

Oracle® GoldenGate

Using Oracle GoldenGate Monitor



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Preface

This document provides background information on how to use the Oracle GoldenGate Monitor Server.

Documentation Accessibility

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Related Documents

For more information, see the following documents in the Oracle GoldenGate Monitor documentation set:

- *Administering Oracle GoldenGate Monitor*
- *Installing and Configuring Oracle GoldenGate Monitor*
- *Upgrading to Oracle GoldenGate Monitor*
- *Installing, Configuring, and Upgrading Oracle GoldenGate Monitor Agent*
- *Release Notes for Oracle GoldenGate Monitor*

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

1

Welcome to Oracle GoldenGate Monitor

Oracle GoldenGate Monitor is a real-time, Web-based monitoring console for the Oracle GoldenGate replication solution. Oracle GoldenGate Monitor delivers an at-a-glance, graphical view of all of the Oracle GoldenGate instances and their associated databases within your enterprise.

This chapter includes:

- [Additional Documentation for Oracle GoldenGate Monitor](#)
- [About Oracle GoldenGate Monitor](#)

Additional Documentation for Oracle GoldenGate Monitor

Read the Oracle GoldenGate Monitor Administrator's Guide to learn how to install, configure, and run the Oracle GoldenGate Monitor components.

Read the following documentation to learn about the Oracle GoldenGate replication solution:

- *Administering Oracle GoldenGate Monitor* (Windows and UNIX, and HP NonStop versions)
- Oracle GoldenGate Installation and Setup Guide (one for each supported database)
- *Reference for Oracle GoldenGate for Windows and UNIX* (Windows and UNIX, and HP NonStop versions)

You should familiarize yourself with Oracle GoldenGate before using Oracle GoldenGate Monitor. The Oracle GoldenGate documentation can be downloaded from the Oracle Technology Network Documentation portal at:

<http://docs.oracle.com/en/middleware/goldengate/index.html>

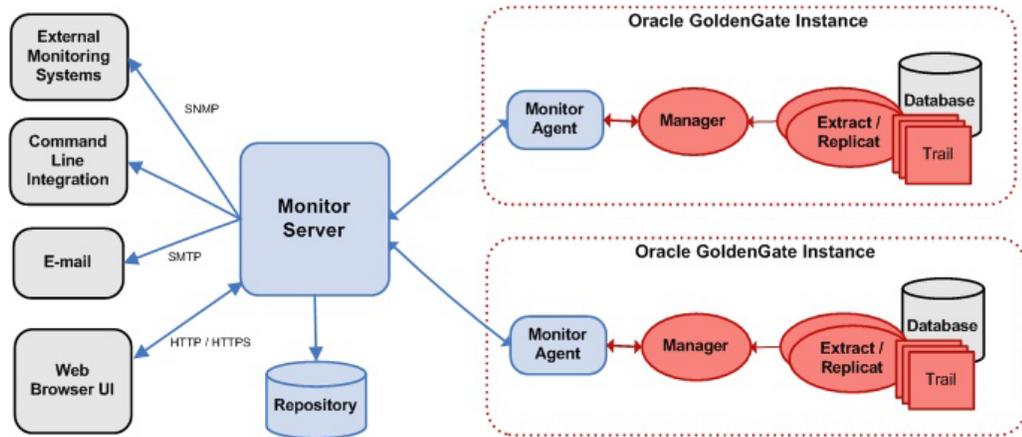
About Oracle GoldenGate Monitor

Oracle GoldenGate Monitor is a multi-tiered client-server application that enables the monitoring of Oracle GoldenGate instances from a remote client. It consists of the following components.

- [Oracle GoldenGate Monitor Agent](#)
- [Oracle GoldenGate Manager](#)
- [Oracle GoldenGate Monitor Server](#)
- [Oracle GoldenGate Monitor Web Client](#)

Oracle GoldenGate Monitor Architecture

The following diagram illustrates the Oracle GoldenGate Monitor architecture:

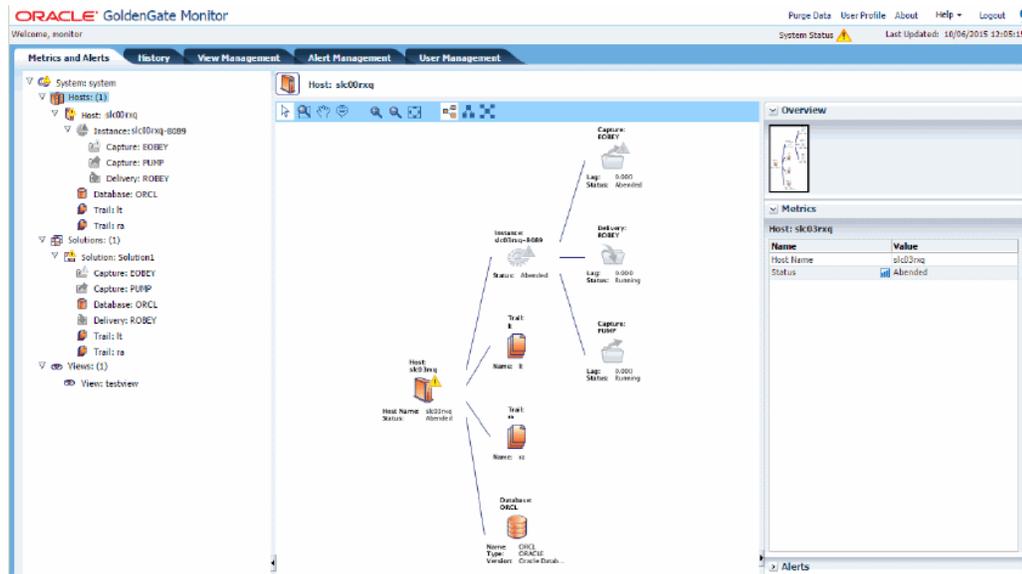


Oracle GoldenGate Manager

The Manager process is the administrative process of an Oracle GoldenGate instance. It controls all of the other Oracle GoldenGate processes in the instance. Part of its role is to generate information about critical monitoring events, which it passes to the agent.

Oracle GoldenGate Monitor Web Client

The Oracle GoldenGate Monitor Client that you are using connects across an intranet or the Internet to the Oracle GoldenGate Monitor Server to receive Oracle GoldenGate information, load any customized views, manage users, and receive and manage alerts.



Oracle GoldenGate Monitor Server

The Oracle GoldenGate Monitor Server is management software that can be deployed anywhere in your enterprise to capture and process the data that is sent by the agents.

Historical data, views, and other persisted information are stored in a database that is associated with the server component.

Oracle GoldenGate Monitor Agent

The Java-based Oracle GoldenGate Monitor Agent monitors the performance profile of processes under the control of its associated Manager, sends Oracle GoldenGate monitoring points and messages to the Oracle GoldenGate Monitor Server, triggers events, and sends notifications to subscribed consumers (such as SNMP programs).

2

Overview of the Oracle GoldenGate Monitor Interface

Learn how to use the Oracle GoldenGate Monitor Interface in detail here. See how you can use the different features, options, tabs, and functional keys for your business needs.

It includes the following subtopics:

- [Utility Bar](#)
- [Status Bar](#)
- [Navigation Tree](#)
- [Diagram View](#)
- [Overview Panel](#)
- [Metrics Panel](#)
- [Alerts Panel](#)
- [Tabs](#)
- [Alert Descriptions](#)
- [About the Objects](#)
- [About the Diagram View](#)
- [About the Metrics](#)
- [About the Status Indicators](#)

Utility Bar

The Utility Bar contains the Oracle logo and, to the right-hand side, links to the following functions:

- **Purge Data:** (Visible only to Administrator, Power Operator, and SuperAdmin users) Enables you to purge old information. See [Purging Historical Data](#).
- **User Profile:** Enables the current (logged on) user to make changes to his or her login information and alert services. See [Managing Your User Profile](#).
- **About:** Provides release and version information about the implementation of Oracle GoldenGate Monitor you are running.
- **Help:** Activates context-sensitive help topics.
- **Logout:** Logs the current user out of the interface and displays the Log-In prompt.

Status Bar

The Status Bar is directly below the Utility Bar. It displays the name of the logged-in user and, to the right-hand side, displays status information for the overall system,

including when the data was last updated. No matter what tab you have active, you will always be able to see any status changes and alerts in the Status Bar.

See [About the Status Indicators](#).

Navigation Tree

Some tabs of the interface contain a Navigation Tree on the left-hand side of the window. The tree displays a hierarchical series of nodes that can be expanded to show Oracle GoldenGate instances and their components, topology views called Solutions, and customized Views.

See [About the Objects](#)

Diagram View

Some tabs of the interface contain a Diagram View that displays the same objects that are shown in the Navigation Tree, but in their logical relationships to one another.

See [About the Diagram View](#).

Overview Panel

The Overview Panel interacts with the Diagram View to help you focus on specific areas of the topology.

Metrics Panel

The Metrics Panel displays the names and values of the attributes that are associated with an Oracle GoldenGate object that is selected in the Navigation Tree or Diagram View. See [About the Metrics](#).



Note:

Key *Summary attributes* are also displayed in the Diagram View, to enable instant evaluation of its state.

The Metrics panel is context-sensitive. For example, when a Capture object is selected, you will see checkpoint information, run status, the name of the group, lag, and other attributes that are related to a Capture group. To interact with the Metrics Panel panel, you can:

- Double-click the header area, or click the embedded arrow, to expand or collapse the panel.
- Sort the metric alphabetically by the Name column.
- Click a chart icon (; present only if valid for the metric) to go to the History tab for that metric and object. See [Working with History Information](#).

Alerts Panel

The Alerts Panel shows all active alerts for the selected object. See [About Alerts](#).

Tabs

A series of tabs comprise the two main functional areas of the interface: the Monitoring Tabs and the Administrative Tabs. These tabs contain some or all of the interface components that are described in this topic.

The Monitoring Tabs

The monitoring tabs are the main areas for monitoring the Oracle GoldenGate instances. These tabs can be viewed by any user, regardless of his or her security role.

See [Overview of the Monitoring Workspace](#).

The Administrative Tabs

The administrative tabs are configuration tabs that perform the following functions:

- Editing user information. See [Managing Users](#) .
- Defining Alerts. See [About Alerts](#).
- Working with Views. See [About Views](#).

These functions require at least a Power Operator security role or higher, depending on the tab. These tabs are not visible to users who do not have the appropriate security role.

See [Understanding User Security Roles](#)

Alert Descriptions

Alert icons indicate that an alert has been triggered. The color indicates the severity of the condition, as specified in the alert definition.

See [Configuring an Alert Definition](#).

Alert Icon	Name
	Warning
	Error

See [About Alerts](#)

About the Objects

This topic explains the objects that appear in the Navigation Tree and Diagram View in the monitoring tabs throughout Oracle GoldenGate Monitor. The objects described here are divided into these two groups:

- [Container Objects](#)
- [Oracle GoldenGate Objects](#)
- [Status Changes](#)
- [Context Menu Actions for These Nodes](#)

Related Topics

[About the Status Indicators](#)

[About Views](#)

Container Objects

Icon	Name	Purpose
	Host	This is the root node for one or more Host sub-nodes. A counter at this node indicates how many Host sub-nodes there are. The Host nodes organize the Oracle GoldenGate components according to the hosts where they are running. Each Host node represents one host (server) within the Oracle GoldenGate enterprise and bears the name of that host. Each Host node contains one or more sub-nodes that represent objects that are part of an Oracle GoldenGate configuration on that host.
	Solutions	This is the root node for one or more Oracle GoldenGate Solution sub-nodes. A counter at this node indicates how many Solution sub-nodes there are. Each solution represents a complete Oracle GoldenGate source-to-target(s) topology and shows all of the Oracle GoldenGate components in that topology, including the source and target databases. If any component of a solution is removed, the solution disappears from the Navigation Tree.
	Views	This is the root node for one or more View nodes. A counter at this node indicates how many View sub-nodes there are. A view is a customized container that can consist of any Oracle GoldenGate object or objects (including databases) that you want to monitor as a unit.
	System	This is the root tree node. It displays the name of this installation of the Oracle GoldenGate Monitor Server component. System contains the following nodes:

Oracle GoldenGate Objects

Within a Host, Solution, or View node in the Navigation Tree, or within a Diagram View, the following Oracle GoldenGate components are monitored. The Oracle GoldenGate objects are discovered automatically when you start Oracle GoldenGate Monitor and whenever there is a configuration change. The exception is when an object is removed; in that case, the object remains in the client displays until the Manager process of the Oracle GoldenGate Instance is restarted.

Icon	Name	Purpose
	Host	This node represents a physical machine on which there are Oracle GoldenGate components.
	Instance	This node represents an Oracle GoldenGate instance. Each Instance includes the Oracle GoldenGate processes and their associated trails and files. Each Instance is identified by its host name and the port number on which the Manager process is running.
	Capture	This node represents one Oracle GoldenGate Extract group. There can be one or more Capture nodes in an Oracle GoldenGate Instance, depending on the underlying Oracle GoldenGate configuration.
	Delivery	This node represents one Oracle GoldenGate Replicat group. There can be one or more Delivery nodes in an Oracle GoldenGate Instance, depending on the underlying Oracle GoldenGate configuration.
	Database	This node represents a database that is either a source or target within the Oracle GoldenGate configuration.
	Trail	This node represents one Oracle GoldenGate trail or file.

Status Changes

A status or alert indicator (or both) on an object in the tree indicates that there is a condition that requires attention. A status change is indicated by one of these icons:



See [About the Status Indicators](#).

Context Menu Actions for These Nodes

By right-clicking a node to get the context menu, you can take the following actions:

- If an object is part of a Solution, a Show Solution command is available to display that solution in the diagram (Navigation Tree only).
- If a node contains sub-nodes, Expand and Collapse commands are available to show or hide the sub-nodes.
- If an object can be renamed, a Rename command is available. This command renames the object within Oracle GoldenGate Monitor (for all users), but does not rename the underlying component in the Oracle GoldenGate configuration. You can use up to 30 characters, including numbers, upper and lower-case letters, dashes, and underscores.

About the Diagram View

The Diagram View displays Oracle GoldenGate objects in the correct schematic relationship to one another. For example, a Host node would be shown with all of the Oracle GoldenGate components on that system, whereas an Instance node would only be shown with the components in that Oracle GoldenGate instance.

Summary attributes are displayed beneath the objects in the diagram to help you quickly see the state of important monitoring information, such as lag and process status.

You can change the amount of space that the Diagram View occupies:

- Click the expand or collapse arrows on the side of the Diagram View panel to expand or collapse the side panels (Navigation Tree, Overview, Attributes, and Alerts as applicable to the tab you are viewing).
- Click-and-drag the border of the Diagram View panel to expand or shrink it without collapsing the side panels.

The Diagram Toolbar

The diagram tools enable you to interact with and customize the display of the Oracle GoldenGate objects in the Diagram View.

Tool	Name	Purpose
	Select	Selects an object for which to display metric information in the Metrics panel.
	Zoom Select	Enables click-and-drag selection to enlarge and focus on objects within a specific area of the diagram.
	Pan	Enables click-and-drag movement of a large topology within the diagram so that different areas can be viewed.
	Show/Hide Tooltips	Enables or disables tooltips for the objects in the diagram. When tool tips are enabled, you can hover your pointer over any object to view an Metrics panel that displays summary information for that object. Tooltips show the same summary information that is shown in the diagram itself, but they are useful when those attributes are not readable in the diagram because of its scale.
	Zoom-in	Enlarges the entire diagram.

Tool	Name	Purpose
	Zoom-out	Reduces the entire diagram.
	Show All	Resets the diagram so that all of the objects are contained within the visible area.
	Left-to-Right Layout	Arranges the objects in their logical order from left to right, starting with the root object (that being the node that is selected in the Navigation Tree).
	Top-to-Bottom Layout	Arranges the objects in their logical order from top to bottom, starting with the root object (that being the node that is selected in the Navigation Tree).
	Star Layout	Arranges the objects in their logical order from the center, starting with the root object (that being the node that is selected in the Navigation Tree).
	Start	Starts the Oracle GoldenGate instance you want to monitor. This control appears only when an Extract or Replicat instance is selected.
	Stop	Stops the Oracle GoldenGate instance you are monitoring. This control appears only when an Extract or Replicat instance is selected.
	Kill	Stops the Oracle GoldenGate instance you are monitoring. This control appears only when an Extract or Replicat instance is selected.

See [Overview of the Monitoring Workspace](#)

About the Metrics

Each Oracle GoldenGate component is associated with a specific set of Metrics (attributes). When you select a component in the Navigation Tree or Diagram View, the current state of the attributes of that object are shown in the Metrics panel and summary attributes are shown with the object in the diagram. Together, the various attributes present an accurate view of the overall health of the selected component.

All attributes measured by Oracle GoldenGate Monitor are listed and described in [Attributes](#).

See [Overview of the Monitoring Workspace](#)

About the Status Indicators

The status indicators are displayed in the Status Bar and alongside Oracle GoldenGate objects in the Navigation Tree and Diagram View. In the Status Bar, they can be viewed regardless of which tab is currently active. When displayed in the Status Bar, the indicator shows that there is something that requires attention somewhere in the system.

When you see an indicator or alert, check the Navigation Tree to find the node where the same indicator appears and continue to drill down from nodes where it is displayed until you find the object that is affected.

Status Indicator	Description
	Manager Warning
	Manager Alert
	Database in error status

Affected objects look similar to the following examples:

Status Descriptions

The following are the possible status indicators:

Icon	Name	Purpose
	Running	An Oracle GoldenGate component is running properly. The status can be one of the following: <ul style="list-style-type: none"> • Initializing • Running • Stopping • Forced Stopping
	Warning	The status could indicate a potential problem. The status can be one of the following: <ul style="list-style-type: none"> • Unknown • Registered • Unresponsive
	Error	One of the following status occurred: <ul style="list-style-type: none"> • Stopped • Forced Stopped • Abended • Killed
Date and Time is displayed	Last Updated	The last refresh of the attributes was performed at this time.

3

Monitoring an Oracle GoldenGate Instance

Learn how to use real time and historical data for troubleshooting and tuning the Oracle GoldenGate Replication solution.

- [Overview of the Monitoring Workspace](#)
- [Monitoring the Oracle GoldenGate System](#)
- [Viewing Warning or Error Conditions](#)
- [Viewing Logged Information](#)
- [Working with History Information](#)
- [Purging Historical Data](#)
- [Viewing Alerts](#)
- [Running GGSCI Commands](#)

Overview of the Monitoring Workspace

The following tabs show real-time monitoring information and historical data to use for troubleshooting and tuning the Oracle GoldenGate replication solution. Anyone with any security role can view these tabs.

- The Metrics and Alerts tab is the main monitoring console of Oracle GoldenGate Monitor. It focuses on objects that are not in a normal state, such as those that have an error status. See [Monitoring the Oracle GoldenGate System](#).
- The History tab focuses on historical and logged data for the attributes that are associated with a selected Oracle GoldenGate object. [Working with History Information](#).

Related Topics

[Working with Alerts](#)

Monitoring the Oracle GoldenGate System

Use the Metrics and Alerts tab as your main monitoring area within Oracle GoldenGate Monitor. This tab combines all of the Oracle GoldenGate Monitor tools to provide several different ways to get information about your configuration quickly. You can view:

- All of your Oracle GoldenGate Instances, their processes, their files, and their associated databases.
- The logical relationship of the Oracle GoldenGate components to one another.
- Information about each component, such as process status, performance statistics, and error conditions. This information is captured in a set of attributes

that, together, provide an accurate view of the overall condition of the Oracle GoldenGate environment. See [About the Metrics](#).

To monitor Oracle GoldenGate:

1. Expand the Navigation Tree nodes to navigate to the Oracle GoldenGate object or group of objects that you want to monitor. See [About the Objects](#).
2. On the tree nodes, check for alerts and status indicators that indicate whether there is a potential problem or state change that applies to the selected node. An alert or status indicator on any container node or Oracle GoldenGate Instance node indicates that you should drill down further to locate the object that is affected. See [About the Status Indicators](#).
3. Select any object in the tree for which you want more information. The Navigation Tree works with the Diagram View to show the selected object along with other objects to which it has a logical relationship. For example, if you selected a Host node, you will see all of the Oracle GoldenGate components on that system, in their correct context. You can use the toolbar to navigate the diagram, if needed. See [About the Diagram View](#).
4. In the diagram, check for alerts and status indicators, and evaluate the summary attributes, not only for the selected object but also for the other objects. Those objects might be the cause of, or might also be affected by, the condition that you are observing.

 **Note:**

You can click any area of the Overview panel to focus on a specific part of the diagram.

5. Select any object in the diagram (or tree) and then view the Metrics Panel to get detailed data for all of the attributes that are associated with the object. See [About the Metrics](#).

 **Note:**

You can sort the attributes by the Name column. You can double-click the header area, or click the embedded arrow, to expand or collapse the panel.

6. (Optional) In the Metrics Panel, click the history icon () next to any attribute. This will open the History tab and show historical data for that attribute. See [Working with History Information](#).
7. Select any object in the diagram (or tree) and then view the Alerts Panel to get details about any active alerts that were triggered for the object, including the text of the alert, the time that it occurred, and the condition that triggered it. See [About Alerts](#).

 **Note:**

You might have to double-click the Alerts header area to expand the panel to view it. You can double-click the header area, or click the embedded arrow, to expand or collapse the panel.

8. (Optional) Focus on objects that have warning or error conditions. See [Viewing Warning or Error Conditions](#).

Related Topics

[Viewing Warning or Error Conditions](#)

[Working with History Information](#)

[Viewing Alerts](#)

Viewing Warning or Error Conditions

Use the Metrics and Alerts tab get a quick overview of Oracle GoldenGate components that have warning or error conditions, without the need to drill down through the Navigation Tree. The objects are displayed in a large Diagram View, so that you can quickly identify the ones that need the most attention. The Diagram view shows the objects in their logical relationship to one another.

To view information about a problem:

1. Select any object in the diagram. You can click any area of the Overview panel to focus on a specific part of the diagram. Use the diagram tools in the toolbar to interact with the diagram. See [About the Diagram View](#).
2. View the Metrics Panel to get detailed data for all of the attributes that are associated with the object. See [About the Metrics](#).

 **Note:**

You can sort the attributes by the Name column. You can double-click the header area, or click the embedded arrow, to expand or collapse the panel.

3. (Optional) In the Metrics Panel, click the history icon next to any metric for which you want to view historical data on the History tab. See [Working with History Information](#).
4. View the Alerts Panel to get details about any active alerts that were triggered for the object, including the text of the alert, the time that it occurred, and the condition that triggered it. See [About Alerts](#).

 **Note:**

You might have to double-click the Alerts header area to expand the panel to view it. You can double-click the header area, or click the embedded arrow, to expand or collapse the panel.

Related Topics[Monitoring the Oracle GoldenGate System](#)[Working with History Information](#)[Viewing Alerts](#)

Viewing Logged Information

You can view logged information about an instance from the Metrics subtab of the History tab. This display shows the report and discard files generated for each Extract or Replicat session. Every time you start an Extract or Replicat session, data is collected and a report generated and stored. You can view these reports from the Metrics and Alert tab in the Report subtab of the Logs subtab. Meanwhile, a runtime error log is also compiled and is displayed in the Ggserr Log subtab. The report location on your local system is specified at the bottom of this tab. The Logs subtab contains these three tabs (not all tabs must appear):

- [Report Subtab](#)
- [Ggserr Log Subtab](#)
- [Discard File Subtab](#)

Report Subtab

The Report tab shows run-time reports generated for a specific Extract or Replicat instance. These reports contain the following information:

- Version information and select environmental settings
- Runtime parameters
- Runtime Messages and statistics

The Report tab is divided into two sections:

- The report list, on the left, which lists each report (where the naming format is *GROUPNAME**nn*.rpt, where *GROUPNAME* represents Extract (EXT) or Replicat (REP), and *nn* is a sequential number identifying the where report falls among all reports collected; for example, EXTAA.rpt, EXTAA0.rpt, EXTAA1.rpt and so on. Note that, as demonstrated in the preceding examples, the most current report *will not* have a sequence number).
- The actual report content on the right.

Additionally, the bottom of the panel shows the full path and file name, size of the file in bytes, and a time stamp for when the data was collected is displayed.

To see a report:

1. Select the Extract or Replicat instance from either the Navigation Tree or the Diagram Area.
2. Select the **Logs** subtab on the Metrics and Alerts tab; the default sub tab of the Logs subtab is the Report subtab.
3. Select the specific report from the reports list.

Discard File Subtab

Discard files contains information about data that failed the respective Extract or Replicat session.

The Discard subtab is divided into two sections:

- The discard disk, on the left, which lists each report (where the naming format is *GROUPNAME*nn.rpt, where *GROUPNAME* represents Extract (ext) or Replicat (rep) and *nn* is a sequential number identifying the where report falls among all reports collected; for example, repaa.dsc, repaa0.dsc, repaa1.dsc, and so on. Note that, as demonstrated in the preceding examples, the most current report *will not* have a sequence number).
- The actual report content on the right; for example:

```
Oracle GoldenGate Delivery for Oracle process started, group REPAA discard
file opened: 2014-04-14 17:43:49.382279
Oracle GoldenGate Delivery for Oracle process stopped, group REPAA :
2014-04-14 17:52:20.212009
```

Additionally, bottom of the panel shows the full path and file name, size of the file in bytes, and a time stamp for when the data was collected.

Ggserr Log Subtab

This subtab displays the Oracle GoldenGate error log file; for example:

```
2014-04-15 05:42:08 INFO OGG-01738 Oracle GoldenGate Capture for Oracle,
extaa.prm: BOUNDED RECOVERY: CHECKPOINT: for object pool 1: p31714_extr:
start=SeqNo: 263, RBA: 29534736, SCN: 0.6146203 (6146203), Timestamp: 2014-04-15
05:41:09.000000, Thread: 1, end=SeqNo: 263, RBA: 29536256, SCN: 0.6146203
(6146203), Timestamp: 2014-04-15 05:41:09.000000, Thread: 1.
2014-04-15 01:42:00 INFO OGG-01738 Oracle GoldenGate Capture for Oracle,
extaa.prm: BOUNDED RECOVERY: CHECKPOINT: for object pool 1: p31714_extr:
start=SeqNo: 263, RBA: 23313936, SCN: 0.6138834 (6138834), Timestamp: 2014-04-15
01:40:11.000000, Thread: 1, end=SeqNo: 263, RBA: 23316480, SCN: 0.6138834
(6138834), Timestamp: 2014-04-15 01:40:11.000000, Thread: 1.
2014-04-14 21:41:54 INFO OGG-01738 Oracle GoldenGate Capture for Oracle,
extaa.prm: BOUNDED RECOVERY: CHECKPOINT: for object pool 1: p31714_extr:
start=SeqNo: 262, RBA: 23449104, SCN: 0.6123109 (6123109), Timestamp: 2014-04-14
21:40:57.000000, Thread: 1, end=SeqNo: 262, RBA: 23450112, SCN: 0.6123109
(6123109), Timestamp: 2014-04-14 21:40:57.000000, Thread: 1.
2014-04-14 17:54:50 INFO OGG-00987 Oracle GoldenGate Command Interpreter for
Oracle: GGSCI command (espear): info repaa detail.
2014-04-14 17:52:24 INFO OGG-03522 Oracle GoldenGate Delivery for Oracle,
repaa.prm: Setting session time zone to source database time zone 'GMT'.
```

Each line of the error log contains time stamp, severity, error code, process reporting the message, and the actual message. This enables you to track an error or warning to data on the associated report.

To download the Ggserr.log file:

You can download the error log file in order to save or view it by clicking **Download complete Ggserr.log**, at the bottom of the Ggserr Log subtab. The parenthetical number next to the download link indicates the current size of the error log file.

Working with History Information

The History tab contains the Metrics and Alerts subtabs that enable you to view performance statistics, event messages, lag, and other information that occurred over a specific time period. You can analyze this data to identify persistent trouble spots or processes that need performance tuning.

Historical data can be obtained for any metric of an Oracle GoldenGate component. See [About the Metrics](#).

The historical data of a metric can be represented either as a chart, as a table, or both, depending on the type of metric.

- The table view displays the selected metric data in a tabular format. The column names vary, depending on the metric that was selected.
- The chart view has two independent charts to allow comparison between different date ranges for the given metric. The tools on the tool bar control the navigation in this view and the display format of the historical data. See [History Tab Toolbar](#).

You can use the following icons, located at the top right-hand corner of the tab, to toggle between chart and table view (if valid for the metric).

View Icons	Name
	Chart View
	Table View

To work with history information:

1. Select an Oracle GoldenGate object in the Navigation Tree. The name of that object will be displayed in the header area of the Metrics subtab. See [About the Objects](#).
2. For Attribute, select a metric for which you want historical data to be retrieved. The Attribute list contains only the appropriate attributes for the selected object, and only those for which there is historical data. If a metric cannot be displayed in chart view, it will not be displayed in the Attribute list when chart view is enabled. To view that metric, switch to table view. (Any metric that can be displayed in chart view can be displayed in table view.)
3. For Date Range Type, select the date range for which you want the history to be retrieved. If you select **Custom**, additional From and To fields are displayed, where you can type a date range or select dates by clicking the calendar icon. The date format is MM/DD/YYYY HH:MM {AM | PM}. (If you click in a field, an example of the correct format is displayed.)

- Click **Get Data**.

Related Topics

[Monitoring the Oracle GoldenGate System](#)

[Viewing Warning or Error Conditions](#)

[Viewing Alerts](#)

History Tab Toolbar

Navigation Tools on the Metrics Subtab

Navigation Tools	Description
	Zoom-in Zooms in to focus on an area.
	Zoom-out Zooms out to view a larger area.
	Fit-to-screen Fits the image to your monitor screen.
	Zoom-to-area Zooms in to a specific area when you depress and hold the mouse button, and then drag the selection box to enclose the zoom area.
	Pan Moves the image within the visible area when you depress and hold the mouse button, and then drag the mouse.

Chart Styles

The following are the chart styles that you can use to view the trend of the historical data over time. You can switch between chart styles as needed.

Chart Style Icon	Description
	Line chart style
	Area chart style
	Histogram chart style

You can choose the following color schemes for the chart style that you selected.

Color Scheme Icon	Description
	Complementary colors
	Monochromatic colors
	Contrasting colors

Purging Historical Data

Over time, historical data and old alerts will accumulate in the database repository. A user with at least the Power User role can purge old metrics and alerts with the Purge Data control.

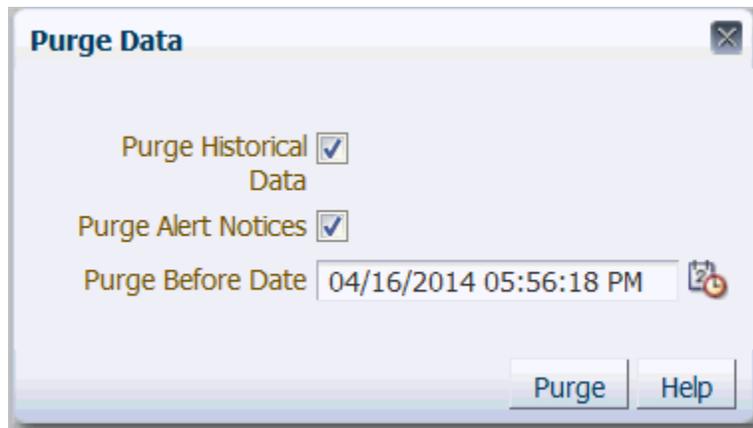
 **Note:**

Purge Data removes the metrics and alerts permanently from the Oracle GoldenGate Monitor database.

To purge old data:

1. Log in with at least the Power User role.
2. On the Utility Bar, click **Purge Data**.

The Purge Data dialog box appears.



3. Select the kind of data to purge: **Historical Data**, **Alert Notices**, or both.
4. For Purge Before Date, enter a date that represents the oldest data that you want to keep (using the date-time format shown), or click the calendar icon to select the date from a calendar. All of the selected data before that date will be deleted permanently. You can purge just one kind of data the first time, and then you can purge the other kind using a different purge date.
5. Click **Purge**. You are not prompted to confirm this action.
6. Click **OK** on the confirmation. You are returned to the Purge Data dialog box to do additional purging, if desired.

Related Topics

[Working with History Information](#)

[Viewing Alerts](#)

Viewing Alerts

Use the Alerts subtab of the History tab to view a history of alerts. By analyzing alert history, you can determine how often certain conditions occur, so that you can make adjustments to the Oracle GoldenGate configuration or the underlying hosts.

The alert history goes back in time to the point where it was last purged by the Super Administrator, Administrator, or Power User.

To view alert information:

1. Select an object in the Navigation Tree. The closer to the root level of the tree that you go, the more alerts that will be displayed, because the selection encompasses alerts for all of the objects within the sub-nodes.
2. View the alerts on the Alerts subtab. This table displays the name of the alert (as specified in the alert definition), the actual notification message (which is the same as that which is sent to email, SNMP, or CLI clients if active), and the time that the alert was generated. You can sort the Alert Name column in ascending or descending order.

Related Topics

[About the Objects](#)

[Purging Historical Data](#)

[About Alerts](#)

Running GGSCI Commands

Use the GGSCI subtab of the Metrics and Alerts tab to run any supported commands without leaving within Oracle GoldenGate Monitor. Enter the command you want to run with any associated options in the GGSCI Command field the click **Run**. The results are displayed for you to review.

You cannot edit parameter files using GGSCI commands with this subtab.

The list of unsupported GGSCI Commands follows:

- sh
- edit
- view
- stop jagent
- start jagent
- obey
- fc
- set editor
- shell
- info marker
- edit params

4

Working with Users

Learn all about the different security roles that you can assign to users. Also see how to manage, edit, and remove users.

- [Understanding User Security Roles](#)
- [Managing Users](#)
- [Adding, Changing, and Removing Users](#)
- [Assigning Instances to a User](#)
- [Managing Your User Profile](#)

 **Note:**

Only users granted Super Administrator and Administrator roles can access the User Management tab. If you log in as an Operator or Power Operator, the User Management tab will not appear in the Oracle GoldenGate Monitor UI.

Understanding User Security Roles

Each person who uses Oracle GoldenGate Monitor must be granted a security role. This role controls which functions of the interface that user can perform. There are three security roles in Oracle GoldenGate Monitor, as described in [Table 4-1](#):

Table 4-1 Oracle GoldenGate Monitor Security Roles

Role	Functions this user can perform	Description
Super Administrator (SuperAdmin)	All	The Super Administrator is the highest-priority role in Oracle GoldenGate Monitor. The Super Administrator can assign instances to Administrators, Operators, and Power Operators. There is always one Super Administrator. The Super Administrator can edit user information, such as the first and last name and email details on the Edit User screen of the logged in user (SA), and for other users like Administrator, Power Operator and Operator

Table 4-1 (Cont.) Oracle GoldenGate Monitor Security Roles

Role	Functions this user can perform	Description
Administrator	All	<p>The Administrator can perform all of the Oracle GoldenGate Monitor functions.</p> <p>The Administrator can map and un-map the instances (that is, instances that are accessible by the current logged in Administrator) for only Operator and Power Operator. the Administrator is not authorized to make any changes on the instances mapped to Super Administrator and other Administrators. Furthermore, the Administrator cannot edit the details for Super Administrator or other Administrators.</p> <p>The Administrator can edit the user information such as the first and last name and email details by using the Edit User screen of the logged-in user (Administrator) and for other users, such as a Power Operator or Operator.</p>
Power Operator	All but User Management	The Power Operator can perform all of the Oracle GoldenGate Monitor functions except managing users. The Power Operator cannot see the User Management tab.
Operator	Metrics and Alerts History User Profile	<p>The Operator can only manage his or her user profile, and can only view the monitoring tabs. The Operator cannot see the following tabs:</p> <ul style="list-style-type: none"> • View Management • Alert Management • User Management • Discard subtab of the Logs subtab on Metrics and Alerts

Related Topics[Managing Users](#)[Managing Your User Profile](#)[Overview of the Monitoring Workspace](#)

Managing Users

Managing users refers to editing a user's profile and administering Oracle GoldenGate instance access. If you are an Oracle GoldenGate Monitor Super Administrator (SuperAdmin) or an Administrator, you can use the User Management tab to view and manage information about the Oracle GoldenGate Monitor users. This tab displays the existing users, with columns that show the login name, the actual name of the person who owns that login name, that person's email address, and that person's security role within Oracle GoldenGate Monitor. It also displays the instances assigned to the users.

While you can use the User Management tab to edit user information, such as name and email address, and to assign instances, you can only add and delete users,

assign and change their passwords, and assign them to groups from the Oracle WebLogic Server Administration Console.

This section describes how to:

- Add a user; see [To add a user](#):
- Add a user to a group; see [To add a user to a group](#):
- Edit user information; see [To change user properties](#):
- Delete a user; see [To remove a user](#):

Related Topics

[Understanding User Security Roles](#)

Adding, Changing, and Removing Users

Weblogic administrators can use the Oracle WebLogic Server Administration Console to do the following:

- Create new users.
- Delete existing users.
- Update the user names and passwords

An Oracle GoldenGate Monitor Super Administrator or Administrator can edit user information by using User Management tab in Oracle GoldenGate Monitor Server Console.

To add a user:

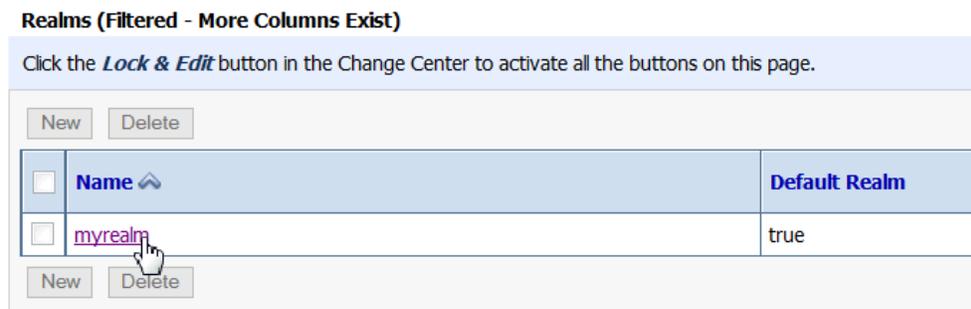
 **Note:**

As of Oracle GoldenGate Monitor 12c (12.2.1), you can only add a user by using the WebLogic Administration Console. The following procedure requires that you access that console before you begin.

1. Log into the Oracle WebLogic Server Administration Console.
2. In the Domain Structure panel (left side of console), select Security Realms.



3. On the Summary of Security Realms page select the name of the realm (for example, myrealm).



4. On the Settings for Realm Name page select **Users and Groups** then **Users**.
The User table displays the names of all users defined in the Authentication provider.
5. Click **New**.
The Create New User screen appears.

Create a New User

OK | Cancel

User Properties

The following properties will be used to identify your new User.

* Indicates required fields

What would you like to name your new User?

*** Name:**

How would you like to describe the new User?

Description:

Please choose a provider for the user.

Provider: ▼

The password is associated with the login name for the new User.

*** Password:**

*** Confirm Password:**

OK | Cancel

6. In the Name field of the Create New User page enter the name of the user.

User names must be unique. For the WebLogic Authentication provider (DefaultAuthenticator), user names are case insensitive. User names must not include tabs or any of the following characters:

- Semicolons: ;
- Commas: ,
- Plus signs: +
- Equal signs: =
- Single backslash character: \ (note that two consecutive backslashes may be used; for example smith\\)

In addition, user names must not begin with either of the following characters:

- Pound sign: #
- Double quotations: "

 **Note:**

If a user is created with any of the preceding invalid characters, the WebLogic domain can become corrupted.

7. (Optional) In the Description field, enter a description. The description might be the user's full name.
8. In the Provider drop-down list, select the Authentication provider for the user.
If multiple Authentication providers are configured in the security realm, they will appear in the list. Select the Authentication provider that corresponds to the database in which the information for the new user is to be stored.
9. In the Password field, enter a password for the user.
The minimum password length for a user defined in the WebLogic Authentication provider is 8 characters. Do not use the username/password combination weblogic/welcome1 in production.

 **Note:**

Oracle recommends that you configure the Password Validation provider in the security realm after you create a domain. The Password Validation provider can be configured to impose additional password composition rules. For more information, see [Configure the Password Validation provider](#).

10. Re-enter the password for the user in the Confirm Password field.
11. Click **OK** to save your changes.
The user name appears in the User table. You can now add this user to a group.

To add a user to a group:

1. In the Users table select the user you want to add to a group.
2. On the Settings for User Name page select **Groups**.

The Groups tab appears:

Settings for superadmin

General Passwords Attributes **Groups**

Save

Use this page to configure group membership for this user.

Parent Groups:

Available:

- AdminChannelUsers
- Administrators
- AppTesters
- CrossDomainConnectors
- Deployers
- Monitors
- OGGAdministrator

Chosen:

- OGGSuperAdmin

Save

3. Select a group or groups from the Available list box:
 - To select multiple groups, Ctrl-click each group and then click the double right arrow to move the selection to the Chosen list box.
 - To add a user to a group, click the right arrow to move the selection to the Chosen list box.
 - To remove a user from a group, select the group in the Chosen list box and click the left arrow. You can remove multiple groups by selecting them and clicking the double left arrow.
4. Click **Save**.

To change user properties:

1. In the Manage Users list of the User Management tab, click the name of the user that you want to change. The Edit User screen appears.

The screenshot shows the 'Edit User' form with the following fields and values:

- Username: ogguser
- First Name: [Empty]
- Last Name: [Empty]
- Email: [Empty]
- Roles: OGGOperator
- Instances: All

Buttons: Submit, Clear, Cancel

2. Change the properties as needed. You can change the following properties:
 - User's proper name (first and/or last)
 - User's email address.
 - The instances to which the user has access (see [Assigning Instances to a User](#)).
3. Click **Submit**.

To remove a user:

1. Log in (or remain logged in) to the Oracle WebLogic Server Administration Console.
2. In the left pane select Security Realms.
3. On the Summary of Security Realms page select the name of the realm (for example, myrealm).
4. On the Settings for Realm Name page select Users and Groups then Users.
5. In the Users table select the check box next to each user name you want to delete.

If you have a large number of users, use the **Customize this table** link to retrieve and list only the users that match your search criteria. The Filter By field uses the asterisk (*) as the wild card character.

 **Note:**

The Administration Console displays a maximum of 1000 users. If the number of users that are defined exceeds 1000, you can apply a search filter to limit the display.

6. Click **Delete**.
7. Click **Yes** to confirm.

Related Topics

[Managing Users](#)

Assigning Instances to a User

As described in [Understanding User Security Roles](#), all Oracle GoldenGate Monitor users are granted a security role. The Super Administrator or Administrator can assign or un-assign the instances to other users on the Edit Users screen, accessed from the User Management tab. This is referred to as "instance level security" and allows one to restrict the access different users have to different hosts/instances. Before attempting this procedure, you should familiarize yourself with how instance level security is managed. See Chapter 6, "Understanding Instance Level Security" in *Administering Oracle GoldenGate Monitor*.

To assign instances to a user:

1. In the Manage Users list of the User Management tab, click the name of the user that you want to change. The Edit User screen appears. The instances to which that user can be assigned will appear in the Instances list box. Note that **Role** is a non-editable column in the Edit Users screen for all the users.
2. Select the check box next to each instance you want to assign to that user. If you want to assign all available instances, select All.
3. Click **Submit**.

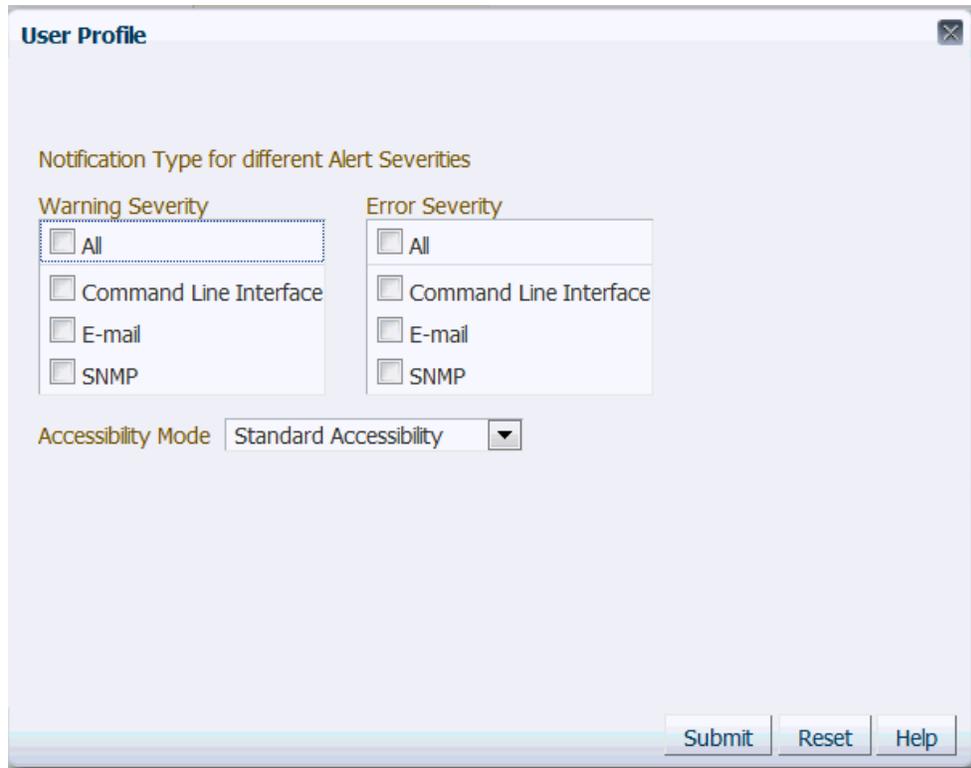
To delete an instance assignment, deselect the specific instance(s) or All and click **Submit**.

Managing Your User Profile

Use the User Profile to change your log-in password and select the kinds of notifications that you want to receive.

To manage your User Profile:

1. In the Utility Bar, click **User Profile**. The User Profile dialog box appears.



2. Under **Notification Type for different Alert Severities**, specify the notification method that you want to use for each level of alert severity. This option is visible only if alerts are enabled by an administrator. An alert can have a severity of either Warning or Error, depending on how it was defined. You might want to receive Error alerts by email, SNMP, and CLI (only options that were enabled by an administrator are shown). Conversely, you might only need to receive Warning alerts by email, depending on your business protocols. The following status indicators appear in the status bar and workspaces for triggered alerts. See [About the Status Indicators](#).

Status Indicators	Description
	Warning-level alert
	Error-level alert

3. For **Accessibility Mode**, set the accessibility mode for users with disabilities.
 - **None:** Accessibility features are excluded.
 - **Standard Accessibility:** Supports standard accessibility features provided by supported browsers.
 - **Screen Reader Optimized:** Enables accessibility features that improve usability with a screen reader, but may affect other users negatively.
4. **Submit:** Click to save the changes that you made to your profile, or click **Reset** to cancel any changes that you made to your profile.

Related Topics

[Working with Alerts](#)

5

Working with Alerts

Learn how to work with Oracle GoldenGate Monitor alerts. An alert is a message that notifies you when a specified event or condition occurs for one or more Oracle GoldenGate components.

- [About Alerts](#)
- [Managing Alert Definitions](#)
- [Configuring an Alert Definition](#)
- [About the Alert Operators](#)

About Alerts

Oracle GoldenGate Monitor alerts notify you when a specified condition exists for an Oracle GoldenGate component. For example, you can request notification when a process stops or when a specified lag threshold is reached. You select the information to include in the message. To define alerts go to **Alert Management** in the user interface.

Using the Alert Management, you can:

- Define alerts using one or more notification channels.
- Define alerts and enable or disable them when required.
- Instance objects associations (available objects) are listed based on user's access to different instances.
- Enforce alerts with Instance Level Security.

Each user specifies which types of alerts Oracle GoldenGate Monitor should produce for them. To enable alerts for a user, go to the **User Profile** in the Oracle GoldenGate Monitor user interface and follow the instructions in the online help.

Some examples of alerts:

- An alert that notifies you when the lag of a Capture or Delivery group reaches a certain threshold.
- An alert that notifies you when there is a failure within the Oracle GoldenGate instance.
- An alert that notifies you when Capture has reached the end of the transaction log.

Oracle GoldenGate Monitor supports these notification types:

- Oracle GoldenGate Monitor console
- Email
- SNMP
- Command-line Interface (CLI)

You determine the content of an alert when you create the alert definition.

This topic contains the following information:

- [Creating Console Alerts](#)
- [Creating Email, SNMP, and CLI Alerts](#)

Creating Console Alerts

By default, alerts are sent to the Metrics and Alerts tab of Oracle GoldenGate Monitor. Whenever there is an alert, an animated bell icon appears in the Status Bar, which is visible no matter which tab of the application is active.

Alert Icon	Description
	Warning-level alert
	Error-level alert

If no other notification protocol is required beyond the built-in alert views, you are ready to create your alert definitions. For instructions, see [Managing Alert Definitions](#).

Creating Email, SNMP, and CLI Alerts

To use these three types of alerts, you must configure a default template for Oracle GoldenGate Monitor to use to send the alert. You must configure a given template before you attempt to create the alert definition.

email Alerts

You can configure Oracle GoldenGate Monitor to send email alerts to one or more Oracle GoldenGate Monitor users. You must create at least a default email notification. For instructions, see [Configuring Email Alerts](#).

SNMP Alerts

You can configure the Oracle GoldenGate Monitor SNMP interface to send alerts in the form of datagrams to any SNMP server. The datagrams are received by a trap recipient that is listening on a specific port. Versions 1 and 2a of SNMP are supported. For instructions, see [Configuring SNMP Alerts](#).

CLI Alerts

You can configure the Oracle GoldenGate Monitor Command Line Interface (CLI) to execute a script or binary file on the Oracle GoldenGate Monitor Server when an alert is triggered. (Creating CLI alerts does not support authentication.) For instructions, see [Configuring CLI Alerts](#).

Managing Alert Definitions

Use the Alert Definition subtab of the Alert Management tab to create, view, and modify alert definitions. Super Administrators, Administrators, and Power Operators can configure alert definitions.

- The **Manage Alert Definitions** table on this tab displays the existing alert definitions, with the following columns:
- **Definition Name:** The name of the alert.

- **Object Type:** The type of Oracle GoldenGate object for which this alert will be triggered. See [About the Objects](#).
- **Assigned Users Objects:** The Oracle GoldenGate Monitor users that can receive the alert for the object. All objects are displayed. The following naming convention is used in displaying the available objects:

Username:fully_qualified_object_name

Example:

`superuser:system/abc.host.com/abc.host.com-6890/PUMP12`

- **Alert Enabled:** Whether or not the alert is enabled or disabled.
- **Date Modified:** The date and time that the alert was last modified.

On the Alert Management tab, you can take the following actions:

- To create an alert definition, click **New Alert Definition**. See [Configuring an Alert Definition](#).
- To edit an alert definition, click its name in the list to open the **Edit Alert Definition** screen. See [Configuring an Alert Definition](#).
- To delete an alert definition, select the check box next to its name, and then click **Remove Definition(s)**.
- To create a notification template, click the **Notification Template** subtab, and then click **New Notification Template**. See [Creating Email, SNMP, and CLI Alerts](#).

 **Note:**

Alerts for DB and Trails cannot be created.

Related Topics

[Configuring an Alert Definition](#)

[About the Alert Operators](#)

Configuring an Alert Definition

An Oracle GoldenGate Monitor user with the Administrator, Power Operator, or SuperAdmin role can create or edit an alert definition. You can create as many alert definitions as you like.

 **Note:**

When creating or editing an alert, the following steps are displayed as the New Alert Definition screen. When editing an alert, the steps are displayed as the Edit Alert Definition screen. The functionality for the two are identical, except that default values are shown when creating a new alert, but current values are shown when editing an alert.

To create or edit an alert definition

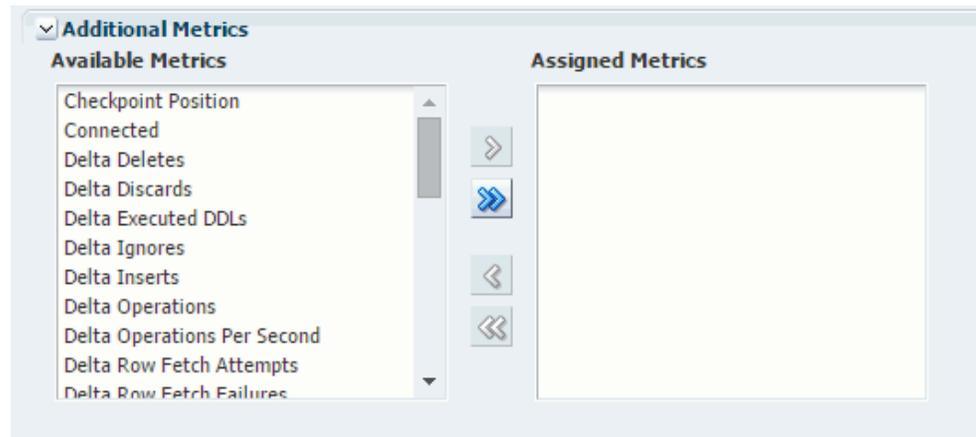
1. On the Alert Management tab, click **New Alert Definition**. The New Alert Definition screen appears. To expand and collapse any section of this screen, click the arrow next to the section name. At the top of the screen, you will see the General Info section of the screen:

The screenshot shows the 'General Info' and 'Notifications' sections of the alert definition screen. The 'General Info' section includes a text input for 'Definition Name', a dropdown for 'Alert Severity' (set to 'Warning'), a 'Suppression Time' field (30 minutes), a dropdown for 'Object Type' (set to 'Capture'), and an 'Enabled' checkbox which is checked. The 'Notifications' section has a table with columns 'Notification Channel' and 'Notification Template'. It lists three channels: 'Email', 'SNMP', and 'Command Line Interface', each with a corresponding 'Select the Notification Template' dropdown.

2. For **Definition Name**, type a name for this alert. You can use up to 30 characters, including numbers, symbols, and uppercase and lowercase letters. This field is mandatory.
3. For **Alert Severity**, select either **Error** or **Warning**. Any condition (as represented by this alert) can be treated as an error or warning, depending on your business protocols.
4. For **Suppression Time**, specify an interval of time during which you only want to receive one instance of this alert. This prevents multiple notifications of the same kind from filling the alert consoles and from being sent to email, SNMP, or CLI targets that are enabled.
5. For **Object Type**, select the type of object for which this alert will be triggered. You can specify an alert definition even before any object types are registered in the system. Only SuperAdmin users can define alerts for SYSTEM and HOST object types; these objects are not displayed if the user is not a SuperAdmin. See [About the Objects](#)
6. For **Enabled**, select to enable (or deselect to disable) this alert. This option allows you to control your alerts dynamically. You can create an alert without enabling it, then return later to activate the alert. For example, you may not want to enable certain alerts during outage periods.
7. For **Notifications**, select one of the **Email**, **SNMP**, or **Command Line Interface**, and then select the corresponding template. See [Configuring Notification Alerts to External Programs](#) .
8. In the **Expression** table, specify the condition (or multiple conditions) that will trigger the alert. Different conditions that are used in one expression are combined with logical AND operators, and the alert will be triggered when both of the conditions is satisfied.

The screenshot shows the 'Expression' table with columns 'Metric', 'Operator', 'Value', and 'Unit'. A single row is present with 'Checkpoint Position' in the Metric column and '==' in the Operator column. At the bottom right, there are two buttons: 'New Condition' and 'Remove Condition(s)'.

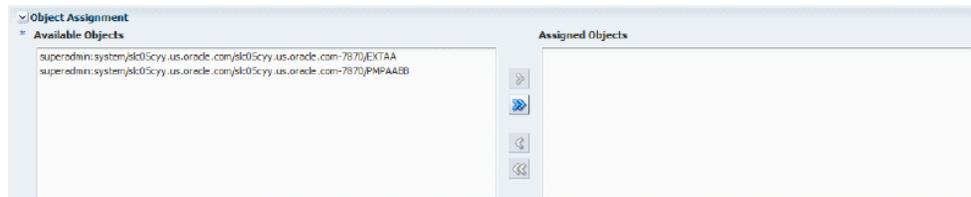
- For **Metric**, select the attribute that triggers the alert. See [About the Metrics](#).
 - For **Operator**, select a standard relational operator that clarifies the value that you will supply. See [About the Alert Operators](#).
 - For **Value**, specify or select a value that, together with Metric and Operator, will determine the complete condition. For some attributes, you must type a value. For others, a drop-down selection list is shown. Date-time values can be specified with the help of a calendar selector.
 - A value for **Unit** will appear automatically if the metric has one, such as Lag.
9. (Optional) To add more conditions to this Expression, click **New Condition** and then repeat the previous step to build the new condition. To remove any condition, select the check box next to it and then click **Remove Condition(s)**.
 10. (Optional) Collapse the Expression section to expose the next sections of the page. Your conditions will remain in place. The Available Metrics section will now be at the top of the screen:
 11. Under **Additional Metrics**, select one or more of the metrics that you want to apply to this alert, and then move them to the Assigned Metrics panel. To move one metric, select the name and then click the single arrow. To move more than one metric, select them by using your operating system's standard selection methods, and then click the single arrow. To move all metrics at once, click the double arrows. You do not need to select anything in the Available Metrics list.



The value of the additional metric will be its current value at the moment that the alert triggers. For example, if you are configuring this alert for Lag in a Capture Object Type, you could also include the [Total Row Fetch Attempts](#) and [Total Row Fetch Failures](#) attributes to indicate whether excessive fetching is causing the lag. You could also include the [Checkpoint Position](#) metric to see where Capture last created a checkpoint in the transaction log. See [About the Metrics](#).

12. (Optional) Collapse the Additional Metrics section to expose the next sections of the page. Your object assignments will remain in place. The next section is the Object Assignment section:
13. Under **Object Assignment**, select the names from **Available Objects** and then move them to **Assigned Objects**. To move one object, select it and then click the single arrow. To move more than one object, select them using the standard selection methods of the operating system, and then click the single arrow. To

move all objects at once, use the double arrows (or just select Assign to all objects of this object type).



The Monitor Server applies instance-level security in alerts. The objects used in creating the alert definition are restricted. Only, the list of objects from every instance for which a user has access to is available and displayed in the New Alert Definition screen.

 **Note:**

Instance Level Security for alerts for object types as views is not supported.

The naming convention for the display of available objects is the username prefixed with the full path of the object.

The Monitor Server applies two levels of filtration before it renders the objects on the UI:

Level 1

The objects are filtered by the logged in user level by checking the list of instances the user has access to. For the current logged in user, all the accessible objects are available and rendered in alert definition screen.

Level 2

The filtration happens by checking if the other users from the Monitor Server have access to the objects filtered in level 1 or not. For the other users in the system, only the objects that are accessible by the current user and accessible by other users are rendered in alert definition screen.

The following naming convention are used in displaying the available objects:

Username:fully_qualified_object_name

Example:

`superuser:system/abc.host.com/abc.host.com-6890/PUMP12`

14. (Optional) Examine your alert definition. You can always edit it later if needed.
15. Do one of the following:
 - To create the alert definition, click **Submit**. The new alert is displayed in the Manage Alert Definitions table.
 - To remove all of the information that you have specified and restore all fields to their defaults, click **Clear**.

- To remove all of the information that you have specified and exit the screen without creating the alert, click **Cancel**.

Related Topics

[Configuring Email Alerts](#)

[Configuring SNMP Alerts](#)

[Configuring CLI Alerts](#)

About the Alert Operators

Oracle GoldenGate Monitor uses the following operators to establish a relationship between an metric and a value for that metric when creating alert criteria.

Operator	Description
<	Less than. For example: Mapped Total Updates < 10000
<=	Less than or equal to. For example: Start Time <= 06/01/2010 12:00 PM
>	Greater than. For example: Lag > 3 sec
>=	Greater than or equal to. For example: Last Checkpoint Timestamp >= 06/01/2010 12:00 PM
!=	Not equal to. For example: Status != Running
==	Equal to. For example: Group Name = ext01
contains	Displays when the metric is Message.text.

Related Topics

[Configuring an Alert Definition](#)

6

Configuring Notification Alerts to External Programs

Learn how to send notification alerts to external programs. You can manage the notification templates, configure email, CLI, SNMP alerts as per your own requirements.

- [About Notification Templates](#)
- [Managing Notification Templates](#)
- [Configuring Email Alerts](#)
- [Configuring CLI Alerts](#)
- [Configuring SNMP Alerts](#)

About Notification Templates

Oracle GoldenGate Monitor comes with a default SNMP notification template and you can add multiple email and command line interface (CLI) notification templates. All templates can be modified at any point in time and the changes are dynamic so a restart of Oracle GoldenGate Monitor is not necessary. When you add alert definitions based on a template, that template cannot be removed; you can only remove templates that are not associated with an alert.

Consider the following when using notification templates:

- You do not need to restart Oracle GoldenGate Monitor when you add or modify notification templates.
- You cannot delete notification templates that are associated with alert definitions.
- Select at least one notification template to define an alert.
- You can select notification templates for one or more notification template email, command line interface, and SNMP.
- User can change notification template at any point in time.

Only Oracle GoldenGate Monitor Super Administrator, Administrator, or Power Operator users can configure alert notifications templates.

Managing Notification Templates

Use the Notification Template subtab of the Alert Management tab to create, view, and modify notification templates.

- The **Manage Notification Template** table on this subtab displays the existing templates, with the following columns:
- **Name:** The name of the template.
- **Type:** The type of template, CLI, email, or SNMP.

- **Enabled:** Indicates whether the template can be used for alert definitions (Enabled) or not (Disabled).
- **Date Modified:** The date and time the template was last modified.

On the Alert Management tab, you can take the following actions:

- To create an alert definition, click **New Notification Template Definition**. See [Configuring an Alert Definition](#).
- To edit an alert definition, click its name in the list to open the **Edit Alert Definition** screen. See [Configuring an Alert Definition](#).
- To delete a notification template, as long as it is not in use by any alert definitions, click the check box for the template you want to remove, then click **Remove Notification Template**, then click **Yes** to confirm the removal. All templates can be selected using the check box in the table header.

You cannot remove the default SNMP template; attempts to do so result in a warning.

Configuring Email Alerts

You can create, view, modify, and delete email notification templates.

1. On the Alert Management tab, click the **Notification Template** subtab.
2. Click **New Notification Template** to create a new template.
3. Use the options as follows to modify this template:

Tip:

You can use the **Clear** button to remove the contents of all of the options.

Notification Template Type

Select **Email**.

Notification Template Name

Enter a unique name for this template that is descriptive of the notification you are configuring.

Notification Template Enabled

Select this check box to enable the use of this template or deselect to disable it.

SMTP Server Host

Enter the hostname of your email server.

SMTP Port

Enter the port number that your email server uses.

From Name

Enter the default sender's name or use the default, Oracle GoldenGate Monitor.

From Email address

Enter the email address of the sender for Oracle GoldenGate Monitor communications generated from the email server.

Secure SMTP

Select this check box if your email server is running in secure mode. Enter the **Email for Authorization** and **Password** in the respective fields.

4. Click **Submit** to save your changes and begin using them immediately, or **Cancel** to revert to the original configuration.
5. Ask each Oracle GoldenGate Monitor user that should receive email alerts to activate them in the User Profile. For instructions, see [Managing Your User Profile](#).
6. Use the Alert Management tab to create your alerts. For instructions, see [Managing Alert Definitions](#).

Configuring CLI Alerts

You can create, view, modify, and delete CLI notification templates.

1. On the Alert Management tab, click the **Notification Template** subtab.
2. Click **New Notification Template** to create a new template.
3. Use the options as follows to modify this template:

 **Tip:**

You can use the **Clear** button to remove the contents of all of the options.

Notification Template Type

Select **Command Line Interface**.

Notification Template Name

Enter a name for this template that is descriptive of the notification you are configuring.

Notification Template Enabled

Select this check box to enable the use of this template or deselect to disable it.

Execution Directory

Enter the directory that contains the command you want to execute. For example, `/root`.

OS Command

Enter the operating system command (or script) that you want to execute. For example, `ls`.

Arguments

You can add command arguments by clicking **Add Argument**, then enter the argument including dash (-), and then select the alert fields from the list of options. For example, `-la`.

The `alertField` can be one of the following values associated with the alert definition:

`alertName`

The name of an alert definition.

`host`

The host of the Oracle GoldenGate object whose monitoring point triggers the alert.

`alertObjectName`

The name associated with the object whose monitoring point triggers the alert, such as an Extract process named EXACCT.

`alertSeverity`

The severity level defined for the alert.

`alertMessage`

The message generated by the alert. This is a combination of the condition defined for the alert, the value of the monitoring point, and literal text.

`changedValue`

The new monitoring point value that triggered the alert. For example, you create an alert that is triggered when lag is greater than 5 seconds. The lag is 4 seconds and then it goes to 7 seconds. This triggers the alert and the `changedValue` is 7.

You can remove one or more arguments by selecting the argument check box and clicking Remove Argument. All arguments can be selected using the check box in the table header.

4. Click **Submit** to save your changes and begin using them immediately, or **Cancel** to revert to the original configuration.
5. Ask each Oracle GoldenGate Monitor user that should receive CLI alerts to activate them in the User Profile. For instructions, see [Managing Your User Profile](#).
6. Use the Alert Management tab to create your alerts. For instructions, see [Managing Alert Definitions](#).

Configuring SNMP Alerts

This default template can be viewed and modified though not removed.

1. On the Alert Management tab, click the **Notification Template** subtab.
2. Double-click the **Sntp_Default_Template** to view or modify this template.
3. Use the options as follows to modify this template:

 **Tip:**

You can use the **Clear** button to remove the contents of all of the options.

Notification Template Name

Enter a different name for this template.

Notification Template Enabled

Select this check box to enable the use of this template or deselect to disable it.

SNMP Server Host

Enter the hostname of your SNMP server.

SNMP Trap Port

Enter the number of your notifications (trap) port.

SNMP Community Name

Enter the community name for authentication.

Version

Select the version number you want to use.

4. Click **Submit** to save your changes and begin using them immediately, or **Cancel** to revert to the original configuration.
5. Ask each Oracle GoldenGate Monitor user that should receive SNMP alerts to activate them in the User Profile. For instructions, see [Managing Your User Profile](#).
6. Use the Alert Management tab, to create your alerts. For instructions, see [Managing Alert Definitions](#).

7

Working with Custom Views

Learn how to manage, add, edit, change, and remove the views for your business needs. Here we explain the procedures for working with customer Monitor views.

- [About Views](#)
- [Managing Views](#)
- [Adding, Changing, and Removing Views](#)

About Views

A view is a customized representation of any related or unrelated group of Oracle GoldenGate objects in your enterprise. By using different views of your Oracle GoldenGate environment, you can more easily monitor large installations that have multiple Oracle GoldenGate instances or complex process topologies. Views also can help you divide up the monitoring workload among the members of your team, each person being responsible only for those objects in his or her assigned view (or views).

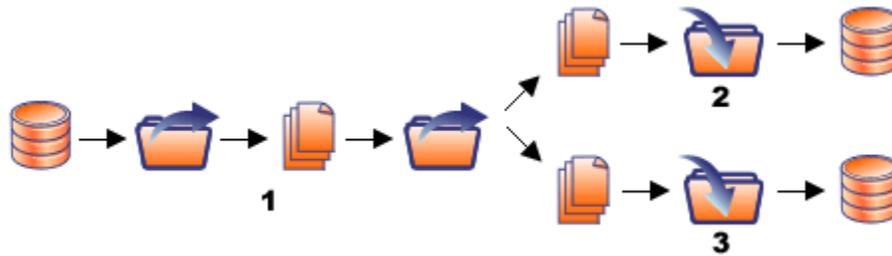
Views are included as nodes in the Navigation Tree. Each view has one or more sub-nodes that represent the Oracle GoldenGate objects that the view contains. See [About the Objects](#).

You can create any number of views. For example, there can be a view for each Oracle GoldenGate instance or each Oracle GoldenGate host. There can be views representing different data paths to different targets, and views representing different parallel process streams. You have control over the granularity of your views, from multiple solutions to a single object.

One advantage of using views is that you can configure status and lag alerts for them. You might, for example, create a view that focuses on a subset of objects that are prone to processing interruptions or anomalies (for example, network disruptions), and then configure alerts to help you monitor them. You can include any objects together in a view, even objects that have no relationship to one another. Objects need not even be within the same Oracle GoldenGate Instance or Solution.

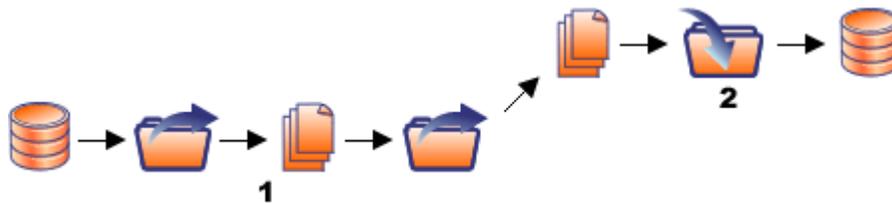
In the following example, each of the numbers (1, 2, and 3) represents an Oracle GoldenGate Instance. The following diagram shows the full Oracle GoldenGate solution, which consists of data paths to two targets:

- System 1 to System 2
- System 1 to System 3



In this example, an administrator could create a view for each of the two replication data paths that originate from System 1.

"View One" would show end-to-end replication from System 1 to System 2:



"View Two" would show end-to-end replication from System 1 (1 in diagram) to System 3:



As an alternative to (or in addition to) the two views in this example, there could be three views, each one representing one of the three Oracle GoldenGate instances.

Related Topics

[Managing Views](#)

[Adding, Changing, and Removing Views](#)

Managing Views

Use the View Management tab to create custom views for monitoring any or all of the Oracle GoldenGate components in your enterprise. You can create any number of views containing any number of related or unrelated Oracle GoldenGate objects. See [About Views](#).

Only Super Administrators, Administrators, and Power Operators can manage views.

On the View Management tab, you can take the following actions:

- To create a view definition, click **New View**. See [Adding, Changing, and Removing Views](#).
- To edit a view, click its name in the Manage Views list to open the Edit View screen. See [Adding, Changing, and Removing Views](#)
- To delete a view, select the check box next to its name in the list, and then click Remove View(s).

Related Topics

[About Views](#)

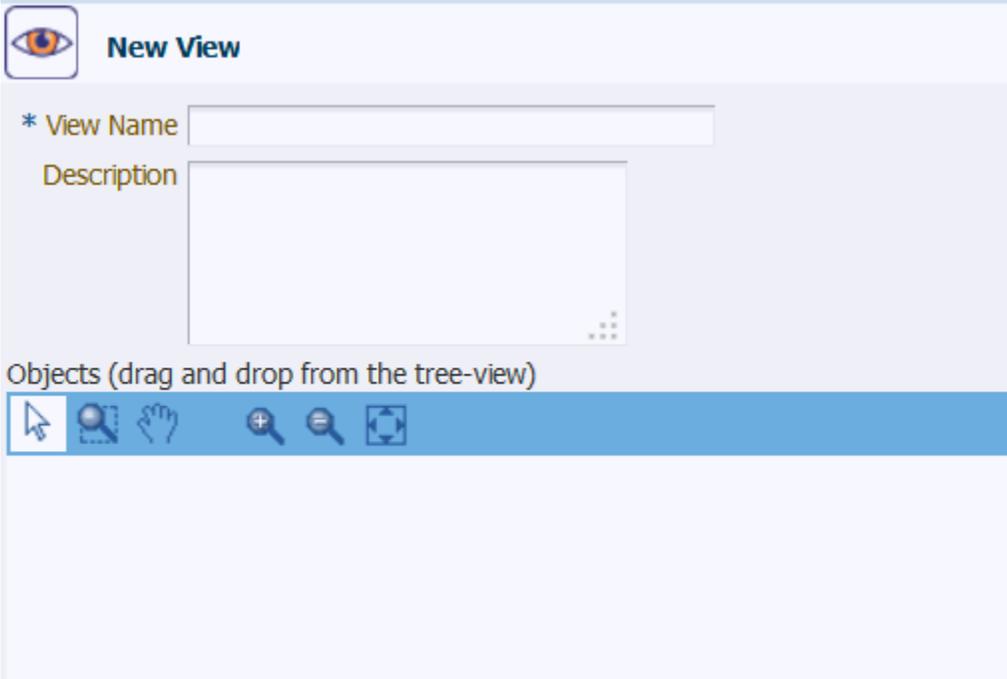
Adding, Changing, and Removing Views

An Oracle GoldenGate Monitor Administrator or Power Operator user can create, edit, and remove custom views of the Oracle GoldenGate components. This topic shows how:

- [To create a view](#)
- [To change a view](#)
- [To remove a view](#)

To create a view

1. On the View Management tab, click **New View**. The New View screen appears in the panel to the right of the Navigation Tree. For a description of the Objects section toolbar, see [About the Objects](#).



The screenshot shows the 'New View' dialog box. At the top left is an eye icon. The title is 'New View'. Below the title are two input fields: '* View Name' and 'Description'. Below the 'Description' field is a section titled 'Objects (drag and drop from the tree-view)' which contains a toolbar with icons for selection, zoom, and pan.

2. For **View Name**, type a name for this view. You can use up to 30 characters, including numbers, uppercase and lowercase letters, underscores, and dashes.

3. (Optional) Supply a brief description of this view, using up to 255 characters.
4. (Optional) In the upper right corner of the New View screen, click the **Table Data View** icon () to change the workspace from diagram format (the default) to table format. The diagram format shows objects as a flow diagram (in their relationship to one another), whereas the table format shows them in list form. You can switch between diagram and table formats at any time. When using the diagram format, use the diagram toolbar as needed to move around the workspace. See [About the Diagram View](#).
5. From the Navigation Tree, drag objects to the New View workspace as needed. When dragging upper-level nodes from the tree (such as Host or Instance), you are prompted to include the child objects of that node as an option.
6. Review your view objects. To remove any object, select it in one of the following ways, and then click **Remove Selected Object(s)**. You cannot undo this action.
 - To select within a diagram, click on the object. Press the Control key to select multiple objects.
 - To select within a table, select the check box next to each item that is to be removed.
7. Click **Submit**. The new view is displayed in the Manage Views list.

To change a view

1. In the Manage Views list of the View Management tab, click the name of the view that you want to change. The Edit View screen appears.
2. Do one of the following:
 - Drag new objects from the Navigation Tree to the Objects workspace.
 - Select objects that you want to remove and click **Remove Selected Object(s)**.
3. Click **Submit**.

To remove a view

1. In the Manage Views list of the View Management tab, select the check box next to the name of the view (or views) that you want to remove.
2. Click **Remove View(s)**. You cannot undo this action.

Related Topics

[Managing Views](#)

A

Attributes

Here we describe the attributes (also called "monitoring points") captured by Oracle GoldenGate Monitor. Metrics apply to both Extract and Replicat targets.

- [Checkpoint Position](#)
- [Connected | Disconnected](#)
- [Delta Deletes](#)
- [Delta Discards](#)
- [Delta Executed DDLs](#)
- [Delta Ignores](#)
- [Delta Inserts](#)
- [Delta Operation Per Second](#)
- [Delta Operations](#)
- [Delta Row Fetch Attempts](#)
- [Delta Row Fetch Failures](#)
- [Delta Truncates](#)
- [Delta Updates](#)
- [End of File](#)
- [GGG Version](#)
- [Group Name](#)
- [Host Name](#)
- [Lag](#)
- [Last Checkpoint Timestamp](#)
- [Last Operation Timestamp](#)
- [Last Processed Timestamp](#)
- [Manager Port](#)
- [Mapped Total Inserts](#)
- [Mapped Total Updates](#)
- [Mapped Total Delete](#)
- [Mapped Total Truncates](#)
- [Message](#)
- [Message Code](#)
- [Message Date](#)
- [Message Severity](#)

- Message Text
- Name
- Path
- Seconds Since Last OGG Checkpoint
- Start Time
- Status
- Total Deletes
- Total Discards
- Total Executed DDLs
- Total Ignores
- Total Inserts
- Total Operations
- Total Row Fetch Attempts
- Total Row Fetch Failures
- Total Truncates
- Total Updates
- Type
- Version
- Working Directory

Checkpoint Position

Shows a composite representation of the checkpoints that were persisted to disk most recently by Extract or Replicat. The value is captured by the monitoring Agent when the metric is published, right after the checkpoint gets persisted.

Extract creates read and write checkpoints, and Replicat creates only read checkpoints. Each individual checkpoint within the composite Checkpoint Position consists of the RBA (relative byte address) of a record in the transaction log or trail (depending on the process and whether it is a read or write checkpoint) and the sequence number of the log or trail file that contains the record. There can be a series of read checkpoints in multiple data source log files (such as Extract from Oracle Real Application Cluster), and/or multiple write checkpoints such as in Extract configurations with multiple trail files.

Accepted Values: Different databases use different representations of the position of a record in the log. Therefore, instead of numeric values, Checkpoint Position is published as a string of text characters encoded in UTF8. For each individual checkpoint within Checkpoint Position, the following are shown the way that they are returned by the GGSCI `SEND group-name STATUS` command:

- The values of the RBA (relative byte address)
- The file sequence number
- The time stamp

Connected | Disconnected

Valid for Instance, Capture, Data Pump, Delivery.

Shows whether or not the Oracle GoldenGate Monitor Server can connect to the Oracle GoldenGate Monitor Agent that is running within the Oracle GoldenGate Instance.

Accepted Values: Connected or Disconnected

Delta Deletes

Shows the number, since the metric was last reported, of `DELETE` operations that were processed by the selected Oracle GoldenGate process in its current run session.

Accepted Values: A positive integer

Delta Discards

Shows the number, since the metric was last reported, of `DISCARD` operations that were processed by the selected Oracle GoldenGate process in its current run session. The records are written to the discard file that is associated with the process.

Accepted Values: Positive integer.

Delta Executed DDLs

Shows the count of executed data definition language (DDL) operations that were processed by the selected Oracle GoldenGate process since the last sample time.

Accepted Values: Positive integer

Delta Ignores

Shows the number of data manipulation language (DML) operations that were ignored since the last sample time.

Accepted Values: Positive integer

Delta Inserts

Shows the number of DML `INSERT` operations that were processed by the selected Oracle GoldenGate process since the last sample.

Accepted Values: A positive integer

Delta Operation Per Second

Shows the number of operations (per second) that were processed by the selected Oracle GoldenGate process since the last sample.

Accepted Values: A positive integer

Delta Operations

Shows the number of operations that were processed by the selected Oracle GoldenGate process since the last sample.

Accepted Values: A positive integer

Delta Row Fetch Attempts

Shows the number of row fetch attempts that were processed by the selected Oracle GoldenGate process since the last sample. A fetch must be done occasionally to obtain row values when the information is incomplete or absent in the transaction log.

Accepted Values: Positive integer

Delta Row Fetch Failures

Shows the number of row fetches that the selected Oracle GoldenGate process failed to complete since the last sample. A fetch must be done occasionally to obtain row values when the information is incomplete or absent in the transaction log

Accepted Values: Positive integer

Delta Truncates

Shows the number of `TRUNCATE` operations that were processed by the selected Oracle GoldenGate process in its current run session since the last sample.

Accepted Values: A positive integer

Delta Updates

Shows the number of `UPDATE` (including primary key updates) operations that were processed by the selected Oracle GoldenGate process in its current run session since the last sample.

Accepted Values: A positive integer

End of File

Shows whether or not the selected process has reached the end of the input from its data source (transaction log or trail file).

Accepted Values: `TRUE` (at end of file) or `FALSE`

GG5 Version

Valid for Instance.

Indicates the version of Oracle GoldenGate that the selected Oracle GoldenGate Instance represents.

Accepted Values: X.x.x (major, minor, and maintenance version levels), for example 11.1.1

Group Name

Valid for Capture, Data Pump, Delivery.

Shows the name of the process group that is associated with the selected process. A process group is a logical identifier that also includes the checkpoint file, parameter file, and other files that are associated with a specific instance of a process type.

Accepted Values: The alphanumeric name of the group as it was specified when `ADD EXTRACT` or `ADD REPLICAT` was issued in GGSCI, for example `oggext`

Host Name

Valid for Host.

Shows the name of the host system that is selected in the Navigation Tree or Diagram View.

Accepted Values: The fully qualified DNS name of the host, or its IP address

Lag

Shows the time difference between the [Last Operation Timestamp](#) and the [Last Processed Timestamp](#). This metric represents the true lag between the Oracle GoldenGate process and its data source. This lag value should match the value that is returned from the GGSCI command `SEND group GETLAG`.

Accepted Values: The lag time, in seconds

Last Checkpoint Timestamp

Shows the time when the last checkpoint was written by the process.

Accepted Values: Date-time value in the format of MM/DD/YYYY HH:MM:SS {AM | PM}, for example: 01/14/2013 09:36:32 AM.

Last Operation Timestamp

Shows the time when an operation was committed in the data source, as recorded in the transaction log.

Accepted Values: Date-time value in the format of MM/DD/YYYY HH:MM:SS {AM | PM}, for example: 01/14/2013 09:36:32 AM

Last Processed Timestamp

Shows the time when a valid record was returned to the selected process. For Extract, this time value is assigned when the record is processed after the container transaction commits (not the time when the record is read from the transaction log). For a Data Pump or Replicat, this time value is returned immediately, because all transactions in the trail are known to be committed.

Accepted Values: Date time value in the format of MM/DD/YYYY HH:MM:SS {AM | PM}, for example: 01/14/2013 09:36:32 AM

Manager Port

Valid for Instance.

Shows the port on which the Manager process of the Instance is running on its local system. The default port number is 7809, but a different port could be specified for this Manager and can be identified by viewing the Manager parameter file or by issuing the `INFO MANAGER` command in GGSCI (if Manager is running).

Accepted Values: The port number for the Manager process, as specified in the Manager parameter file.

Mapped Total Inserts

Valid for Capture, Data Pump, Delivery.

Shows the total number of `INSERT` operations that were processed by the selected Oracle GoldenGate process in its current run session. The statistic reflects the total operations performed on all of the tables that are specified in the parameter file for that process.



Note:

If any tables are mapped to targets in the Capture configuration, the statistics will reflect the total operations for all of the targets.

Accepted Values: A positive integer.

Mapped Total Updates

Valid for Capture, Data Pump, Delivery.

Shows the total number of `UPDATE` (including primary key updates) operations that were processed by the selected Oracle GoldenGate process in its current run session. The statistic reflects the total operations performed on all of the tables that are specified in the parameter file for that process.

 **Note:**

If any tables are mapped to targets in the Capture configuration, the statistics will reflect the total operations for all of the targets.

Accepted Values: A positive integer.

Mapped Total Delete

Valid for Capture, Data Pump, Delivery.

Shows the total number of `DELETE` operations that were processed by the selected Oracle GoldenGate process in its current run session. The statistic reflects the total operations performed on all of the tables that are specified in the parameter file for that process.

 **Note:**

If any tables are mapped to targets in the Capture configuration, the statistics will reflect the total operations for all of the targets.

Accepted Values: A positive integer.

Mapped Total Truncates

Valid for Capture, Data Pump, Delivery.

Shows the total number of `TRUNCATE` operations that were processed by the selected Oracle GoldenGate process in its current run session. The statistic reflects the total operations performed on all of the tables that are specified in the parameter file for that process.

 **Note:**

If any tables are mapped to targets in the Capture configuration, the statistics will reflect the total operations for all of the targets.

Accepted Values: A positive integer.

Message

The message includes the following information:

- Component attribute: Show the name of the component; for example: `ONLEXT / ONLREP`.

- Message code: Number of an event message from the Oracle GoldenGate error log.
Accepted Values: The numerical code of an Oracle GoldenGate event message in the event log, for example, OGG-00651.
- Message Date: Timestamp of an event message from the Oracle GoldenGate log.
Accepted Values: A date-time value in the form of YYYY-MM-DD HH:MM:SS (in 24-hour clock format)
- Message Text: Text of an event message from the Oracle GoldenGate error log.
Accepted Values: A text string from the message.

Message Code

Valid for Capture, Data Pump, Delivery, Instance.

Shows the code number of an event message from the Oracle GoldenGate error log.

Accepted Values: The numerical code of an Oracle GoldenGate event message in the event log, for example OGG-00651.

Message Date

Valid for Capture, Data Pump, Delivery, Instance.

Shows the timestamp of an event message from the Oracle GoldenGate log.

Accepted Values: A date-time value in the form of YYYY-MM-DD HH:MM:SS (in 24-hour clock format)

Message Severity

Valid for Capture, Data Pump, Delivery, Instance.

Shows the severity of a message in the Oracle GoldenGate event log.

Accepted Values: INFO, WARNING, ERROR

Message Text

Valid for Capture, Data Pump, Delivery, Instance.

Shows the text of an event message from the Oracle GoldenGate error log.

Accepted Values: A text string from the message

Name

Name of the selected object.

Accepted Values: Name of the object as displayed in the Oracle GoldenGate Monitor interface.

Path

Valid for Trail.

Shows the path name of the selected trail.

Accepted Values: The relative or full path name of the trail, appended with the two-character logical name, for example `dirdat/tr`.

Seconds Since Last OGG Checkpoint

Time (in seconds) since the last checkpoint.

Start Time

Shows the time that an Oracle GoldenGate component received its startup information after it has been created.

Accepted Values: 64-bit Julian GMT time stamp in microseconds

Status

Shows the status of the selected process.

Accepted Values: Unknown, Registered, Initializing, Running, Stopping, Forced Stopping, Stopped, Forced Stop, Abended, Killed, and Unresponsive

Total Deletes

Shows the total number of `DELETE` operations that were processed by the selected Oracle GoldenGate process in its current run session.

Accepted Values: A positive integer

Total Discards

Shows the total number of operations that were discarded by the selected Oracle GoldenGate process in its current run session. The records are written to the discard file that is associated with the process.

Accepted Values: Positive integer.

Total Executed DDLs

Shows the total number of DDLs operations that were processed by the selected Oracle GoldenGate process in its current run session.

Accepted Values: Positive integer

Total Ignores

Shows the total number of DML operations that were ignored by the process in its current run session. Errors are included in the Total Ignores metric.

Accepted Values: Positive integer

Total Inserts

Shows the total number of DML `INSERT` operations that were processed by the selected Oracle GoldenGate process in its current run session. The statistic reflects the total operations performed on all of the tables that are specified in the parameter file for that process. **Note:** If any tables are mapped to targets in the Extract configuration, the statistics will reflect the total operations for all of the targets.

Accepted Values: A positive integer

Total Operations

Shows the total number of operations that were processed by the selected Oracle GoldenGate process since the last sample.

```
Total operations =  
  total DML changes (insert, update, delete)  
  +  
  total DDL (table definition changes)  
  +  
  Truncate changes
```

Accepted Values: A positive integer

Total Row Fetch Attempts

Shows the total number of row fetches that the selected process performed in its current run session. A fetch must be done sometimes to obtain row values when the information is incomplete or absent in the transaction log.

Accepted Values: Positive integer

Total Row Fetch Failures

Shows the total number of row fetches that the selected process was unable to perform in its current run session.

Accepted Values: Positive integer

Total Truncates

Shows the total number of `TRUNCATE` operations that were processed by the selected Oracle GoldenGate process in its current run session. The statistic reflects the total operations performed on all of the tables that are specified in the parameter file for

that process. Note: if any tables are mapped to targets in the Extract configuration, the statistics will reflect the total operations for all of the targets.

Accepted Values: A positive integer

Total Updates

Shows the total number of UPDATE (including primary key updates) operations that were processed by the selected Oracle GoldenGate process in its current run session. The statistic reflects the total operations performed on all of the tables that are specified in the parameter file for that process. **Note:** If any tables are mapped to targets in the Extract configuration, the statistics will reflect the total operations for all of the targets.

Type

Valid for Database.

Shows the type of database. Examples are Oracle and SQL Server.

Accepted Values: The alphanumeric brand name of the database.

Version

Valid for Database.

Shows the version of the database.

Accepted Values: X.x.x (major, minor, and maintenance version levels), for example 11.1.1.

Working Directory

Valid for Instance.

Shows the directory that contains the Manager executable file for the selected Oracle GoldenGate Instance. This is the home directory of the Oracle GoldenGate installation.

Accepted Values: The full path name of the directory