the SMTP service when the service status is down.

5.19.5 [SMTP] Time To Send Email (ms)

This metric indicates the time it took (in milliseconds) to send a short e-mail message.

5.19.6 [SMTP] Total Time (ms)

This metric indicates the total time it took (in milliseconds) to open an SMTP connection and send a short e-mail message.

5.20 SOAP Response Metrics

The following sections list the SOAP Response metrics and their descriptions.

5.20.1 SOAP Response Response Time (ms)

This metric indicates the time taken by the beacon to complete the entire operation. This includes the time taken to send the HTTP request and receive the response.

5.20.2 SOAP Status

This can be 0 (status down) or 1 (status up). The status is down when there is any error detected by beacon while performing the operation. The Status may be down in following cases:

- Due to any HTTP error
- No HTTP errors but due to a SOAP fault in the response

5.21 Oracle SQL Response

The following sections list the SQL Response metrics, their descriptions, and user actions.

5.21.1 [SQL] Close Time (ms)

This metric indicates the time taken to close the connection.

User Action

Close Time might be slow if the network performance is slow. Examine your network configuration.

5.21.2 [SQL] Connect Time (ms)

This metric indicates the total time taken to connect to the database.

User Action

Connect Time might be slow if the network is congested, if the database is having trouble authenticating the user, or if the database is having trouble allocating connections. If you have an Enterprise Manager target instance for the database, you should consult the homepage for the database.

5.21.3 [SQL] Execute Time (ms)

This metric indicates the time taken to execute the SQL statement.

User Action

Execute Time will be slow if the database performance is slow. If you have an Enterprise Manager target instance for the database, you should consult the homepage for the database.

5.21.4 [SQL] Fetch Time (ms)

This metric indicates the time taken to retrieve data from the server.

User Action

Fetch Time might be slow if the network bandwidth is low or if database performance is slow. If you have an Enterprise Manager target instance for the database, you should consult the homepage for the database.

5.21.5 [SQL] Fetch Time per Row (ms)

This metric indicates the time taken to fetch each row (Fetch Time / Number of Rows Fetched). Fetch Time per Row is a good metric to use for setting thresholds and for comparing the performance of different Oracle SQL Timing tests.

User Action

Use the Fetch Time per Row metric to identify data transfer problems. If the value of this metric is high, then the data-transfer bandwidth between the client and the database is poor. If you have an Enterprise Manager target instance for the database, you should consult the homepage for the database.

5.21.6 [SQL] Number of Rows Fetched

This metric indicates the total number of rows fetched during a query.

User Action

If the Number of Rows Fetched is not what you expected, then examine the contents of your database. Unexpected rows in the result could affect Fetch Time and Total Time.

5.21.7 [SQL] Prepare Time (ms)

This metric indicates the time taken to prepare the SQL statement. This usually includes fetching metadata for the object types in the query.

User Action

Prepare Time might be slow if the network performance is slow or if database performance is slow. If you have an Enterprise Manager target instance for the database, you should consult the homepage for the database.

5.21.8 [SQL] Status

This metric indicates whether the SQL or PL/SQL statement could be successfully executed.

5.21.9 [SQL] Status Description

This metric displays a description of the status.

5.21.10 [SQL] Total Time (ms)

This metric indicates the total time taken to connect to the database and run the query. It is the sum of Connect Time, Prepare Time, Execute Time, Fetch Time and Close Time.

User Action

Use the Total Time metric to identify database connectivity problems. Examine the other metrics to isolate and repair the problem. If you have an Enterprise Manager target instance for the database, you should consult the homepage for the database.

5.21.11 [SQL] Total Time per Row (ms)

This metric indicates the time taken to perform the entire test divided by the number of rows fetched ($\text{Total Time} / \text{Number of Rows Fetched}$). Total Time per Row is a good metric to use for setting thresholds and for comparing the performance of different Oracle SQL Timing tests.

User Action

Use the Total Time per Row metric to identify database connectivity problems. As with the Total Time metric, you should examine the other metrics to isolate and repair the problem. If you have an Enterprise Manager target instance for the database, you should consult the homepage for the database.

5.22 TNS Ping Response

The following sections list the TNS Ping Response metrics, their descriptions, and user actions.

5.22.1 [TNS] Average Response Time (ms)

This metric for a listener shows response time in milliseconds. It is calculated using the `tnsping "<address>"` utility. For example:

```
tnsping "( ADDRESS= ( PROTOCOL=TCP ) ( HOST=myhost.us.example.com ) ( PORT=15045 ) )"
TNS Ping Utility for Linux: Version 11.2.0.2.0 - Production on 09-SEP-2011 06:43:16
Copyright (c) 1997, 2010, Oracle. All rights reserved.
Attempting to contact ( ADDRESS= ( PROTOCOL=TCP ) ( HOST=myhost.us.example.com )
( PORT=15045 ) )
OK (2 msec)
```

5.22.2 [TNS] Pings Dropped (%)

This metric indicates the percentage of pings that did not receive a response.

User Action

Check that the network is not congested and that the database is not under heavy load. If you have an Enterprise Manager target instance for the database, you should consult the homepage for the database

5.22.3 [TNS] Status

This metric indicates whether the database responds to the pings.

5.23 WebDAV Response Metrics

The following sections lists the WebDAV response metrics and their descriptions.

5.23.1 [WebDAV] Status

This metric indicates whether the transaction done through the WebDAV service was successful.

5.23.2 [WebDAV] Total Time (ms)

This metric indicates the total time taken for the transaction made through the WebDAV service to complete.

5.23.3 [WebDAV] Connect Time (ms)

This metric displays the total time taken to connect to the WebDAV service.

5.23.4 [WebDAV] Collection Creation Time (ms)

This metric displays the time taken to create a collection of files.

5.23.5 [WebDAV] Content Listing Time (ms)

This metric indicates the time taken to list all the contents present in the server.

5.23.6 [WebDAV] File Creation Time (ms)

This metric indicates the time taken to create a new file through WebDAV protocol.

5.23.7 [WebDAV] File Read Time (ms)

This metric indicates the time taken to read an existing file through WebDAV protocol.

5.23.8 [WebDAV] File Lock Time (ms)

This metric indicates the time taken to restrict the edit access to a file through WebDAV protocol.

5.23.9 [WebDAV] File Unlock Time (ms)

This metric indicates the time taken to release the locked edit access to a file through WebDAV protocol.

5.23.10 [WebDAV] File Move Time (ms)

This metric indicates the time taken to move a file from one collection to another through WebDAV protocol.

5.23.11 [WebDAV] Collection Deletion Time (ms)

This metric indicates the time taken to delete an existing collection from the server.

5.23.12 [WebDAV] Status Message

This metric indicates the description of the status.

5.24 [Web Transaction] Browser

This metric is a container for a set of metrics you can use to measure the performance of your web transaction.

5.24.1 [Web Transaction (Browser)] Status

This metric indicates whether the web transaction was successful.

5.24.2 [Web Transaction (Browser)] Status Description

If the beacon is unable to run the transaction successfully, this metric returns a description of the error that prevented the transaction from running.

5.24.3 [Web Transaction (Browser)] Total Time (ms)

This metric indicates the amount of time that it would take a web browser to play the transaction. This is a good metric for setting thresholds because it is the closest active measurement of what the user-experience is likely to be.

User Action

Use this metric to identify problem transactions. After you identify a transaction that's slow to respond to user requests, you can drill down and analyze each phase of the transaction to isolate and repair the problem.

5.25 [Web Transaction (Browser)] Raw

This metric is container for a set of metrics you can use to measure the performance of your web transaction service test and its associated steps and steps groups.

5.25.1 [Web Transaction (Browser)] Row Type

This metric indicates whether the metric is collected for step, step group or transaction.

5.25.2 [Web Transaction (Browser)] Status

This metric indicates whether the web transaction was successful.

5.25.3 [Web Transaction (Browser)] Status Description

If the beacon is unable to run the step, step group, or transaction successfully, this metric returns a description of the error.

5.25.4 [Web Transaction (Browser)] Total Time (ms)

This metric indicates the overall time spent to process the step, step group, or transaction. This includes all the phases of the step / step group / transaction, including Connect Time, Redirect Time, First Byte Time, HTML Time, and Non-HTML Time. This metric calculates total transaction time by assuming all contents of a page are fetched in a serial manner.

User Action

Use the Total Time Metric to identify problem transactions. After you identify a transaction that's slow to respond to user requests, you can drill down and analyze each phase of the transaction to isolate and repair the problem.

5.26 Web Transaction (Browser) Step

This metric is a container for a set of metrics you can use to measure the performance each step in the transaction.

5.26.1 [Web Transaction (Browser) Step] Status

This metric indicates whether the web transaction was successful.

5.26.2 [Web Transaction (Browser) Step] Status Description

If the beacon is unable to run the transaction successfully, this metric returns a description of the error that prevented the transaction from running.

5.26.3 [Web Transaction (Browser) Step] Total Time (ms)

This metric indicates the amount of time that it would take a web browser to play the step element. This is a good metric for setting thresholds because it is the closest active measurement of what the user-experience is likely to be.

User Action

Use this metric to identify problem transactions. After you identify a step group that's slow to respond to user requests, you can drill down and analyze each phase of the step to isolate and repair the problem.

5.27 [Web Transaction (Browser)] Step Group

This metric is container for a set of metrics you can use to measure the performance of all the steps in the step group.

5.27.1 [Web Transaction (Browser) Step Group] Status

This metric indicates whether the web transaction was successful.

5.27.2 [Web Transaction (Browser) Step Group] Status Description

If the beacon is unable to run the step group successfully, this metric returns a description of the error that prevented the step group from running.

5.27.3 [Web Transaction (Browser) Step Group] Total Time (ms)

This metric indicates the amount of time that it would take a web browser to play the step group. This is a good metric for setting thresholds because it is the closest active measurement of what the user-experience is likely to be.

User Action

Use this metric to identify problem transactions. After you identify a step group that's slow to respond to user requests, you can drill down and analyze each phase of the step group to isolate and repair the problem.

5.28 XMPP Response Metrics

The following sections list the XMPP response metrics and their descriptions.

5.28.1 [XMPP] Status

This metric indicates whether the connection to the XMPP server was successful.

5.28.2 [XMPP] Total Time (ms)

This metric indicates the total time taken to establish a connection to the XMPP server and list the contacts. Total time consists of Connect time, login time and contacts listing time.

5.28.3 [XMPP] Connect Time (ms)

This metric indicates the time taken to connect to the XMPP server.

5.28.4 [XMPP] Login Time (ms)

This metric indicates the time taken to verify the user credentials in the XMPP server.

5.28.5 [XMPP] Contacts Listing Time (ms)

This metric indicates the time taken to show all the contacts for the logged in user.

5.28.6 [XMPP] Message Send Time (ms)

This metric indicates the time taken for the message to be sent from the XMPP server.

5.28.7 [XMPP] Status Message

This metric indicates the description of the status.

Web Application Metrics

This chapter describes the Web Application metrics.

6.1 HTTP Content

The following sections lists the HTTP Content metrics, their descriptions, and user actions.

6.1.1 Average Connect Time

This metric measures the average connect time for all pages in the transaction. This is calculated as: $\text{Total Connect Time} / \text{Number of Connections Made}$. The Connect Time is one of the phases of a transaction that can help you isolate and fix response time problems.

User Action

The average connect time, when reviewed over a period of time, can indicate whether network congestion or other connectivity issues are the cause of poor Web application response time.

6.1.2 Average First Byte Time

This metric measures the average First Byte Time for all pages in the transaction. This metric is computed as: $\text{Total First Byte Time} / \text{Number of Requests Made}$ (either to fetch HTML or content). The First Byte time is one of the phases of a transaction that can help you isolate and fix response time problems.

User Action

The average First Byte Time, when reviewed over a period of time, can indicate whether network congestion or other connectivity issues are the cause of poor Web application response time.

6.1.3 Average Response Time

A single transaction often accesses multiple Web pages. The Average Page Response metric calculates the average response time of the pages within a single transaction. This metric is calculated as: $\text{Total Transaction Time} / \text{Number of Pages in the Transaction}$. For example, if the transaction connects to four different Web pages, this metric will calculate the average response time for the four pages each time the transaction is run.

User Action

If a particular transaction continuously exceeds the Average Page Response threshold, use the Beacon Data page to test the transaction from other beacons and over a specific time period. Use this data to pinpoint any trends or specific beacons that generate the

alerts. Display the Beacon Data page by clicking the value of a metric on the Transaction Performance Page.

6.1.4 Beacon Name

The beacon name is the name of the beacon for which the current metric data is being collected.

6.1.5 Broken Content

This metric is not currently collected by Oracle Enterprise Manager and is for internal use only.

6.1.6 Broken Count

This metric measures the number of errors encountered when displaying content for the pages accessed by the transaction. For example, missing GIF images or style sheets will increase the value of the Broken Count metric.

User Action

Use this metric to measure the quality of the pages being served by your Web application. For example, high values for the Broken Count metric can indicate that files have been moved or that relative links in the application are broken.

6.1.7 Computed Response Time

This metric represents the estimated response time for a client such as a browser, to fetch all the pages in a transaction. The computed response time is calculated as if the contents of every page (such as images and HTML style sheets) were fetched in parallel using multiple threads.

User Action

Use the Calculated Response Time to predict the response time that will be experienced by your average end user.

6.1.8 Connect Time

Enterprise Manager breaks down each transaction into individual phases. Performance metrics for each phase of the transaction can help you pinpoint the cause of a slow response time alert. Connect Time is the first phase of a transaction and represents the time it takes for a connection to the Web server to be established for all requests.

User Action

Slow connect time has nothing to do with the content of the page itself. It is likely caused by a slow network or a busy Web server, which prevents the request from getting to the Web server in a timely manner.

6.1.9 Content Time

Enterprise Manager breaks down each transaction into individual phases. Performance metrics for each phase of the transaction can help you pinpoint the cause of a slow response time alert. This metric measures the Content Time, which is the amount of time taken to transfer page content to the browser. Page content includes images and style sheets, as opposed to the HTML coding for the page.

User Action

Consider reducing the size of images or other contents of the page

6.1.10 DNS Time

This metric is not supported for this version of Enterprise Manager

6.1.11 First Byte Time

Enterprise Manager breaks down each transaction into individual phases. Performance metrics for each phase of the transaction can help you pinpoint the cause of a slow response time alert. This metric measures the First Byte Time, which is the total time taken between the last byte of the request sent and the first byte of the response received by the server for all requests made. This includes the network latency and the time for the server to respond.

User Action

As with the Connect Time and Redirect Time, this metric can help you pinpoint whether or not the page content or Web application software is causing the slow response time, as opposed to the actual time it takes to transfer one byte of information to the browser.

6.1.12 HTML Bytes

This metric provides information about the amount of data transferred during the selected transaction. For each transaction, this metric provides the total bytes of HTML code transferred from all the Web pages accessed by the transaction.

User Action

This metric can help you isolate the cause of any performance problems identified by this transaction. Be sure to consider the number of HTML bytes when you compare the response time of your Web Application transactions.

6.1.13 HTML Content

This metric serves as a container for a set of metrics that provide you with information about the content of the Web pages you are monitoring, as well as response time information.

6.1.14 HTTP Response

This metric is a container for a set of metrics you can use to measure the performance of your Web Application transactions. It indicates how quickly the pages respond to user requests.

6.1.15 HTML Time

Enterprise Manager breaks down each transaction into individual phases. Performance metrics for each phase of the transaction can help you pinpoint the cause of a slow response time alert. This metric measures the HTML Time, which is the amount of time it takes to transfer the HTML coding of the page to the browser. This metric does not include the time spent transferring images or other page content, for example.

User Action

Slow HTML time could indicate problems with your HTML coding. Check the source code for your Web Application page to see if there are ways to streamline or improve the logic of the HTML code.

6.1.16 Page Content Bytes

This metric provides information about the amount of data transferred during the selected transaction. For each transaction, this metric provides the number of bytes that represent page content such as images and style sheets.

User Action

This metric can help you isolate the cause of any performance problems identified by this transaction. Be sure to consider the total number of bytes when you compare the response time of your Web Application transactions. Pages with many images or complex style sheets will return a high value for the Page Content Bytes metric.

6.1.17 Page Content Count

This metric is not currently collected by Oracle Enterprise Manager and is for internal use only.

6.1.18 Redirect Count

This metric is not currently collected by Oracle Enterprise Manager and is for internal use only.

6.1.19 Redirect Time

Enterprise Manager breaks down each transaction into individual phases. Performance metrics for each phase of the transaction can help you pinpoint the cause of a slow response time alert. Some pages automatically redirect the HTTP request to another page. Redirect time represents the total time of all redirects within a transaction. The time taken to redirect the request can affect the overall response time of the page.

User Action

Significant time taken to redirect the HTTP request removes the possibility that the page content or the Web application software is causing a slow response time alert. If the redirect is causing the performance problems, consider alternative solutions to sending the user to another HTML page.

6.1.20 Request Count

This metric is not currently collected by Oracle Enterprise Manager and is for internal use only.

6.1.21 Slowest Response Time

A single transaction often accesses multiple Web pages. This metric indicates the maximum response time measured for a particular page within a transaction. The slowest page response time can be monitored for a specific transaction and from a specific beacon over a period of time.

You can set a threshold for this metric so that Enterprise Manager will generate an alert if the slowest page response for a particular transaction exceeds a value you specify when it is run from a specific beacon.

6.1.22 Status

This metric returns a value of 1 if the selected beacon was successfully able to run the transaction for this Web application target.

User Action

There are several possible causes to a failed transaction. First, check the availability of the Web application and host for the Web application target.

Second, check the availability of the Oracle Agent for this beacon.

6.1.23 Status Description

If the beacon is unable to run the transaction successfully, this metric returns a description of the error that prevented the transaction from running.

User Action

If you are reviewing the metric results from the All Metrics page, review the Value column of the Status Description table. The error description should offer clues about why the transaction failed.

6.1.24 Total Bytes

This metric provides information about the amount of data transferred during the selected transaction. For each transaction, this metric provides the total number of bytes transferred from all the Web pages accessed by the transaction.

User Action

This metric can help you isolate the cause of any performance problems identified by this transaction. Be sure to consider the total number of bytes when you compare the response time of your Web Application transactions.

6.1.25 Total Response Time

Total transaction time indicates the overall time spent to process the transaction. This includes all the phases of the transaction, including Connect Time, Redirect Time, First Byte Time, HTML Time, and Content Time. This metric calculates total transaction time by assuming all contents of a page are fetched in a serial manner.

User Action

Use the total response time metric to identify problem pages. After you identify a page or transaction that's slow to respond to user requests, you can drill down and analyze each phase of the transaction to isolate and repair the problem.

6.1.26 Transaction Name

The transaction name is the name of the transaction for which the current metric data is collected.

6.1.27 Transfer Rate

The transfer rate indicates how quickly data is being transferred from the Web server to the client browser. This is computed as: Total Kilobytes Received / Total Transaction Time.

User Action

Slow transfer rate can be caused by network congestion or other connectivity issues.

6.1.28 Web Application

You can use Oracle Enterprise Manager to view performance and availability metrics for your Web applications.

6.2 HTTP Step Group

The following sections lists the HTTP Step Group metrics, their descriptions, and user actions.

6.2.1 [HTTP Step Group] Broken URL Count

This metric measures the number of errors encountered when displaying content for the pages accessed by the step group. For example, missing GIF images or style sheets will increase the value of the Broken Count metric.

User Action

Use this metric to measure the quality of the pages being served by your Web application. For example, high values for the Broken Count metric can indicate that files have been moved or that relative links in the application are broken.

6.2.2 [HTTP Step Group] Broken URL Details

This metric is not currently collected by Oracle Enterprise Manager and is for internal use only.

6.2.3 [HTTP Step Group] Connect Time (ms)

Enterprise Manager breaks down each step group into individual phases. Performance metrics for each phase of the step group can help you pinpoint the cause of a slow response time alert. Connect Time is the total time spent in the transaction connecting to the server. There may be multiple connections made during a transaction. Time spend connecting for requests that result in redirects count as Redirect Time rather than Connect Time.

User Action

Significant Connect Time values are usually caused by a slow network or a busy Web server. Significant Connect Time values may also indicate that there are too many connections made during the transaction. Consider enabling HTTP persistent connections if the application does not already have them enabled.

6.2.4 [HTTP Step Group] DNS Time

This metric is not supported for this version of Enterprise Manager.

6.2.5 [HTTP Step Group] First Byte Time (ms)

Enterprise Manager breaks down each step group into individual phases. Performance metrics for each phase of the transaction can help you pinpoint the cause of a slow response time alert. This metric measures the First Byte Time, which is the total time taken between the last byte of the request sent and the first byte of the response received by the server for all requests made. This includes the network latency and the time for the server to respond.

User Action

As with the Connect Time and Redirect Time, this metric can help you pinpoint whether or not the page content or Web application software is causing the slow response time, as opposed to the actual time it takes to transfer one byte of information to the browser. A high First Byte Time suggests that there may be high network latency between the agent and the service. Some applications generate an entire page before sending the first byte of that page. For such applications, a high First Byte Time could also indicate that the servers are taking a long time to generate each page.

6.2.6 [HTTP Step Group] First Byte Time per Page (ms)

This is the First Byte Time divided by the number of pages in the step group.

User Action

A high First Byte Time per Page suggests that there may be high network latency between the agent and the service. Some applications generate an entire page before sending the first byte of that page. For such applications, a high First Byte Time could also indicate that the servers are taking a long time to generate each page.

6.2.7 [HTTP Step Group] HTML Time (ms)

Enterprise Manager breaks down each step group into individual phases. Performance metrics for each phase of the transaction can help you pinpoint the cause of a slow response time alert. This metric measures the HTML Time, which is the amount of time it takes to transfer the HTML coding of the page to the browser. This metric does not include the time spent transferring images or other page content.

User Action

Slow HTML time could indicate that the application is taking a long time to finish generating each page. Alternatively, slow HTML time could indicate that network bandwidth between the agent and the service is low.

6.2.8 [HTTP Step Group] Non-HTML Time (ms)

This is the amount of time it takes to transfer the non-HTML content such as images to the browser.

User Action

Slow Non-HTML time could indicate that the application is taking a long time to generate images. Alternatively, slow HTML time could indicate that network bandwidth between the agent and the service is low. Consider reducing the number of distinct images in the application.

6.2.9 [HTTP Step Group] Perceived Slowest Page Time (ms)

The amount of time that it would take a Web browser to play the slowest page in a step group. This is a good metric for setting thresholds because it is the closest active measurement of what the user-experience is likely to be.

User Action

Use this metric to identify problem pages. After you identify a page or transaction that's slow to respond to user requests, you can drill down and analyze each phase of the transaction to isolate and repair the problem.

6.2.10 [HTTP Step Group] Perceived Time per Page (ms)

The average amount of time that it would take a Web browser to play each page in the step group. This is a good metric for setting thresholds because it is the closest active measurement of what the user-experience is likely to be. Because it is normalized on a per-page basis, Perceived Time per Page is also a good metric for comparing the relative performance of different transactions.

User Action

Use this metric to identify problem transactions. After you identify a transaction that's slow to respond to user requests, you can drill down and analyze each phase of the step group to isolate and repair the problem.

6.2.11 [HTTP Step Group] Perceived Total Time (ms)

The amount of time that it would take a Web browser to play the step group. This is a good metric for setting thresholds because it is the closest active measurement of what the user-experience is likely to be.

User Action

Use this metric to identify problem transactions. After you identify a step group that's slow to respond to user requests, you can drill down and analyze each phase of the step group to isolate and repair the problem.

6.2.12 [HTTP Step Group] Redirect Time (ms)

Enterprise Manager breaks down each step group into individual phases. Performance metrics for each phase of the step group can help you pinpoint the cause of a slow response time alert. Some pages automatically redirect the HTTP request to another page. Redirect time represents the total time of all redirects within a step group. The time taken to redirect the request can affect the overall response time of the page.

User Action

Significant time taken to redirect the HTTP request. If the redirect is causing the performance problems, consider alternative solutions to sending the user to another HTML page.

6.2.13 [HTTP Step Group] Status

Indicates whether the Web transaction was successful.

6.2.14 [HTTP Step Group] Status Description

If the beacon is unable to run the transaction successfully, this metric returns a description of the error that prevented the transaction from running.

6.2.15 [HTTP Step Group] Time per Connection (ms)

This is the Connect Time divided by the number of connections made while playing a step group.

User Action

Slow Time per Connection has nothing to do with the content of the page itself. It is likely caused by a slow network or a busy Web server, which prevents the request

from getting to the Web server in a timely manner. Transactions that use HTTPS will typically have a much higher Time per Connection than transactions that use HTTP.

6.2.16 [HTTP Step Group] Total Time (ms)

Indicates the overall time spent in processing the step group. This includes all the phases of the transaction, including Connect Time, Redirect Time, First Byte Time, HTML Time, and Non-HTML Time. This metric calculates total transaction time by assuming all contents of a page are fetched in a serial manner.

User Action

Use the Total Time Metric to identify problem transactions. After you identify a transaction that's slow to respond to user requests, you can drill down and analyze each phase of the transaction to isolate and repair the problem.

6.2.17 [HTTP Step Group] Transfer Rate (KB per second)

The transfer rate indicates how quickly data is being transferred from the Web server to the client browser. This is computed as: Total Kilobytes Received / Total Transaction Time.

User Action

Slow transfer rate can be caused by network congestion or other connectivity issues.

6.3 HTTP Transaction

The following sections lists the HTTP Transaction metrics, their descriptions, and user actions.

6.3.1 [HTTP Transaction] Connect Time (ms)

Enterprise Manager breaks down each transaction into individual phases. Performance metrics for each phase of the transaction can help you pinpoint the cause of a slow response time alert. Connect Time is the total time spent in the transaction connecting to the server. There may be multiple connections made during a transaction. Time spend connecting for requests that result in redirects count as Redirect Time rather than Connect Time.

User Action

Significant Connect Time values are usually caused by a slow network or a busy Web server. Significant Connect Time values may also indicate that there are too many connections made during the transaction. Consider enabling HTTP persistent connections if the application does not already have them enabled.

6.3.2 [HTTP Transaction] DNS Time

This metric is not supported for this version of Enterprise Manager.

6.3.3 [HTTP Transaction] First Byte Time (ms)

Enterprise Manager breaks down each transaction into individual phases. Performance metrics for each phase of the transaction can help you pinpoint the cause of a slow response time alert. This metric measures the First Byte Time, which is the total time taken between the last byte of the request sent and the first byte of the response received by the server for all requests made. This includes the network latency and the time for the server to respond.

User Action

As with the Connect Time and Redirect Time, this metric can help you pinpoint whether or not the page content or Web application software is causing the slow response time, as opposed to the actual time it takes to transfer one byte of information to the browser. A high First Byte Time suggests that there may be high network latency between the agent and the service. Some applications generate an entire page before sending the first byte of that page. For such applications, a high First Byte Time could also indicate that the servers are taking a long time to generate each page.

6.3.4 [HTTP Transaction] First Byte Time per Page (ms)

This is the First Byte Time divided by the number of pages in the transaction.

User Action

A high First Byte Time per Page suggests that there may be high network latency between the agent and the service. Some applications generate an entire page before sending the first byte of that page. For such applications, a high First Byte Time could also indicate that the servers are taking a long time to generate each page.

6.3.5 [HTTP Transaction] HTML Time (ms)

Enterprise Manager breaks down each transaction into individual phases. Performance metrics for each phase of the transaction can help you pinpoint the cause of a slow response time alert. This metric measures the HTML Time, which is the amount of time it takes to transfer the HTML coding of the page to the browser. This metric does not include the time spent transferring images or other page content.

User Action

Slow HTML time could indicate that the application is taking a long time to finish generating each page. Alternatively, slow HTML time could indicate that network bandwidth between the agent and the service is low.

6.3.6 [HTTP Transaction] Non-HTML Time (ms)

This is the amount of time it takes to transfer the non-HTML content such as images to the browser.

User Action

Slow Non-HTML time could indicate that the application is taking a long time to generate images. Alternatively, slow HTML time could indicate that network bandwidth between the agent and the service is low. Consider reducing the number of distinct images in the application.

6.3.7 [HTTP Transaction] Perceived Slowest Page Time (ms)

The amount of time that it would take a web browser to play the slowest page in the transaction. This is a good metric for setting thresholds because it is the closest active measurement of what the user-experience is likely to be.

User Action

Use this metric to identify problem pages. After you identify a page or transaction that's slow to response respond to user requests, you can drill down and analyze each phase of the transaction to isolate and repair the problem.

6.3.8 [HTTP Transaction] Perceived Time per Page (ms)

The average amount of time that it would take a Web browser to play each page in the transaction. This is a good metric for setting thresholds because it is the closest active measurement of what the user-experience is likely to be. Because it is normalized on a per-page basis, Perceived Time per Page is also a good metric for comparing the relative performance of different transactions.

User Action

Use this metric to identify problem transactions. After you identify a transaction that's slow to respond to user requests, you can drill down and analyze each phase of the transaction to isolate and repair the problem.

6.3.9 [HTTP Transaction] Perceived Total Time

The amount of time that it would take a web browser to play the transaction. This is a good metric for setting thresholds because it is the closest active measurement of what the user-experience is likely to be.

User Action

Use this metric to identify problem transactions. After you identify a transaction that's slow to respond to user requests, you can drill down and analyze each phase of the transaction to isolate and repair the problem.

6.3.10 [HTTP Transaction] Redirect Time (ms)

Enterprise Manager breaks down each transaction into individual phases. Performance metrics for each phase of the transaction can help you pinpoint the cause of a slow response time alert. Some pages automatically redirect the HTTP request to another page. Redirect time represents the total time of all redirects within a transaction. The time taken to redirect the request can affect the overall response time of the page.

User Action

Significant time taken to redirect the HTTP request. If the redirect is causing the performance problems, consider alternative solutions to sending the user to another HTML page.

6.3.11 [HTTP Transaction] Status

Indicates whether the Web transaction was successful.

6.3.12 [HTTP Transaction] Status Description

If the beacon is unable to run the transaction successfully, this metric returns a description of the error that prevented the transaction from running.

6.3.13 [HTTP Transaction] Time per Connection (ms)

This is the Connect Time divided by the number of connections made while playing a transaction.

User Action

Slow Time per Connection has nothing to do with the content of the page itself. It is likely caused by a slow network or a busy Web server, which prevents the request

from getting to the Web server in a timely manner. Transactions that use HTTPS will typically have a much higher Time per Connection than transactions that use HTTP.

6.3.14 [HTTP Transaction] Total Time (ms)

Indicates the overall time spent to process the transaction. This includes all the phases of the transaction, including Connect Time, Redirect Time, First Byte Time, HTML Time, and Non-HTML Time. This metric calculates total transaction time by assuming all contents of a page are fetched in a serial manner.

User Action

Use the Total Time Metric to identify problem transactions. After you identify a transaction that's slow to respond to user requests, you can drill down and analyze each phase of the transaction to isolate and repair the problem.

6.3.15 [HTTP Transaction] Transfer Rate (KB per second)

The transfer rate indicates how quickly data is being transferred from the Web server to the client browser. This is computed as: Total Kilobytes Received / Total Transaction Time.

User Action

Slow transfer rate can be caused by network congestion or other connectivity issues.

6.4 HTTP User Action

The following sections lists the HTTP User Action metrics, their descriptions, and user actions.

6.4.1 [HTTP Step] Broken URL Content

This metric is not currently collected by Oracle Enterprise Manager and is for internal use only.

6.4.2 [HTTP Step] Connect Time (ms)

Enterprise Manager breaks down each step element. Performance metrics for each step element can help you pinpoint the cause of a slow response time alert. Connect Time is the total time spent in the transaction connecting to the server. There may be multiple connections made during a transaction. Time spend connecting for requests that result in redirects count as Redirect Time rather than Connect Time.

User Action

Significant Connect Time values are usually caused by a slow network or a busy Web server. Significant Connect Time values may also indicate that there are too many connections made during the transaction. Consider enabling HTTP persistent connections if the application does not already have them enabled.

6.4.3 [HTTP Step] DNS Time

This metric is not supported for this version of Enterprise Manager.

6.4.4 [HTTP Step] First Byte Time (ms)

Enterprise Manager breaks down each step into individual phases. Performance metrics for each phase of the transaction can help you pinpoint the cause of a slow

response time alert. This metric measures the First Byte Time, which is the total time taken between the last byte of the request sent and the first byte of the response received by the server for all requests made. This includes the network latency and the time for the server to respond.

User Action

As with the Connect Time and Redirect Time, this metric can help you pinpoint whether or not the page content or Web application software is causing the slow response time, as opposed to the actual time it takes to transfer one byte of information to the browser. A high First Byte Time suggests that there may be high network latency between the agent and the service. Some applications generate an entire page before sending the first byte of that page. For such applications, a high First Byte Time could also indicate that the servers are taking a long time to generate each page.

6.4.5 [HTTP Step] First Byte Time per Page Element (ms)

This is the First Byte Time divided by the number of step elements.

User Action

A high First Byte Time per Page suggests that there may be high network latency between the agent and the service. Some applications generate an entire page before sending the first byte of that page. For such applications, a high First Byte Time could also indicate that the servers are taking a long time to generate each page.

6.4.6 [HTTP Step] HTML Time (ms)

Enterprise Manager breaks down each step element. Performance metrics for each step element can help you pinpoint the cause of a slow response time alert. This metric measures the HTML Time, which is the amount of time it takes to transfer the HTML coding of the page to the browser. This metric does not include the time spent transferring images or other page content.

User Action

Slow HTML time could indicate that the application is taking a long time to finish generating each page. Alternatively, slow HTML time could indicate that network bandwidth between the agent and the service is low.

6.4.7 [HTTP Step] Non-HTML Time (ms)

This is the amount of time it takes to transfer the non-HTML content such as images to the browser.

User Action

Slow Non-HTML time could indicate that the application is taking a long time to generate images. Alternatively, slow HTML time could indicate that network bandwidth between the agent and the service is low. Consider reducing the number of distinct images in the application.

6.4.8 [HTTP Step] Perceived Slowest Page Element Time (ms)

The amount of time that it would take a Web browser to play the slowest step element. This is a good metric for setting thresholds because it is the closest active measurement of what the user-experience is likely to be.

User Action

Use this metric to identify problem pages. After you identify a page or transaction that's slow to respond to user requests, you can drill down and analyze each phase of the transaction to isolate and repair the problem.

6.4.9 [HTTP Step] Perceived Time per Page Element (ms)

The average amount of time that it would take a Web browser to play each page in a step. This is a good metric for setting thresholds because it is the closest active measurement of what the user-experience is likely to be. Because it is normalized on a per-page basis, Perceived Time per Page is also a good metric for comparing the relative performance of different transactions.

User Action

Use this metric to identify problem transactions. After you identify a transaction that's slow to respond to user requests, you can drill down and analyze each phase of the step group to isolate and repair the problem.

6.4.10 [HTTP Step] Perceived Total Time (ms)

The amount of time that it would take a Web browser to play the step element. This is a good metric for setting thresholds because it is the closest active measurement of what the user-experience is likely to be.

User Action

Use this metric to identify problem transactions. After you identify a step group that's slow to respond to user requests, you can drill down and analyze each phase of the step to isolate and repair the problem.

6.4.11 [HTTP Step] Redirect Time (ms)

Enterprise Manager breaks down each step element. Performance metrics for each step element can help you pinpoint the cause of a slow response time alert. Some pages automatically redirect the HTTP request to another page. Redirect time represents the total time of all redirects within a step. The time taken to redirect the request can affect the overall response time of the page.

User Action

Significant time taken to redirect the HTTP request. If the redirect is causing the performance problems, consider alternative solutions to sending the user to another HTML page.

6.4.12 [HTTP Step] Status

Indicates whether the Web transaction was successful.

6.4.13 [HTTP Step] Status Description

If the beacon is unable to run the transaction successfully, this metric returns a description of the error that prevented the transaction from running.

6.4.14 [HTTP Step] Time per Connection (ms)

This is the Connect Time divided by the number of connections made while playing a step element.

User Action

Slow Time per Connection has nothing to do with the content of the page itself. It is likely caused by a slow network or a busy Web server, which prevents the request from getting to the Web server in a timely manner. Transactions that use HTTPS will typically have a much higher Time per Connection than transactions that use HTTP.

6.4.15 [HTTP Step] Total Time (ms)

Indicates the overall time spent in processing the step. This includes all the phases of the transaction, including Connect Time, Redirect Time, First Byte Time, HTML Time, and Non-HTML Time. This metric calculates total transaction time by assuming all contents of a page are fetched in a serial manner.

User Action

Use the Total Time Metric to identify problem transactions. After you identify a transaction that's slow to respond to user requests, you can drill down and analyze each phase of the transaction to isolate and repair the problem.

6.4.16 [HTTP Step] Transfer Rate (KB per second)

The transfer rate indicates how quickly data is being transferred from the Web server to the client browser. This is computed as: Total Kilobytes Received / Total Transaction Time.

User Action

Slow transfer rate can be caused by network congestion or other connectivity issues.

6.4.17 [HTTP Step] URL

This is the URL associated with the step.

6.5 HTTP Raw

The following sections lists the HTTP Raw metrics, their descriptions, and user actions.

6.5.1 HTTP Raw Broken URL Details

This metric is not currently collected by Oracle Enterprise Manager and is for internal use only.

6.5.2 HTTP Raw Connect Time (ms)

Enterprise Manager breaks down each transaction into individual phases. Performance metrics for each phase of the transaction, step or step group can help you pinpoint the cause of a slow response time alert. Connect Time is the total time spent in the transaction connecting to the server. There may be multiple connections made during a transaction. Time spent connecting for requests that result in redirects count as Redirect Time rather than Connect Time.

User Action

Significant Connect Time values are usually caused by a slow network or a busy Web server. Significant Connect Time values may also indicate that there are too many connections made during the transaction. Consider enabling HTTP persistent connections if the application does not already have them enabled.

6.5.3 HTTP Raw DNS Time

This metric is not supported for this version of Enterprise Manager.

6.5.4 HTTP Raw First Byte Time (ms)

This is the First Byte Time divided by the number of pages in the step, step group, or transaction.

User Action

A high First Byte Time per Page suggests that there may be high network latency between the agent and the service. Some applications generate an entire page before sending the first byte of that page. For such applications, a high First Byte Time could also indicate that the servers are taking a long time to generate each page.

6.5.5 HTTP Raw HTML Time (ms)

Enterprise Manager breaks down each step, step group, or transaction into individual phases. Performance metrics for each phase can help you pinpoint the cause of a slow response time alert. This metric measures the HTML Time, which is the amount of time it takes to transfer the HTML coding of the page to the browser. This metric does not include the time spent transferring images or other page content.

User Action

Slow HTML time could indicate that the application is taking a long time to finish generating each page. Alternatively, slow HTML time could indicate that network bandwidth between the agent and the service is low.

6.5.6 HTTP Raw Non-HTML Time (ms)

This is the amount of time it takes to transfer the non-HTML content such as images to the browser.

User Action

Slow Non-HTML time could indicate that the application is taking a long time to generate images. Alternatively, slow HTML time could indicate that network bandwidth between the agent and the service is low. Consider reducing the number of distinct images in the application.

6.5.7 HTTP Raw Perceived Slowest Page / Page Element Time (ms)

The amount of time that it would take a web browser to play the slowest page in the step, step group, or transaction. This is a good metric for setting thresholds because it is the closest active measurement of what the user-experience is likely to be.

User Action

Use this metric to identify problem pages. After you identify a page or transaction that's slow to response respond to user requests, you can drill down and analyze each phase of the transaction to isolate and repair the problem.

6.5.8 HTTP Raw Perceived Time per Page / Page Element (ms)

The average amount of time that it would take a Web browser to play each page in the step, step group, or transaction. This is a good metric for setting thresholds because it is the closest active measurement of what the user-experience is likely to be. Because it

is normalized on a per-page basis, Perceived Time per Page is also a good metric for comparing the relative performance of different transactions.

User Action

Use this metric to identify problem transactions. After you identify a transaction that's slow to respond to user requests, you can drill down and analyze each phase of the transaction to isolate and repair the problem.

6.5.9 HTTP Raw Perceived Total Time (ms)

Indicates the overall time spent to process the step, step group, or transaction. This includes all the phases of the step / step group / transaction, including Connect Time, Redirect Time, First Byte Time, HTML Time, and Non-HTML Time. This metric calculates total transaction time by assuming all contents of a page are fetched in a serial manner.

User Action

Use the Total Time Metric to identify problem transactions. After you identify a transaction that's slow to respond to user requests, you can drill down and analyze each phase of the transaction to isolate and repair the problem.

6.5.10 HTTP Raw Redirect Time (ms)

Enterprise Manager breaks down each transaction into individual phases. Performance metrics for each phase of the transaction can help you pinpoint the cause of a slow response time alert. Some pages automatically redirect the HTTP request to another page. Redirect time represents the total time of all redirects within a transaction. The time taken to redirect the request can affect the overall response time of the page.

User Action

Significant time taken to redirect the HTTP request. If the redirect is causing the performance problems, consider alternative solutions to sending the user to another HTML page.

6.5.11 HTTP Raw Status

Indicates whether the Web transaction was successful.

6.5.12 HTTP Raw Status Description

If the beacon is unable to run the step, step group, or transaction successfully, this metric returns a description of the error that prevented the transaction from running.

6.5.13 HTTP Raw Time Per Connection

This metric measures the average connect time for all pages in the transaction. This is calculated as: $\text{Total Connect Time} / \text{Number of Connections Made}$. The Connect Time is one of the phases of a transaction that can help you isolate and fix response time problems.

User Action

The average connect time, when reviewed over a period of time, can indicate whether network congestion or other connectivity issues are the cause of poor Web application response time.

6.5.14 HTTP Raw Transfer Rate (KB per second)

The transfer rate indicates how quickly data is being transferred from the Web server to the client browser. This is computed as: Total Kilobytes Received / Total Transaction Time.

User Action

Slow transfer rate can be caused by network congestion or other connectivity issues.

6.5.15 HTTP Raw Total Time (ms)

Indicates the overall time spent to process the step, step group, or transaction. This includes all the phases of the transaction, including Connect Time, Redirect Time, First Byte Time, HTML Time, and Non-HTML Time. This metric calculates total transaction time by assuming all contents of a page are fetched in a serial manner.

User Action

Use the Total Time Metric to identify problem transactions. After you identify a transaction that's slow to respond to user requests, you can drill down and analyze each phase of the transaction to isolate and repair the problem.

6.5.16 HTTP Raw URL

This is the URL associated with the step.

Oracle VM Server Pool

This release of Enterprise Manager employs a new method for collecting performance metrics. To reduce load and increase scalability, metrics for the Oracle VM Server and Oracle VM Guest targets in an Oracle VM server pool are collected as part of the Oracle VM Server Pool target. However, all data are delivered to the correct targets.

In the following lines, metrics starting with OVMGuest* are collected by the Oracle VM Server Pool target for the Oracle VM Guest targets. Similarly, all metrics starting with OVMServer* are collected by the Oracle VM Server Pool target for the member Oracle VM Server targets.

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

7.1 Load

This metric category describes the Oracle VM Server Pool Load metrics.

Target Version	Collection Frequency
All Versions	Every 30 Minutes

7.1.1 Average CPU Utilization (%)

This metric displays the average CPU utilization across all the servers in the pool. For performance reasons, this is an approximate value and does not represent an absolutely accurate value.

Target Version	Collection Frequency
All Versions	Every 30 Minutes

7.1.2 Total Disk Throughput (kb/s)

This metric displays the average disk throughput across all the servers in the pool. For performance reasons, this is an approximate value and does not represent an absolutely accurate value.

Target Version	Collection Frequency
All Versions	Every 30 Minutes

7.1.3 Total DiskSpace Used (%)

This metric provides the amount of disk space used (%) across all servers in the pool.

Target Version	Collection Frequency
All Versions	Every 30 Minutes

7.1.4 Total DiskSpace Used (MB)

This metric provides the amount of disk space used (MB) across all servers in the pool.

Target Version	Collection Frequency
All Versions	Every 30 Minutes

7.1.5 Total Memory Used (MB)

This metric provides the memory used (MB) across all servers in the pool.

Target Version	Collection Frequency
All Versions	Every 30 Minutes

7.1.6 Total Memory Used (%)

This metric provides the memory used (%) across all servers in the pool.

Target Version	Collection Frequency
All Versions	Every 30 Minutes

7.1.7 Total Net Throughput (kb/s)

This metric provides the average net throughput in kb/sec across all servers in the pool.

Target Version	Collection Frequency
All Versions	Every 30 Minutes

7.2 Oracle VM Guest Disk Activity

This metric category is used to bulk collect all disk-related metrics for all the Oracle VM Guest targets in the Oracle VM Server pool. This metric is not uploaded, but is used for alerts only. You can set separate thresholds for each Oracle VM Guest using the Target ID. Different thresholds can be set for different Oracle VM Guests based on the Target ID. Only the collection schedule remains same for all the guests.

The collection schedule is governed by the schedule of the Oracle VM Guest Disk Activity Scheduled metric. Any alerts generated are generated against the relevant Oracle VM Guest target.

7.2.1 Disk

This metric displays the name of the disk.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.2.2 Read Throughput (KB/S)

This metric displays the read throughput of the disk in kb/s. If unusually high values are observed, then check for crashing applications. If high values are expected, consider using high speed storage for better performance.

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

7.2.3 Target ID

This metric contains the target name and target type used to push the metric data and alerts to the correct targets.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.2.4 Total Throughput (KB/S)

This metric displays the total throughput of the disk in kb/s. If unusually high values are observed, then check for crashing applications. If high values are expected, consider using high speed storage for better performance.

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

7.2.5 Write Throughput (KB/S)

This metric displays the write throughput of the disk in kb/s. If unusually high values are observed, then check for crashing applications. If high values are expected, consider using high speed storage for better performance.

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

7.3 Oracle VM Guest Disk Activity Scheduled

This metric is used to bulk collect all disk-related metrics for all the Oracle VM Guest targets in the Oracle VM Server pool. Any collection schedule changes should be made to this metric, and such changes affect the collection of this metric for all Oracle VM Guest targets in the pool. This metric is not uploaded, but collects data for the corresponding alert-only and upload-only metrics.

The collection schedule is governed by the schedule of the Oracle VM Guest Disk Activity Scheduled metric. Any alerts generated are generated against the relevant Oracle VM Guest target.

7.3.1 Disk

This metric provides the name of the disk.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.3.2 Read Throughput (KB/S)

This metric displays the read throughput of the disk in kb/s. If unusually high values are observed, then check for crashing applications. If high values are expected, consider using high speed storage for better performance.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.3.3 Target ID

This metric contains the target name and target type used to push the metric data and alerts to the correct targets.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.3.4 Total Throughput (KB/S)

This metric displays the total throughput of the disk in kb/s. If unusually high values are observed, then check for crashing applications. If high values are expected, consider using high speed storage for better performance.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.3.5 Write Throughput (KB/S)

This metric displays the write throughput of the disk in kb/s. If unusually high values are observed, then check for crashing applications. If high values are expected, consider using high speed storage for better performance.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.4 Oracle VM Guest Disk Activity Summary

This metric is used to "bulk" collect all disk related metrics for all the Oracle VM Guest targets in the Oracle VM Server pool. This is a summary metric which computes values across all the guests in the pool and uploads them. The collection schedule is governed by the schedule of the Oracle VM Guest Disk Activity Scheduled metric.

7.4.1 Highest Read Throughput (kb/s)

This metric displays the maximum read throughput in kb/sec observed across the disks in the Oracle VM Guest target. You can use it to decide on thresholds of the Oracle VM Guest Disk Activity metric.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.4.2 Highest Total Throughput (kb/s)

This metric displays the maximum total throughput in kb/sec observed across the disks in the Oracle VM Guest target. You can use it to decide on thresholds of the Oracle VM Guest Disk Activity metric.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.4.3 Highest Write Throughput (kb/s)

This metric displays the maximum write throughput in kb/sec observed across the disks in the Oracle VM Guest target. You can use it to decide on thresholds of the Oracle VM Guest Disk Activity metric.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.4.4 Target ID

This metric contains the target name and target type used to push the metric data and alerts to the correct targets.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.4.5 Total Throughput (kb/s)

This metric displays the total throughput in kb/sec observed across all the disks in the Oracle VM Guest target. Use this metric to render graphs on the target home page.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.5 Oracle VM Guest Filesystems

This metric is used to “bulk” collect all file system-related metrics for all the Oracle VM Guest targets in the Oracle VM Server pool. This metric is not uploaded, but is only used for alerts. Thresholds should be defined against this metric, and the threshold values are applicable to all the Oracle VM Guest targets in the server pool.

The Collection schedule is governed by the schedule of the Oracle VM Guest Filesystems Scheduled metric. Any alerts generated are generated against the relevant Oracle VM Guest target.

7.5.1 Disk

This metric displays the name of the disk.

Target Version	Collection Frequency
All Versions	Every 6 Hours

7.5.2 Free Space (MB)

This metric displays the free space on the disk in MB. You can configure it so that if free space falls below a certain value, then an alert is raised. If an alert is raised, consider freeing up space on the disk, or adding additional storage.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 6 Hours	Not Defined	Not Defined	Oracle VM Guest's free space for %keyvalue% is %value% Mb, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

7.5.3 Used Space (%)

This metric displays the used space on the disk (%). You can configure it so that if the used space goes above a certain value, then an alert is raised. If an alert is raised, consider freeing up space on the disk or adding extra storage.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 6 Hours	Not Defined	Not Defined	Oracle VM Guest's used space for %keyvalue% is %value%%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

7.5.4 Target ID

This metric contains the target name and target type used to push the metric data and alerts to the correct targets.

Target Version	Collection Frequency
All Versions	Every 6 Hours

7.6 Oracle VM Guest Filesystems Scheduled

This metric is used to “bulk” collect all file system-related metrics for all the Oracle VM Guest targets in the Oracle VM Server pool. Any collection schedule changes should be made to this metric, and such changes affect the collection of this metric for all Oracle VM Guest targets in the pool. This metric is not uploaded, but collects data for the corresponding alert-only and upload-only metrics.

7.6.1 Disk

This metric displays the name of the disk.

Target Version	Collection Frequency
All Versions	Every 6 Hours

7.6.2 Free Space (MB)

This metric displays the free space on the disk in MB.

Target Version	Collection Frequency
All Versions	Every 6 Hours

7.6.3 Used Space (%)

This metric displays the used space on the disk (%).

Target Version	Collection Frequency
All Versions	Every 6 Hours

7.6.4 Target ID

This metric contains the target name and target type used to push the metric data and alerts to the correct targets.

Target Version	Collection Frequency
All Versions	Every 6 Hours

7.7 Oracle VM Guest Load

This metric is used to “bulk” collect all load-related metrics for all the Oracle VM Guest targets in the Oracle VM Server pool. Any collection schedule changes should be made to this metric, and such changes affect the collection of this metric for Oracle VM Guest targets in the pool.

This metric is uploaded and thresholds can be defined against the metric columns. Any alerts generated are generated against the relevant Oracle VM Guest target.

7.7.1 Relative CPU Utilization (%)

The physical cpu utilization of the Oracle VM Guest target running on the Oracle VM Server target. Thresholds can be defined on this metric, the value depends on the number of Oracle VM Guests running on the Oracle VM Server. If alerts are raised regularly, consider reducing the load on the Oracle VM Server target and allocating more processing power to the Oracle VM Guest target.

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

7.7.2 Upsince

This metric displays the time the Oracle VM Guest target has been running.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.7.3 Target ID

This metric contains the target name and target type, used to push the metric data and alerts to the correct targets.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.8 Oracle VM Guest Network Activity

This metric is used to “bulk” collect all network activity-related metrics for all the Oracle VM Guest targets in the Oracle VM Server pool. This metric is not uploaded, but is only used for alerts. Thresholds should be defined against this metric, and the threshold values are applicable to all the Oracle VM Guest targets in the server pool.

Collection schedule is governed by the schedule of the Oracle VM Guest Network Activity Scheduled metric. Any alerts generated are generated against the relevant Oracle VM Guest target.

7.8.1 Interface

The metric displays the name of the interface.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.8.2 Read Throughput (KB/S)

This metric displays the read throughput on the interface in kb/s. If high values are expected, then consider using high speed network or adding additional network interfaces via bonding for better performance.

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

7.8.3 Target Separator

This metrics contains the target name and target type used to push the metric data and alerts to the correct targets.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.8.4 Total Throughput (KB/S)

This metric displays the total throughput on the interface in kb/s. If high values are expected, then consider using high speed network or adding additional network interfaces via bonding for better performance.

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

7.8.5 Write Throughput (KB/S)

This metric displays the write throughput on the interface in kb/s. If high values are expected, then consider using high speed network or adding additional network interfaces via bonding for better performance.

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

7.9 Oracle VM Guest Network Activity Scheduled

This metric is used to "bulk" collect all network activity-related metrics for all the Oracle VM Guest targets in the Oracle VM Server pool. Any collection schedule changes should be made to this metric, and such changes affect the collection of this metric for all Oracle VM Guest targets in the pool. This metric is not uploaded, but collects data for the corresponding alert-only and upload-only metrics.

7.9.1 Interface

This metric displays the name of the interface.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.9.2 Read Throughput

The metric displays the read throughput on the interface in kb/s.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.9.3 Target ID

This metric contains the target name and target type used to push the metric data and alerts to the correct targets.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.9.4 Total Throughput (KB/S)

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

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.9.5 Write Throughput (KB/S)

This metric displays the write throughput on the interface in kb/s.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.10 Oracle VM Server Disk Activity

This metric is used to “bulk” collect all disk activity-related metrics for all the Oracle VM Server targets in the Oracle VM Server pool. This metric is not uploaded, but is only used for alerts. Thresholds should be defined against this metric, and the threshold values are applicable to all the Oracle VM Server targets in the server pool.

The collection schedule is governed by the schedule of the Oracle VM Server Disk Activity Scheduled metric. Any alerts generated are generated against the relevant Oracle VM Server target.

7.10.1 Disk

This metric displays the name of the disk.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.10.2 Read Throughput (kb/s)

This metric displays the read throughput of the disk in kb/s. If unusually high values are observed, then check for crashing applications. If high values are expected, consider using high speed storage for better performance.

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

7.10.3 Target Separator

This metric contains the target name and target type, used to push the metric data and alerts to the correct targets.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.10.4 Total Throughput (kb/s)

This metric displays the total throughput of the disk in kb/s. If unusually high values are observed, then check for crashing applications. If high values are expected, consider using high speed storage for better performance.

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

7.10.5 Write Throughput (kb/s)

This metric displays the write throughput of the disk in kb/s. If unusually high values are observed, then check for crashing applications. If high values are expected, consider using high speed storage for better performance.

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

7.11 Oracle VM Server Disk Activity Scheduled

This metric is used to "bulk" collect all disk activity-related metrics for all the Oracle VM Server targets in the Oracle VM Server pool. Any collection schedule changes should be made to this metric, and such changes affect the collection of this metric for

all the Oracle VM Server targets in the pool. This metric is not uploaded, but collects data for the corresponding alert-only and upload-only metrics.

7.11.1 Disk

This metric displays the name of the disk.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.11.2 Read Throughput (kb/s)

This metric displays the read throughput of the disk in kb/s. If unusually high values are observed, then check for crashing applications. If high values are expected, consider using high speed storage for better performance.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.11.3 Target Separator

This metric contains the target name and target type, used to push the metric data and alerts to the correct targets.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.11.4 Total Throughput (kb/s)

This metric displays the total throughput of the disk in kb/s. If unusually high values are observed, then check for crashing applications. If high values are expected, consider using high speed storage for better performance.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.11.5 Write Throughput (kb/s)

This metric displays the write throughput of the disk in kb/s. If unusually high values are observed, then check for crashing applications. If high values are expected, consider using high speed storage for better performance.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.12 Oracle VM Server Filesystems

This metric is used to “bulk” collect all file system-related metrics for all the Oracle VM server targets in the Oracle VM Server Pool. This metric is not uploaded, but is only used for alerts. Thresholds should be defined against this metric, and the threshold values are applicable to all the Oracle VM server targets in the server pool.

The collection schedule is governed by the schedule of the Oracle VM Server Filesystems Scheduled metric. Any alerts generated are generated against the relevant Oracle VM server target.

7.12.1 Free (MB)

This metric displays the free space on the disk in MB. You can configure it so that if free space falls below a certain value, then an alert is raised. If an alert is raised, consider freeing up space on the disk, or adding additional storage.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 1 Hour	Not Defined	Not Defined	Oracle VM Server's free space for %keyvalue% is %value% Mb, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

7.12.2 Mountpoint

This metric displays the file system mountpoint.

Target Version	Collection Frequency
All Versions	Every 1 Hour

7.12.3 Target ID

This metric contains the target name and target type, used to push the metric data and alerts to the correct targets.

Target Version	Collection Frequency
All Versions	Every 1 Hour

7.12.4 Used Space (%)

This metric displays the used space on the disk (%). You can configure it so that if the used space goes above a certain value, then an alert is raised. If an alert is raised, consider freeing up space on the disk or adding extra storage.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 1 Hour	Not Defined	Not Defined	Oracle VM Server's used space for %keyvalue% is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

7.12.5 UUID

This metric displays the UUID of the file system.

Target Version	Collection Frequency
All Versions	Every 1 Hour

7.13 Oracle VM Server Filesystems Scheduled

This metric is used to "bulk" collect all file system-related metrics for all the Oracle VM Server targets in the Oracle VM Server pool. Any collection schedule changes should be made to this metric, and such changes affect the collection of this metric for all Oracle VM Server targets in the pool. This metric is not uploaded, but collects data for the corresponding alert-only and upload-only metrics.

7.13.1 Free Space (MB)

This metric displays the free space on the disk in MB.

Target Version	Collection Frequency
All Versions	Every 1 Hour

7.13.2 Mountpoint

This metric displays the file system mountpoint.

Target Version	Collection Frequency
All Versions	Every 1 Hour

7.13.3 Target ID

This metric contains the target name and target type, used to push the metric data and alerts to the correct targets.

Target Version	Collection Frequency
All Versions	Every 1 Hour

7.13.4 Used Space (%)

This metric displays the used space on the disk (%).

Target Version	Collection Frequency
All Versions	Every 1 Hour

7.13.5 UUID

This metric displays the UUID of the file system.

Target Version	Collection Frequency
All Versions	Every 1 Hour

7.14 Oracle VM Server Load

This metric is used to “bulk” collect all load-related metrics for all the Oracle VM Server targets in the Oracle VM Server pool. Any collection schedule changes should be made to this metric, and such changes affect the collection of this metric for all Oracle VM Server targets in the pool.

7.14.1 CPU Utilization (%)

This metric displays the physical CPU utilization of the Oracle VM Server target.

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

7.14.2 Number of Oracle VM Guests

This metric displays the number of Oracle VM Guest targets running on the Oracle VM Server.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.14.3 Memory Utilized (mb)

This metric displays the memory used (MB).

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

7.14.4 Physical Memory Utilization (%)

This metric displays the memory used (%). If the value is consistently very high, consider adding additional memory or reducing the load on the Oracle VM Server.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.14.5 Swap Free (mb)

This metric displays the swap space free in MB. If this value drops to a very low value, the system may run out of swap space. Reduce the load on the system or add more swap space.

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

7.14.6 Target ID

This metric contains the target name and target type, used to push the metric data and alerts to the correct targets.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.15 Oracle VM Server Network Activity

This metric is used to "bulk" collect all network activity-related metrics for all the Oracle VM Server targets in the Oracle VM Server pool. This metric is not uploaded, but is only used for alerts. Thresholds should be defined against this metric, and the threshold values are applicable to all the Oracle VM Server targets in the server pool.

The collection schedule is governed by the schedule of the Oracle VM Server Network Activity Scheduled metric. Any alerts generated are generated against the relevant Oracle VM Server target.

7.15.1 Interface

This metric displays the name of the interface.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.15.2 Read Throughput (kb/s)

This metric displays the read throughput on the interface in kb/s. If high values are expected, then consider using high speed network or adding additional network interfaces via bonding for better performance.

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

7.15.3 Target ID

This metric contains the target name and target type, used to push the metric data and alerts to the correct targets.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.15.4 Total Throughput (kb/s)

This metric displays the total throughput on the interface in kb/s. If high values are expected, then consider using high speed network or adding additional network interfaces via bonding for better performance.

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

7.15.5 Write Throughput (kb/s)

This metric displays the write throughput on the interface in kb/s. If high values are expected, then consider using high speed network or adding additional network interfaces via bonding for better performance.

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

7.16 Oracle VM Server Network Activity Scheduled

This metric is used to "bulk" collect all network activity-related metrics for all the Oracle VM Server targets in the Oracle VM Server Pool. Any collection schedule changes should be made to this metric, and such changes affect the collection of this metric for all Oracle VM Server targets in the pool. This metric is not uploaded, but collects data for the corresponding alert-only and upload-only metrics

7.16.1 Interface

The metric displays the name of the interface.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.16.2 Read Throughput (kb/s)

This metric displays the read throughput on the interface in kb/s.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.16.3 Target ID

This metric contains the target name and target type, used to push the metric data and alerts to the correct targets.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.16.4 Total Throughput (kb/s)

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

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.16.5 Write Throughput (kb/s)

This metric displays the write throughput on the interface in kb/s. If high values are expected, consider using high speed network or adding additional network interfaces via bonding for better performance.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.17 Oracle VM Server VlanActivity

This metric is used to report the performance of the Virtual LAN (VLAN).

7.17.1 Read Throughput (kb/s)

This metric displays the read throughput of the VLAN in kb/s.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 5 Minutes	Not Defined	Not Defined	Oracle VM Server's read throughput for %keyvalue% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold

7.17.2 Target ID

This metric contains the target name and target type, used to push the metric data and alerts to the correct targets.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.17.3 Total Throughput (kb/s)

This metric displays the total throughput of the VLAN in kb/s.

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

7.17.4 Vlan

This metric displays the VLAN ID.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.17.5 Write Throughput (kb/s)

This metric displays the write throughput of the VLAN in kb/s.

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

7.18 Oracle VM Server VlanActivity Scheduled

This metric is used to report the performance of the Virtual LAN (VLAN).

7.18.1 Read Throughput (kb/s)

This metric displays the read throughput of the VLAN in kb/s.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.18.2 Target ID

This metric contains the target name and target type, used to push the metric data and alerts to the correct targets.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.18.3 Total Throughput (kb/s)

This metric displays the total throughput of the VLAN in kb/s.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.18.4 Write Throughput (kb/s)

This metric displays the write throughput of the VLAN in kb/s.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

7.19 Oracle VM State

This metric category provides information about the Oracle VM State metric.

7.19.1 State

This metric collects a state that cannot be represented by the Enterprise Manager status.

Target Version	Collection Frequency
All Versions	Every 6 Hours

7.20 Response

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

7.20.1 Status

This metric provides the status of the Oracle VM Server Pool target.

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

Oracle VM Guest

This chapter describes the Oracle VM Guest metrics. This release of Enterprise Manager employs a new method for collecting performance metrics. To reduce load and increase scalability, metrics for the Oracle VM Server and Oracle VM Guest targets in an Oracle VM Server Pool are collected as part of the Oracle VM Server Pool target. However, all data are delivered to the correct targets.

For information about managing Oracle VM Guests, see the *Oracle Enterprise Manager Cloud Administration Guide*.

8.1 Oracle VM Guest DiskActivity

This metric is used to bulk collect all disk-related metrics for all the Oracle VM Guest targets in the Oracle VM Server Pool. This metric is not uploaded, but is only used for alerts. Thresholds should be defined against this metric and the threshold values are applicable to all the Oracle VM Guest targets in the server pool.

Collection schedule is governed by the schedule of the Oracle VM Guest DiskActivity Scheduled metric. Any alerts generated are generated against the relevant Oracle VM Guest target.

8.1.1 Disk

This metric displays the name of the disk.

8.1.2 Read Throughput (KB/S)

This metric displays the read throughput of the disk in kb/s. If unusually high values are observed, then check for crashing applications. If high values are expected, then consider using high speed storage for better performance.

8.1.3 Total Throughput (KB/S)

This metric displays the total throughput of the disk in kb/s. If unusually high values are observed, then check for crashing applications. If high values are expected, then consider using high speed storage for better performance.

8.1.4 Write Throughput (KB/S)

This metric displays the write throughput of the disk in kb/s. If unusually high values are observed, then check for crashing applications. If high values are expected, then consider using high speed storage for better performance.

8.2 Oracle VM Guest DiskActivity Scheduled

This metric is used to bulk collect all disk related metrics for all the Oracle VM Guest targets in the Oracle VM Server Pool. Any collection schedule changes should be made

to this metric, and such changes affect the collection of this metric for all Oracle VM Guest targets in the pool. This metric is not uploaded, but collects data for the corresponding alert-only and upload-only metrics.

Collection schedule is governed by the schedule of the Oracle VM Guest DiskActivity Scheduled metric. Any alerts generated are generated against the relevant Oracle VM Guest target.

8.2.1 Disk

This metric displays the name of the disk.

8.2.2 Read Throughput

This metric displays the read throughput of the disk in kb/s. If unusually high values are observed, then check for crashing applications. If high values are expected, then consider using high speed storage for better performance.

8.2.3 Total Throughput

This metric displays the total throughput of the disk in kb/s. If unusually high values are observed, then check for crashing applications. If high values are expected, then consider using high speed storage for better performance.

8.2.4 Write Throughput

This metric displays the write throughput of the disk in kb/s. If unusually high values are observed, then check for crashing applications. If high values are expected, then consider using high speed storage for better performance.

8.3 Oracle VM Guest DiskActivity Summary

This metric is used to "bulk" collect all disk-related metrics for all the Oracle VM Guest targets in the Oracle VM Server Pool. This is a summary metric which computes values across all the guests in the pool and uploads them. The collection schedule is governed by the schedule of the Oracle VM Guest DiskActivity Scheduled metric.

8.3.1 Highest Read Throughput (kb/s)

This metric displays the maximum read throughput in kb/sec observed across the disks in the Oracle VM Guest target. You can use it to decide on thresholds of the Oracle VM Guest DiskActivity metric.

8.3.2 Highest Total Throughput (kb/s)

This metric displays the maximum total throughput in kb/sec observed across the disks in the Oracle VM Guest target. You can use it to decide on thresholds of the Oracle VM Guest DiskActivity metric.

8.3.3 Highest Write Throughput (kb/s)

This metric displays the maximum write throughput in kb/sec observed across the disks in the Oracle VM Guest target. You can use it to decide on thresholds of the Oracle VM Guest DiskActivity metric.

8.3.4 Total Throughput (kb/sec)

This metric displays the total throughput in kb/sec observed across all the disks in the Oracle VM Guest target. You can use it to render graphs on the target home page.

8.4 Oracle VM Guest Filesystems

This metric is used to “bulk” collect all file system related metrics for all the Oracle VM Guest targets in the Oracle VM Server Pool. This metric is not uploaded, but is only used for alerts. Thresholds should be defined against this metric, and the threshold values are applicable to all the Oracle VM Guest targets in the server pool.

The Collection schedule is governed by the schedule of the Oracle VM Guest Filesystems Scheduled metric. Any alerts generated are generated against the relevant Oracle VM Guest target.

8.4.1 Disk

This metric displays the name of the disk.

8.4.2 Free Space (MB)

This metric displays the free space on the disk in MB. You can configure this metric so that if free space falls below a certain value, then an alert is raised. If an alert is raised, consider freeing up space on the disk or adding additional storage.

8.4.3 Used Space (%)

This metric displays the used space on the disk (%). You can configure this metric so that if the file space utilization goes beyond a certain value, then an alert is raised. If an alert is raised, consider freeing up space on the disk or adding extra storage.

8.5 Oracle VM Guest Filesystems Scheduled

This metric is used to “bulk” collect all file system-related metrics for all the Oracle VM Guest targets in the Oracle VM Server Pool. Any collection schedule changes should be made to this metric, and such changes affect the collection of this metric for all Oracle VM Guest targets in the pool. This metric is not uploaded, but collects data for the corresponding alert-only and upload-only metrics.

8.5.1 Disk

This metric displays the name of the disk.

8.5.2 Free MB

This metric displays the free space on the disk in MB.

8.5.3 Used

This metric displays the used space on the disk (%)

8.6 Oracle VM Guest Filesystems Summary

This metric is used to “bulk” collect all file system-related metrics for all the Oracle VM Guest targets in the Oracle VM Server Pool. This is a summary metric which computes values across all the guests in the pool and uploads them. The collection schedule is governed by the schedule of the Oracle VM Guest Filesystems Scheduled metric.

8.6.1 Total Used

This metric displays the total space used on all disks for the Oracle VM Guest target. You can use this metric to render graphs on the target homepage.

8.7 Oracle VM Guest Load

This metric is used to “bulk” collect all load-related metrics for all the Oracle VM Guest targets in the Oracle VM Server Pool. Any collection schedule changes should be made to this metric, and such changes affect the collection of this metric for all Oracle VM Guest targets in the pool.

This metric is uploaded and thresholds can be defined against the metric columns. Any alerts generated are generated against the relevant Oracle VM Guest target.

Note:

The collection schedule for Oracle VM Guest Load metrics *must* be greater than the Oracle VM Manager statistics collection interval.

Oracle recommends setting the Oracle VM Guest Load collection schedule to five times greater than the Oracle VM Manager statistics collection interval.

For example, if Oracle VM Manager statistics collection interval is defined at 100 seconds, then set the Oracle VM Guest Load collection schedule to 500 seconds at a minimum.

For information about the Oracle VM Manager statistics collection interval, see *Oracle VM User's Guide for Release 3.2.1*.

8.7.1 Relative CPU Utilization (%)

This metric displays the physical cpu utilization of the Oracle VM Guest running on the Oracle VM Server target. Thresholds can be defined on this metric, the value depends on the number of Oracle VM Guests running on Oracle VM Server. If alerts are raised regularly, consider reducing the load on the Oracle VM Server target and allocating more processing power to the Oracle VM Guest target.

8.7.2 Upsince

This metric displays the length of time that the Oracle VM Guest has been running.

8.8 Oracle VM Guest Network Activity

This metric is used to “bulk” collect all network activity-related metrics for all the Oracle VM Guest targets in the Oracle VM Server Pool. This metric is not uploaded,

but is only used for alerts. Thresholds should be defined against this metric, and the threshold values are applicable to all the Oracle VM Guest targets in the server pool.

Collection schedule is governed by the schedule of the Oracle VM Guest Network Activity Scheduled metric. Any alerts generated are generated against the relevant Oracle VM Guest target.

8.8.1 Interface

This metric displays the name of the interface.

8.8.2 Read Throughput (KB/S)

This metric displays the read throughput on the interface in kb/s. If high values are expected, then consider using a high speed network or adding additional network interfaces via bonding for better performance.

8.8.3 Total Throughput (KB/S)

This metric displays the total throughput on the interface in kb/s. If high values are expected, then consider using a high speed network or adding additional network interfaces via bonding for better performance.

8.8.4 Write Throughput (KB/S)

This metric displays the write throughput on the interface in kb/s. If high values are expected, then consider using a high speed network or adding additional network interfaces via bonding for better performance.

8.9 Oracle VM Guest Network Activity Scheduled

This metric is used to “bulk” collect all network activity related metrics for all the Oracle VM Guest targets in the Oracle VM Server Pool. Any collection schedule changes should be made to this metric, and such changes affect the collection of this metric for all Oracle VM Guest targets in the pool. This metric is not uploaded, but collects data for the corresponding alert-only and upload-only metrics.

8.9.1 Interface

This metric displays the name of the interface.

8.9.2 Read Throughput

This metric displays the read throughput on the interface in kb/s.

8.9.3 Total Throughput

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

8.9.4 Write Throughput

This metric displays the write throughput on the interface in kb/s.

8.10 Oracle VM Guest Network Activity Summary

This metric is used to “bulk” collect all network activity-related metrics for all the Oracle VM Guest targets in the Oracle VM Server Pool. This is a summary metric

which computes values across all the guests in the pool and uploads them. The collection schedule is governed by the schedule of the Oracle VM Guest Network Activity Scheduled metric.

8.10.1 Highest Read Throughput (kb/s)

This metric displays the maximum read throughput observed across the interfaces in the Oracle VM Guest target. You can use it to decide on thresholds of the Oracle VM Guest Network Activity metric.

8.10.2 Highest Total Throughput (kb/s)

This metric displays the maximum total throughput observed across the interfaces in the Oracle VM Guest target. You can use this metric to decide on thresholds of the Oracle VM Guest Network Activity metric.

8.10.3 Highest Write Throughput (kb/s)

This metric displays the maximum write throughput observed across the interfaces in the Oracle VM Guest target. You can use this metric to decide on thresholds of the Oracle VM Guest Network Activity metric.

8.10.4 Total Throughput (kb/s)

This metric displays the total throughput observed across all the interfaces in the Oracle VM Guest target. You can use this metric to render graphs on the target home page.

8.11 Oracle VM State

This metric category provides information about the state of the Oracle VM Guest.

8.11.1 State

This metric displays the state of the Oracle VM Guest, such as running, stopped, stopping, or starting.

Target Version	Collection Frequency
All Versions	Every 6 Hours

8.12 Response

The following section describes the response metrics

8.12.1 Status

This metric is used to collect the status of the Oracle VM Guest target.

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

Oracle VM Server

This chapter describes the Oracle VM Server metrics. This release of Enterprise Manager employs a new method for collecting performance metrics. To reduce load and increase scalability, metrics for the Oracle VM Server and Oracle VM Guest targets in an Oracle VM server pool are collected as part of the Oracle VM Server Pool target. However, all data are delivered to the correct targets.

For information about managing Oracle VM servers, see the *Oracle Enterprise Manager Cloud Administration Guide*.

9.1 Oracle VM Server Disk Activity (kb/s)

This metric is used to “bulk” collect all disk activity-related metrics for all the Oracle VM Server targets in the Oracle VM server pool. This metric is not uploaded, but is used for alerts only. You can set separate thresholds for each Oracle VM Server using the Target ID. Different thresholds can be set for different Oracle VM Servers based on the Target ID. Only the collection schedule remains same for all the servers.

Thresholds should be defined against this metric, and the threshold values are applicable to all the Oracle VM Server targets in the server pool.

The collection schedule is governed by the schedule of the Oracle VM Server Disk Activity Scheduled metric. Any alerts generated are generated against the relevant Oracle VM Server target.

9.1.1 Disk

This metric displays the name of the disk.

9.1.2 Read Throughput (kb/s)

This metric displays the read throughput of the disk in kb/s. If unusually high values are observed, then check for crashing applications. If high values are expected, consider using high speed storage for better performance.

9.1.3 Total Throughput (kb/s)

This metric displays the total throughput of the disk in kb/s. If unusually high values are observed, then check for crashing applications. If high values are expected, consider using high speed storage for better performance.

9.1.4 Write Throughput (kb/s)

This metric displays the write throughput of the disk in kb/s. If unusually high values are observed, then check for crashing applications. If high values are expected, consider using high speed storage for better performance.

9.2 Oracle VM Server Disk Activity Scheduled

This metric is used to “bulk” collect all disk activity-related metrics for all the Oracle VM Server targets in the Oracle VM server pool. Any collection schedule changes should be made to this metric, and such changes affect the collection of this metric for all Oracle VM Server targets in the pool. This metric is not uploaded, but collects data for the corresponding alert-only and upload-only metrics.

9.2.1 Disk

This metric displays the name of the disk.

9.2.2 Read Throughput

This metric displays the read throughput of the disk in kb/s. If unusually high values are observed, then check for crashing applications. If high values are expected, consider using high speed storage for better performance.

9.2.3 Total Throughput

This metric displays the total throughput of the disk in kb/s. If unusually high values are observed, then check for crashing applications. If high values are expected, consider using high speed storage for better performance.

9.2.4 Write Throughput

This metric displays the write throughput of the disk in kb/s. If unusually high values are observed, then check for crashing applications. If high values are expected, consider using high speed storage for better performance.

9.3 Oracle VM Server Disk Activity Summary

This metric is used to “bulk” collect all disk activity-related metrics for all the Oracle VM Server targets in the Oracle VM server pool. This is a summary metric which computes values across all the guests in the pool and uploads them. The collection schedule is governed by the schedule of the Oracle VM Server Disk Activity Scheduled metric.

9.3.1 Highest Read Throughput (kb/s)

This metric displays the maximum read throughput observed across the disks in the Oracle VM Guest target. You can use this metric to decide on thresholds of the Oracle VM Server Disk Activity metric.

9.3.2 Highest Total Throughput (kb/s)

This metric displays the maximum total throughput observed across the disks in the Oracle VM Guest target. You can use this metric to decide on thresholds of the Oracle VM Server Disk Activity metric.

9.3.3 Highest Write Throughput (kb/s)

This metric displays the maximum write throughput observed across the disks in the Oracle VM Guest target. You can use this metric to decide on thresholds of the Oracle VM Server Disk Activity metric.

9.3.4 Total Throughput (kb/s)

This metric displays the total throughput observed across all the disks in the Oracle VM Guest target. Use this metric to render graphs on the target home page.

9.4 Oracle VM Server Filesystems

This metric category is used to “bulk” collect all file system-related metrics for all the Oracle VM Server targets in the Oracle VM server pool. This metric is not uploaded, but is used for alerts only. Thresholds should be defined against this metric, and the threshold values are applicable to all the Oracle VM Server targets in the server pool.

The collection schedule is governed by the schedule of the Oracle VM Server Filesystems Scheduled metric. Any alerts generated are generated against the relevant Oracle VM Server target.

9.4.1 Free Space (MB)

This metric displays the free space on the disk in MB. You can configure this metric so that if free space falls below a certain value, an alert is raised. If an alert is raised, then consider freeing up space on the disk, or adding additional storage.

9.4.2 Mountpoint

This metric displays the file system mountpoint.

9.4.3 Total Space (MB)

This metric displays the total space on the disk in MB.

9.4.4 Used Space (%)

This metric displays the used space on the disk (%). You can configure this metric so that if used space goes above a certain value, an alert is raised. If an alert is raised, then consider freeing up space on the disk or adding extra storage.

9.5 Oracle VM Server Filesystems Scheduled

This metric category is used to “bulk” collect all file system-related metrics for all the Oracle VM Server targets in the Oracle VM server pool. Any collection schedule changes should be made to this metric, and such changes affect the collection of this metric for all Oracle VM Server targets in the pool. This metric is not uploaded, but collects data for the corresponding alert-only and upload-only metrics.

9.5.1 Free (MB)

This metric displays the free space on the disk in MB.

9.5.2 Mountpoint

This metric displays the file system mountpoint.

9.5.3 Used

This metric displays the used space on the disk (%).

9.6 Oracle VM Server Filesystems Summary

This metric is used to “bulk” collect all file system-related metrics for all the Oracle VM Server targets in the Oracle VM server pool. This is a summary metric which computes values across all the servers in the pool and uploads them. The collection schedule is governed by the schedule of the Oracle VM Server Filesystems Scheduled metric.

9.6.1 Total Space Used (%)

This metric displays the total used file system space (%). Use this metric to render graphs on the target home page.

9.6.2 Total Space Used (MB)

This metric displays the total used file system space in MB.

9.7 Oracle VM Server Load

This metric category is used to “bulk” collect all load-related metrics for all the Oracle VM Server targets in the Oracle VM server pool. Any collection schedule changes should be made to this metric, and such changes affect the collection of this metric for all Oracle VM Server targets in the pool.

Note:

The collection schedule for Oracle VM Server Load metrics *must* be greater than the Oracle VM Manager statistics collection interval.

Oracle recommends setting the Oracle VM Server Load collection schedule to five times greater than the Oracle VM Manager statistics collection interval.

For example, if Oracle VM Manager statistics collection interval is defined at 100 seconds, then set the Oracle VM Server Load collection schedule to 500 seconds at a minimum.

For information about the Oracle VM Manager statistics collection interval, see *Oracle VM User’s Guide for Release 3.2.1*.

9.7.1 CPU Utilization (%)

The metric displays the physical CPU utilization of the Oracle VM Server target.

9.7.2 Memory Available (MB)

This metric displays the amount of memory available (MB) to the Oracle VM Server target.

9.7.3 Memory Utilized (MB)

This metric displays the memory used (MB).

9.7.4 Number of Oracle VM Guests

This metric displays the number of Oracle VM Guest targets running on the Oracle VM Server target.

9.7.5 Physical Memory Utilization (%)

This metric displays the memory used (%). If the value is consistently very high, then consider adding additional memory or reducing the load on the Oracle VM Server.

9.7.6 Swap Used (MB)

This metric displays the swap space free in MB. If this value drops to a very low value, then the system might run out of swap space. Reduce the load on the system or add more swap space

9.8 Oracle VM Server Network Activity

This metric category is used to “bulk” collect all network activity-related metrics for all the Oracle VM Server targets in the Oracle VM server pool. This metric is not uploaded, but is used for alerts only. Thresholds should be defined against this metric, and the threshold values are applicable to all the Oracle VM Server targets in the server pool.

The collection schedule is governed by the schedule of the Oracle VM Server Network Activity Scheduled metric. Any alerts generated are generated against the relevant Oracle VM Server target.

9.8.1 Interface

This metric displays the name of the interface.

9.8.2 Read Throughput (kb/s)

This metric displays the read throughput on the interface in kb/s. If high values are expected, then consider using high speed network or adding additional network interfaces via bonding for better performance.

9.8.3 Total Throughput (kb/s)

This metric displays the total throughput on the interface in kb/s. If high values are expected, then consider using high speed network or adding additional network interfaces via bonding for better performance.

9.8.4 Write Throughput (kb/s)

This metric displays the write throughput on the interface in kb/s. If high values are expected, then consider using high speed network or adding additional network interfaces via bonding for better performance.

9.9 Oracle VM Server Network Activity Scheduled

This metric category is used to “bulk” collect all network activity-related metrics for all the Oracle VM Server targets in the Oracle VM server pool. Any collection schedule changes should be made to this metric, and such changes affect the collection of this

metric for all Oracle VM Server targets in the pool. This metric is not uploaded, but collects data for the corresponding alert-only and upload-only metrics

9.9.1 Interface

The metric displays the name of the interface.

9.9.2 Read Throughput

This metric displays the read throughput on the interface in kb/s.

9.9.3 Total Throughput

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

9.9.4 Write Throughput

This metric displays the write throughput on the interface in kb/s. If high values are expected, then consider using high speed network or adding additional network interfaces via bonding for better performance.

9.10 Oracle VM Server Network Activity Summary

This metric category is used to "bulk" collect all network activity-related metrics for all the Oracle VM Server targets in the Oracle VM server pool. This is a summary metric which computes values across all the guests in the pool and uploads them. The collection schedule is governed by the schedule of the Oracle VM Server Network Activity Scheduled metric.

9.10.1 Highest Read Throughput (kb/s)

This metric displays the maximum read throughput observed across the interfaces in the Oracle VM Server target. You can use this metric to decide on thresholds of the Oracle VM Server Network Activity metric.

9.10.2 Highest Total Throughput (kb/s)

This metric displays the maximum total throughput observed across the interfaces in the Oracle VM Server target. You can use this metric to decide on thresholds of the Oracle VM Server Network Activity metric.

9.10.3 Highest Write Throughput (kb/s)

This metric displays the maximum write throughput observed across the interfaces in the Oracle VM Server target. You can use this metric to decide on thresholds of the Oracle VM Server Network Activity metric.

9.10.4 Total Throughput (kb/s)

This metric displays the total throughput observed across all the interfaces in the Oracle VM Server target. Use this metric to render graphs on the target home page.

9.11 Oracle VM Server Vlan Activity

This metric category is used to "bulk" collect all Virtual LAN (VLAN) activity-related metrics for all the Oracle VM Server targets in the Oracle VM server pool. This metric

is not uploaded, but is used for alerts only. Thresholds should be defined against this metric, and the threshold values are applicable to all the Oracle VM Server targets in the server pool.

9.11.1 Read Throughput (kb/s)

This metric displays the read throughput of the VLAN in kb/s.

9.11.2 Total Throughput (kb/s)

This metric displays the total throughput of the VLAN in kb/s.

9.11.3 Write Throughput (kb/s)

This metric displays the write throughput of the VLAN in kb/s.

9.12 Oracle VM State

This metric category provides information about the state of the Oracle VM Server.

9.12.1 State

This metric displays the state of the Oracle VM Server, such as running, stopped, stopping, or starting.

Target Version	Collection Frequency
All Versions	Every 6 Hours

9.13 Response

The response metric category provides information about the status of the Oracle VM Server target.

9.13.1 Status

This metric is used to collect the status of the Oracle VM Server target.

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

9.13.2 OVM State

This metric displays a state when the Oracle VM Server in maintenance mode only. Otherwise, it will not display any value.

Oracle VM Zone

This chapter describes the Oracle VM Zone metrics. An Oracle VM Zone is a set of virtual server pools. For information about managing zones, see the *Oracle Enterprise Manager Cloud Administration Guide*.

10.1 Load

This metric category provides information about the Oracle VM Zone load metrics.

10.1.1 Average CPU Utilization (%)

Average CPU utilization across all the servers in the zone. For performance reasons, this value is an approximate and does not represent an absolutely accurate value.

Target Version	Collection Frequency
All Versions	Every 30 Minutes

10.1.2 Total Disk Throughput (kb/s)

This metric reports the average disk throughput across all the servers in the zone. For performance reasons, this value is an approximate value and does not represent an absolutely accurate value.

Target Version	Collection Frequency
All Versions	Every 30 Minutes

10.1.3 Total DiskSpace Used (%)

This metric reports the total amount of file system used (%) across all servers in the zone.

Target Version	Collection Frequency
All Versions	Every 30 Minutes

10.1.4 Total Memory Utilization (%)

This metric reports the total memory used (%) across all servers in the zone.

Target Version	Collection Frequency
All Versions	Every 30 Minutes

10.1.5 Total Net Throughput (kb/s)

This metric reports the average net throughput across all servers in the zone.

Target Version	Collection Frequency
All Versions	Every 30 Minutes

10.2 Response

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

10.2.1 Status

This metric provides the status of the Oracle VM Zone target.

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

10.2.2 OVM State

This metric displays a state that cannot be represented by the Enterprise Manager status.

Oracle VM Instance

This chapter describes the metrics associated with the Oracle VM Instance target. Oracle VM Instances are guest virtual machines managed by the hypervisor domain.

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

11.1 Basic Configuration Details

This metric category provides information about the basic configuration of an Oracle VM Instance target.

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

11.1.1 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

11.1.2 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

11.1.3 Allocated Storage (GB)

This metric displays the total amount of allocated storage to the guest virtual machine in GB.

Target Version	Collection Frequency
All Versions	Every 24 Hours

11.1.4 CPU Priority

This metric displays the CPU priority of the domain.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

11.1.5 CPU Utilization Cap

This metric displays the CPU cap (maximum number of CPU cores) of the domain.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

11.1.6 Domain Type

This metric displays the domain type.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

11.1.7 Guest UUID

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

Target Version	Collection Frequency
All Versions	Every 24 Hours

11.2 Disk Activity

This metric category provides information about the Oracle VM Instance's virtual block device statistics.

11.2.1 Disk Name

This metric displays the disk name.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 5 Minutes

11.2.2 Read throughput (KB per second)

This metric displays the read throughput since the last metric collection.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 5 Minutes

11.2.3 Write throughput (KB per second)

This metric displays the write throughput since the last metric collection.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 5 Minutes

11.2.4 Total throughput (KB per second)

This metric displays the total throughput since the last metric collection.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 5 Minutes

11.3 Disk Activity Summary

This metric category provides a summary of the Oracle VM Instance's virtual block device statistics.

11.3.1 Highest Read throughput (KB per second)

This metric displays the highest write throughput since the last metric collection among all disks.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 5 Minutes

11.3.2 Highest Write throughput (KB per second)

This metric displays the highest write throughput since the last metric collection among all disks.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 5 Minutes

11.3.3 Highest Total throughput (KB per second)

This metric displays the highest total throughput since the last metric collection among all disks.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 5 Minutes

11.3.4 Number of VBD Read Requests

This metric displays the total number of read requests across all virtual block devices since startup.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

11.3.5 Number of VBD Read Sectors

This metric displays the total number of read sectors across all virtual block devices since startup.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

11.3.6 Number of VBDS

This metric displays the total number of virtual block devices.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

11.3.7 Number of VBD Write Requests

This metric displays the total number of written requests across all virtual block devices since startup.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

11.3.8 Number of VBD Write Requests

This metric displays the total number of written requests across all virtual block devices since startup.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

11.3.9 Number of VBD Write Sectors

This metric displays the total number of written sectors across all virtual block devices since startup.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

11.3.10 Reads (KB)

This metric displays the total number of reads in KB since startup.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

11.3.11 Read throughput (KB per second)

This metric displays the read throughput since the last metric collection.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

11.3.12 Total throughput (KB per second)

This metric displays the total throughput since the last metric collection.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 5 Minutes

11.3.13 VBD OO

This metric displays the total number of times the virtual block devices have encountered an out-of-request error.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

11.3.14 Writes (KB)

This metric displays the total number of writes in KB since startup.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

11.3.15 Write throughput (KB per second)

This metric displays the write throughput since the last metric collection.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

11.4 Load

This metric category provides information about the load metrics of an Oracle VM Instance target.

11.4.1 CPU utilization of the virtual machine (%)

This metric displays the CPU usage in percentage as seen by the Guest OS running in the virtual machine.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 5 Minutes	Not Defined	Not Defined	Oracle Server's cpu utilization is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

11.4.2 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..

11.4.3 Cumulative VCPU utilization per VM (second)

This metric displays the total physical CPU usage in seconds.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

11.4.4 Status

This metric displays the status of the guest virtual machine as maintained in Xen.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

11.4.5 Up Since

This metric displays the time since the guest virtual machine is up and running.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

11.5 Network Activity

This metric category provides the statistics of each Oracle VM Instance network interface.

11.5.1 Interface name

This metric displays the name of the network interface.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

11.5.2 Read (KB)

This metric displays the total number of read data from the virtual network interface card (VNIC) in KB since startup.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

11.5.3 Write (KB)

This metric displays the total number of data written to the VNIC data in KB since startup.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

11.5.4 Input Packets

This metric displays the total number of read packets from the VNIC since startup.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

11.5.5 Output Packets

This metric displays the total number of written packets to the VNIC since startup.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

11.5.6 Read throughput (KB per second)

This metric displays the VNIC read throughput since last metric collection.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

11.5.7 Total Throughput (KB per second)

This metric displays the VNIC total throughput since last metric collection.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 5 Minutes

11.5.8 Write throughput (KB per second)

This metric displays the VNIC write throughput since last metric collection.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

11.6 Network Activity Summary

This metric category provides the summary of the Oracle VM Instance network throughput.

11.6.1 Highest Read throughput (KB per second)

This metric displays the highest read throughput since the last metric collection among all VNICs.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 5 Minutes

11.6.2 Highest Write throughput (KB per second)

This metric displays the highest write throughput since the last metric collection among all VNICs.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 5 Minutes

11.6.3 Highest Total throughput (KB per second)

This metric displays the highest total throughput since the last metric collection among all VNICs.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 5 Minutes

11.6.4 Read throughput (KB per second)

This metric displays the total network read throughput across all VNICs since the last collection.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

11.6.5 Write throughput (KB per second)

This metric displays the total network write throughput across all VNICs since the last collection.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

11.6.6 Total throughput (KB per second)

This metric displays the total network read and write throughput across all VNICs since the last collection.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

11.7 Network Configuration

This metric category provides information about the network configuration of an Oracle VM Instance target.

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

11.7.1 Interface Name

This metric displays the name of the network interface.

Target Version	Collection Frequency
All versions	Every 24 Hours

11.7.2 MAC Address

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

Target Version	Collection Frequency
All versions	Every 24 Hours

11.7.3 Bridge

This metric displays the bridge of the network interface.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

11.8 Response

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

11.8.1 Status

This metric provides the status of the Oracle VM Instance 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

11.9 Software Configuration

This metric category provides information about the software configuration.

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

11.9.1 OS Name

This metric displays the OS name of the virtual server.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

11.10 VCPU Configuration

This metric category provides information about the virtual CPU.

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

11.10.1 VCPU ID

This metric displays the ID of the VCPU.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

11.10.2 VCPU Affinity

This metric displays the CPU affinity of this VCPU.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

11.11 VCPU Details

This metric category provides information about the virtual CPU.

11.11.1 VCPU ID

This metric displays the VCPU ID of the virtual server assigned VCPU list.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 5 Minutes

11.11.2 CPU Thread ID

This metric displays the physical CPU thread ID where the VCPU ID is running on.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 5 Minutes

11.11.3 Cumulative VCPU Time (second)

This metric displays the cumulative VCPU time the VCPU ran for.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 5 Minutes

11.11.4 Relative CPU utilization (%)

This metric displays the relative to physical server CPU utilization of the VCPU (as measured from hypervisor level).

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 5 Minutes

11.11.5 Status

This metric displays the state of the VCPU.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 5 Minutes

11.11.6 VCPU utilization (%)

This metric displays the VCPU utilization of the VCPU as seen from the Guest OS.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 5 Minutes

11.12 Virtual Disks

This metric category provides information about the virtual disks.

11.12.1 Virtual Disk UUID

This metric displays the UUID of the virtual disk.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

11.12.2 Virtual Disk Name

This metric displays the name of the virtual disk.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

11.12.3 Size(MB)

This metric displays size in MB of the virtual disk.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

11.12.4 Type

This metric displays type of the virtual disk.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

11.12.5 Mode

This metric displays the read or write mode of the virtual disk.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

11.12.6 Path of the virtual disk

This metric displays the path of the virtual disk.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

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*.

12.1 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.

12.1.1 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

12.1.2 Allocated CPU

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

Target Version	Collection Frequency
All Versions	Every 24 Hours

12.1.3 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

12.1.4 Vendor Name

This metric displays the vendor name of the Hypervisor's platform.

Target Version	Collection Frequency
All Versions	Every 24 Hours

12.1.5 Vendor Version

This metric displays the vendor version of the Hypervisor's platform.

Target Version	Collection Frequency
All Versions	Every 24 Hours

12.1.6 Operating System

This metric displays the name of the Domain 0's operating system.

Target Version	Collection Frequency
All Versions	Every 24 Hours

12.1.7 Operating System type

This metric displays the type of the Domain 0 operating system.

Target Version	Collection Frequency
All Versions	Every 24 Hours

12.1.8 Kernel release

This metric displays the version of the kernel installed on the Domain 0's platform.

Target Version	Collection Frequency
All Versions	Every 24 Hours

12.1.9 VT Enabled

This metric indicates if the platform is Virtualization Technology enabled at the hardware level.

Target Version	Collection Frequency
All Versions	Every 24 Hours

12.1.10 Xen capabilities

This metric displays a list of the Xen platform capabilities with versions.

Target Version	Collection Frequency
All Versions	Every 24 Hours

12.1.11 NTP Server

This metric displays a list of all the Network Time Protocol (NTP) servers separated by a comma.

Target Version	Collection Frequency
All Versions	Every 24 Hours

12.1.12 Total VCPUs allocated to Virtual machines

This metric displays the total number of VCPUs allocated to all the Guest virtual machines hosted by the hypervisor.

Target Version	Collection Frequency
All Versions	Every 24 Hours

12.2 CPU Interrupts

This metric category provides information about the CPU interrupts.

12.2.1 CPU Number

This metric provides the user-specified CPU number that the user cares about.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 15 Minutes

12.2.2 Device Name

This metric provides user-specified device name that the user cares about.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 15 Minutes

12.2.3 Interrupt Type

This metric provides a user-specified interrupt that the user cares about.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 15 Minutes

12.2.4 Interrupt Count

This metric displays the number of matched interrupts.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 15 Minutes	Not Defined	Not Defined	CPU "%cpuNumber%" has received "%intCount%" interrupts of "%intType%" interrupt type from device "%device%", crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.3 Disk Activity

This metric category provides the statistics of each local disk of the Oracle Virtual Platform.

Setting Multiple Thresholds

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

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

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

12.3.1 Disk Name

This metric displays the name of the disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

12.3.2 Read throughput (KB per second)

This metric provides the read throughput of the disk in KB per second 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 disk %keyValue% read throughput (KB per second) is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.3.3 Total throughput (KB per second)

This metric provides the total read and write throughput of the disk in KB per second 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 disk %keyValue% total throughput (KB per second) is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.3.4 Write throughput (KB per second)

This metric provides the write throughput of the disk in KB per second 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 disk %keyValue% write throughput (KB per second) is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.4 Disk Activity Summary

This metric category provides the summary of the statistics across all the disks of the Oracle Virtual Platform.

12.4.1 Read Throughput (KB per second)

This metric provides the read of all the disks of the Oracle Virtual platform since the last collection.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 15 Minutes	Not Defined	Not Defined	Oracle Virtual Platform disk read throughput (KB per second) is %value %, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.4.2 Write Throughput (KB per second)

This metric provides the write of all the disks of the Oracle Virtual platform since the last collection.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 15 Minutes	Not Defined	Not Defined	Oracle Virtual Platform disk write throughput (KB per second) is %value %, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.4.3 Highest Total Throughput (KB per second)

This metric provides the highest total throughput among all the disks of the Oracle Virtual platform since the last collection.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 15 Minutes	Not Defined	Not Defined	Oracle Virtual Platform highest total throughput (KB per second) among the disks is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.4.4 Highest Read Throughput (KB per second)

This metric provides the highest read among all the disks of the Oracle Virtual platform since the last collection.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 15 Minutes	Not Defined	Not Defined	Oracle Virtual Platform highest read throughput (KB per second) among the disks is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.4.5 Highest Write Throughput (KB per second)

This metric provides the highest write among all the disks of the Oracle Virtual platform since the last collection.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 15 Minutes	Not Defined	Not Defined	Oracle Virtual Platform highest write throughput (KB per second) among the disks is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.4.6 Total Throughput(KB per second)

This metric provides the total read and write throughput of all the disks of the Oracle Virtual platform 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 disk total throughput (KB per second) is %value %, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.5 Dom0 Load

This metric category describes the load metrics of Domain 0 of the Oracle Virtual Platform.

12.5.1 Active Logical Memory (KB)

This metric provides the active logical memory of Domain 0 in KB.

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 active logical memory (KB) is %value%, crossed warning (%warning_threshold %) or critical (%critical_threshold%) threshold.

12.5.2 Active Memory (KB)

This metric displays the total active RAM in KB.

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 active memory (KB) is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.5.3 CPU in I/O Wait (%)

This metric displays the percentage of the CPU in I/O Wait mode.

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

12.5.4 CPU in System Mode (%)

This metric displays the percentage of the CPU in System/Kernel mode.

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

12.5.5 CPU in User Mode (%)

This metric displays the percentage of the CPU in user mode.

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

12.5.6 CPU utilization (%)

This metric displays the CPU utilization of the operating system 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 cpu utilization is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.5.7 Free Memory (%)

This metric represents the available memory left after the current active memory is consumed out of total memory.

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%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.5.8 Logical Free Memory (%)

This metric represents logical free memory in Domain 0 (discounting memory used for file system buffers). Note that this memory can potentially be freed and might not be available immediately.

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 logical free memory is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.5.9 Memory Page Scan Rate (per second)

This metric displays the total memory page scan rate.

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 page scan rate (per second) is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.5.10 Memory utilization (%)

This metric displays the memory utilization of 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 memory utilization is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.5.11 Relative CPU utilization (%)

This metric displays the relative CPU utilization of 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 dom0 relative cpu utilization is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.5.12 Run Queue Length (1 minute average,per core)

This metric displays the system load averages per core for the past 1 minute.

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 run queue length (1 minute average,per core) is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.5.13 Run Queue Length (15 minutes average,per core)

This metric displays the system load averages per core for the past 15 minutes.

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 run queue length (15 minutes average,per core) is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.5.14 Run Queue Length (5 minutes average,per core)

This metric displays the system load averages per core for the past 5 minutes.

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 run queue length (5 minutes average, per core) is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.5.15 Swap space used (MB)

This metric displays the total swap space used at the time of collection.

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.

12.5.16 Swap space utilization(%)

This metric displays the total swap space utilization in percentage at the time of collection.

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.

12.5.17 Total Processes

This metric displays the total number of processes at the time of collection.

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.

12.5.18 Total Users

This metric displays the total number of active users at the time of collection.

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 users is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.5.19 Up since

This metric displays the duration since Domain 0 is up and running.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

12.5.20 Used Logical Memory (%)

This metric displays the percentage of the Active Logical memory.

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 logical free memory is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.5.21 VCPU Over Subscribed (Yes/No)

This metric indicates if the Domain 0 has oversubscribed VCPUs.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 5 Minutes	Not Defined	Not Defined	Oracle Virtual Platform VCPU has over subscribed.

12.5.22 VCPU Subscription ratio

This metric displays the ratio of Domain 0's VCPU oversubscription.

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

12.6 File System

This metric category provides the statistics of all the file system mount points of the Oracle Virtual Platform.

Multiple Thresholds

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

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

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

12.6.1 Mount Point

This metric provides the mount point of a file system.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

12.6.2 Filesystem

This metric displays the file system or device being mounted on the Domain 0 platform.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

12.6.3 Filesystem Size(MB)

This metric displays the total size of the file system in MB.

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

12.6.4 Filesystem Space Available(%)

This metric displays the percentage of the available space on the file system.

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

12.6.5 Filesystem Space Available (MB)

This metric displays the available space on the file system in MB.

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

12.7 File System Configuration

This metric category provides configuration information about the file system mount points of the Oracle Virtual Platform.

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

12.7.1 Mount Point

This metric displays the mount point of file system.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

12.7.2 File System

This metric displays the file system.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

12.7.3 Type

This metric displays the type of the file system.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

12.7.4 Mount Options

This metric displays the mount options of the file system.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

12.7.5 File System Size(MB)

This metric displays the size of the file system.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

12.8 File System Summary

This metric category provides monitoring information about the file system mount points of the Oracle Virtual Platform.

12.8.1 Total Space Available (MB)

This metric displays the total available space on the file system in MB.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 15 Minutes	Not Defined	Not Defined	Oracle Virtual Platform total filesystem space available (MB) is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.8.2 Total Space Available (%)

This metric displays the percentage of total available space on the file system in MB.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 15 Minutes	Not Defined	Not Defined	Oracle Virtual Platform total filesystem space available is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.8.3 Total Space Used (MB)

This metric displays the total used space on the file system in MB.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 15 Minutes	Not Defined	Not Defined	Oracle Virtual Platform total filesystem space used (MB) is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.8.4 Total Space Used (%)

This metric displays the percentage of total used space on the file system in MB.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 15 Minutes	Not Defined	Not Defined	Oracle Virtual Platform total filesystem space used is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.9 Log File Monitor

This metric category enables administrators to monitor one or more log files for the occurrence of one or more text patterns in the content. In addition, the operator can specify a text pattern to be ignored for the log file. Periodic scanning is performed against new content added since the last scan. Lines matching the ignore pattern are ignored first, then lines matching specified match patterns result in one record being uploaded to the Management Repository for each pattern. You can set a threshold against the number of lines matching this pattern. File rotation is handled within the given file.

12.9.1 Log File Name

This metric provides the name of the log file to monitor.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

12.9.2 Match Pattern

This metric displays the text pattern to be matched in the monitored log file.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

12.9.3 Ignore Pattern

This metric displays the text pattern to be ignored in the monitored log file.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

12.9.4 Log File Pattern Matched Content

This metric displays the text content matched in the log file since the last read of the log file.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

12.9.5 Log File Pattern Matched Line Count

This metric returns the number of lines matching the pattern specified in this file. Setting warning or critical thresholds against this metric for a specific log file name, match pattern, or ignore pattern, triggers the monitoring of specified criteria against this log file.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 15 Minutes	Not Defined	Not Defined	Log file "%log_file_name%" %value% lines matched by "%log_file_name_match_pattern%", crossed warning (%warning_threshold %) or critical (%critical_threshold%) threshold.

Editing Thresholds

For this metric you can set different warning and critical threshold values for each unique combination of Log File Name, Match Pattern and Ignore Pattern objects.

If warning or critical threshold values are currently set for any unique combination of Log File Name, Match Pattern and Ignore Pattern objects, then those thresholds can be viewed on **All Metrics** page for this metric.

To specify or change warning or critical threshold values for each unique combination of Log File Name, Match Pattern and Ignore Pattern objects, use the **Modify Thresholds** page.

12.10 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.

12.10.1 Interface NAME

This metric provides the name of the network interface.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

12.10.2 Combined Utilization (%)

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.

12.10.3 Network Interface Collisions (%)

This metric provides the total network collisions (in percentage) of the network interface since the last collection.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

12.10.4 Network Interface Read (MB per second)

This metric displays the total read rate (in MB/s) of the network interface.

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 interface %keyValue% read (MB per second) is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.10.5 Network Interface Read Errors (%)

This metric displays the total read errors (in percentage) of the network interface.

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 interface %keyValue% read errors is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.10.6 Network Interface Total Error Rate (%)

This metric displays the total read and write errors (in percentage) 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 interface %keyValue% total error rate is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.10.7 Network Interface Total I/O Rate (MB per second)

This metric displays the total read and write rate (in MB/s) of the network interface.

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 interface %keyValue% total I/O rate (MB per second) is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.10.8 Network Interface Write (MB per second)

This metric displays the total write rate (in MB/s) of the network interface.

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 interface %keyValue% write (MB per second) is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.10.9 Network Interface Write Errors (%)

This metric displays the total write errors (in percentage) of the network interface.

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 interface %keyValue% write errors is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.10.10 Read Utilization (%)

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.

12.10.11 Write Utilization (%)

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.

12.11 Network Activity Summary

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

12.11.1 Combined Utilization(%)

This metric represents the percentage of network bandwidth being used by reading and writing from and to the network for full-duplex network connections 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.

12.11.2 Highest Read Rate (MB per second)

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

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	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.

12.11.3 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 since the last collection.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	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.

12.11.4 Highest Write Rate (MB per second)

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

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	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.

12.11.5 Read Utilization(%)

This metric displays the amount of network bandwidth being used for reading from the network as a percentage of total read capacity 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 read utilization is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.11.6 Write Utilization(%)

This metric displays the amount of network bandwidth being used for writing to the network as a percentage of total read capacity 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 write utilization is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.11.7 Total throughput (MB per second)

This metric displays the total throughput on the interface in MB/s 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 all network interfaces total throughput (MB per second) is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.11.8 Read Rate(MB per second)

This metric represents the amount of megabytes per second read from all the network interfaces 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 all network interfaces read rate (MB per second) is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.11.9 Write Rate(MB per second)

This metric represents the amount of megabytes per second written to all the interfaces 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 all network interfaces write rate (MB per second) is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.12 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.

12.12.1 Interface Name

This metric displays the name of the network interface.

Target Version	Collection Frequency
All Versions	Every 24 Hours

12.12.2 MAC Address

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

Target Version	Collection Frequency
All Versions	Every 24 Hours

12.12.3 MTU

This metric displays the MTU of the network interface in bytes.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

12.12.4 IP Address

This metric displays the IP address of the network interface.

Target Version	Collection Frequency
All Versions	Every 24 Hours

12.12.5 Gateway

This metric displays the address of the network gateway.

Target Version	Collection Frequency
All Versions	Every 24 Hours

12.12.6 Netmask

This metric displays the netmask address.

Target Version	Collection Frequency
All Versions	Every 24 Hours

12.12.7 Bandwidth

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

Target Version	Collection Frequency
All Versions	Every 24 Hours

12.13 Operating System Software

This metric category provides information about the operating system software of the Oracle Virtual Platform target.

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

12.13.1 Name

This metric displays the name of the software installed on the Virtual Platform.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

12.13.2 Vendor Name

This metric displays the software vendor name.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

12.13.3 Version

This metric displays the software version.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

12.13.4 Installation Date

This metric displays the software installation time.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

12.13.5 Installed location

This metric displays the installed location of the software.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

12.13.6 Description

This metric displays a brief description of the software.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

12.14 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

12.14.1 Domain name

This metric displays the domain name of the guest virtual machine hosted on the hypervisor.

Target Version	Collection Frequency
All Versions	Every 24 Hours

12.14.2 Domain ID

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

Target Version	Collection Frequency
All Versions	Every 24 Hours

12.14.3 Domain UUID

This metric displays the unique identifier (UUID) of the guest virtual machine hosted on the hypervisor.

Target Version	Collection Frequency
All Versions	Every 24 Hours

12.15 Paging Activity

This metric category provides the memory paging statistics of the Oracle Virtual Platform target.

12.15.1 Active Pages

This metric displays the total number of active pages in the memory.

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

12.15.2 Pages Paged-in (per second)

This metric represents the number of page read-ins per second (read from disk to resolve fault memory references) by the virtual memory manager since the last collection. Along with Page Outs, this statistic represents the amount of real I/O initiated by the virtual memory manager.

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

12.15.3 Pages Paged-out (per second)

This metric represents the number of page write-outs to disk per second 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 pages paged-out (per second) is %value%%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.15.4 Pages Scanned by Page Stealing Daemon (per second)

This metric displays the number of pages scanned per second by the Page Stealing daemon 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 pages scanned by page stealing daemon (per second) is %value%%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.16 Program Resource Utilization

This metric category provides flexible resource monitoring functionality. The administrator must specify the criteria for the programs to be monitored by specifying key value specific thresholds. Values for the key value columns, *{program name, owner}*, define the unique criteria to be monitored for resource utilization in the system. By default, no programs are tracked by this metric. Key values entered as part of a key value specific threshold setting define the criteria for monitoring and tracking.

Multiple Thresholds

For this metric you can set different warning and critical threshold values for each unique combination of Program Name and Owner objects.

If the warning or critical threshold values are currently set for any unique combination of Program Name and Owner objects, then you can view those thresholds on the **All Metrics** page for this metric.

To specify or change the warning or critical threshold values for each unique combination of Program Name and Owner objects, use the **Modify Thresholds** page.

12.16.1 Program Name

This metric provides the name of the program.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

12.16.2 Owner

This metric provides the owner of the program process.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

12.16.3 Program's Max CPU Time Accumulated (Minutes)

This metric represents the maximum CPU time accumulated by the most active process matching the *{program name, owner}* key value criteria.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 15 Minutes	Not Defined	Not Defined	The process which got max cpu time among %progMaxProcessCount% process matched by the program name "%progName%" and owner "%owner%", and utilizing %value% minutes of cpu time. It has crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.16.4 Program's Max CPU Utilization (%)

This metric represents the maximum percentage of CPU utilized by a single process matching the *{program name, owner}* key value criteria since the last scan.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 15 Minutes	Not Defined	Not Defined	The process which got max cpu utilization among %progMaxProcessCount% process matched by the program name "%progName%" and owner "%owner%", and utilizing %value%% of the cpu. It has crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.16.5 Program's Max Process Count

This metric fetches the current number of processes matching the *{program name, owner}* key value criteria. Use it to set warning or critical thresholds to monitor for a maximum number of processes that a given *{program name, owner}* key value criteria crosses.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 15 Minutes	Not Defined	Not Defined	%value% process matched by the program name "%progName%" and owner "%owner%". It has crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.16.6 Program's Max Resident Memory (MB)

This metric represents the maximum resident memory occupied by a single process matching the *{program name, owner}* key value criteria. Use it to set warning or critical thresholds to monitor for the maximum value a given *{program name, owner}* key value criteria crosses.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 15 Minutes	Not Defined	Not Defined	The process which got max resident memory among %progMaxProcessCount% process matched by the program name "%progName%" and owner "%owner%", and utilizing %value% MB. It has crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.16.7 Program's Min Process Count

This metric fetches the current number of processes matching the *{program name, owner}* key value criteria. Use it to set warning or critical thresholds to monitor for the minimum number of processes that a given *{program name, owner}* key value criteria should never cross.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 15 Minutes	Not Defined	Not Defined	%value% process matched by the program name "%progName%" and owner "%owner%". It has crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.16.8 Program's Total CPU Time Accumulated (Minutes)

This metric displays the total CPU time accumulated by all active process matching the *{program name, owner}* key value criteria.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 15 Minutes	Not Defined	Not Defined	%progMaxProcessCount% processes matched by the program name "%progName%" and owner "%owner%" are utilizing %value% minutes of cpu time. It has crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.16.9 Program's Total CPU Utilization (%)

This metric represents the percentage of CPU time utilized by all active process matching the *{program name, owner}* key value criteria 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	%progMaxProcessCount% processes matched by the program name "%progName%" and owner "%owner%" are utilizing %value%% of the cpu. It has crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.16.10 Process Count / Message

This metric fetches the current number of processes matching the *{program name, owner}* key value criteria. Use it to set warning or critical thresholds to monitor for the maximum number of processes that a given *{program name, owner}* key value criteria crosses.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 15 Minutes	Not Defined	Not Defined	%value% process matched by the program name "%progName%" and owner "%owner%". It has crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.17 Response

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

12.17.1 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

12.18 Server Load

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

12.18.1 Local Disk space utilization (%)

This metric displays the combined utilization of all the local file systems.

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

12.18.2 Number of virtual machines

This metric displays the total number of guest virtual machines hosted by the Oracle Server target.

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

12.18.3 Physical Server CPU Utilization (%)

This metric displays the total physical CPU utilized 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 cpu utilization is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.18.4 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.

12.18.5 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.

12.18.6 Physical Server: Allocated Memory (MB)

This metric displays the total allocated physical memory to 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 allocated memory (MB) of physical server is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.18.7 Physical Server: Memory over allocation (%)

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 over allocation of physical server is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.18.8 Total Guest relative CPU utilization (%)

This metric displays the total CPU utilized relative to the physical CPU by all the guest virtual machines excluding 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 total guest relative cpu utilization is %value%%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

12.19 Swap Area

This metric category provides the status of the swap memory on the Oracle Virtual Platform target.

Multiple Thresholds

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

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

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

12.19.1 Swap File

This metric displays the swap file being monitored.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

12.19.2 Swap Free (MB)

This metric represents the number of 1K blocks in the swap area that is not allocated.

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

12.19.3 Swap Size (MB)

This metric represents the size of the swap file.

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

12.19.4 Swap Utilization (%)

This metric represents the percentage of swapped memory in use for the last interval.

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

12.20 Zombies

This metric category monitors the orphaned processes running on the Oracle Virtual Platform target.

12.20.1 zombies (%)

This metric represents the percentage of all processes running on the system that are currently in a zombie state.

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

Oracle Server

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*.

13.1 CPU Topology

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

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

13.1.1 Thread

This metric displays the name of the CPU thread.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

13.1.2 Core

This metric displays the CPU core corresponding to the CPU thread.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

13.1.3 Socket

This metric displays the CPU socket corresponding to CPU thread.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

13.1.4 Node

This metric displays the CPU node corresponding to the CPU thread.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

13.2 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.

13.2.1 BIOS Release Date

This metric displays BIOS release date.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

13.2.2 BIOS Vendor

This metric displays BIOS vendor name.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

13.2.3 BIOS Version

This metric displays BIOS version.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

13.2.4 Machine Architecture

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

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

13.2.5 Clock Frequency (MHz)

This metric displays clock frequency of the installed CPU.

Target Version	Collection Frequency
All Versions	Every 24 Hours

13.2.6 CPU Count

This metric displays the total number of installed CPUs.

Target Version	Collection Frequency
All Versions	Every 24 Hours

13.2.7 Number of Sockets

This metric displays the total number of CPU sockets.

Target Version	Collection Frequency
All Versions	Every 24 Hours

13.2.8 Serial Number

This metric displays the serial number of this server.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

13.2.9 Total CPU Cores

This metric displays the total number of CPU cores.

Target Version	Collection Frequency
All Versions	Every 24 Hours

13.2.10 CPU Cores Per Socket

This metric displays the CPU cores per socket.

Target Version	Collection Frequency
All Versions	Every 24 Hours

13.2.11 CPU Threads Per Core

This metric displays the number of CPU threads per core.

Target Version	Collection Frequency
All Versions	Every 24 Hours

13.2.12 Enabled CPU Cores

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

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

13.2.13 CPU Vendor Name

This metric displays the vendor name of the CPU, such as GenuineIntel.

Target Version	Collection Frequency
All Versions	Every 24 Hours

13.2.14 Allocated Memory (Megabytes)

This metric displays the total installed RAM.

Target Version	Collection Frequency
All Versions	Every 24 Hours

13.2.15 Local Disk Space (GB)

This metric displays the total disk space.

Target Version	Collection Frequency
All Versions	Every 24 Hours

13.2.16 Manufacturer

This metric displays the name of the machine manufacturer.

Target Version	Collection Frequency
All Versions	Every 24 Hours

13.2.17 Product Name

This metric displays the name of the product model, such as PowerEdge 1750.

Target Version	Collection Frequency
All Versions	Every 24 Hours

13.3 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.

13.3.1 Interface Name

This metric displays the name of the network interface.

Target Version	Collection Frequency
All Versions	Every 24 Hours

13.3.2 MAC Address

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

Target Version	Collection Frequency
All Versions	Every 24 Hours

13.3.3 Bandwidth

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

Target Version	Collection Frequency
All Versions	Every 24 Hours

13.4 Processor Details

This metric category provides information about the processor.

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

13.4.1 Processor ID

This metric displays Processor ID.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

13.4.2 Family

This metric displays the family of this processor.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

13.4.3 Model

This metric displays the model of this processor.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

13.4.4 Manufacturer

This metric displays the manufacture of this processor.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

13.4.5 Speed(MHZ)

This metric displays the current speed of this processor.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

13.4.6 Signature

This metric displays the signature of this processor.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

13.4.7 L1 Cache Size(KB)

This metric displays the level 1 cache size of this processor.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

13.4.8 L2 Cache Size(KB)

This metric displays the level 2 cache size of this processor.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

13.4.9 L3 Cache Size(KB)

This metric displays the level 3 cache size of this processor.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

13.4.10 Flags

This metric displays the flags of this processor.

Target Version	Collection Frequency
Enterprise Manager for Virtual Infrastructure Plug-in Release 12.1.0.2	Every 24 Hours

13.5 Response

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

13.5.1 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

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