Oracle® Enterprise Manager Cloud Control

Oracle Engineered Systems Metric Reference Manual

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Oracle Enterprise Manager Cloud Control Oracle Engineered Systems Metric Reference Manual, 13c Release 5

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Preface

This manual is a compilation of the Oracle Engineered Systems metrics provided in Oracle Enterprise Manager.

In addition to this manual, information on the Oracle Database and database-related target metrics is available in the following manuals:

- *Oracle Database Metric Reference Manual*
- *Oracle Grid Infrastructure Metric Reference Manual*
- *Systems Infrastructure Plug-in Metric Reference Manual*
- *Virtual Infrastructure Plug-in Metric Reference Manual*

Audience

This document is intended for Oracle Enterprise Manager users interested in Oracle Engineered Systems 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 Resources

For more information, see the documents and other resources in Oracle Enterprise Manager Documentation Sets and Other Resources.

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
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
`monospace`	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

How to Use This Manual

The *Oracle Enterprise Manager Oracle Engineered Systems Metric Reference Manual* (hereafter referred to as the *Oracle Engineered Systems Metric Reference Manual*) lists the Oracle Engineered Systems metrics that Enterprise Manager monitors.
To collect and monitor Oracle Engineered Systems metrics, the Systems Infrastructure plug-in must be deployed to an agent. The System Infrastructure plug-in depends on the EM Platform plug-in.

If you are managing **Oracle Exadata** systems, you will need the Oracle Exadata plug-in, which is installed with its dependencies: the EM Platform plug-in, Oracle Database plug-in, the Systems Infrastructure plug-in (including the EM Platform plug-in), and the Oracle Virtual Infrastructure plug-in.

If you are managing a **Recovery Appliance**, you will need the Zero Data Loss Recovery Appliance plug-in, with its dependency, the Oracle Exadata plug-in and its dependencies.

For information on plug-ins, see Plug-ins Included In This Release in *Enterprise Manager Cloud Control Release Notes*.

This preface describes:

Structure of the Metric Reference Manual

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

Metric Information

Where available, each metric includes the following information:

- Description

  Explanation following the metric name. This text defines the metric and, where available, provides additional information pertinent to the metric.

- Metric Summary Table

  Where available, this table lists the target version, default 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 that you will see in the *Oracle Engineered Systems Metric Reference Manual*.

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

Target Version	Collection Frequency
All versions	Every 15 minutes

The following table shows a metric where the server evaluation frequency is the same as the collection frequency.

Target Version	Evaluation and Collection Frequency
All versions	Every 10 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, 18c.
Evaluation and Collection Frequency	The rate at which the metric is collected and evaluated to determine whether it has crossed its threshold. The evaluation frequency is the same as the collection frequency.
Collection Frequency	The rate at which the Management Agent collects data. The default collection frequency for a metric comes from the Enterprise Manager default collection file for that target type.
Default Warning Threshold	Value that indicates whether a warning alert should be initiated. If the evaluation of the warning threshold value returns a result of TRUE for the specified number of consecutive occurrences defined for the metric, an alert triggers at the warning severity level.
Default Critical Threshold	Value that indicates whether a critical alert should be initiated. If the evaluation of the critical threshold value returns a result of TRUE for the specified number of consecutive occurrences defined for the metric, an alert triggers at the critical severity level.
Alert Text	Message indicating why the alert was generated. Words that display between percent signs (%) denote variables.

Abbreviations and Acronyms

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

Abbreviation/Acronym	Name
Agent	Oracle Management Agent

Abbreviation/Acronym	Name
Listener	Oracle Listener

About Metrics, Thresholds, and Alerts

A metric is a unit of measurement used to determine the health of a target. It is through the use of metrics and associated thresholds that Enterprise Manager sends out alerts notifying you of problems with the target.

Thresholds are boundary values against which monitored metric values are compared.

When a threshold is reached, Enterprise Manager generates an alert. An 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.

Accessing Metrics

To access metrics from the Cloud Control Console, use the All Metrics page:

1. From the Cloud Control Console, choose the target.
2. From the target's home page, select the target type name, then **Monitoring**, and then **All Metrics**.

Editing Metrics

Out of the box, Enterprise Manager comes with default thresholds for critical metrics. Enterprise Manager generates alerts when warning and critical thresholds are reached, 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:

- Choose acceptable values to avoid unnecessary alerts, while still being notified of issues in a timely manner.
- Adjust your metric thresholds based on metric trends. One of the more important actions you can perform with your monitoring system is to track metric trends for some period of time so you can make informed decisions about what metrics are important as well as what levels your thresholds should be set at.

- Set the number of occurrences appropriately. If some events occur only once or twice, for example, you might not need to be notified of them. You can set the number of occurrences of a metric that must be reached before you are notified.

To modify metric thresholds:

1. From the Cloud Control console, right-click the target name, select **Monitoring**, and then **All Metrics**.
2. From the **All Metrics** page, select the metric that you want to modify.
3. Click **Modify Thresholds**.
4. In the Modify Thresholds window, you can set values for settings such as:
   - Warning Threshold
   - Critical Threshold
   - Occurrences Before Alert

   > **Note:**
   >
   > You must have at least OPERATOR privilege on the target to make changes. Without OPERATOR privilege, the content of the Metric Threshold table is read-only.

5. Click **Save Thresholds** to upload the new metric settings to the Management Repository.

Specifying Multiple Thresholds

The Specifying Multiple Thresholds functionality enables 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, and what benefit will be realized by defining a more stringent or lax threshold for that particular device, mount point, and so on.

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Oracle Exadata

This chapter provides information about the Oracle Exadata metrics.
For each metric, it provides the following information:

- Description
- Metric table

  The metric table can include some or all of the following: target version, default collection frequency, default warning threshold, default critical threshold, and alert text.

It includes the metrics collected for the following target types:

- Oracle Exadata Storage Server
- Oracle Database Exadata Storage Server System
- Oracle Exadata Storage Server Grid

Oracle Exadata Storage Server

The Oracle Exadata target monitors the software and hardware performance of an individual Oracle Exadata Storage Server in the database.

Aggregated Exadata Capacity

This metric category contains the aggregated metrics of the Exadata Capacity metric category and it collects every 60 minutes.

Disk Size (GB)

This metric gives an indication of the size of the status in GB.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Disk Type

This metric reports the metrics are for hard disk, flash disk, flash cache, and grid disk.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Allocated (%)

This metric gives an indication of the percentage allocation of the total number of bytes for the hard disk, flash disk, flash cache, and grid disk.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Aggregated Exadata CellDisk

This metric category contains the aggregated cell disk performance metrics. The metric values are aggregated over all the cell disks in a cell. They are mainly aggregated via averaging and totaling.

Average CellDisk IO Load

This metric gives an indication of the average input/output load to the cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average CellDisk Read IOPS

This metric gives an indication of the average number of read input/output operations per second.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average CellDisk Read Response Time

This metric gives an indication of the average read response time to the cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average CellDisk Read Throughput

This metric gives an indication of the average number of bytes read from the cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average CellDisk Write IOPS

This metric gives an indication of the average number of write input/output operations to the cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average CellDisk Write Response Time

This metric gives an indication of the average write response time to the cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average CellDisk Write Throughput

This metric gives an indication for the average number of bytes written to the cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Maximum CellDisk IO Load

This metric gives an indication of the maximum input/output load to the cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Total CellDisk IO Load

This metric gives an indication of the total input/output load to the celldisk. The Total CellDisk IO load is the aggregated number of IO requests waiting to be serviced by the storage server disks at any given point in time. You can think of this as the length of the queue for I/O requests.

Because the type of requests can be either for small or large reads, there is not one number that would indicate a potential performance issue. Oracle cannot recommend a number as each customer environment is often unique. Monitor the value of the I/O load and a number that correlates with poor response time will be a good candidate for a metric threshold. An Exadata system is underutilized if the I/O load is less than 20.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Total CellDisk Read IOPS

This metric gives an indication of the total number of read input/output operations per second to the cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Total CellDisk Read Throughput

This metric gives an indication for the total number of bytes read from the cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Total CellDisk Write IOPS

This metric gives an indication of the total number of write input/output operations per second to the cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Total CellDisk Write Throughput

This metric gives an indication of the total number of bytes written to the cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Aggregated Exadata Diskgroup Capacity

This metric category contains the aggregated capacity metrics for ASM instances and disk groups.

ASM Instance

This metric reports the ASM instance name for the aggregated exadata diskgroup.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Diskgroup Name

This metric reports the name of the aggregated exadata diskgroup.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Count

This metric reports the total grid disk number for the specific diskgroup.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Size (GB)

This metric reports the diskgroup size in GB of the aggregated exadata diskgroup.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Aggregated Exadata FlashDisk and HardDisk

This metric category contains metrics that are aggregated over either the hard disks or flash disks in a cell.

Average CellDisk IO Load

This metric reports the average input and output load to the cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average CellDisk IO Utilization

This metric indicates the average utilization for I/O requests from the cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average CellDisk Large Read IOPS

This metric indicates the average number of read input and output operations from large blocks in a cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average CellDisk Large Read Response Time

This metric reports the average response time to read large blocks from the cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average CellDisk Large Read Throughput

This gives an indication of the average number of bytes read from the large blocks from the hard disks or flash disks in a cell.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average CellDisk Large Write IOPS

This gives an indication of the average number of input and output operations written to large blocks of the hard disks or flash disks in a cell.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average CellDisk Large Write Response Time

This gives an indication of the average response time when writing large blocks to the cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average CellDisk Large Write Throughput

This gives an indication of the total number of bytes when writing large blocks to the cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average CellDisk Read IOPS

This metric gives an indication of the average number of read input/output operations from the hard disks or flash disks in a cell.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average CellDisk Read Response Time

This metric reports the average read response time to the cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average CellDisk Read Throughput

This metric gives an indication of the average number of bytes read from the hard disks or flash disks in a cell.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average CellDisk Small Read IOPS

This gives an indication of the average number of read input and output operations from small blocks in a cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average CellDisk Small Read Response Time

This metric reports the average response time when reading small blocks from the cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average CellDisk Small Read Throughput

This gives an indication of the average number of bytes read from the small blocks from the hard disks or flash disks in a cell.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average CellDisk Small Write IOPS

This gives an indication of the average number of input and output operations written to small blocks of the hard disks or flash disks in a cell.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average CellDisk Small Write Response Time

This metric reports the average response time when writing small blocks to the cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average CellDisk Small Write Throughput

This gives an indication of the total number of bytes when writing small blocks to the cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average CellDisk Write IOPS

This metric gives an indication of the average number of input/output operations written to the hard disks or flash disks in a cell.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Average CellDisk Write Response Time

This metric reports the average response time when writing to the cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average CellDisk Write Throughput

This metric gives an indication of the average number of bytes written to the hard disks or flash disks in a cell.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

CellDisk Type

This metric reports the type of Cell disk, either hard disk or flash disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Maximum CellDisk Small Read Response Time

This metric reports the maximum response time when reading small blocks from the cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Maximum CellDisk Small Write Response Time

This metric reports the maximum response time when writing small blocks to the cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Total CellDisk IO Load

This metric reports the total input/output load to the celldisk. The Total CellDisk IO load is the aggregated number of IO requests waiting to be serviced by the storage server disks at any given point in time. You can think of this as the length of the queue for I/O requests.

Because the type of requests can be either for small or large reads, there is not one number that would indicate a potential performance issue. Oracle cannot recommend a number as each customer environment is often unique. Monitor the value of the I/O load and a number that correlates with poor response time will be a good candidate for a metric threshold. An Exadata system is underutilized if the I/O load is less than 20.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Total CellDisk IO Utilization

This metric reports the total utilization for I/O requests to the celldisk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Total CellDisk Read IOPS

This metric reports the total number of bytes read from the hard disks or flash disks in a cell.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Total CellDisk Read Throughput

This metric reports the total number of bytes read from the hard disks or flash disks in a cell.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Total CellDisk Write IOPS

This metric reports the total number of bytes written to the hard disks or flash disks in a cell.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Total CellDisk Write Throughput

This metric reports the total number of bytes written to the hard disks or flash disks in a cell.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Aggregated Exadata Sparse Diskgroup Capacity

This metric category contains the sparse aggregated capacity metrics for ASM instances and disk groups.

Count

This metric reports the total grid disk number for the specific diskgroup.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Size (GB)

This metric reports the diskgroup size in GB of the aggregated exadata sparse diskgroup.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Virtual Size (GB)

This metric reports the virtual diskgroup size in GB of the aggregated exadata sparse diskgroup.

Target Version	Collection Frequency
All Versions	Every 60 Minutes

Cell Generated Alert

This metric category contains the cell generated alert metrics. This is shown whenever the Exadata Storage server (cell) generates alert and the Enterprise Manager subscribes to the cell's SNMP alert.

ADR Incident ID

This metric shows the alert Automatic Diagnostic Repository (ADR) unique identifier for Enterprise Manager Incident Manager.

Target Version	Collection Frequency
11*g*, 12*c*	N/A

ADR Problem Key

This metric shows the alert ADR problem key.

Target Version	Collection Frequency
11*g*, 12*c*	N/A

ADR Trace File Name

This metric shows the Alert ADR Trace file.

Target Version	Collection Frequency
11*g*, 12*c*	N/A

Action

This metric shows the recommended action to perform for this alert.

Target Version	Collection Frequency
11*g*, 12*c*	N/A

Alert Begin Time

This metric shows the time stamp when an alert changes its state.

Target Version	Collection Frequency
11*g*, 12*c*	N/A

Alert Object

This metric shows the Alert Object Name, such as cell disk or grid disk, for which a metric threshold has caused an alert.

Target Version	Collection Frequency
11*g*, 12*c*	N/A

Alert Type

This metric shows the type of the alert. Values are stateful or stateless.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
11*g*, 12*c*	N/A	Warning	Critical	Alert from %target% is cleared: %msg%

Alert Name

This metric shows the name of the alert.

Target Version	Collection Frequency
11*g*, 12*c*	N/A

Alert Sequence

This metric shows the alert sequence.

Target Version	Collection Frequency
11*g*, 12*c*	N/A

ECID

This metric shows the Alert ADR Execution Context Id.

Target Version	Collection Frequency
11*g*, 12*c*	N/A

Examined By

This metric shows the administrator who reviewed the alert.

Target Version	Collection Frequency
11*g*, 12*c*	N/A

Msg

This metric shows a brief explanation of the alert.

Target Version	Collection Frequency
11*g*, 12*c*	N/A

Notification

This metric shows the number indicating progress in notifying subscribers to alert messages.

Target Version	Collection Frequency
11*g*, 12*c*	N/A

Sequence Begin Time

This metric shows the time stamp when an alert sequence ID is first created.

Target Version	Collection Frequency
11*g*, 12*c*	N/A

Severity

This metric shows the Severity level. Possible values are clear, info, warning, or critical.

Target Version	Collection Frequency
11*g*, 12*c*	N/A

Cell ILOM Generated Alert

This metric category contains the cell ILOM generated alert metrics. This is shown whenever the Exadata Storage server (cell) ILOM generates alert and the Enterprise Manager subscribes to the cell's SNMP alert.

Chassis Id

This metric shows the Chassis Id of the cell ILOM.

Target Version	Collection Frequency
11*g*, 12*c*	N/A

Fault Class

This metric shows the fault class of the cell ILOM alert.

Target Version	Collection Frequency
11*g*, 12*c*	N/A

Fault Message Id

This metric shows the fault message Id of the cell ILOM alert.

Target Version	Collection Frequency
11*g*, 12*c*	N/A

Fault Status

This metric shows the fault status of the cell ILOM alert.

Target Version	Collection Frequency
11*g*, 12*c*	N/A

Fault Unique Id (UUID)

This metric shows the fault unique Id (UUID) of the cell ILOM alert.

Target Version	Collection Frequency
11*g*, 12*c*	N/A

Product Name

This metric shows the product name.

Target Version	Collection Frequency
11*g*, 12*c*	N/A

Exadata Services Status

This metric category contains the Exadata services status metric.

CellSrv Status

This metric shows the status of the service *Cell Services*.

Target Version	Collection Frequency
All versions	Every 15 Minutes

MS Status

This metric shows the status of the Management Server service.

Target Version	Collection Frequency
All versions	Every 15 Minutes

RS Status

This metric shows the status of the Restart Server service.

Target Version	Collection Frequency
All versions	Every 15 Minutes

Exadata Cell Metric

This metric category contains the performance metrics collected at the cell level for each cell, such as CPU utilization and memory utilization.

CPU Utilization

This metric provides information about the CPU utilization.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	CPU Utilization for %target%:%object_name%:%cell_name% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Cell Name

This is the short name of the Exadata Storage Server without domain suffix.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Disk I/O Objective

This metric provides the optimization objective which IORM is configured to achieve. For example, "Low Latency" or "Balanced" for OLTP-oriented databases, or "High Throughput" for data warehouses.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Exadata Run Queue Length

This metric provides information about the Exadata run queue length.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Exadata Run Queue Length for %target%:%object_name%:%cell_name% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Exadata Temperature Lower Threshold

This metric reports the lower or minimum temperature threshold for the ambient operating temperature for the Exadata machine.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Exadata Temperature Lower Threshold for %target%:%object_name%:%cell_name% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Exadata Temperature Reading

This metric reports the ambient operating temperature for the Exadata machine.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Exadata Temperature Upper Threshold

This metric reports the upper or maximum temperature threshold for the ambient operating temperature for the Exadata machine.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Exadata Temperature Upper Threshold for %target%:%object_name%:%cell_name% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

IORM Boost

This metric reports the ratio of the cumulative number of positions in the I/O queue that were skipped because of IORM scheduling to the number of I/Os that were scheduled.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

LED Status

This metric provides the status of the locator LED (on or off).

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Memory Utilization

This metric provides information about the memory utilization.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Memory Utilization for %target%:%object_name%:%cell_name% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Network Received

This metric reports the total number of I/O packets received by interconnections per second.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Network Sent

This metric reports the total number of I/O packets transmitted by interconnections per second.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Offload Efficiency

This metric provides information about the offload efficiency.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Offload Efficiency for %target%:%object_name%:%cell_name% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Exadata CellDisk Metric

This metric category contains performance metrics for each cell disk. The metric values are collected for each cell disk.

Average Large Read Response Time

This metric reports the average response time to read large blocks from the cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average Large Write Response Time

This metric reports the average response time when writing large blocks to the cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average Read Response Time

This metric reports the average read response time to the cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average Response Time

This metric reports the average response time to the cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average Small Read Response Time

This metric reports the average response time when reading small blocks from the cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average Small Write Response Time

This metric reports the average response time when writing small blocks to the cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average Write Response Time

This metric reports the average response time when writing to the cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

CellDisk Type

This metric reports the celldisk type, either hard disk or flash disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

IO Load

This metric reports the average input/output load to the cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

IO Utilization

This metric reports the percentage utilization for I/O requests.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Large Read Bytes

This metric reports the number of MB read in large blocks from a cell disk.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Large Read Bytes for %target% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Large Read Requests

This metric reports the number of requests to read large blocks from a cell disk.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Large Read Requests for %target% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Large Write Bytes

This metric reports the number of MB written in large blocks to a cell disk.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Large Write Bytes for %target% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Large Write Requests

This metric reports the number of requests to write large blocks to a cell disk.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Large Write Requests for %target% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Object Name

This metric reports the cell disk name.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Read IOPS

This metric reports the number of read input/outputs per second to a cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Read Throughput (MBPS)

This metric reports the number of bytes in MB per second read from a cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Small Read Bytes

This metric reports the number of MB read in small blocks from a cell disk.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Small Read Bytes for %target% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Small Read Requests

This metric reports the number of requests to read small blocks from a cell disk.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Small Read Requests for %target% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Small Write Bytes

This metric reports the number of MB written in small blocks to a cell disk.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Small Write Bytes for %target% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Small Write Requests

This metric reports the number of requests to write small blocks to a cell disk.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Small Write Requests for %target% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Write IOPS

This metric reports number of write input/outputs operations per second to a cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Write Throughput (MBPS)

This metric reports the number of bytes in MB per second written to a cell disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Exadata CellDisk Load Imbalance

This metric category contains the Exadata CellDisk Load Imbalance metrics.

IO Load Imbalance

This metric gives an indication of the percentage of maximum average I/O load from the cell disk.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	CellDisk %object_name% is %cd_io_load_imbalance%% load imbalance, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Object Name

This metric gives an indication of the object, such as hard disk or flash disk name.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Exadata Disk Status Metric

This metric category contains the status of the physical Exadata disk.

Disk Status

This metric reports the status of the physical disk.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 1 Hour	Not Defined	Not Defined	Physical Disk Status %target%:%object_name% is %value%, equaled to warning (%warning_threshold%) or critical (%critical_threshold%) value.

Exadata Flash Cache IORM Database Metric

This metric category contains the IO statistics for the flash cache by database.

Cell Name

This is the short name of the Exadata Storage Server without domain suffix.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Size (MB)

This metric shows the disk size in MB of the Flash Cache IORM Database.

Target Version	Collection Frequency
10*g*, 11*g*, 12cR1	Every 24 hours

Exadata Flash Cache IORM Pluggable Database Metric

This metric category contains the IO statistics for the flash cache by pluggable database.

Cell Name

This is the short name of the Exadata Storage Server without domain suffix.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Size (MB)

This metric shows the disk size in MB of the Flash Cache IORM Pluggable Database.

Target Version	Collection Frequency
13*c*	Every 15 minutes

Exadata Flash Cache Metric

This metric category contains the performance metrics for the flash cache in a cell.

All I/O Requests

This metric reports the cumulative number of read requests to flash cache since the metric was created.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Cell Name

This is the short name of the Exadata Storage Server without domain suffix.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Default Hits

This metric reports the number of read requests satisfied from flash cache non-keep objects since the last metric collection.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Default Hits (%)

This metric reports the percentage of read requests to non-keep objects that are satisfied from flash cache since the last metric collection. Exadata Storage Server automatically decides which objects will be put in flash cache as non-keep objects. In general, the higher the hits rate, the better the performance.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Default hits rate for %target%:%object_name%:%cell_name% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Default Misses

This metric reports the number of read requests to non-keep objects which did not find all data in flash cache since the last metric collection.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Default Misses (%)

This metric reports the percentage of read requests to non-keep objects which did not find all data in flash cache since the last metric collection. In general, a low number of read misses indicates better performance. However, in cases where it is not beneficial to put data object of large size into flash cache, a high number of read misses does not necessarily indicate performance issues.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Default misses rate for %target%:%object_name%:%cell_name% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Default Read IOPS

This metric reports the number of read requests per second which were satisfied from flash cache non-keep objects.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Default Read Throughput (MBPS)

This metric reports the size of data read per second from flash cache non-keep objects.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Default Used (GB)

This metric reports the space used for non-keep objects on flash cache.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Destage Write To Disk Per Second

This metric reports the cumulative number of requests per second to write to flash cache since the metric was created.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

First Writes

The metric reports the cumulative number of requests to write new data to flash cache since the metric was created.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

First Writes Per Second

The metric reports the number of requests per second to write new data to flash cache since the last metric collection.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Flash Cache Population Writes Per Second

The metric reports the number of requests that are population writes into the flash cache due to read miss.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

I/O Requests Keep Pool Misses

This metric reports the cumulative number of read requests to keep objects which did not find all data in flash cache since the metric was created.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

I/O Requests Read Misses

This metric reports the cumulative number of read requests which did not find all data in flash cache since the metric was created.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

I/O Requests for keep

This metric reports the cumulative number of read requests to keep objects since the metric was created.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Keep Hits

This metric shows the number of read requests satisfied from Flash Cache keep objects since the last metric collection.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Keep Hits (%)

This metric reports the percentage of read requests to keep objects that are satisfied from Flash Cache since the last metric collection. In general, the higher the keep hits rate, the better performance.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Keep hits rate for %target%:%object_name%:%cell_name% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Keep Misses

This metric reports the number of read requests to keep objects which did not find all data in Flash Cache since the last metric collection.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Keep Misses (%)

This metric reports the percentage of read requests to keep objects which did not find all data in Flash Cache since the last metric collection. In general, a low number of read misses indicates better performance. However, in cases where it is not beneficial to put data objects of a large size into flash cache, a high number of read misses does not necessarily indicate performance issues.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Keep misses rate for %target%:%object_name%:%cell_name% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Keep Overwrites Per Second

This metric reports the number of megabytes per second pushed out of the flash cache because of space limits for keep objects.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Keep Pool Read IOPS

This metric reports the number of read requests per second which were satisfied from Flash Cache keep objects.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Keep Pool Read Throughput (MBPS)

This metric reports the size of data read per second from Flash Cache keep objects.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Keep Pool Used (GB)

This metric reports the space used for keep objects on Flash Cache.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Overwrites

This metric reports the cumulative number of requests to overwrite existing data in flash cache.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Overwrites Per Second

This metric reports the cumulative number of requests per second to overwrite existing data in flash cache.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Read Hit Ratio for Random I/O

This metric reports the read hit ratio which is caculated by dividing Read IOPS by the sum of Read IOPS and disk reads per second.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Read IOPS for Random I/O

This metric reports the number of read requests per second from flash cache, for random I/O.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Read IOPS for Scan

This metric reports the number of IO read per second from flash cache, for scan data.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Read Misses (MB)

This metric reports the cumulative size of data read from disk which did not find all data from Flash Cache since the metric was created.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Read Throughput Redirected to Disk for Scan (MBPS)

This metric reports the size of data read per second from disk, for scan data.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Read Throughput for Random I/O (MBPS)

This metric reports the throughput of data read from flash cache for randon I/O.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Read Throughput for Scan (MBPS)

This metric reports the number of megabytes read per second from flash cache, for scan data.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Reads (MB)

This metric reports the cumulative size of data read from Flash Cache since the metric was created.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Reads for Keep (MB)

This metric reports the cumulative size of data read from Flash Cache keep objects since the metric was created.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Used (GB)

This metric reports the size of used space on flash cache.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Write IO requests that bypass Flash Cache

This metric reports the cumulative number of writes that bypass flash cache due to the large size of requested objects since the metric was created.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Exadata Flash IORM Consumer Group Metric

This metric category contains the IO statistics of flash by consumer group.

Average I/O Throughput (MB/Sec)

This metric reports the number of megabytes of I/O per second for this consumer group to flash.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average Wait Time for I/O (ms/req)

This metric reports the average IORM wait time per request issued by a consumer group.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average IORM Wait Time for Large I/O (ms/req)

This metric reports the average IORM wait time per request issued by a consumer group for large I/O.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average IORM Wait Time for Small I/O (ms/req)

This metric reports the average IORM wait time per request issued by a consumer group for small I/O.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Cell Name

This is the short name of the Exadata Storage Server without domain suffix.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

I/O Requests per Second (IO/sec)

This metric reports the number of IO requests issued by a consumer group to flash per second.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

I/O Requests per Second - Large (IO/Sec)

This metric reports the number of large IO requests issued by a consumer group to flash per second.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

I/O Requests per Second - Small (IO/Sec)

This metric reports the number of small IO requests issued by a consumer group to flash per second.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

I/O Utilization (%)

This metric reports the percentage of flash resources utilized by requests from this Consumer Group.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Exadata Flash IORM Database Metric

This metric category contains the IO statistics of flash by database.

Average I/O Throughput (MB/Sec)

This metric reports the average number of megabytes of I/O per second for this database to flash.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average Wait Time for I/O (ms/req)

This metric reports the average IORM wait time per request issued to the flash by a database.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average IORM Wait Time for Large I/O (ms/req)

This metric reports the average IORM wait time per request issued to the flash by a database for large I/O.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average IORM Wait Time for Small I/O (ms/req)

This metric reports the average IORM wait time per request issued for the flash by a database for small I/O.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Cell Name

This is the short name of the Exadata Storage Server without domain suffix.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

I/O Requests per Second (IO/sec)

This metric reports the number of IO requests issued by a database to the flash per second.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

I/O Requests per Second - Large (IO/Sec)

This metric reports the number of large IO requests issued by a database to the flash per second.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

I/O Requests per Second - Small (IO/Sec)

This metric reports the number of small IO requests issued by a database to the flash per second.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

I/O Utilization (%)

This metric reports the percentage of flash resources utilized by requests from this database.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Exadata Flash IORM Pluggable Database Metric

This metric category contains the IO statistics of flash by pluggable database.

Average I/O Throughput (MB/Sec)

This metric reports the average number of megabytes of I/O per second for this pluggable database to flash disks.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average IORM Wait Time for I/O (ms/req)

This metric reports the average IORM wait time per request issued by a pluggable database to the flash disks.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average IORM Wait Time for Large I/O (ms/req)

This metric reports the average IORM wait time per request issued by a pluggable database to the flash disks for large I/O.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average IORM Wait Time for Small I/O (ms/req)

This metric reports the average IORM wait time per request issued by a pluggable database to the flash disks for small I/O.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Cell Name

This is the short name of the Exadata Storage Server without domain suffix.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

I/O Requests per Second (IO/sec)

This metric reports the number of IO requests issued by a pluggable database to the flash disk per second.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

I/O Requests per Second - Large (IO/Sec)

This metric reports the number of large IO requests issued by a pluggable database to the flash disk per second.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

I/O Requests per Second - Small (IO/Sec)

This metric reports the number of small IO requests issued by a pluggable database to the flash disk per second.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

I/O Utilization (%)

This metric reports the percentage of flash resources utilized by requests from this pluggable database.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Exadata Flash Log Metric

This metric category contains the Exadata Flash Log metrics.

Cell Name

This is the short name of the Exadata Storage Server without domain suffix.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Cumulative Disk Write Errors

This metric reports the cumulative number of write errors encoundered while writing to hard disks.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Cumulative Flash Write Errors

This metric reports the cumulative number of write errors encoundered while writing to flash disks.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Efficiency of Smart Flash Log Over the Past Hour

This metric provides the efficiency of smart flash log over the past hour, that is, the ratio between the number of redo log writes completed by smart flash log in the past hour.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Efficiency of Smart Flash Logging (%)

This metric provides the efficiency of Smart Flash Logging expressed as a percentage, that is, the ratio between the number of redo log writes completed by Smart Flash Log and the total number of redo log writes.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Megabytes per second Written to Flash

This metric provides a number of megabytes per second written to flash disk.

Target Version	Collection Frequency
All versions	Every 15 Minutes

Megabytes per second Written to Hard Disk

This metric provides a number of megabytes per second written to hard disk.

Target Version	Collection Frequency
All versions	Every 15 Minutes

Redo Data Kept

This metric provides the number of bytes of redo data kept over time.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Redo Writes Exceeding Outlier Threshold

This metric provides the number of redo writes that exceed the outlier threshold over time.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Redo Writes Prevented from Exceeding Outlier Threshold

This metric provides the number of redo writes that were prevented from exceeding the outlier threshold over time.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Skipped Large Writes

This metric provides the number of write operations that were skipped for Large I/O.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Skipped Writes Due to Slow Disk

This metric provides the number of write operations that were skipped due to the reason that the hard disk was slow in responding.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Skipped Writes Due to Slow Disk During Last Minute

This metric provides the number of write operations that were skipped due to the reason that the hard disk was slow in responding in the last minute.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Skipped Writes Due to Unavailable Buffer

This metric provides the number of write operations that were skipped due to the unavailability of the buffer.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Writes Serviced

This metric provides the number of write operations that were serviced over the selected time range.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Exadata IORM Consumer Group Metric

This metric category contains the Exadata IORM Consumer Group metrics.

Average I/O Throughput (MB/Sec)

This metric reports the number of megabytes of I/O per second for this consumer group to hard disks.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average Wait Time for I/O (ms/req)

This metric reports the average IORM wait time per request issued by a consumer group.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Cell Name

This is the short name of the Exadata Storage Server without domain suffix.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

I/O Requests per Second (IO/sec)

This metric reports the number of IO requests issued by a consumer group to hard disks per second.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

I/O Utilization (%)

This metric reports the percentage of disk resources utilized by requests from this Consumer Group.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Exadata IORM DB

This metric category contains the metrics collected for the IORM databases.

Average I/O Load

This metric reports the average I/O load from this database for hard disks.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average I/O Throughput (MB/Sec)

This metric reports the number of megabytes of I/O per second for this database to hard disks.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average Wait Time for I/O (ms/req)

This metric reports the average wait time for I/O requests.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Average Throttle Time per Disk I/O by Database for %target%:%object_name%:%cell_name% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Average Wait Time for Large I/O (ms/req)

This metric reports the average wait time for large I/O requests.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Average IORM wait time of Large Request in seconds for %target%:%object_name%:%cell_name% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Average Wait Time for Small I/O (ms/req)

This metric reports the average wait time for small I/O requests.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Average IORM wait time of Small Request in seconds for %target%:%object_name%:%cell_name% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Average latency of reading or writing blocks/request from flash disks

This metric reports the rate which is the average latency of reading or writing blocks per request by a database from or to flash disks.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average latency of reading or writing blocks/request from hard disks

This metric reports the rate which is the average latency of reading or writing blocks per request by a database from or to hard disks.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average latency of reading or writing large blocks/request from hard disks

This metric reports the rate which is the average latency of reading or writing large blocks per request by a database from or to hard disks.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average latency of reading or writing small blocks/request from hard disks

This metric reports the rate which is the average latency of reading or writing small blocks per request by a database from or to hard disks.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Cell Name

This is the short name of the Exadata Storage Server without domain suffix.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Cumulative latency of reading or writing blocks from flash disks

This metric reports the cumulative latency of reading or writing blocks by a database from or to flash disks.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Cumulative latency of reading or writing large blocks from hard disks

This metric reports the cumulative latency of reading or writing large blocks by a database from or to hard disks.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Cumulative latency of reading or writing small blocks from hard disks

This metric reports the cumulative latency of reading or writing small blocks by a database from or to hard disks.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

I/O Requests per Second (IO/Sec)

This metric reports the number of IO requests issued by a database to hard disks per second.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

I/O Requests per Second - Large (IO/Sec)

This metric reports the number of large IO requests issued by a database to hard disks per second.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

I/O Requests per Second - Small (IO/Sec)

This metric reports the number of small IO requests issued by a database to hard disks per second.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

IO Utilization (%)

This metric reports the percentage utilization for I/O requests.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Large I/O Utilization (%)

This metric reports the percentage utilization for large I/O requests.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Database IO Utilization for %target%:%object_name%:%cell_name% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Small IO Utilization (%)

This metric reports the percentage utilization for small I/O requests.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Wait Time for Large I/O (ms)

This metric specifies the average number of milliseconds that large I/O requests issued by the database have waited to be scheduled by IORM in the past minute. A large value indicates that the I/O workload from this database is exceeding the allocation specified for it in the interdatabase plan.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Wait Time of Large Requests for %target%:%object_name%:%cell_name% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Wait Time for Small I/O (ms)

This metric specifies the average number of milliseconds that small I/O requests issued by the database have waited to be scheduled by IORM in the past minute. A large value indicates that the I/O workload from this database is exceeding the allocation specified for it in the interdatabase plan.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Wait Time of Small Requests for %target%:%object_name%:%cell_name% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Exadata IORM Pluggable Database Metric

This metric category contains the metrics collected for the IORM pluggable databases.

Average I/O Load

This metric reports the average I/O load from this pluggable database for hard disks.

Target Version	Collection Frequency
12*c*	Every 15 Minutes

Average I/O Throughput (MB/Sec)

This metric reports the number of megabytes of I/O per second for this consumer group to hard disks.

Target Version	Collection Frequency
12*c*	Every 15 Minutes

Average Wait Time for Large I/O (ms/req)

This metric reports the average wait time for large I/O requests.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 15 Minutes	Not Defined	Not Defined	Average IORM Wait time per Large request in milliseconds for %target%:%object_name%:%cell_name% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Average Wait Time for Small I/O (ms/req)

This metric reports the average wait time for small I/O requests.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 15 Minutes	Not Defined	Not Defined	Average IORM Wait time per Small request in milliseconds for %target%:%object_name%:%cell_name% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Average Wait Time for I/O (ms/req)

This metric reports the average wait time for I/O requests.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 15 Minutes	Not Defined	Not Defined	Average IORM Wait time per I/O request in milliseconds for %target%:%object_name%:%cell_name% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Cell Name

This is the short name of the Exadata Storage Server without domain suffix.

Target Version	Collection Frequency
12*c*	Every 15 Minutes

I/O Requests per Second (IO/Sec)

This metric reports the number of IO requests issued by a pluggable database to hard disks per second.

Target Version	Collection Frequency
12*c*	Every 15 Minutes

I/O Requests per Second - Large (IO/Sec)

This metric reports the number of large IO requests issued by a pluggable database to hard disks per second.

Target Version	Collection Frequency
12*c*	Every 15 Minutes

I/O Requests per Second - Small (IO/Sec)

This metric reports the number of small IO requests issued by a pluggable database to hard disks per second.

Target Version	Collection Frequency
12*c*	Every 15 Minutes

I/O Utilization (%)

This metric reports the percentage utilization for I/O requests.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 15 Minutes	Not Defined	Not Defined	IO Utilization for %target%:%object_name%:%cell_name% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Large I/O Utilization (%)

This metric reports the percentage of disk resources utilized by large requests from this Pluggable Database.

Target Version	Collection Frequency
12*c*	Every 15 Minutes

Small I/O Utilization (%)

This metric reports the percentage of disk resources utilized by small requests from this Pluggable Database.

Target Version	Collection Frequency
12*c*	Every 15 Minutes

Wait Time for Large I/O (ms)

This metric specifies the average number of milliseconds that large I/O requests issued by the database have waited to be scheduled by IORM in the past minute. A large value indicates that the I/O workload from this database is exceeding the allocation specified for it in the interdatabase plan

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 15 Minutes	Not Defined	Not Defined	Wait Time of Large requests for %target%:%object_name%:%cell_name% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Wait Time for Small I/O (ms)

This metric specifies the average number of milliseconds that small I/O requests issued by the database have waited to be scheduled by IORM in the past minute.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 15 Minutes	Not Defined	Not Defined	Wait Time of Small requests for %target%:%object_name%:%cell_name% is %value%, fallen below warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Exadata Key Performance Indicators

The following key performance indicator metrics are displayed for the Exadata Storage Server:

Metric	Description	Alert Message	Clear Message
Exadata Key Performance Indicators	Key performance indicators for the Exadata Storage Server.	-	-
Total Flash Disk IOPS	Aggregated total read and write IOPS of all flash disks on the Exadata Storage Server.	Total flash disk IOPS for %target% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.	Total flash disk IOPS for %target% is %value%, fallen below warning (%warning_threshold%) or critical (%critical_threshold%) threshold.
Total Hard Disk IOPS	Aggregated total read and write IOPS of all hard disks on the Exadata Storage Server.	Total hard disk IOPS for %target% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.	Total hard disk IOPS for %target% is %value%, fallen below warning (%warning_threshold%) or critical (%critical_threshold%) threshold.
Total Flash Disk Throughput	Aggregated total read and write throughput of all flash disks on the Exadata Storage Server.	Total flash disk throughput for %target% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.	Total flash disk throughput for %target% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.
Total Hard Disk Throughput	Aggregated total read and write throughput of all hard disks on the Exadata Storage Server.	Total hard disk throughput for %target% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.	Total hard disk throughput for %target% is %value%, fallen below warning (%warning_threshold%) or critical (%critical_threshold%) threshold.
Average Flash Disk IO Load	Average IO load across all flash disks on the Exadata Storage Server.	Average flash disk IO load for %target% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.	Average flash disk IO load for %target% is %value%, fallen below warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Metric	Description	Alert Message	Clear Message
Average Hard Disk IO Load	Average IO load across all hard disks on the Exadata Storage Server.	Average hard disk IO load for %target% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.	Average hard disk IO load for %target% is %value%, fallen below warning (%warning_threshold%) or critical (%critical_threshold%) threshold.
Average Flash Disk Response Time	Average read and write latency across all flash disks on the Exadata Storage Server.	Average flash disk response time for %target% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.	Average flash disk response time for %target% is %value%, fallen below warning (%warning_threshold%) or critical (%critical_threshold%) threshold.
Average Hard Disk Response Time	Average read and write latency across all hard disks on the Exadata Storage Server.	Average hard disk response time for %target% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.	Total hard disk response time for %target% is %value%, fallen below warning (%warning_threshold%) or critical (%critical_threshold%) threshold.
Flash Disk IO Health Exceptions	Number of flash disk Key Performance Indicators exceeding their critical thresholds for the Exadata Storage Server.	%target% has %value% flash disk Key Performance Indicators exceeding their critical thresholds.	%target% has %value% flash disk Key Performance Indicators exceeding their critical thresholds.
Hard Disk IO Health Exceptions	Number of hard disk Key Performance Indicators exceeding their critical thresholds for the Exadata Storage Server.	%target% has %value% hard disk Key Performance Indicators exceeding their critical thresholds.	%target% has %value% hard disk Key Performance Indicators exceeding their critical thresholds.

Exadata Smart IO Metric

This metric category contains the Exadata smart IO metrics.

Cell Name

This is the short name of the Exadata Storage Server without domain suffix.

Target Version	Collection Frequency
11*g*R2, 12*c*	Every 15 Minutes

Megabytes per second of pass through IOs

This metric provides a number of megabytes per second saved by storage index.

Target Version	Collection Frequency
11*g*R2, 12*c*	Every 15 Minutes

Megabytes per second read from flash cache

This metric provides a number of megabytes per second read from flash cache by smart IO.

Target Version	Collection Frequency
11*g*R2, 12*c*	Every 15 Minutes

Megabytes per second read from hard disk

This metric provides a number of megabytes per second read from hard disk by smart IO.

Target Version	Collection Frequency
11*g*R2, 12*c*	Every 15 Minutes

Megabytes per second saved by storage index

This metric provides a number of megabytes per second saved by storage index.

Target Version	Collection Frequency
11*g*R2, 12*c*	Every 15 Minutes

Exadata Storage Type

This metric provides information on the available storage types.

Physical Disk Type

This metric column lists available storage types as physical disks on Exadata storage server, for example, HarDisk and FlashDisk.

Target Version	Collection Frequency
All versions	Every 24 Hours (1440 Minutes)

Number of Physical Disks

This metric column provides the count of physical disks for each storage type on Exadata Storage Server, for example 12 for HardDisk, and 16 for FlashDisk.

Target Version	Collection Frequency
All versions	Every 24 Hours (1440 Minutes)

Number of Cell Disks

This metric column provides count of physical disks that are configured as cell disks for each storage type on Exadata Storage Server, for example 12 for HardDisk, and 16 for FlashDisk.

Target Version	Collection Frequency
All versions	Every 24 Hours (1440 Minutes)

Filesystem Utilization

This metric category contains the metrics relating to the filesystem utilization.

Cell Name

This is the short name of the Exadata Storage Server without domain suffix.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Filesystem Utilization %

This metric provides the percentage of file system usage on the target.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 24 Hours	Not Defined	Not Defined	File system usage on %target%: %name%:%cell_name% is %value%, which has crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

HCA Port Configuration Monitor

This metric category contains the HCA port configuration monitor metrics.

HCA Node GUID

This metric displays the node GUID.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Is this port disconnected (yes/no)

This metric specifies whether the HCA port is disconnected.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	yes	Port %PortNumber% (%CA_Display_Name%) on %target% is disconnected from port %ConnectedToSwitchPortNumPrev% on %ConnectedToSwitchNamePrev%.

Port GUID

This metric provides the port GUID.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Switch GUID on the other end of the link

This metric provides the GUID of the switch to which this port is connected.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Switch Name to which this port is connected

This metric provides the name of the switch to which this port is connected.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Switch Port number on the other end of the link

This metric provides the port number of the switch to which this port is connected.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

HCA Port Errors

This metric category contains the HCA port error metrics.

Excessive buffer overruns

This metric reports the number of “buffer overruns exceeding the threshold" since the last metric collection.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Port %PortNumber% has %value% excessive buffer overruns, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Incoming VL15 packets dropped due to resource limitation

This metric reports the number of incoming VL 15 packets dropped due to lack of buffers since the last metric collection.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Port %PortNumber% has %value% incoming VL15 packets dropped, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Link integrity errors

This metric displays the number of link integrity errors, that is, errors on the local link.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Port %PortNumber% has %value% link integrity errors, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Link recovers

This metric reports the number of times the link error recovery process was completed successfully since the last metric collection.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Port %PortNumber% has %value% link recovers, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Packets not transmitted due to constraints

This metric reports the number of packets not transmitted due to constrains since the last metric collection.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Port %PortNumber% has %value% packets not transmitted due to constraints, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Received packets discarded due to constraints

This metric reports the number of packets discarded due to constraints since the last metric collection.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Port %PortNumber% has %value% received packets discarded due to constraints, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Received packets marked with the EBP delimiter

This metric reports the number of packets marked with the EBP delimiter received on the port.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 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.

Received packets with error

This metric reports the number of packets received with errors since the last metric collection.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Port %PortNumber% has %value% received packets containing an error, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Symbol errors

This metric reports the number of symbols errors detected since the last metric collection.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Port %PortNumber% has %value% symbol errors, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Total errors

This metric reports the sum total of all errors listed in this section.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	Port %PortNumber% has %value% total errors, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

HCA Port State

This metric category contains the HCA port state metrics.

Active link width of port based on cable connectivity (e.g., 1X)

This metric displays the active link width of the port based on the cable connectivity.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Is the link degraded? (active speed or width less than enabled)

This metric reports whether or not the link is degraded. If the active speed of a link is less than the enabled speed, then it is considered to be degraded and this column value is set to 1.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	1	Port %PortNumber% (%ca_disp_name%) is running in degraded mode.

Link state (0 = Down, 1 = Active)

This metric reports the link state. The link is down if the physical link state is 0.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Physical link state (0 = Disabled/Polling, 1 = LinkUp)

This metric reports the physical link state. The physical link state is 0 if the port is in polling or disabled state.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

The active link speed (Gbps)

The metric reports the speed of the active link.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

HCA Port State (For Alerts)

The metrics in this category describe the host channel adapters (HCA) port state .

Is port disabled?

This metric indicates whether the HCA port is disabled.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	1	Port %PortNumber% (%ca_disp_name%) is disabled.

Is port in 'polling' state?

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

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 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.

Host Interconnect Statistics

This metric category contains the Host Interconnect Statistics metrics.

Cell Name

This is the short name of the Exadata Storage Server without domain suffix.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Host MB Dropped Per Sec

This metric reports the number of megabytes dropped during transmission to a particular host in the interval.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Host MB Received Per Sec

This metric reports the number of megabytes received from a particular host in the interval.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Host MB Resent Per Sec

This metric reports the number of megabytes retransmitted to a particular host in the interval.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Host MB sent Per Sec

This metric reports the number of megabytes transmitted to a particular host in the interval.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Host RDMA MB Dropped Per Sec

This metric reports the number of megabytes dropped during RDMA transmission to a particular host in the interval.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Host RDMA Retry Latency (msec)

This metric reports the latency of the retry action during RDMA transmission to a particular host in the interval.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Response

This metric category contains the metric used to detect whether or not the Management server on the cell is running.This metric is checked at 5 minute intervals. A one in the status column indicates that the cell is up, otherwise the cell is down.

Response Status

This metric is checked at 5 minute intervals. A one in the status column indicates that the cell is up, otherwise the cell is down.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	0	%target% is down. MS Status is %MSStatus% and Ping Status is %MgmtNetworkPingStatus%.

Top CPU Activity

This metric category contains the Top CPU metrics.

Activity(%)

This metric reports the percentage of total samples from a specific database.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Begin Sequence

This metric reports the begin sequence number for collection.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Database Name

This metric reports the database unique name ("other" represents unnamed database requests).

Target Version	Collection Frequency
All Versions	Every 15 Minutes

End Sequence

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Incarnation

This metric reports the cellsrv incarnation number.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

SQL ID

This metric reports the SQL unique ID ("0000000000000" represents requests without a SQL ID).

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Samples

This metric reports the total samples collected for a specific database in this interval.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Total Samples

This metric reports the total samples collected in this interval.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Network Port

This metric category contains the metrics used to monitor the performance, traffic statistics and the error statistics of the network ports.

Network Ports InfiniBand Error Statistics

This metric details the error statistics of the InfiniBand ports. The data is collected every 15 minutes.

Metric Summary

Each of the below metric columns have metric data such as Port ID, Average Value, Low Value, High Value, Last Known Value, Current Severity, Alert Triggered, and Last Collection Timestamp.

Metric Column	Description
Execution Buffer Overrun Errors	Number of buffer overruns since last collection
Link Downed	Number of failed link errors recovered and link down errors since the last collection
Link Integrity Errors	Number of link integrity errors since last collection

Metric Column	Description
Link Recovers	Number of link error recovers since last collection
Number of packets with the EBP delimiter received on the port since the last collection	Total number of packets with the EBP delimiter received on the port
Received Constraint Errors	Number of received constraint errors since last collection
Received Errors	Number of error packets received on the port since the last collection
Received Switch Relay Errors	Number of received switch relay errors since last collection
Sent Constraint Errors	Number of transmitted constraint errors since last collection
Sent Discards	Number of outbound packets discarded because of down/ congested port since last collection
Symbol Errors	Number of minor link errors since the last collection. Usually an `8b/10b` error due to a bit error
Total Errors	Total number of errors
Virtual Lanne 15 Packets Dropped	Number of incoming Virtual Lane 15 packets dropped due to resource limitations

Network Ports InfiniBand Performance

This metric provides the performance statistics of the InfiniBand ports. The metric is collected every 15 minutes.

Metric Summary

Metric Column	Description	Metric Data
Active link width of port based on cable connectivity (e.g., 1X)	The active width of the InfiniBand port	Port ID, Average Value, Last Collected Value, Current Severity, Alert Triggered, Last Collection Timestamp
Cable State	The state of the cable connected to the InfiniBand port	Port ID, Last Collected Value, Current Severity, Alert Triggered, Last Collection Timestamp
Enabled link speed (Gbps)	The enabled speed for the InfiniBand port	Port ID, Last Collected Value, Current Severity, Alert Triggered, Last Collection Timestamp
Enabled link width (e.g., 1X or 4X)	The enabled width of the InfiniBand port	Port ID, Last Collected Value, Current Severity, Alert Triggered, Last Collection Timestamp
Gateway Port Link Mode	The mode of the gateway port, if applicable	Port ID, Last Collected Value, Current Severity, Alert Triggered, Last Collection Timestamp
Is port disabled?	Indicates that the cable is present but the port is disabled	Port ID, Average Value, Low Value, High Value, Last Known Value, Current Severity, Alert Triggered, Last Collection Timestamp

Metric Column	Description	Metric Data
Is port in 'polling' state?	Indicates that the cable is present but the port is polling	Port ID, Average Value, Low Value, High Value, Last Known Value, Current Severity, Alert Triggered, Last Collection Timestamp
Is the link degraded? (active speed or width less than enabled)	Indicates whether the link is degraded on the InfiniBand port	Port ID, Average Value, Low Value, High Value, Last Known Value, Current Severity, Alert Triggered, Last Collection Timestamp
Link state (0 = Down, 1 = Active)	The link state associated with the InfiniBand port	Port ID, Last Collected Value, Current Severity, Alert Triggered, Last Collection Timestamp
Local Port LID	The LID (local identifier) associated with the InfiniBand port	Port ID, Last Collected Value, Current Severity, Alert Triggered, Last Collection Timestamp
Physical link state (0 = Disabled/ Polling, 1 = LinkUp)	The physical link state associated with the InfiniBand port	Port ID, Last Collected Value, Current Severity, Alert Triggered, Last Collection Timestamp
Port State	The state of the InfiniBand port	Port ID, Last Collected Value, Current Severity, Alert Triggered, Last Collection Timestamp
Remote Port LID	The LID (local identifier) associated with the remote InfiniBand port	Port ID, Last Collected Value, Current Severity, Alert Triggered, Last Collection Timestamp
Supported link speed (Gbps)	The supported speed for the InfiniBand port	Port ID, Last Collected Value, Current Severity, Alert Triggered, Last Collection Timestamp
Supported link width (e.g., 1X or 4X)	The supported width of the InfiniBand port	Port ID, Last Collected Value, Current Severity, Alert Triggered, Last Collection Timestamp
The active lin kspeed (Gbps)	The active speed of the InfiniBand port	Port ID, Last Collected Value, Current Severity, Alert Triggered, Last Collection Timestamp

Network Ports InfiniBand Traffic Statistics

This metric provides the traffic statistics of the InfiniBand ports. The metric is collected every 15 minutes.

Metric Summary

Each metric column contains the metric data such as Port ID, Average Value, Last Known Value, Current Severity, Alert Triggered, and Last Collection Timestamp.

Metric Column	Description
Received Bytes	Total number of incoming octets
Received Multicast Packets	Total number of incoming multicast packets
Received Packets	Total number of incoming packets
Received Unicast Packets	Total number of incoming unicast packets
Sent Bytes	Total number of outgoing octets

Metric Column	Description
Sent Multicast Packets	Total number of outgoing multicast packets
Sent Packets	Total number of outgoing packets
Sent Unicast Packets	Total number of outgoing unicast packets

Network Ports Performance

This metric provides the performance statistics of the network ports. The metric is collected every 15 minutes.

Metric Summary

In the following metrics columns, if the metric provides the status, then the metric data available are Name, Average Value, Last Collected Value, Current Severity, Alert Triggered, and Last Collection Timestamp. If the metric provides numerical values, then additionally, the metric data for Average Value, Low Value, High Value, and Last Known Value are available.

Metric Column	Description
Admin State	Administrative state. For example, UP, DOWN, TESTING.
Discarded Packets	Number of discarded packets
Duplex Mode	Actual mode of the port. Full or Half.
Inbound Errors	Number of incoming errors
Inbound Multicast Packets	Number of incoming non-unicast packets
Inbound Octets	Number of incoming octets
Inbound Octets Rate	Total incoming octets rate
Inbound Unicast Packets	Number of incoming unicast packets
Inbound Unknown Protocol	Number of incoming unknown protocol errors
MTU	Actual physical MTU
Operational Status	Operation status of the port. For example, UNKNOWN, UP, DOWN, TESTING, UNCONNECTED.
Outbound Discards	Number of outgoing discards
Outbound Errors	Number of outgoing errors
Outbound Multicast Packets	Number of outbound non-unicast packets
Outbound Octets	Number of outbound octets
Outbound Octets Rate	Total outgoing octets rate
Outbound Unicast Packets	Number of outbound unicast packets
Partition Keys	List of partition keys to which this port belongs
Port is down	Port status became down
Speed	Actual speed of the port
Speed Units	The unit of speed. For example, bytes per second, kilobytes per second, megabytes per second, gigabytes per second.
Total Octets Rate	Total octets rate for incoming and outgoing data
vLAN IDs	List of vLAN IDs to which this port belongs

Password Expiration

This metric category provides details on how long before the current monitoring password for Exadata Storage Server will expire. This is applicable for Exadata Storage Server targets using the monitoring mechanism ExaCLI or RESTAPI.

Days Until Password Expiration

This metric shows the number of days until the password expiration. *Default Warning Threshold* is `14 days` and *Default Critical Threshold* is `7 days`.

Target Version	Collection Frequency
Exadata Storage Server target 19.1.0.0.0	Every 1 Hour

Oracle Database Exadata Storage Server System

The Oracle Database Exadata Storage Server System target type is a system target that contains all the Oracle Exadata targets that provide storage for one single database.

Agg_Exadata_System_Celldisk_Metric

This metric category provides the metrics collected for a group of Exadata targets that are the storage for one database.

Average Flash Disk IO Load

This metric indicates the average input/output load to the Flash disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average Flash Disk Read IOPS

This metric indicates the average number of bytes read from the Flash disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average Flash Disk Read Throughput

This metric indicates the average number of bytes read from the Flash disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average Flash Disk Write IOPS

This metric indicates the average number of input/output operations written to the Flash disk

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average Flash Disk Write Throughput

This metric indicates the average number of bytes written to the Flash disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average Hard Disk IO Load

This metric indicates the average I/O load to the hard disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average Hard Disk Read IOPS

This metric indicates the average number of read input/output operations from the hard disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average Hard Disk Read Throughput

This metric indicates the average number of bytes read from the hard disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average Hard Disk Write IOPS

This metric indicates the average number of input/output operations written to the hard disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Average Hard Disk Write Throughput

This metric indicates the average number of bytes written to the hard disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Maximum Flash Disk IO Load

This metric indicates the maximum I/O load to the Flash disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Maximum Flash Disk Read IOPS

This metric indicates the maximum number of read input/output operations per second to the Flash disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Maximum Flash Disk Read Throughput

This metric indicates the maximum number of bytes read from the Flash disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Maximum Flash Disk Write IOPS

This metric indicates maximum number of input/output operations written to the Flash disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Maximum Flash Disk Write Throughput

This metric indicates maximum number of bytes written to the Flash disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Maximum Hard Disk IO Load

This metric indicates the maximum I/O load to the hard disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Maximum Hard Disk Read IOPS

This metric indicates the maximum number of input/output operations read from the hard disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Maximum Hard Disk Read Throughput

This metric indicates the maximum number of bytes read from the hard disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Maximum Hard Disk Write IOPS

This metric indicates the maximum number of input/output operations written to the hard disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Maximum Hard Disk Write Throughput

This metric indicates the maximum number of bytes written to the hard disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Minimum Flash Disk IO Load

This metric indicates the minimum I/O load to the Flash disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Minimum Flash Disk Read IOPS

This metric indicates the minimum number of read input/output operations from the Flash disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Minimum Flash Disk Read Throughput

This metric indicates the minimum number of bytes read from the Flash disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Minimum Flash Disk Write IOPS

This metric indicates the minimum number of input/output operations written to the Flash disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Minimum Flash Disk Write Throughput

This metric indicates the minimum number of bytes written to the Flash disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Minimum Hard Disk IO Load

This metric indicates the minimum I/O load to the hard disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Minimum Hard Disk Read IOPS

This metric indicates the minimum number of read input/output operations per second to the hard disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Minimum Hard Disk Read Throughput

This metric indicates the minimum number of bytes read from the hard disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Minimum Hard Disk Write IOPS

This metric indicates the minimum number of input/output operations written to the hard disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Minimum Hard Disk Write Throughput

This metric indicates the minimum number of bytes written to the hard disk.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Response

This metric category contains the metric used to detect the response of the Oracle Database Exadata Storage Server System.

Status

This metric's collection frequency is event-driven. A one in the status column indicates that the target is up, otherwise it is down.

Target Version	Collection Frequency
All Versions	Event-driven

Oracle Exadata Storage Server Grid

The Oracle Exadata Storage Server Grid target type is a system target that contains all the Oracle Exadata targets from the same Exadata Database Machine system.

Exadata Key Performance Indicators

The following key performance indicator metrics are displayed for the Exadata Storage Server Grid:

Metric	Description	Alert Message	Clear Message
Exadata Key Performance Indicators	Key performance indicators for the Exadata Storage Server Grid.	-	-

Metric	Description	Alert Message	Clear Message
Total Flash Disk IOPS	Aggregated total read and write IOPS of all flash disks on the Exadata Storage Server Grid.	Total flash disk IOPS for %target% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.	Total flash disk IOPS for %target% is %value%, fallen below warning (%warning_threshold%) or critical (%critical_threshold%) threshold.
Total Hard Disk IOPS	Aggregated total read and write IOPS of all hard disks on the Exadata Storage Server Grid.	Total hard disk IOPS for %target% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.	Total hard disk IOPS for %target% is %value%, fallen below warning (%warning_threshold%) or critical (%critical_threshold%) threshold.
Total Flash Disk Throughput	Aggregated total read and write throughput of all flash disks on the Exadata Storage Server Grid.	Total flash disk throughput for %target% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.	Total flash disk throughput for %target% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.
Total Hard Disk Throughput	Aggregated total read and write throughput of all hard disks on the Exadata Storage Server Grid.	Total hard disk throughput for %target% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.	Total hard disk throughput for %target% is %value%, fallen below warning (%warning_threshold%) or critical (%critical_threshold%) threshold.
Average Flash Disk IO Load	Average IO load across all flash disks on the Exadata Storage Server Grid.	Average flash disk IO load for %target% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.	Average flash disk IO load for %target% is %value%, fallen below warning (%warning_threshold%) or critical (%critical_threshold%) threshold.
Average Hard Disk IO Load	Average IO load across all hard disks on the Exadata Storage Server Grid.	Average hard disk IO load for %target% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.	Average hard disk IO load for %target% is %value%, fallen below warning (%warning_threshold%) or critical (%critical_threshold%) threshold.
Average Flash Disk Response Time	Average read and write latency across all flash disks on the Exadata Storage Server Grid.	Average flash disk response time for %target% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.	Average flash disk response time for %target% is %value%, fallen below warning (%warning_threshold%) or critical (%critical_threshold%) threshold.
Average Hard Disk Response Time	Average read and write latency across all hard disks on the Exadata Storage Server Grid.	Average hard disk response time for %target% is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.	Total hard disk response time for %target% is %value%, fallen below warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Metric	Description	Alert Message	Clear Message
Flash Disk IO Health Exceptions	Number of members whose Exadata Key Performance Indicator Flash Disk IO Health Exceptions exceed their critical thresholds.	%target% has %value% member Exadata Storage Servers whose Key Performance Indicator Flash Disk IO Health Exceptions exceed their critical thresholds.	%target% has %value% member Exadata Storage Servers whose Key Performance Indicator Flash Disk IO Health Exceptions exceed their critical thresholds.
Hard Disk IO Health Exceptions	Number of members whose Exadata Key Performance Indicator Hard Disk IO Health Exceptions exceed their critical thresholds.	%target% has %value% member Exadata Storage Servers whose Key Performance Indicator Hard Disk IO Health Exceptions exceed their critical thresholds.	%target% has %value% member Exadata Storage Servers whose Key Performance Indicator Hard Disk IO Health Exceptions exceed their critical thresholds.

Response

This metric category contains the metric used to detect the response of the Oracle Exadata Storage Server Grid target.

Status

This metric's collection frequency is event-driven. A one in the status column indicates that the target is up, otherwise it is down.

Target Version	Collection Frequency
All Versions	Event-driven

2
Recovery Appliance

This chapter provides information about the Recovery Appliance metrics.

For each metric, it provides the following information:

- Description
- Metric table

  The metric table can include some or all of the following: target version, default collection frequency, default warning threshold, default critical threshold, and alert text.

Data Sent/Received

These metrics collect information about the data that is backed up, copied to tape, and replicated for all protected databases.

Backup Data Rate (GB/s)

This metric provides the rate (GB/s) at which backup data is being ingested by the Recovery Appliance for all protected databases.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

RA_DATABASE view in the Recovery Appliance database

User Action

Not applicable

Cumulative Backup Data Delta (GB)

This metric provides the change in the cumulative amount of backup data received for all protected databases since the last collection of this metric.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

RA_DATABASE view in the Recovery Appliance database

User Action

Not applicable.

Cumulative Backup Data Received (GB)

This metric provides the cumulative amount of backup data received by the Recovery Appliance for all protected databases.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

RA_DATABASE view in the Recovery Appliance database

User Action

Not applicable

Cumulative Copy-to-Tape Data Delta (GB)

This metric provides the change in the cumulative amount of data copied to tape for all protected databases since the last collection of this metric.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

RA_DATABASE view in the Recovery Appliance database

User Action

Not applicable.

Cumulative Copy-to-Tape Data Sent (GB)

This metric provides the cumulative amount of data copied to tape for all protected databases.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

RA_DATABASE view in the Recovery Appliance database

User Action

Not applicable

Cumulative Replication Data Delta (GB)

This metric provides the change in the cumulative amount of data replicated for all protected databases since the last collection.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

RA_DATABASE view in the Recovery Appliance database

User Action

Not applicable.

Cumulative Replication Data Sent (GB)

This metric provides the cumulative amount of data replicated for all protected databases.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

RA_DATABASE view in the Recovery Appliance database

User Action

Not applicable.

Replication Data Rate (GB/s)

This metric provides the rate at which data is replicated for all protected databases.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

RA_DATABASE view in the Recovery Appliance database

User Action

Not applicable.

Health

These metrics collect incident data for the Recovery Appliance.

The Health metric for a Zero Data Loss Recovery Appliance (ZDLRA) target lists all the incidents generated by the Recovery Appliance while monitoring the internal operations and status of the databases protected by the appliance. This information is sourced from the RA_INCIDENT_LOG view in the Recovery Appliance.

For all Recovery Appliance incidents that have a severity of WARNING, ERROR, or INTERNAL, out-of-the-box alerts are raised in Oracle Enterprise Manager. This results in a relatively high volume of alerts, however, you have the option of setting the following metric collection properties to filter and be notified of only some of these alerts.

- **`ignorePattern`**: You can use this property to specify a regular expression pattern that can be used to filter out incidents. This pattern is applied to the **Error Text** column of the Health metric, and any rows matching the pattern are automatically filtered and not collected as part of the Health metric in Oracle Enterprise Manager. This greatly reduces the number of alerts generated for the Recovery Appliance. If you do not want to view ORA-45175 errors, you must add "ORA-45175" to the pattern: `.*ORA-*(45175)\D.*`. In addition, you can add other ORA errors that you want to ignore to the same pattern `.*ORA-*(-45160|45175|45168)\D.*`.
- **`ignoreProtectionPolicies`**: You can use this property on a Health metric to ignore the incidents generated against databases associated with a specific protection policy. If backups for certain databases are stopped deliberately, for example, with the intention of retiring the database, incidents are generated for these databases in the Recovery Appliance. You can create a new protection policy called "DECOMMISSIONED", add the databases for which you want to ignore alerts to this protection policy, and specify "DECOMMISSIONED" as the value for the `ignoreProtectionPolicies` property.

To set these properties:

1. Click **Monitoring** and then **Metric and Collection Settings** for the Recovery Appliance.
2. Click the pencil icon in the **Edit** column of any Health metric row to access **Edit Advanced Settings**.

Component

This metric provides the component of the Recovery Appliance detecting this incident.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_INCIDENT_LOG view in the Recovery Appliance database.

Database Key

This metric provides the primary key of the protected database (if any) involved in this incident.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

RA_INCIDENT_LOG view in the Recovery Appliance database.

Database Unique Name

This metric provides the db_unique_name of the protected database (if any) involved in this incident.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

RA_INCIDENT_LOG view in the Recovery Appliance database.

Error Code

This metric provides the Oracle error code for the message describing the incident.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

RA_INCIDENT_LOG view in the Recovery Appliance database.

Error Text

This metric provides the text of the message describing the incident.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

RA_INCIDENT_LOG view in the Recovery Appliance database.

First Incident Time

This metric provides the timestamp when the Recovery Appliance first detected the incident.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

RA_INCIDENT_LOG view in the Recovery Appliance database.

Incident ID

This metric provides the unique ID for the incident.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

RA_INCIDENT_LOG view in the Recovery Appliance database.

Incident Status

This metric provides the status of this incident: ACTIVE, FIXED, or RESET.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

RA_INCIDENT_LOG view in the Recovery Appliance database.

Last Incident Time

This metric provides the timestamp when the Recovery Appliance most recently detected the incident.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

RA_INCIDENT_LOG view in the Recovery Appliance database.

Number of Incidents

This metric provides the number of times the Recovery Appliance detected the incident.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

RA_INCIDENT_LOG view in the Recovery Appliance database.

Parameter

This metric provides the parameter qualifying the scope of the error code.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

RA_INCIDENT_LOG view in the Recovery Appliance database.

Severity

This metric provides the relative severity of the incident in the context of the operation of the Recovery Appliance.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	WARNING	ERROR, INTERNAL	%error_text%.

Data Source

RA_INCIDENT_LOG view in the Recovery Appliance database.

Storage Location Key

This metric provides the primary key of the storage location (if any) involved in this incident.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

RA_INCIDENT_LOG view in the Recovery Appliance database.

Storage Location Name

This metric provides the name of the storage location (if any) involved in this incident.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

RA_INCIDENT_LOG view in the Recovery Appliance database.

Task ID

This metric provides the ID of the task, if any, in which the incident was detected.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

RA_INCIDENT_LOG view in the Recovery Appliance database.

Task State

This metric provides the processing state of the task: EXECUTABLE, RUNNING, COMPLETED, TASK_WAIT, FAILED, and so on.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

RA_INCIDENT_LOG view in the Recovery Appliance database.

Task Type

This metric provides the type of processing performed by the task.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

RA_INCIDENT_LOG view in the Recovery Appliance database.

Protected Databases

These metrics collect information about the databases protected by this Recovery Appliance.

For protected databases, you can choose to set up thresholds and obtain alerts based on metrics such as recovery window goal or unprotected data window. If you stop sending backups to the Recovery Appliance for a protected database and you have previously set up thresholds and configured alerts, you will continue to receive the alerts even though your action was deliberate. In such a scenario, you have the option of setting the following metric collection property:

- **`ignoreProtectionPolicies`**: You can use this property on a Protected Databases metric to ignore the incidents generated against databases associated with a specific protection policy. If backups for certain databases are stopped deliberately, for example, with the intention of retiring the database, incidents are generated for these databases in the Recovery Appliance. You can create a new protection policy called "DECOMMISSIONED", add the databases for which you want to ignore alerts to this protection policy, and specify "DECOMMISSIONED" as the value for the `ignoreProtectionPolicies` property.

To set this property:

1. Click **Monitoring** and then **Metric and Collection Settings** for the Recovery Appliance.
2. Click the pencil icon in the **Edit** column of any Protected Databases metric row to access **Edit Advanced Settings**.

Backup Data Rate (GB/s)

This metric provides the rate (GB/s) at which backup data is being ingested by the Recovery Appliance for this protected database.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

Copy-to-Tape Data Rate (GB/s)

This metric provides the rate (GB/s) at which the data has been copied to tape for this protected database.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

Copy-to-Tape Queued Data (GB)

This metric provides the amount of data (GB) that is in the queue to be copied to tape for this protected database.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

Copy-to-Tape Queued Data Age (hours)

This metric provides information about how long the data has been in the queue to be copied to tape for this protected database.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

Copy-to-Tape Total Data on Tape (GB)

This metric provides the total amount of data that has been copied to tape for this protected database.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

Cumulative Backup Data (GB)

The metric provides the cumulative amount of backup data ingested by the Recovery Appliance for this protected database.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

Cumulative Backup Data Delta (GB)

This metric provides the change in the cumulative amount of backup data ingested for this protected database since the last collection of this metric.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

Cumulative Copy-to-Tape Data (GB)

This metric provides the cumulative amount of data copied to tape for this protected database.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

Cumulative Copy-to-Tape Data Delta (GB)

This metric provides the change in the cumulative amount of data copied to tape for this protected database since the last collection of this metric.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

Cumulative Replication Data Delta (GB)

This metric provides the change in the cumulative amount of data replicated for this protected database since the last collection of this metric.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

User Action

Not applicable.

Cumulative Replication Data (GB)

This metric provides the cumulative amount of data replicated for this protected database.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

User Action

Not applicable.

Current Recovery Window (interval)

This metric provides the current recovery window of this protected database (as an interval).

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

Current Recovery Window (sec)

This metric provides the current recovery window of this protected database (in seconds).

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

Database Key

This metric provides the primary key for this protected database in the Recovery Appliance metadata.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

Database Unique Name

This metric provides the db_unique_name of this protected database.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

Date Added as Protected Database

This metric provides the time when this protected database was enrolled with the Recovery Appliance.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

Deduplication Ratio

This metric provides the ratio of the total size of received backups for this protected database to the space consumed for this database in Recovery Appliance storage.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

Keep Backup Space (GB)

This metric provides the total amount of space used by backups that have a KEEP retention setting that overrides the retention policy used for this protected database.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

Last Complete Backup

This metric provides the latest point in time for which a complete backup is available for all data files in this protected database.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

Last Copy to Tape

This metric provides the last time that data was copied to tape for this protected database.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

Last Replication

This metric provides the last time data was replicated for this protected database.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

Most Recent Recovery Point

This metric provides the latest time to which the protected database can be recovered.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

Near-Zero Data Loss Enabled

This metric indicates whether this protected database is shipping redo data to the Recovery Appliance.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

User Action

Check the Near-Zero Data Loss setting in Backup Settings for this protected database.

Number of Protected Databases

This metric provides the total number of protected databases enrolled with the Recovery Appliance.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

Oldest Recovery Point

This metric provides the earliest time to which the protected database can be recovered.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

Protection Policy

This metric provides the name of the protection policy used by this protected database.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

Recovery Window Goal (interval)

This metric provides the recovery window goal (as an interval) for disk backups, as specified in the protection policy used by this protected database.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

User Action

Not applicable.

Recovery Window Goal (sec)

This metric provides the recovery window goal in seconds for disk backups, as specified in the protection policy used by this protected database.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

User Action

Not applicable.

Recovery Window Ratio (%)

This metric provides the ratio between the current recovery window and the recovery window goal for this protected database.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

User Action

Not applicable.

Recovery Window Space (GB)

This metric provides an estimation of the required space in Recovery Appliance storage to meet the recovery window goal specified in the protection policy used by this protected database.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

User Action

Not applicable.

Recovery Window Space as a Percentage of Reserved Space

This metric provides the ratio between the recovery window space and the reserved space for this protected database.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	The space required to meet the recovery window for database %db_unique_name% is %value%% of the reserved space for the database.

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

User Action

Not applicable.

Replication Data Rate (GB/s)

This metric provides the rate at which data is being replicated for this protected database.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

User Action

Not applicable.

Replication Queued Data (GB)

This metric provides the amount of data (GB) that is in the queue to be replicated for this protected database.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

User Action

Not applicable.

Reserved Space (GB)

This metric provides the minimum amount of disk space (GB) that will be reserved on the Recovery Appliance for this protected database.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

User Action

Not applicable.

Storage Location

This metric provides the name of the Recovery Appliance storage location used by this protected database.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

User Action

Not applicable.

Unprotected Data Window (sec)

This metric provides the current actual amount of potential data loss for this protected database.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

User Action

Not applicable.

Unprotected Data Window Threshold (sec)

This metric provides the maximum amount of acceptable potential data loss exposure specified in the protected policy used by this protected database.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

User Action

Not applicable.

Used Space (GB)

This metric provides the amount of disk space currently used for this protected database in the Recovery Appliance.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE, RA_DISK_RESTORE_RANGE and other views in the Recovery Appliance database.

Queued Data

These metrics provide an overview of the amount of data and number of tasks queued on the Recovery Appliance for backup, copy-to-tape, and replication operations.

Backup Tasks Queued Since Last Collection

This metric provides the number of backup tasks queued on the Recovery Appliance since the last collection of this metric.

Target Version	Collection Frequency
All Versions	Every Hour

Data Source

RA_SBT_TASK and RA_TASK views in the Recovery Appliance database.

User Action

Not applicable.

Copy-to-Tape Tasks Queued Since Last Collection

This metric provides the number of copy-to-tape tasks queued on the Recovery Appliance since the last collection of this metric.

Target Version	Collection Frequency
All Versions	Every Hour

Data Source

RA_SBT_TASK and RA_TASK views in the Recovery Appliance database.

User Action

Not applicable.

Replication Tasks Queued Since Last Collection

This metric provides the number of replication tasks queued on the Recovery Appliance since the last collection of this metric.

Target Version	Collection Frequency
All Versions	Every Hour

Data Source

RA_SBT_TASK and RA_TASK views in the Recovery Appliance database.

User Action

Not applicable.

Total Backup Tasks Queued

This metric provides the total number of backup tasks queued on the Recovery Appliance.

Target Version	Collection Frequency
All Versions	Every Hour

Data Source

RA_SBT_TASK and RA_TASK views in the Recovery Appliance database.

User Action

Not applicable.

Total Copy-to-Tape Data Queued (bytes)

This metric provides the cumulative amount of data in the queued copy-to-tape tasks.

Target Version	Collection Frequency
All Versions	Every Hour

Data Source

RA_SBT_TASK and RA_TASK views in the Recovery Appliance database.

User Action

Not applicable.

Total Copy-to-Tape Tasks Queued

This metric provides the total number of copy-to-tape tasks queued on the Recovery Appliance.

Target Version	Collection Frequency
All Versions	Every Hour

Data Source

RA_SBT_TASK and RA_TASK views in the Recovery Appliance database.

User Action

Not applicable

Total Replication Data Queued (bytes)

This metric provides the cumulative amount of data in the queued replication tasks.

Target Version	Collection Frequency
All Versions	Every Hour

Data Source

RA_SBT_TASK and RA_TASK views in the Recovery Appliance database.

User Action

Not applicable.

Total Replication Tasks Queued

This metric provides the total number of replication tasks queued on the Recovery Appliance.

Target Version	Collection Frequency
All Versions	Every Hour

Data Source

RA_SBT_TASK and RA_TASK views in the Recovery Appliance database.

User Action

Not applicable.

Replication Status

These metrics collect information about the replication servers configured on the Recovery Appliance.

Replication Server Name

This metric provides the name of the replication server, as specified when the replication server was created.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_REPLICATION_SERVER and RA_SBT_LIBRARY views in the Recovery Appliance database

User Action

Not applicable.

Replication Status

This metric provides the tape library status (READY, PAUSE, ERROR, or null).

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_REPLICATION_SERVER and RA_SBT_LIBRARY views in the Recovery Appliance database

User Action

Not applicable.

SBT Library Name

This metric provides the name of the tape library that the replication server is associated with.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_REPLICATION_SERVER and RA_SBT_LIBRARY views in the Recovery Appliance database

User Action

Not applicable.

Response

The metrics in this category show the status of the Recovery Appliance instance.

Status

This metric shows the status of the Recovery Appliance processes.

Valid values:

- 1: Recovery Appliance processes are running
- 0: Recovery Appliance processes are not running

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	0	Recovery Appliance is down. %oraerr%

Data Source

RA_SERVER view in the Recovery Appliance database

User Action

Not applicable.

Storage Locations

These metric collect information about the storage locations configured for this Recovery Appliance.

Incoming Backup Data Rate (GB/s)

This metric provides the rate at which backup data is being ingested, aggregated across all databases using this storage location.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE and RA_STORAGE_LOCATION views in the Recovery Appliance database.

User Action

Not applicable.

Key

This metric provides the primary key for this storage location in the Recovery Appliance metadata.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE and RA_STORAGE_LOCATION views in the Recovery Appliance database.

User Action

Not applicable.

Name

This metric provides the Recovery Appliance storage location name.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE and RA_STORAGE_LOCATION views in the Recovery Appliance database.

User Action

Not applicable

Number of Storage Locations

This metric provides the total number of storage locations for this Recovery Appliance.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE and RA_STORAGE_LOCATION views in the Recovery Appliance database.

User Action

Not applicable.

Recovery Window Space (GB)

This metric provides the estimated space that is needed to meet the recovery window goal for all databases using this storage location.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE and RA_STORAGE_LOCATION views in the Recovery Appliance database.

User Action

Not applicable.

Recovery Window Space as a Percentage of Reserved Space

This metric provides the ratio between the total space required to meet the recovery window for all databases using this storage location and the total reserved space for all databases using the storage location.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	Not Defined	Not Defined	The total space required to meet the recovery window for all databases using storage location %sl_name% is %value%% of the total reserved space for all databases using the storage location.

Data Source

RA_DATABASE and RA_STORAGE_LOCATION views in the Recovery Appliance database.

User Action

Not applicable.

Recovery Window Space as a Percentage of Storage Location Size

This metric provides the ratio between the total space required to meet the recovery window for all databases using storage location and the size of the storage location.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 15 Minutes	85	97	The total space required to meet the recovery window for all databases using storage location %sl_name% is %value%% of the size of the storage location.

Data Source

RA_DATABASE and RA_STORAGE_LOCATION views in the Recovery Appliance database.

User Action

Not applicable.

Reserved Space (GB)

This metric provides the amount of disk space reserved for all databases using this storage location.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE and RA_STORAGE_LOCATION views in the Recovery Appliance database.

User Action

Not applicable.

Size (GB)

This metric provides the maximum amount of storage (in GB) that the Recovery Appliance storage location can use for the backup data.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE and RA_STORAGE_LOCATION views in the Recovery Appliance database.

User Action

Not applicable.

Unreserved Space (GB)

This metric provides the difference between the maximum amount of storage that the storage location can use for backup data and the amount of disk space reserved for all databases using this storage location.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE and RA_STORAGE_LOCATION views in the Recovery Appliance database.

User Action

Not applicable.

Unused Space (GB)

This metric provides the amount of unused space in this storage.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE and RA_STORAGE_LOCATION views in the Recovery Appliance database.

User Action

Not applicable.

Used Space (GB)

This metric provides the total amount of disk space used in this storage location.

Target Version	Collection Frequency
All Versions	Every 15 Minutes

Data Source

RA_DATABASE and RA_STORAGE_LOCATION views in the Recovery Appliance database.

User Action

Not applicable.

3
CISCO Switch Metrics

This chapter provides information about the CISCO Switch metrics.
For each metric, it provides the following information:

- Description
- Metric table

  The metric table can include some or all of the following: target version, default collection frequency, default warning threshold, default critical threshold, and alert text.

The Cisco Switch plug-in enables Enterprise Manager Cloud Control to monitor Cisco Switch targets. This plug-in is used to monitor the Cisco switch's CPU, memory, temperature, network interfaces, system information, fan, and power supply metrics. Each Cisco switch will have a plug-in instance added to its agent.

CPU

This metric category contains the CPU usage metrics.

CPU Usage in the Last 5 Minutes (%)

This metric displays the average CPU usage over the last 5 minutes, in percent.

The following table shows how often the metric's value is collected and compared against the default thresholds.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 5 Minutes	20	40	-

Data Source

The data is collected using simple network management protocol (SNMP).

User Action

No user action is required.

CPU Usage in the Last 1 Minute (%)

This metric shows the average CPU usage over the last minute, in percent.

The following table shows how often the metric's value is collected and compared against the default thresholds.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 1 Minute	20	40	-

Data Source

The data is collected using SNMP.

User Action

No user action is required.

CPU Usage in the Last 5 Seconds (%)

This metric shows the CPU usage at last metric collection, in percent.

The following table shows how often the metric's value is collected and compared against the default thresholds.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 5 Minutes	20	40	-

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Fan

This metric category contains the fan metrics.

Fan State

This metric shows the status indicator for the switch fan. 1 indicates Normal, 2 Warning, 3 Critical, 4 Shutdown, 5 Not Present, and 6 Not Functioning.

The following table shows how often the metric's value is collected and compared against the default thresholds.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 5 Minutes	20	3	State of the fan %KeyValue% is either warning or critical. Current state code is %fanState%. (state code values are mapped as 1=normal,2=warning,3=critical,4=shutdown,5=notPresent,6=notFunctioning)

Data Source

The data is collected using SNMP push.

User Action

No user action is required.

Memory

This metric category contains the memory metrics.

Memory Pool Usage (%)

This metric shows the amount of the switch's memory in use, in percent.

The following table shows how often the metric's value is collected and compared against the default thresholds.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 5 Minutes	Not Defined	Not Defined	-

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Network Interfaces

This metric category contains the network interface metrics.

Admin Status

This metric shows the Admin status for the switch.

The following table shows how often the metric's value is collected and compared against the default thresholds.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 5 Minutes	Not Defined	Not Defined	Network Interface %Name% (%Alias%) AdminStatus is %AdminStatus%.

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Incoming Discards(%)

This metric shows the inbound packets discarded, in percent. The following table shows how often the metric's value is collected and compared against the default thresholds.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 5 Minutes	1	3	Percentage of Inbound Packets discarded at Network Interface %Name% are %PercentDiscardsIn% %%. It has crossed warning (%warning_threshold%%%) or critical (%critical_threshold%%%) threshold.

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Incoming Errors(%)

This metric shows the inbound packet errors, in percent.

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

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 5 Minutes	1	3	Percentage of Inbound Packet Errors at Network Interface %Name% are %PercentErrorsIn%%%. It has crossed warning (%warning_threshold%%%) or critical (%critical_threshold%%%) threshold.

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Incoming Traffic(%)

This metric shows the incoming bandwidth in use, in percent.

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

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 5 Minutes	80	90	Network Interface %Name% has used %PercentBandwidthUsedIncoming%%% of its bandwidth. It has crossed warning (%warning_threshold%%%) or critical (%critical_threshold%%%) threshold.

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Incoming Traffic (Kb/s)

This metric shows the incoming traffic, measured in Kb/s.

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

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 5 Minutes	Not Defined	Not Defined	Incoming Traffic rate for network interface %Name% is %NetworkRecdRate%Kilobits/sec. It has crossed warning (%warning_threshold%%%) or critical (%critical_threshold%%%) threshold.

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Interface Status

This metric shows the status of switch interface.

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

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 5 Minutes	Not Defined	Failed	Network Interface %Name% (%Alias%) AdminStatus is %AdminStatus%.

Data Source

The data is collected using SNMP.

User Action

No user action is required.

OperStatus

This metric shows the OperStatus of switch.

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

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 5 Minutes	Not Defined	Not Defined	Network Interface %Name% (%Alias%) OperStatus is %OperStatus%.

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Outgoing Discards(%)

This metric shows the outbound packets discarded, in percent.

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

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 5 Minutes	1	3	Percentage of Outbound Packets discarded at Network Interface %Name% are %PercentDiscardsOut%%%. It has crossed warning (%warning_threshold%%%) or critical (%critical_threshold%%%) threshold.

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Outgoing Errors(%)

This metric shows the outbound packet errors, in percent.

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

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 5 Minutes	1	3	Percentage of Outbound Packet Errors at Network Interface %Name% are %PercentErrorsOut%%%. It has crossed warning (%warning_threshold%%%) or critical (%critical_threshold%%%) threshold.

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Outgoing Traffic(%)

This metric shows the outbound bandwidth in use, in percent.

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

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 5 Minutes	Not Defined	Not Defined	Network Interface %Name% (%Alias%) AdminStatus is %AdminStatus%.

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Outgoing Traffic(Kb/s)

This metric shows the outbound traffic, measured in Kb/s.

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

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 5 Minutes	Not Defined	Not Defined	Outgoing Traffic rate for network interface %Name% is %NetworkSentRate%Kilobits/sec It has crossed warning (%warning_threshold%%%) or critical (%critical_threshold%%%) threshold.

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Power Supply

This metric category contains the power supply metrics.

Power Supply State

This metric shows the status indicator for switch's power supply. 1 indicates Good, 2 indicates Bad, 3 indicates Down.

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

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 5 Minutes	Not Defined	3	State of the power supply %KeyValue% is either warning or critical. Current state code is %powerSupplyState%. (state code values are mapped as 1=normal,2=warning,3=critical,4=shutdown,5=notPresent,6=notFunctioning).

Data Source

The data is collected using SNMP push.

User Action

No user action is required.

TCP Ping, Milliseconds

This is the switch ping time, measured in ms.

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 is collected using SNMP push.

User Action

No user action is required.

System Information

This section contains the system information metrics.

Contact

This metric shows the contact person for the switch and method of contacting them.

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 is collected using SNMP.

User Action

No user action is required.

Host Name

This metric shows the host name of the switch.

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 is collected using SNMP.

User Action

No user action is required.

Location

This metric shows the physical location of the switch.

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 is collected using SNMP.

User Action

No user action is required.

Up Since (Days)

This metric shows the number of days since switch has been down.

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 is collected using SNMP.

User Action

No user action is required.

Temperature

This metric category contains the temperature metrics.

Temperature, State

This metric shows the switch's temperature status.

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

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 5 Minutes	warning	critical	State of the Temperature for %KeyValue% is either warning or critical. Current state is %TemperatureState% (state code values are mapped as 1=normal,2=warning,3=critical,4=shutdown,5=notPresent,6=notFunctioning) and the current temperature status value is %TemperatureStatusValue% Celsius.

Data Source

The data is collected using both SNMP poll and push.

User Action

No user action is required.

Temperature, Value (Celsius)

This metric shows the temperature of the switch in degrees celsius.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 5 Minutes	56	66	-

Data Source

The data is collected using both SNMP poll and push.

User Action

No user action is required.

4
KVM Target Metrics

This chapter provides information about the KVM Target metrics.
For each metric, it provides the following information:

- Description
- Metric table

  The metric table can include some or all of the following: target version, default collection frequency, default warning threshold, default critical threshold, and alert text.

KVM Target metrics are used to monitor keyboard, video or visual display unit, and mouse (KVM) targets The Avocent MergePoint Unity Switch plug-in enables Enterprise Manager Cloud Control to monitor KVM targets. The plug-in provides the status of the KVM and event occurrences, such as Factory Defaults Set, Fan Failure, Aggregated Target Device Status, Power Supply Failure, Power Supply Restored, Reboot Started, and Temperature Out of Range on the KVM target.

Aggregated Target Device Status Changed

The metrics in this metric category provide details of the aggregated target device status changed metrics.

Aggregated Target Device Status

This metric provides the aggregated target device status. A status 0 indicates that the aggregate server status has changed.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 5 Minutes	0	Not Defined	Aggregate server status changed and its encoded value is %aggregatedTargetDeviceStatusChangedObject% .

Data Source

The data for this metric is collected through SNMP push.

User Action

No user action is required.

Aggregated Target Device Status Changed Object

This metric provides the encoded value of the aggregate server status upon change.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

The data for this metric is collected through SNMP push.

User Action

No user action is required.

Factory Defaults Set

The metrics in this metric category provide details of the factory defaults set metrics.

Factory Defaults Set Status

This metric provides the factory defaults set status. A status 0 indicates that the KVM was commanded to set itself to factory defaults.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 5 Minutes	0	Not Defined	The appliance was commanded to set itself to factory.

Data Source

The data for this metric is collected through SNMP push (traps).

User Action

No user action is required.

Fan Failure

The metrics in this metric category provide details of the fan failure metrics.

Fan Failure Status

This metric provides the fan failure status. A status 0 indicates that the KVM's fan has failed.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 5 Minutes	Not Defined	0	Fan failure has been detected.

Data Source

The data for this metric is collected through SNMP push.

User Action

No user action is required.

Ping Status

The metrics in this category provide details about the ping status metrics.

Status

This metric reports the status of the KVM target.

Target Version	Collection Frequency
All Versions	Every 30 Minutes

Data Source

The data for this metric is collected using OS line token fetchlet by running the agent provided script osresp.pl.

User Action

No user action is required.

TCP Ping, Milliseconds

This metric reports the KVM target's response to a ping time, in ms.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 5 Minutes	400	1000	KVM target's response to a TCP ping is %value% msecs

Data Source

The data for this metric is collected using OS line token fetchlet by running the agent provided script osresp.pl.

User Action

No user action is required.

Power Supply

The metrics in this metric category provide details of the power supply metrics.

Power Supply Status

This metric provides the power supply status. A status 0 indicates that the KVM's power supply has failed.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 5 Minutes	0	Not Defined	Power Supply %keyValue% has failed.

Data Source

The data for this metric is collected through SNMP push.

User Action

No user action is required.

Reboot Started

This metric category contains the reboot started metrics.

Reboot Started Status

This metric provides the status of the reboot. A status 0 indicates that the KVM is rebooting.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 5 Minutes	0	Not Defined	The appliance is rebooting. Command issued by user %userName% .

Data Source

The data for this metric is collected using OS line token fetchlet by running the agent provided script osresp.pl.

User Action

No user action is required.

User Name

This metric provides the name of the user that ordered the KVM to reboot.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

The data for this metric is collected using OS line token fetchlet by running the agent provided script `osresp.pl`.

User Action

No user action is required.

Response

This metric category contains the response metrics.

Status

This metric indicates whether OMS on the KVM is running. 1 indicates Up, and 0 indicates Down.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 5 Minutes	Not Defined	0	%target% is down

Data Source

The data for this metric is collected using OS line token fetchlet by running the agent provided script osresp.pl.

User Action

No user action is required.

TCP Ping, Milliseconds

This metric reports the KVM ping time, in ms.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

The data for this metric is collected using OS line token fetchlet by running the agent provided script osresp.pl.

User Action

No user action is required.

Temperature Range

This metric category contains the metric that provides details on the temperature range metrics.

Temperature Out Of Range Status

This metric reports whether or not the temperature is out of range. A status 0 indicates that the KVM's temperature is outside operating range.

Target Version	Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All versions	Every 5 Minutes	Not Defined	0	Temperature is outside operating range.

Data Source

The data for this metric is collected through SNMP push.

User Action

No user action is required.

5

Integrated Lights Out Manager Metrics

This chapter provides information about the Integrated Lights Out Manager (ILOM) metrics. For each metric, it provides the following information:

- Description
- Metric table

  The metric table can include some or all of the following: target version, default collection frequency, default warning threshold, default critical threshold, and alert text.

The Oracle ILOM plug-in monitors the Oracle ILOM service processor in a compute node for hardware events and records sensor data to the Oracle Enterprise Manager Repository.

The ILOM plug-in is deployed to the Oracle Management Agent on the first compute node in an Oracle Database system, and only that Management Agent communicates with the Oracle Management Server and Repository for all ILOM database server service processors in the Oracle Database system.

Component Fault

This metric category describes component failure alerts.

Fault Status

This metric provides the component failure status.

The following table shows how often the metric's value is collected and compared against the default thresholds.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 5 Minutes	Not Defined	CRITICAL	Component %ComponentName% has a fault.

Fan Fault

This metric category describes fan failure alerts.

Fault Status

This metric provides the fan failure status.

The following table shows how often the metric's value is collected and compared against the default thresholds.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 5 Minutes	Not Defined	CRITICAL	The fan %FanName% has a fault.

Fan Sensors

This metric category describes the fan sensor metrics.

Sensor Speed (RPM)

This is the speed of the ILOM fan, in revolutions per minute (RPM).

The following table shows how often the metric's value is collected and compared against the default thresholds.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 5 Minutes	Not Defined	-1	Fan %SensorName% encountered a fault: %SensorSpeed% (-1: Predictive Failure, -2: Fan Missing/Removed, -3: Fan Not Readable/Not Present, -4: General Fault, -5: Not Spinning/ Obstructed).

Data Source

The data for this metric is collected using the operating system (OS) line token fetchlet by running the `FanSensorStatus.pl`script.

User Action

No user action is required.

Sensor State

This metric reports the status of the ILOM fan.

The following table shows how often the metric's value is collected and compared against the default thresholds.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 5 Minutes	FAULT_DIAGNOSED|FAULT_SUSPECTED|WARNING	CRITICAL|ERROR|FAILED|FAULTED|NOT_PRESENT|NON_RECOVERABLE|PREDICTIVE_FAILURE_ASSERTED|LOWER_CRITICAL|UPPER_CRITICAL|LOWER_NON_RECOVERABLE|UPPER_NON_RECOVERABLE	Fan %SensorName% rotating at %SensorSpeed%(rpm) encountered a fault: %SensorState%

Data Source

The data for this metric is collected using the OS line token fetchlet by running the `FanSensorStatus.pl`script.

User Action

No user action is required.

Hard Disk Status

The metrics in this category provide information about the hard disk status.

Fault Status (0 - cleared, 1 - critical)

This metric reports the status of the hard disk. 0 indicates Cleared, 1 indicates Critical.

The following table shows how often the metric's value is collected and compared against the default thresholds.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 5 Minutes	Not Defined	1	The hard disk %HardDiskName% has a fault. Fault code is %FaultCode%.

Data Source

The data for this metric is collected using the OS line token fetchlet by running the `NodeStatusCheck.pl - ping` script.

User Action

No user action is required.

HCA Port State (For Alerts)

The metrics in this category describe the host channel adapters (HCA) port state .

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
12*c*	Every 5 Minutes	Not Defined	1	Port %PortNumber% (%ca_disp_name%) is disabled.

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
12*c*	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.

ILOM Temperatures

This metric category contains the ILOM temperatures metrics.

Inlet Ambient Temperature

This metric shows the inlet ambient temperature for the ILOM target in degrees Celsius.

The following table shows how often the metric's value is collected and compared against the default thresholds.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 5 Minutes	Not Defined	Not Defined	Current Inlet temperature for ILOM %target% is %value% degree Celcius.

Outlet Ambient Temperature

This metric shows the outlet ambient temperature for the ILOM target in degrees Celsius.

The following table shows how often the metric's value is collected and compared against the default thresholds.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 5 Minutes	Not Defined	Not Defined	Current Outlet temperature for ILOM %target% is %value% degree Celcius.

System Ambient Temperature

This metric shows the system ambient temperature for the ILOM target in degrees Celsius.

The following table shows how often the metric's value is collected and compared against the default thresholds.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 5 Minutes	Not Defined	Not Defined	Current System temperature for ILOM %target% is %value% degree Celcius.

Memory Fault

This metric category contains the memory failure alert metric.

Fault Status

This metric provides the memory failure status.

The following table shows how often the metric's value is collected and compared against the default thresholds.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 5 Minutes	Not Defined	CRITICAL	Memory %MemoryName% has a fault.

Processor Fault

This metric category contains the CPU failure alert metric.

Fault Status

This metric provides the CPU failure status.

The following table shows how often the metric's value is collected and compared against the default thresholds.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 5 Minutes	Not Defined	CRITICAL	The processor %ProcessorName% has a fault.

Sensor Alerts

This metric category contains the sensor alert metrics.

Current Sensor Description

This metric provides a description of the current sensor status.

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

Target Version	Collection Frequency
12*c*	Every 5 Minutes

Data Source

The data for this metric is collected using the OS line token fetchlet by running the `GetSensorAlerts` script .

User Action

No user action is required.

Current Sensor Status

This metric shows the current status of the ILOM sensor.

The following table shows how often the metric's value is collected and compared against the default thresholds.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 5 Minutes	WARNING - *	CRITICAL - *	Current sensor(s) at level - %CurrentStatusDesc%.

Data Source

The data for this metric is collected using the OS line token fetchlet by running the `GetSensorAlerts` script.

User Action

No user action is required.

Fan Sensor Status

This metric shows the status of the sensor for the ILOM fan.

The following table shows how often the metric's value is collected and compared against the default thresholds.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 5 Minutes	WARNING - *	CRITICAL - *	Fan sensor(s) at level - %FanStatusDesc%.

Data Source

The data for this metric is collected using the OS line token fetchlet by running the `GetSensorAlerts` script.

User Action

No user action is required.

Fan Sensor Status Description

This metric shows the description of the fan sensor status.

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

Target Version	Collection Frequency
12*c*	Every 5 Minutes

Data Source

The data for this metric is collected using the OS line token fetchlet by running the `GetSensorAlerts` script.

User Action

No user action is required.

Power Supply Sensor Description

This metric shows the description of the power supply sensor status.

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

Target Version	Collection Frequency
12*c*	Every 5 Minutes

Data Source

The data for this metric is collected using the OS line token fetchlet by running the `GetSensorAlerts` script.

User Action

No user action is required.

Power Supply Sensor Status

This metric shows the status of the sensor for the ILOM power supply.

The following table shows how often the metric's value is collected and compared against the default thresholds.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 5 Minutes	WARNING - *	CRITICAL - *	Power supply sensor(s) at level - %PowerSupplyStatusDesc%.

Data Source

The data for this metric is collected using the OS line token fetchlet by running the `GetSensorAlerts` script.

User Action

No user action is required.

Temperature Sensor Description

This metric shows the description of the temperature sensor status.

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

Target Version	Collection Frequency
12*c*	Every 5 Minutes

Data Source

The data for this metric is collected using the OS line token fetchlet by running the `GetSensorAlerts` script.

User Action

No user action is required.

Temperature Sensor Status

This metric shows the status of the sensor for the ILOM temperature.

The following table shows how often the metric's value is collected and compared against the default thresholds.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 5 Minutes	WARNING - *	CRITICAL - *	Temperature sensor(s) at level - %TemperatureStatusDesc%.

Data Source

The data for this metric is collected using the OS line token fetchlet by running the `GetSensorAlerts` script.

User Action

No user action is required.

Voltage Sensor Description

This metric provides a description of the voltage sensor status.

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

Target Version	Collection Frequency
12*c*	Every 5 Minutes

Data Source

The data for this metric is collected using the OS line token fetchlet by running the `GetSensorAlerts` script.

User Action

No user action is required.

Voltage Sensor Status

This metric shows the status of the sensor for ILOM voltage.

The following table shows how often the metric's value is collected and compared against the default thresholds.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 5 Minutes	WARNING - *	CRITICAL - *	Voltage sensor(s) at level - %VoltageStatusDesc%.

Data Source

The data for this metric is collected using the OS line token fetchlet by running the `GetSensorAlerts` script.

User Action

No user action is required.

Service Processor Information

This metric category contains the service processor information metrics.

Check Physical Presence

This metric provides a flag that indicates whether a user must press the **Locator** button on the physical system to recover the ILOM administrator password.

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

Target Version	Collection Frequency
12*c*	Every 5 Minutes

Data Source

The data for this metric is collected using the OS line token fetchlet by running the `GetSpInformation` script.

User Action

No user action is required.

Host Name

This metric provides an ILOM host name as a method of network identification.

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

Target Version	Collection Frequency
12*c*	Every 5 Minutes

Data Source

The data for this metric is collected using the OS line token fetchlet by running the `GetSpInformation` script.

User Action

No user action is required.

Reset to Defaults

This metric provides a flag that indicates whether the system has been told to reset to defaults.

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

Target Version	Collection Frequency
12*c*	Every 5 Minutes

Data Source

The data for this metric is collected using the OS line token fetchlet by running the `GetSpInformation` script.

User Action

No user action is required.

System Contact

This metric provides a contact person and method of contact for the ILOM.

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

Target Version	Collection Frequency
12*c*	Every 5 Minutes

Data Source

The data for this metric is collected using the OS line token fetchlet by running the `GetSpInformation` script.

User Action

No user action is required.

System Description

This metric provides a description of this ILOM.

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

Target Version	Collection Frequency
12*c*	Every 5 Minutes

Data Source

The data for this metric is collected using the OS line token fetchlet by running the `GetSpInformation` script.

User Action

No user action is required.

System Identifier

This metric provides an ILOM system identifier property, which helps identify the managed device in the payload element of an SNMP trap.

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

Target Version	Collection Frequency
12*c*	Every 5 Minutes

Data Source

The data for this metric is collected using the OS line token fetchlet by running the `GetSpInformation` script.

User Action

No user action is required.

System Location

This metric shows the physical location of the ILOM.

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

Target Version	Collection Frequency
12*c*	Every 5 Minutes

Data Source

The data for this metric is collected using the OS line token fetchlet by running the `GetSpInformation` script.

User Action

No user action is required.

Temperature Sensors

This metric category contains the temperature sensor metrics.

Sensor Reading (degree C)

This metric shows the ILOM temperature, in degrees Celsius.

The following table shows how often the metric's value is collected and compared against the default thresholds.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 4 Minutes	Not Defined	Not Defined	The temperature sensor %SensorName% operating at %SensorReading%(degree C) has exceeded its threshold.

Data Source

The data for this metric is collected using the OS line token fetchlet by running the `TempSensorStatus.pl` script.

User Action

No user action is required.

Sensor State

This metric shows the status of the ILOM temperature.

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

Target Version	Collection Frequency
12*c*	Every 4 Minutes

Data Source

The data for this metric is collected using the OS line token fetchlet by running the `TempSensorStatus.pl` script.

User Action

No user action is required.

Voltage Sensors

This metric category contains the voltage sensor metrics.

Sensor Reading (Volts)

This metric reports the ILOM voltage reading, in volts.

The following table shows how often the metric's value is collected and compared against the default thresholds.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
12*c*	Every 4 Minutes	Not Defined	Not Defined	The voltage sensor %SensorName% operating at %SensorReading%(Volts) has exceeded its threshold.

Data Source

The data for this metric is collected using the OS line token fetchlet by running the `VoltSensorStatus.pl` script.

User Action

No user action is required.

Sensor State

This metric shows the status of the ILOM voltage.

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

Target Version	Collection Frequency
12*c*	Every 5 Minutes

Data Source

The data for this metric is collected using the OS line token fetchlet by running the `VoltSensorStatus.pl` script.

User Action

No user action is required.

6
Infiniband Network

This chapter provides information about the Infiniband Network metrics.
For each metric, it provides the following information:

- Description
- Metric table

  The metric table can include some or all of the following: target version, default collection frequency, default warning threshold, default critical threshold, and alert text.

These metrics provide details on the throughput performance of each link (port-to-port connection) in the network, an aggregation of performance for Switch-to-Node and Switch-to-Switch link types, and total throughput performance of the network.

Link Type Performance

The metrics in this metric category describe the performance for Switch-to-Node and Switch-to-Switch link types.

Average Throughput

This metric reports the average throughput for all the links of this type (Kbps).

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

The data source is the perfquery command and the iblinkinfo.pl file.

User Action

No user action is required.

Highest Throughput

This metric reports the highest throughput amongst all the links of this type (Kbps).

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

The data source is the perfquery command and the niblinkinfo.pl file.

User Action

No user action is required.

Link Type

This metric reports the link type, either switch-to-switch or switch-to-node.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

The data source is the perfquery command and the iblinkinfo.pl file.

User Action

No user action is required.

Lowest Throughput

This metric reports the lowest throughput amongst all of the links of this type (Kbps).

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

The data source is the perfquery command and the iblinkinfo.pl file.

User Action

No user action is required.

Network Performance

This metric category contains the total throughput performance of the network.

Total Throughput (KBPS)

This metric reports the sum of all the bytes transmitted by each node in the last collection interval, divided by the duration of the last collection interval.

Target Version	Collection Frequency
All Versions	Every 24 Hours

Data Source

The data source is the perfquery command and the iblinkinfo.pl file.

User Action

No user action is required.

7
Infiniband Switch

This chapter provides information about the Infiniband Switch metrics.
For each metric, it provides the following information:

- Description
- Metric table

  The metric table can include some or all of the following: target version, default collection frequency, default warning threshold, default critical threshold, and alert text.

These metrics describe the performance of each port of the switch and the aggregation of performance for Switch-to-Node and Switch-to-Switch link types. They also define whether a switch is a subnet manager for the network or not. Switch statistics are also covered.

Aggregate Sensors

This metric category is not initiated by the agent. The IB switch pushes information to the agent through SNMP trap mechanism. It works only when the agent subscribes for SNMP traps.

> **Note:**
>
> This metric is used only for generating alerts. No data is uploaded to repository. The All Metrics page will not show any data for this metric.

Alarm Status

This metric reports whether the severity is set or cleared (Major/Cleared).

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	major	The aggregate sensor %keyValue% has a fault.

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Sensor Value

This metric reports whether the aggregate sensor is de-asserted (1) or aggregate sensor state is asserted (2).

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Fan Speed Sensors

Similar to Aggregate sensors, this metric category contains SNMP trap based metrics.

Alarm Status

This metric reports the alarm status. These values (Critical/Major/Warning) indicate fan speed has exceeded fatal, critical, and non-critical thresholds, respectively. The first two states are shown as Critical alert in Enterprise Manager and the last state is shown as Warning.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	warning|FAULT_DIAGNOSED|FAULT_SUSPECTED|WARNING	critical|major|CRITICAL|ERROR|FAILED|FAULTED|NOT_PRESENT|NON_RECOVERABLE|PREDICTIVE_FAILURE_ASSERTED|LOWER_CRITICAL|UPPER_CRITICAL|LOWER_NON_RECOVERABLE|UPPER_NON_RECOVERABLE	The speed of fan %keyValue% has exceeded its threshold.

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Fan Speed (revolutions per minute)

This metric reports the speed of the fan in revolutions per minute.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Fan Speed Sensor Alerts

Similar to Fan Speed Sensors, this metric category contains SNMP trap based metrics.

Alarm Status

This metric reports the alarm status. These values (Critical/Major/Warning) indicate that fan speed has exceeded fatal, critical, and non-critical thresholds, respectively. The first two states are shown as a Critical alert in Enterprise Manager and the last state is shown as Warning.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	warning| WARNING	critical| major| CRITICAL| ERROR| FAILED	The speed of fan %keyValue% has exceeded its threshold.

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Fan Speed (revolutions per minute)

This metric reports the speed of the fan in revolutions per minute.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

The data is collected using SNMP.

User Action

No user action is required.

FRU Removal Alerts

This metric category provides information about field replaceable unit (FRU) removal alerts.

FRU Status

This metric displays an alert that is sent for all FRU removals.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	The FRU %keyValue% has been removed from the system.

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Response

The metric in this category is used to detect whether the management server on the cell is running.

Response Status

This metric is checked at 1 minute intervals. A one in the status column indicates that the cell is up, otherwise the cell is down.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 1 Minute	Not Defined	0	Failed to connect to Infiniband switch %target%.

Data Source

Not available.

User Action

No user action is required.

Switch Gateway Port State

This metric category provides information about the gateway metrics for gateway ports of an Infiniband switch.

10 Gb/s Ethernet Port

This metric displays the 10 Gb/s Ethernet port number.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

State

This metric displays the state of the gateway.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Received Bytes

This metric displays the number of bytes received by the gateway

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Received Packets

This metric displays the number of packets received by the gateway.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Received Jumbo Packets

This metric displays the number of jumbo packets received by the gateway.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Received Unicast Packets

This metric displays the number of unicast packets received by the gateway.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Received Broadcast Packets

This metric displays the number of broadcast packets received by the gateway.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Received Buffers

This metric displays the number of buffers received by the gateway.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Received CRC Errors

This metric displays the number of Cyclic Redundancy Check (CRC) errors received by the gateway.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Received Runtime Errors

This metric displays the number of runtime errors received by the gateway.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Received Total Errors

This metric displays the total number of errors received by the gateway.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Transmitted Bytes

This metric displays the number of bytes transmitted by the gateway.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Transmitted Packets

This metric displays the number of packets transmitted by the gateway.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Transmitted Jumbo Packets

This metric displays the number of jumbo packets transmitted by the gateway.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Transmitted Unicast Packets

This metric displays the number of unicast packets transmitted by the gateway.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Transmitted Multicast Packets

This metric displays the number of multicast packets transmitted by the gateway.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Transmitted Broadcast Packets

This metric displays the number of broadcast packets transmitted by the gateway.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Transmitted Total Errors

This metric displays the total number of errors transmitted by the gateway.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Switch Performance Summary

This metric category provides overall performance of the ibswitch across all ports.

Average link throughput (KBPS)

This metric reports the average number of bytes received and transmitted per second across all ports in the ibswitch (KBPS).

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Highest link throughput (KBPS)

This metric reports the maximum number of bytes received and transmitted per second across all ports in ibswitch (KBPS).

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Lowest link throughput (KBPS)

This metric reports the minimum number of bytes received and transmitted per second across all ports in ibswitch (KBPS).

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Switch Port Configuration Monitor

This metric category is mainly used for monitoring the connectivity of ports and raising alerts when there is a disconnection.

GUID on the other end of the link

This metric reports the IB globally unique identifier (GUID). This is not an Enterprise Manager target GUID of the entity to which the port is connected. This can be switch GUID, if the other end is a switch port, or port GUID if it is an HCA port.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Name of the entity to which this port is connected

This metric reports the name of the entity (Switch/Cell/Compute Node) to which this switch port is connected.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Node GUID if the peer is a Switch port, Port GUID otherwise

This metric displays the node GUID if the peer port is a switch port. Otherwise, it displays the port GUID, indicating a HCA port.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Port number of the peer port

This metric reports the port number of the peer port.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Type of entity to which this disconnected port was connected

If this port is currently disconnected, then this field provides the type of the entity from which disconnection happened. It can take four possible values (Switch/Cell/Node/None). When the port is in connected state then the value for this metric is None.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	node|cell|switch	Port %PortNumber% on %target% is disconnected from port %ConnectedToPortNumberPrev% on %ConnectedToNamePrev%.

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Type of the entity to which this port is connected

This metric can take any of the three values (Switch/Cell/Compute Node) depending on what entity this port is connected to.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Switch Port Errors

The metrics in this metric category provide statistics obtained from perfquery output on the switch. This metric values provide the delta change in error counters since last collection. Alerts are raised only if there are new errors since last metric collection.

Excessive buffer overruns

This metric reports the number of “buffer overruns exceeding the threshold" since last Collection (which is 5 minutes).

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.

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Incoming VL15 packets dropped due to resource limitation

This metric reports the number of incoming VL 15 packets dropped due to lack of buffers since last metric collection.

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.

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Link integrity errors

This metric displays the number of link integrity errors, that is errors on the local link.

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.

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Link recovers

This metric reports the number of times the link error recovery process was completed successfully since last collection.

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.

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Packets not transmitted due to constraints

This metric reports the number of packets not transmitted due to constrains since last collection.

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.

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Received packets discarded due to constraints

This metric reports the number of packets discarded due to constraints since last collection.

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.

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Received packets marked with the EBP delimiter

This metric reports the number of packets marked with the EBP delimiter received on the port.

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.

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Received packets with error

This metric reports the number of packets received with errors since last collection.

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.

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Symbol errors

This metric reports the number of symbols errors detected since last collection.

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.

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Total errors

This metric reports the sum total of all errors mentioned above.

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.

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Switch Port Performance

This metrics category contains performance metrics at the switch port level.

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

This metric reports the number of bytes transmitted and received.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Number of bytes received per sec (KBPS)

This metric reports the number of bytes received per second (KBPS).

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Number of bytes transmitted per sec (KBPS)

This metric reports the number of bytes transmitted per second (KBPS).

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Number of packets received per sec

This metric reports the number of packets received per second.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Number of packets transmitted per sec

This metric reports the number of packets transmitted per second.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Switch Port State

This metrics category contains Switch Port state metrics.

Active link width of port based on cable connectivity

This metric displays the active link width of the port based on the cable connectivity.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Is the link degraded?

This metric reports whether or not the link is degraded. If the active speed of a link is less than the enabled speed, then it is considered to be degraded and this column value is set to 1. It is mainly used for raising alerts.

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

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Link state

This metric reports the link state. The link is down if the physical link state is 0.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Physical link state

This metric reports the physical link state. The physical link state is 0 if the port is in polling or disabled state.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

The data is collected using SNMP.

User Action

No user action is required.

The active link speed (Gbps)

The metric reports the speed of the active link.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Switch Port State (For Alerts)

This metrics category contains Switch Port state metrics (for alerts.

Indicates that cable is present but port is disabled

This metric reports that the cable is present but that the port is disabled. This metric's collection frequency is event-driven.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Event-driven	Not Defined	1	Cable is present on Port %PortNumber% but the port is disabled.

Indicates that cable is present but port is polling for peer port

This metric reports that the cable is present but the port is checking for the peer port. This metric's collection frequency is event-driven.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Event-driven	Not Defined	1	Cable is present on Port %PortNumber% but it is polling for peer port. This could happen when the peer port is unplugged/disabled.

Switch State Summary

This metrics category contains metrics that report the overall state of switch ports.

Number of active ports

This metric reports the total number of active ports.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Number of degraded ports

This metric reports the total number of degraded ports.

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 degraded ports is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Number of ports with errors

This metric reports the number of ports with errors. From 12.1.0.3 Exadata plug-in onwards, degraded ports are counted both in Degraded ports and Error ports categories.

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 ports with errors is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Switch Temperatures

This metrics category contains metrics that report the switch temperature.

Back of switch temperature

This metric reports the rear chassis temperature.

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

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Front of switch temperature

This metric reports the front chassis temperature.

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

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Switch I4 chip temperature

This metric reports the I4 chip temperature.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	Not Defined	Switch I4 chip temperature is %value%, crossed warning (%warning_threshold%) or critical (%critical_threshold%) threshold.

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Switch Service Processor temperature

This metric reports the management controller temperature.

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

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Temperature Sensors

Similar to other SNMP trap based metrics, this metric category contains metrics that are also used only for generating alerts and are not uploaded to the repository.

Alarm Status

This metric reports the alarm status. These values (Critical/Major/Warning) indicate if the temperature has exceeded fatal, critical, and non-critical thresholds, respectively. The first two states are shown as Critical alert in Enterprise Manager and the last state is shown as Warning.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	critical| major| CRITICAL| ERROR| FAILED	The temperature sensor %keyValue% has exceeded its threshold.

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Temperature (degrees Celsius)

This metric reports the temperature of rear chassis/front chassis/I4 chip/Management controller.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Voltage Sensors

This metrics category contains metrics that report the voltage sensor.

Alarm Status

This metric reports the alarm status. These values (Critical/Major/Warning) indicate if the temperature has exceeded fatal, critical, and non-critical thresholds, respectively. The first two states are shown as Critical alert in Enterprise Manager and the last state is shown as Warning.

Target Version	Evaluation and Collection Frequency	Default Warning Threshold	Default Critical Threshold	Alert Text
All Versions	Every 5 Minutes	Not Defined	critical| major| CRITICAL| ERROR| FAILED	The voltage sensor %keyValue% has exceeded its threshold.

Data Source

The data is collected using SNMP.

User Action

No user action is required.

Voltage (mV)

This metric reports the voltage recorded by various voltage sensors on the ibswitch.

Target Version	Collection Frequency
All Versions	Every 5 Minutes

Data Source

The data is collected using SNMP.

User Action

No user action is required.