

Oracle GoldenGate Monitor®

Administrator's Guide

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PREFACE

About GoldenGate Guides



The complete Oracle GoldenGate documentation set contains the following components:

HP NonStop platforms

- *Oracle GoldenGate HP NonStop Administrator's Guide*: Explains how to plan for, configure, and implement the Oracle GoldenGate replication solution on the NonStop platform.
- *Oracle GoldenGate HP NonStop Reference Guide*: Contains detailed information about Oracle GoldenGate parameters, commands, and functions for the NonStop platform.

Windows, UNIX, Linux platforms

- *Installation and Setup guides*: There is one such guide for each database that is supported by Oracle GoldenGate. It contains system requirements, pre-installation and post-installation procedures, installation instructions, and other system-specific information for installing the Oracle GoldenGate replication solution.
- *Oracle GoldenGate Windows and UNIX Administrator's Guide*: Explains how to plan for, configure, and implement the Oracle GoldenGate replication solution on the Windows and UNIX platforms.
- *Oracle GoldenGate Windows and UNIX Reference Guide*: Contains detailed information about Oracle GoldenGate parameters, commands, and functions for the Windows and UNIX platforms.
- *Oracle GoldenGate Windows and UNIX Troubleshooting and Tuning Guide*: Contains suggestions for improving the performance of the Oracle GoldenGate replication solution and provides solutions to common problems.

Other Oracle GoldenGate products

- *Oracle GoldenGate Director Administrator's Guide*: Explains how to install, run, and administer Oracle GoldenGate Director for configuring, managing, monitoring, and reporting on the Oracle GoldenGate replication components.
- *Oracle GoldenGate Veridata Administrator's Guide*: Explains how to install, run, and administer the Oracle GoldenGate Veridata data comparison solution.
- *Oracle GoldenGate for Java Administrator's Guide*: Explains how to install, configure, and run Oracle GoldenGate for Java to capture JMS messages to Oracle GoldenGate trails or deliver captured data to messaging systems or custom APIs.
- *Oracle GoldenGate for Flat File Administrator's Guide*: Explains how to install, configure, and run Oracle GoldenGate for Flat File to format data captured by Oracle GoldenGate as batch input to ETL, proprietary or legacy applications.



Typographic Conventions Used in This Manual

This manual uses the following style conventions:

- Parameters are shown in upper case, for example:
`CHECKPARAMS`
- File names and directory names are shown in lower case unless they are case-sensitive to the operating system or software application they are associated with, for example:
`acct.properties`
`GLOBALS`
- Parameters, command arguments, file names, and table names are shown in monospace font when embedded in text, for example:
Use `mkdir` to create the new directory.
Edit the `acct.properties` file.
- Variables are shown in italics in both code examples and embedded text, for example:
`http://host_name:http_port/monitor`
Change *host_name* to the fully qualified name of the server.
- When one of multiple mutually-exclusive arguments must be selected, the selection is enclosed within braces and separated with pipe characters, for example:
`VIEW PARAMS {MGR | groupname | filename}`
- Optional arguments are enclosed within brackets, for example:
`CLEANUP EXTRACT groupname [, SAVE count]`
- When there are numerous multiple optional arguments, a placeholder such as [*option*] may be used, and the options listed and described separately, for example:
`TRANLOGOPTIONS [option]`
- When an argument is accepted more than once, an ellipsis character (. . .) is used, for example:
`PARAMS ([requirement_rule] param_spec [, param_spec] [, . . .])`
- The ampersand (&) is used as a continuation character in Oracle GoldenGate parameter files. It must be placed at the end of each line of a parameter statement that spans multiple lines if the command does not have a termination character. Most examples in this documentation show the ampersand in its proper place; however, some examples of multi-line statements may omit it to allow for space constraints of the publication format.

CHAPTER 1

Introduction to Oracle GoldenGate Monitoring

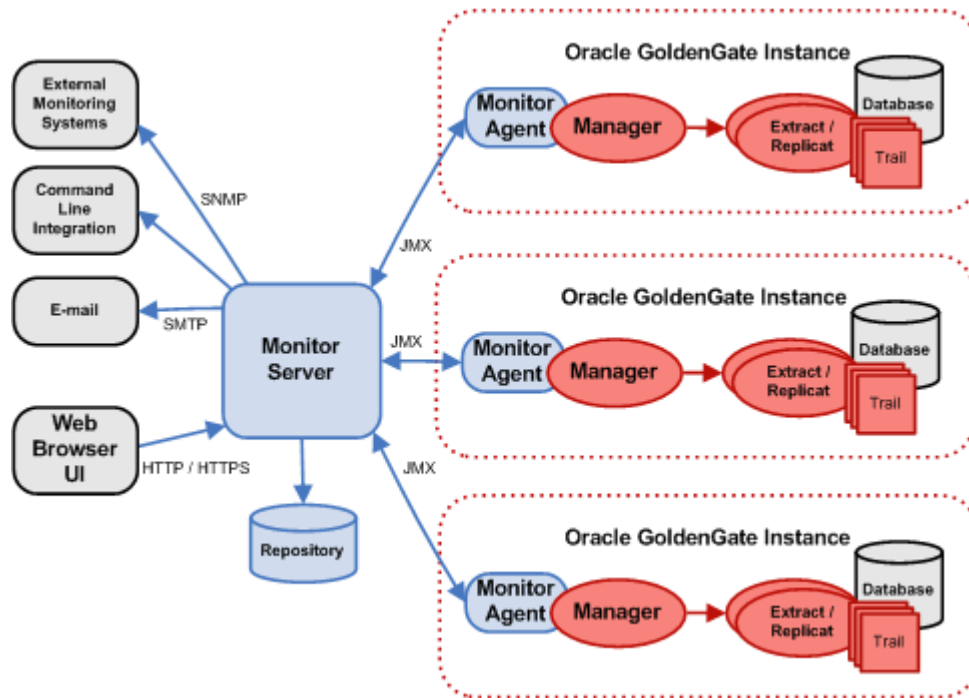
.....

Oracle GoldenGate instances can be configured for monitoring by a remote client. When monitoring is enabled, Extract, Replicat, and Manager processes supply periodic updates of monitoring points such as status, lag, and checkpoints. The Manager sends these monitoring points to the Oracle GoldenGate Agent, a Java agent that communicates with the client.

Oracle GoldenGate releases 11.2.1 and later also support monitoring with Oracle Enterprise Manager. Refer to the *Oracle Enterprise Manager System Monitoring Plug-in Installation Guide for Oracle GoldenGate* for information on this option.

Overview of Oracle GoldenGate Monitor Architecture

Oracle GoldenGate Monitor uses a browser-based graphical user interface to monitor Oracle GoldenGate instances remotely. It includes the components shown in the diagram.



.....

Oracle GoldenGate

An Oracle GoldenGate Monitor Server communicates with one or more Oracle GoldenGate instances using Java Management Extensions (JMX). The Manager process for each Oracle GoldenGate instance is associated with an Oracle GoldenGate Agent that supplies information about the instance to the Oracle GoldenGate Monitor Server.

Oracle GoldenGate Agent

An Oracle GoldenGate Agent is installed with each Oracle GoldenGate instance. It collects information about the instance and sends it to the Oracle GoldenGate Monitor Server.

For Oracle GoldenGate release 11.1.1.1, the Oracle GoldenGate Agent is embedded in the Manager process and is a Java agent interacting with a C programming language sub-agent. For Oracle GoldenGate release 11.2.1 and later, the Oracle GoldenGate Agent is a separate Java agent (sometimes referred to as a standalone agent) and there is no C sub-agent.

Oracle GoldenGate Monitor Server

The Oracle GoldenGate Monitor Server coordinates the monitoring of multiple Oracle GoldenGate instances. The Oracle GoldenGate Monitor Server is a Java application that 1) processes information from Oracle GoldenGate Agents and communicates it to the web browser and 2) manages users, history, the display of information, and notifications triggered by events.

Oracle GoldenGate Monitor Repository

The Oracle GoldenGate Monitor Server uses a database as a central repository to store information about users and groups, process status, events, and other information.

Understanding the Discovery Process

Oracle GoldenGate Monitor has preset definitions and rules that determine how it defines and automatically discovers solutions and databases.

Discovering Solutions

When you start your Oracle GoldenGate processes, the agent registers with the Oracle GoldenGate Monitor server. The server uses the information provided by the agent to look for solutions. Then when you log into the browser user interface, these solutions are available to display.

To be classified as a complete solution, there must be a continuous flow capturing and replicating changes from a source to a target database. The discovery process looks for complete solutions starting from a source database, creating a trail, and replicating the changes to a target database (a single end-to-end solution). Or it looks for processing that captures source database changes and delivers them to a target, and also captures changes from the target and delivers them to the source (a bi-directional solution).

Partial Solutions

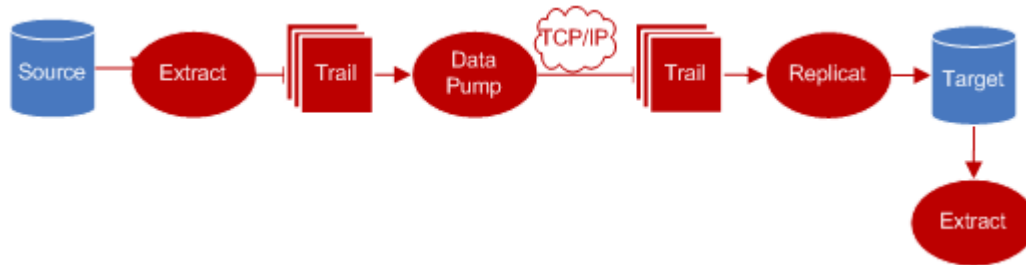
Partial solutions that are not registered as continuously linked from the source to the target database are not displayed as solutions in the user interface.

Example 1 This diagram represents a partial solution with the Replicat configured, but not started. Since the Replicat has never registered, the server does not see a continuous link to the target. Some pieces will show up in the tree view, but the configuration will not be included in the solutions list.



Registration of the Manager includes the names of its processes, so the Extract and Replicat names will be listed with the instance in the tree view whether they have registered or not. Linked databases and remote trails do not show up until the process registers, so the remote trail and the target database in the example will not be listed until the user starts the Replicat and it registers. This example will become a solution once the Replicat registers.

Example 2 In this second example there are continuous links from the source to the target databases, but there is no link from the Extract that is attached to the target. This makes it a partial solution that will not be included in the solutions list.



Using Views for Partial Solutions

Although partial solutions are not automatically discovered, they can be displayed in the user interface if you create a view. You can create a view to include items that are listed under an instance in the tree view. See the user interface online help for information on how to create a view.

Discovering Databases

Recognition of your source or target database by Oracle GoldenGate Monitor processing depends on the database type, where it is installed, and the process that is registering it. The solution discovery process compares the database instance, the Manager's port, and the host name to decide whether databases are the same.

The same database instance on the same host will be categorized as a separate database if it is registered by two different Managers. Two databases (such as two schemas) within the

same instance (such as Oracle SID), registered by the same Manager, and residing on the same host, display as one database icon.

CHAPTER 2

Installing Oracle GoldenGate Monitor Server



This chapter lists the system requirements and provides instruction on how to install, upgrade, and uninstall Oracle GoldenGate Monitor Server

System Requirements

Before you begin the installation of Oracle GoldenGate Monitor Server, you should verify that your system meets requirements and gather the information that you will need during the installation.

Oracle GoldenGate Monitor Server

This section explains how to verify your platform is supported, outlines the hardware requirements, and discusses the software that is associated with Oracle GoldenGate Monitor Server.

Supported Platforms

To find out which Oracle GoldenGate Monitor builds are available for a specific combination of database version and operating system, log on to <http://support.oracle.com> and select the **Certifications** tab. For assistance, click **Tips for Finding Certifications**.

An e-mail address and password are required to enter this site.

Hardware Requirements

- Oracle GoldenGate Monitor Server requires dedicated ports. You must identify these ports during installation.
- The Oracle GoldenGate Monitor installer allocates 1 GB of memory during installation. The machine must have 0.5 GB of available memory plus the 1 GB heap size to do this. If the installer is unable to allocate the default 1 GB RAM, the Oracle GoldenGate Monitor Server will fail to start.

NOTE You can reset the memory allotment after the installation if the server fails to start, or if your monitoring needs are lower (See “Changing the Memory Requirement” on page 31.)



- Memory requirements vary with usage, such as the number of users, agents, and monitoring points you include in your configuration. Plan for at least 2 GB of available RAM if you may be monitoring the maximum number of instances and processes.

NOTE Oracle GoldenGate Monitor supports a maximum of 20 Oracle GoldenGate instances with up to 50 processes running in one of the instances.

- The storage for Oracle GoldenGate Monitor server software requires approximately 150 MB of disk. A more exact requirement is displayed during the installation.
- The minimum disk space required for the repository is 200 MB, but total storage requirements will depend on:
 - The number of Oracle GoldenGate Monitor environments being monitored (the number of agents)
 - The number of processes being monitored
 - The number of monitoring points and their polling frequency
 - How much historical data you need to retain and how often you purge historical data

Associated Software

- The Apache Tomcat web server is included with the Oracle GoldenGate Monitor install.
- A production Oracle GoldenGate Monitor Server must be installed on a system with access to one of the following databases that can be used as a repository:
 - MySQL Enterprise version 5.0 or 5.1
 - SQL Server 2005 or 2008
 - Oracle 10g or 11g

NOTE The embedded Derby database can be used as the repository for a demonstration of Oracle GoldenGate Monitor Server, but is not supported for a production system.

Oracle GoldenGate Monitor software includes the necessary drivers, so no additional set up is required to access the selected repository database.

- To use the graphical installer on a UNIX or Linux system, a windowing system such as X Windows must be available.

User Interface Requirements

The user interface requires a browser with:

- Network connectivity to the Oracle GoldenGate Monitor Server
- JavaScript enabled
- Cookies enabled

The following browsers have been certified to run with Oracle GoldenGate Monitor Server:

- Microsoft Internet Explorer version 7 or 8
- Mozilla Firefox version 3

The preferable display resolution for the Oracle GoldenGate Monitor user interface screen is at least 1024 x 768.

Information Needed for the Installation

Perform these steps to set up or identify the information you will need during the installation.

1. Identify the fully qualified name of the computer on which Oracle GoldenGate Monitor Server will be installed. This name must be valid for communication with the Oracle GoldenGate Agents. See “Selecting the Host Names” on page 26 for more information.
2. Set up or identify the database that will be the repository. This database must be running and available to the browser. Identify the TCP/IP port on which the database is listening.
3. Add a new or identify an existing user for the repository database with:
 - SELECT permission
 - Privileges to create a database and the objects in it

The installation program will verify the user credentials before allowing the installation to proceed.

4. Identify available ports (not bound to any process) to be used. The installation defaults are:

○ Shutdown	5501
○ HTTP	5500
○ HTTPS	5505
○ JMX Server	5502

Plan to change the port if another process is using the default number.

5. If you plan to use e-mail alerts, identify the Simple Mail Transfer Protocol (SMTP) Server and its port.
6. If you plan to send messages to existing services, identify the Simple Network Management Protocol (SNMP) version, host server, and trap port.
7. If you plan to use a Secure Sockets Layer (SSL) connection, create a keystore file with the necessary security certificates imported into it. This should be in the Java KeyStore (JKS) format used by Java keytool command-line utility.
8. If you plan to install Oracle GoldenGate Monitor as a Windows service, you must log in using an Administrative user account before doing the installation.

Installing Oracle GoldenGate Monitor Server

These instructions are for installing a new instance of the Oracle GoldenGate Monitor software.

Downloading Oracle GoldenGate Monitor Software

Follow the steps to download the appropriate Oracle GoldenGate Monitor software.

1. Navigate to <http://edelivery.oracle.com>.
2. On the **Welcome** page:
 - Select your language.
 - Click **Continue**.
3. On the **Export Validation** page:
 - Enter your identification information.
 - Accept the **Trial License Agreement** (even if you have a permanent license).
 - Accept the **Export Restrictions**.
 - Click **Continue**.
4. On the **Media Pack Search** page:
 - Select the **Oracle Fusion Middleware** Product Pack.
 - Select the platform on which you will be installing the software.
 - Click **Go**.
5. In the **Results List**:
 - Select the Media Pack that you want.
 - Click **Continue**.
6. On the **Download** page:
 - Click **Download** for each component that you want. Follow the automatic download process to transfer the mediapack.zip file to your system.

NOTE Before installing the software, review the release notes for any new features, new requirements, or bug fixes that affect your current configuration.

Installing a New Oracle GoldenGate Monitor Server

You can use the Oracle GoldenGate Monitor graphical installer program or install from the command line.

Using the Graphical Installer

Follow these steps to install a new Oracle GoldenGate Monitor Server using the graphical installer.

1. Run the installer as follows:
 - On a Windows system, run the program:
`GoldenGate_Monitor_release.exe`
 - On a UNIX system, bring up your X windows system and run the shell script:
`./Oracle_GoldenGate_Monitor_release.sh`

2. **Welcome:** Press **Next** on the first screen.
3. **Select Destination Directory:** Accept the default, enter a different location, or browse to the location where you want the Oracle GoldenGate Monitor installation directory to be created. Ensure the free disk space displayed on the screen is enough to meet the displayed requirements for the installation. If this is not the only installation of Oracle GoldenGate Monitor on your system, ensure that the destination directory for this new installation is different.

If the destination exists, the system asks you to confirm that the entered destination is where you want the installation. A second window displays if the destination has an existing Oracle GoldenGate Monitor installation. Check the box on this screen to confirm the upgrade to the existing installation or click **Back** to select a different destination. If you want to upgrade an existing system see “Upgrading Oracle GoldenGate Monitor” on page 20.

4. **(Windows only) Start Menu Folder:** To add Oracle GoldenGate Monitor to the **Programs** list of the **Start** menu, accept the default menu item name (to be created during installation), enter a different one, or select one from the list. To make the shortcuts available to everyone who uses the system, select **Create shortcuts for all users**, otherwise it will only be available to the current user. If you do not want to add an Oracle GoldenGate Monitor shortcut to any list, select **Don't create a Start Menu folder**.

5. **Database:** Select the database that will be the Oracle GoldenGate Monitor repository.

NOTE The embedded database is not valid for a production system and should be used only for a demonstration system.

NOTE To change the database after installation you must reinstall Oracle GoldenGate Monitor Server and repopulate the new database. The original data will no longer be available.

6. If you selected the embedded database, then skip to the next step. Otherwise enter the information Oracle GoldenGate Monitor requires to connect to your repository database.
 - **Oracle database:** Enter the Oracle server host name, port, and SID.
 - **MySQL database:** Enter the MySQL server host name, port, and database name.
 - **SQL Server:** Enter the SQL Server host name, port, and database name. The installer defaults the schema name to `dbo`, which is the only name supported.

7. **Database User Credentials:** Identify an existing database user with DML and DDL privileges for the repository database. This user creates the repository database schema and objects.

The installer verifies the database user credentials before moving to the next screen. An error displays if the program cannot connect to the database, or if the entered user does not exist or does not have the required privileges.

8. **Master User Credentials:** Specify an initial Oracle GoldenGate Monitor administrator user. The administrator is the most privileged role in Oracle GoldenGate Monitor, and can perform all configuration, execution, and monitoring functions. Keep a record of this login. You will use this to initially log in to the Oracle GoldenGate Monitor server.

9. **(Windows only) Monitor Service:** Installing the Oracle GoldenGate Monitor server as a Windows service is recommended. To install as a Windows service, either accept the default service name or enter a name. If there are, or will be, other instances of this software on the local system, make certain that each name is unique. To prevent installation as a service, deselect **Install as a service**.
10. **Monitor Server Ports:** Configure the Oracle GoldenGate Monitor Server by clicking at least one of the check boxes to select secured or non-secured mode. Accept the default HTTP, HTTPS, and shutdown ports if you know they are not being used by any other process. Specify different ones if the defaults are not available. The HTTP port is used by the embedded Tomcat web server application to connect to the Oracle GoldenGate Monitor user interface component. The HTTPS connects in secure mode (SSL). The shutdown port is used by Oracle GoldenGate Monitor to shut down the server processes.
11. **HTTPS Keystore Selection:** This screen is displayed if the secure connection option was selected in the previous screen. You are required to enter or browse to a location and select a valid Java keystore file to be uploaded. The installer copies the keystore file to the Oracle GoldenGate Monitor installation directory `/tomcat/config` subdirectory and uses it for SSL authentication.
12. **JMX Server Configuration:** Accept the default or enter a JMX port. Enter the host name for the Oracle GoldenGate Monitor Server. This must be the fully qualified address recognized by your network (See “Selecting the Host Names” on page 26 for more information.) Enter the user name and password that the Oracle GoldenGate Agent will use to log in to the Oracle GoldenGate Monitor Server. You will need these credentials when you configure the Oracle GoldenGate instance.
13. **SMTP Configuration:** Deselect the check box if you do not want e-mail notifications from Oracle GoldenGate Monitor. Otherwise enter the SMTP server host name and port. Enter a user name and password that can communicate with the server if it is a secure SMTP server. Accept the default or enter a name and e-mail address from which the e-mail will be sent.
14. **SNMP Configuration:** Deselect the check box if you do not want Oracle GoldenGate Monitor to send messages to message services. To enable the messaging, select the version and enter the host name and trap port. Click **Enable CLI Integration** to enable the command-line interface.
15. **Information:** Review your installation selections. Press **Back** to make changes or press **Next** to begin the installation.
16. **Completing the GoldenGate Monitor Setup Wizard:** To start the service after the installation is finished, accept the default. To launch the Oracle GoldenGate Monitor user interface or view the readme file, check the appropriate boxes.
17. Click **Finish** to close the installer.

Using the Command-Line Installer

The command-line installer displays a question or prompt followed by the default answer in brackets. For example:

```
Where should Oracle GoldenGate Monitor be installed?  
[C:/Program Files/Oracle GoldenGate Monitor]
```

When there is no default, the brackets are empty. For example:

```
SMTP server host name:  
[ ]
```

Enter your answer or accept the default and press the **Enter** key. The installer may display a message about your entry or the installer's progress. For example:

```
INFO {main} Checking if application is already installed.
```

Install Steps

Follow these steps to install using the command-line installer.

1. Run the installer with the `-c` command-line option.

- On Windows:

```
Shell> start\wait GoldenGate_Monitor_release.exe -c
```

- On a UNIX operating system:

```
Shell> ./Oracle_GoldenGate_Monitor_release.sh -c
```

2. You are asked for an installation location. Accept the default or enter a different location for the Oracle GoldenGate Monitor installation. If this is not the only installation of Oracle GoldenGate Monitor on your system, ensure that the destination directory for this new installation is different.

If the destination you specify exists, the system asks you to confirm that you want to do an upgrade. Enter **Yes** (1) to confirm the upgrade. Enter **No** (2) and press the keyboard shortcut **Ctrl+C** to cancel the installation so you can start over.

3. (Windows only) The installer asks if you want to add Oracle GoldenGate Monitor to the **Programs** list of the **Start** menu. If you enter **yes**, it asks for the name to use for the shortcut menu item. Accept the default or enter a name. Next it asks if you want to make the shortcuts available to everyone who uses the system. Enter **yes** (y) to create shortcuts for all users, otherwise the shortcut will be available only to the current user.

4. Enter 1 (embedded), 2 (MySQL), 3 (Oracle) or 4 (SQL Server) to select the database that will be the Oracle GoldenGate Monitor repository.

NOTE The embedded database is not valid for a production system and should be used only for a demonstration system.

NOTE To change the database after installation you must reinstall Oracle GoldenGate Monitor Server and repopulate the new database. The original data will no longer be available.

5. If you selected the embedded database, then skip to the next step. Otherwise you will be asked for the information Oracle GoldenGate Monitor requires to connect to your repository database.

- **Oracle database:** Oracle server host name, port, and SID
- **MySQL database:** MySQL server host name, port, and database name
- **SQL Server:** SQL Server host name, port, and database name. (The installer defaults the schema name to `dbo`, which is the only name supported.)

6. You are asked to identify an existing database user with DML and DDL privileges for the repository database. This user creates the repository database schema and objects.
The installer verifies the database user credentials. An error displays if the program cannot connect to the database, or if the entered user does not exist or does not have the required privileges.
7. You are asked to enter the Oracle GoldenGate Monitor administrator user credentials to be created. The administrator can perform all configuration, execution, and monitoring functions. Keep a record of this login. You will use this to initially log in to the Oracle GoldenGate Monitor server.
8. You are asked to enter the ports that Oracle GoldenGate Monitor will listen on. Ensure that the port you select is not being used by any other process.
 - If you enter yes (y) to configure the HTTP server, you can accept the default HTTP port or enter a different one. The HTTP port is used by the embedded Tomcat web server application to connect to the Oracle GoldenGate Monitor web component.
 - If you enter yes (y) to configure the HTTPS server, you can accept the default HTTPS port or enter a different one. The HTTPS connects in secure mode (SSL).
 - Accept the default shutdown port or enter a different one. The shutdown port is used by Oracle GoldenGate Monitor to shut down the server processes.
9. If you entered yes to configure the HTTPS server, the system will prompt you for the location of a valid Java keystore file to be uploaded. The installer copies the keystore file to the Oracle GoldenGate Monitor installation directory `/tomcat/config` subdirectory and uses it for SSL authentication
10. **(Windows only):** Enter yes (y) to install the Oracle GoldenGate Monitor server as a Windows service. Either accept the default service name or enter a name. If there are, or will be, other instances of this software on the local system, make certain that each name is unique.
11. You are asked to configure the JMX Server parameters by entering:
 - The fully qualified address that can be used to communicate with the host. This must be a valid name for connection from the agents.
 - The port that the JMX server will use.
 - The user name and password that the Oracle GoldenGate Agent will use to log in to the Oracle GoldenGate Monitor Server. You will need these credentials when you configure the Oracle GoldenGate instance, so make a note of the user name and password.
12. You are asked if you want to enable e-mail notifications. If you enter yes, you are asked for the SMTP server host name and port. If you indicate it is a secure SMTP server, you are asked to enter a user name and password authorized to communicate with the server. Accept the default or enter a name and e-mail address from which the e-mail will be sent.
13. You are asked if you want to enable SNMP messages to existing message services. If you enter yes (y), select the version and enter the host name and trap port.
14. You are asked if you want to enable the CLI command-line interface. Enter yes (y) for the command-line interface.

15. An installation summary displays the installation location, Java Database Connectivity (JDBC) driver URL, and database user name. Press **Enter** to start the installation.

When the installation completes, you are asked if you want to start the service, launch the Oracle GoldenGate Monitor user interface, or view the readme file.

Upgrading Oracle GoldenGate Monitor

You can use the Oracle GoldenGate Monitor graphical installer program or upgrade from the command line.

NOTE If you are also upgrading monitored 11.1.1.1 Oracle GoldenGate instances to 11.2.1 and later, make sure that you follow the directions to remove the platform-specific library path variable settings as explained in "Preparing the Environment" on page 23.

Using the Graphical Installer

The upgrade program replaces Oracle GoldenGate Monitor software without changing the information in the repository or existing property files. If there are new properties for the release, they will be appended to the existing property file.

To upgrade an existing Oracle GoldenGate Monitor:

1. Stop the Oracle GoldenGate Monitor server.

NOTE The upgrade program attempts to stop the server if it is running, but if the server is in a state requiring an abnormal stop, it will fail. It is therefore recommended that you manually stop the Oracle GoldenGate Monitor Server before running the upgrade program

2. Navigate to the Oracle GoldenGate Monitor installation location.

3. Run the installer as follows:

- On a Windows system, run the program:
`GoldenGate_Monitor_release.exe`
- On a UNIX system, bring up your X windows system and run the shell script:
`./Oracle_GoldenGate_Monitor_release.sh`

4. **Welcome:** Press **Next** on the first screen.

5. **Destination Directory:** Enter or browse to the location where the Oracle GoldenGate Monitor to be upgraded is installed.

6. **Upgrade Confirmation:** The system verifies that the destination directory has an existing Oracle GoldenGate Monitor installation. Check the box to confirm you want to upgrade the existing installation and press **Next**. The system installs the software retaining the existing settings.

7. **Completing the GoldenGate Monitor Setup Wizard:** To start the service after the installation is finished, accept the default. To launch the Oracle GoldenGate Monitor user interface or view the readme file, check the appropriate boxes.

Using the Command-Line Installer

1. Stop the Oracle GoldenGate Monitor server.
2. Navigate to the Oracle GoldenGate Monitor installation location.
3. Run the installer with the command-line option:
 - On Windows:
Shell> start\wait GoldenGate_Monitor_release.exe -c
 - On a UNIX system:
Shell> ./Oracle_GoldenGate_Monitor_release.sh -c
4. Enter the destination directory of the existing installation.
5. Confirm that you want to do an upgrade.

Uninstalling Oracle GoldenGate Monitor

You can use the Oracle GoldenGate Monitor graphical uninstall program or uninstall from the command line.

Using the Graphical Uninstaller

To uninstall Oracle GoldenGate Monitor:

1. Stop the Oracle GoldenGate Monitor server.
 - NOTE** The uninstall program attempts to stop the server if it is running, but if the server is in a state requiring an abnormal stop, it will fail. It is therefore recommended that you manually stop the Oracle GoldenGate Monitor Server before running the uninstall program.
2. Run the graphical uninstall program.
 - On a Windows system: From the **Start** menu, go to the Oracle GoldenGate Monitor program folder and select Oracle GoldenGate Monitor **Uninstaller**. Alternatively you can navigate to the Oracle GoldenGate Monitor installation location and run the `uninstall.exe` from the command line.
Shell> start\wait uninstall.exe -c
 - On UNIX and Linux: Using X windows or an X windows emulation program, run `uninstall.sh` from the Oracle GoldenGate Monitor installation directory.
Shell> ./uninstall.sh -c
3. **Oracle GoldenGate Monitor Uninstall:** Press **Next** to continue with the uninstall.

4. **Drop tables:** Check the box to remove the Oracle GoldenGate Monitor tables from the database.
5. **Information:** Review the information to verify the installation to be removed. Press **Next** to start the uninstall process.
6. **Results of the Uninstaller:** Displays the outcome of the uninstall process.

Using the Command-Line Uninstaller

1. Stop the Oracle GoldenGate Monitor server.
2. Navigate to the Oracle GoldenGate Monitor installation location.
3. Run the uninstaller with the command-line option:
 - On Windows:
Shell> start\wait uninstall.exe -c
 - On a UNIX system:
Shell> ./uninstall.sh -c
4. Enter **yes (y)** to confirm that you want to uninstall. Informational messages are displayed while the uninstall reads and sets properties.
5. You are asked if you want to remove the repository tables from the database. If you answer **yes (y)**, the installation location, database dialect, JDBC driver URL, and database user name are displayed. To start the uninstall press **Enter**.
6. Messages are displayed while the tables are dropped and the software removed.

CHAPTER 3

Configuring Oracle GoldenGate for Monitoring

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This chapter explains what you need to do to begin monitoring your Oracle GoldenGate instance. It outlines how to prepare your environment, prepare and configure your Oracle GoldenGate instance, create the Oracle GoldenGate Wallet, and start your monitored Oracle GoldenGate instance.

Preparing the Environment

Perform the following steps to ensure that your environment is ready for monitoring.

- Verify that you have Oracle GoldenGate release 11.1.1.1.1 or later in order to support monitoring.
- Install a release of Java 1.6 Java Development Kit (JDK) on each system where Oracle GoldenGate is installed.
 - This must be the JDK, not a Java Runtime Environment (JRE).
 - For the Windows x64 platform, you must use the x64 version of JDK or the Manager will not be able to load the Java agent.

- Set the environmental variables to point to the JDK:

For example on Windows:

- Set the `JAVA_HOME` variable to the location of the JDK installation.
- Set the `PATH` variable to the `\jre\bin` of the JDK installation location.

```
...;%JAVA_HOME%\jre\bin
```
- Set the `PATH` variable to the location of `jvm.dll` (the `\jre\bin\server` directory of the JDK installation location).

```
...;%JAVA_HOME%\jre\bin\server
```

- If you are monitoring Oracle GoldenGate 11.1.1 instances running on one of the following platforms, set the platform-specific library path variable:

- On Linux and Solaris, set `LD_LIBRARY_PATH` to the location of the `libjvm.so`.

NOTE On 64 bit Solaris Sparc, ensure the `LD_LIBRARY_PATH` setting points to the 64 bit library location, which is the directory `$JAVA_HOME/jre/lib/sparcv9/server`.

- On AIX, set `LIBPATH` to the location of the shared libraries `ppc64` and `j9vm`. In the following example, `JAVA_HOME` is set to the JDK installation directory:

```
export LIBPATH
=$JAVA_HOME/jre/lib/ppc64:$JAVA_HOME/jre/lib/ppc64/j9vm:$LIBPATH
```

- On HPUX:
 - ▶ Set `SHLIB_PATH` to the location of the `libjvm.sl` for HPUX PA-RISC and to `libjvm.so` for HPUX Itanium.
 - ▶ Prior to starting the Oracle GoldenGate Manager, set `LD_PRELOAD` to `libjvm.sl` for HPUX PA-RISC and to `libjvm.so` for HPUX Itanium.
- NOTE** Remove the `LD_PRELOAD` setting after starting the Manager to avoid possible affects on other applications running on the system.
- If you are monitoring Oracle GoldenGate 11.2.0 and later instances, do *not* set these library path variables. Instead remove platform-specific library path variable settings if they were added to enable monitoring of 11.1.1 releases:
 - On Linux and Solaris, remove the `LD_LIBRARY_PATH` setting for the location of `libjvm.so`
 - On AIX, remove the `LIBPATH` setting for the location of `ppc64` and `j9vm`.
 - On HPUX, remove the `SHLIBPATH` setting for the location of `libjvm.sl` (HPUX PA-RISC) or `libjvm.so` (HPUX Itanium).
 - Use fully qualified names for the `RMTHOST` parameter in the Extract parameter files to make it easier to diagnose connection problems.

Oracle GoldenGate Monitoring Subdirectories

The following Oracle GoldenGate subdirectories contain components used to support monitoring of Oracle GoldenGate:

- `cfg` - Contains the property and XML files that are used to configure the Oracle GoldenGate Agent. This subdirectory is created during installation.
- `dirjar` - Contains the Java programs that support the Oracle GoldenGate Agent. This subdirectory is created during installation.
- `dirprm` - Contains the Oracle GoldenGate Agent parameter file, `jagent.prm`. This subdirectory and parameter file are created during installation of Oracle GoldenGate 11.2.1 and later. Extract, Replicat and Manager parameter files created using GGSCI will also reside in this subdirectory.
- `dirwlt` - Contains the Oracle Wallet that stores passwords for Oracle GoldenGate Monitor. This subdirectory is not installed until the utility that creates the wallet is run.
- `dirbdb` - Contains the Berkeley database that is used to persist monitoring data for Oracle GoldenGate 11.2.1 and later. This subdirectory is created by GGSCI when the `CREATE DATASTORE` command is issued

At run time, the Oracle GoldenGate Agent creates the `agent.cpm` file on the `dirchk` subdirectory. This file contains read checkpoint information for the Oracle GoldenGate Agent. The `dirchk` subdirectory also contains checkpoint files created by Extract and Replicat processes. Do not edit these files.

Preparing and Configuring Oracle GoldenGate

The first step in configuring your GoldenGate instance for monitoring is either to install

new software or verify that your existing release is adequate to support the monitoring client you want to use. Then you must enable monitoring, verify your Java environment, configure for your selected monitoring client, and create the Oracle Wallet.

To configure Oracle GoldenGate for monitoring by the Oracle GoldenGate Monitor Server:

- 1. Install or upgrade software:** If installing new software, follow the instructions found in the *Installation and Setup Guide* specific to your application database and platform. Verify that the `cfg` and `dirjar` directories are present under the Oracle GoldenGate installation directory.

If you have an existing release, verify the software is release 11.1.1.1.1 or later so it can support Oracle GoldenGate Monitor. If necessary, follow the instructions in the *Installation and Setup Guide* to upgrade the software.

- 2. Verify your Java environment:** Navigate to the Oracle GoldenGate installation directory, and enter the following command:

```
Shell> java -version
```

If this returns a 1.6 version of Java, your environment is verified.

- 3. Enable monitoring:** You must add a parameter to the `GLOBALS` parameter file to activate Oracle GoldenGate monitoring. Without this parameter the Oracle GoldenGate Agent is disabled and there will be no communication with the monitoring client.

To add the parameter, navigate to the Oracle GoldenGate installation directory and edit the `GLOBALS` parameter file.

```
Shell> GGSCI
GGSCI> EDIT ./GLOBALS
```

- If your Oracle GoldenGate release is 11.1.1.1.1, add the `ENABLEMONITORAGENT` parameter.
- If your Oracle GoldenGate release is 11.2.1 or later, add the `ENABLEMONITORING` parameter. If your `GLOBALS` file also has the `ENABLEMONITORAGENT` parameter, remove it.

Save the parameter file. The parameter will be activated when you start the Manager after configuring the Oracle GoldenGate instance.

- 4. Configure Oracle GoldenGate:** Follow the instructions in “Configuring Oracle GoldenGate to Run with Oracle GoldenGate Monitor Server” on page 25.
- 5. Create the Oracle Wallet:** Create the Oracle Wallet by following the steps in section “Creating the Oracle Wallet” on page 27.
- 6. Start the Oracle GoldenGate instance:** Follow the steps in “Starting Oracle GoldenGate” on page 27.

Configuring Oracle GoldenGate to Run with Oracle GoldenGate Monitor Server

To prepare your Oracle GoldenGate instance to work with the Oracle GoldenGate Monitor Server you must align the host property values. If you are running with Oracle GoldenGate 11.2.1 or later, you must also set the type of monitoring you wish to do.

Setting Monitoring Type

The property that determines the monitoring type must be set to Oracle GoldenGate Monitor. Navigate to the Oracle GoldenGate installation directory and edit the `/cfg/Config.properties` file to set the `agent.type.enabled` property to `OGGMON`.

```
agent.type.enabled=OGGMON
```

Aligning Host Properties

This will set the host name properties to allow the Oracle GoldenGate Agent to communicate with the Oracle GoldenGate Monitor Server.

Selecting the Host Names

When setting a value for the host names you should:

- Use a fully qualified name that includes the computer name and domain or use an IP address.
- Ensure that the name you use for `monitor.host` in the `Config.properties` file is the same as the name used for `monitor.jmx.server.host` in the `monitor.properties` file. If you use an IP Address for one, you must use an IP address for the other.
- To enable automatic solution discovery when you use `RMTTRAIL` in your Extract parameters:
 - Match the `RMTHOST` Extract parameter to the `jagent.host` in the `Config.properties` file of the remote trail's Oracle GoldenGate Agent.
 - If you use an IP Address for one, use an IP address for the other.

To test that the Oracle GoldenGate Monitor Server and Oracle GoldenGate Agent hosts will be able to communicate using the host names you enter in the properties file:

- Go to the command line on the Oracle GoldenGate instance computer (`jagent.host`) and `ping` the computer on which Oracle GoldenGate Monitor is installed using the fully qualified value you will use for `monitor.host`.
- Go to the command line on the Oracle GoldenGate Monitor Server computer (`monitor.host`) and `ping` the computer on which the Oracle GoldenGate instance is installed using the fully qualified value you will use for `jagent.host`.

If the computers are unable to communicate, you may need to change a computer name or your network configuration. Your network administrator should be able to advise you.

Setting the Properties

To set these properties edit the `/cfg/Config.properties` file to:

1. Change the `jagent.host` property to the fully qualified host name of the server of the Oracle GoldenGate instance.

Remember that the `host_name` specified for the `RMTHOST` parameter in the Extract parameter file has to match the value of this `jagent.host` property if you have used `RMTTRAIL` in the Extract.

2. Change `monitor.host` to the fully qualified host name of the server on which Oracle GoldenGate Monitor is installed. Remember that:

```
Config.properties      monitor.properties
monitor.host           =   monitor.jmx.server.host
```

The `monitor.properties` file `monitor.jmx.server.host` must have a value that matches the `monitor.host` property in the `Config.properties`.

3. Change the `monitor.jmx.username` property to the user specified on the **JMX Server Configuration** screen during the Oracle GoldenGate Monitor installation.

You can leave all other property settings at their default values. These can be adjusted later if required.

Creating the Oracle Wallet

The Oracle Wallet is used to store the passwords. The `pw_agent_util.bat` and `pw_agent_util.sh` files are delivered with the Oracle GoldenGate installation. These provide a command-line utility to create the Oracle Wallet and initially store the two passwords that are required.

NOTE The wallet must be created by the user that installed the Oracle GoldenGate instance.

1. Navigate to the directory where the Oracle GoldenGate instance is installed.
2. Run the appropriate `pw_agent_util` file using the `create` runtime argument.
 - On Windows go to the command line and enter:
Shell> `pw_agent_util.bat -create`
 - On UNIX enter the following command:
Shell> `./pw_agent_util.sh -create`
3. If a wallet already exists in the `dirwlt` directory, a message is returned and the utility stops. If this happens, run the utility with the `updateAgentJMX` and `updateServerJMX` command to add the passwords. See “Changing Oracle GoldenGate Agent passwords” on page 34 for more information.
4. If a wallet does not exist, one is created. The utility then prompts you to enter the Oracle GoldenGate Agent’s JMX password and confirm it. This password is passed to Oracle GoldenGate Monitor Server when the agent registers.

Next the utility prompts for the Oracle GoldenGate Monitor Server JMX password to be entered and confirmed. The Oracle GoldenGate Agent uses this password to connect to the Oracle GoldenGate Monitor Server.

NOTE This password must match the JMX password that was entered during the Oracle GoldenGate Monitor installation.

Starting Oracle GoldenGate

After you complete all of the installation steps, follow these instructions for starting either the embedded agent (11.1.1.1.1) or the standalone agent (11.2.1 and later).

Starting with an Embedded Agent

When the Oracle GoldenGate Agent is embedded, the Manager starts the agent and begins communication with Oracle GoldenGate Monitor Server. Use the following steps to start Oracle GoldenGate when there is an embedded agent:

1. Navigate to the Oracle GoldenGate installation directory.
2. Start a GGSCI session.

```
Shell> GGSCI
```
3. If you have a running Oracle GoldenGate Manager process, stop it.

```
GGSCI> STOP MANAGER
```
4. Start the Oracle GoldenGate Manager process.

```
GGSCI> START MANAGER
```

Starting with a Standalone Agent

Oracle GoldenGate releases 11.2.1 and later use a standalone Oracle GoldenGate Agent. For these releases, use the following steps to start Oracle GoldenGate and the agent.

1. Navigate to the Oracle GoldenGate Installation directory.
2. Start a GGSCI session.

```
Shell> GGSCI
```
3. If this is the first start for Oracle GoldenGate since monitoring has been enabled, create the database that will persist monitoring data.

```
GGSCI> CREATE DATASTORE
```
4. If you just added the `GLOBALS` parameter to enable monitoring, you must stop and restart running Oracle GoldenGate Manager processes to activate the new setting.

```
GGSCI> STOP MANAGER
```
5. Start the Oracle GoldenGate Manager process.

```
GGSCI> START MANAGER
```
6. Start the Oracle GoldenGate Agent.

```
GGSCI> START JAGENT
```

NOTE The Oracle Wallet must be successfully created and the passwords entered before the agent is started.

CHAPTER 4

Using Oracle GoldenGate Monitor Server

Tasks that you may need to perform when using Oracle GoldenGate Monitor Server include starting and stopping the Oracle GoldenGate Monitor Server, starting the user interface, changing passwords, and changing settings for the memory allotment or the timeout interval.

Starting and Stopping Oracle GoldenGate Monitor Server

The scripts `monitor.sh` and `monitor.bat` start and stop the Oracle GoldenGate Monitor Server. The runtime arguments are:

- **start**
Starts Oracle GoldenGate Monitor Server
- **stop**
Stops the Oracle GoldenGate Monitor Server

Starting Oracle GoldenGate Monitor Server

Follow these steps to start the Oracle GoldenGate Monitor Server:

- On a Windows system select one of these options.
 - If you created a shortcut during installation:
From the **Start** menu, go to the Oracle GoldenGate Monitor program folder and select **Start Monitor Server**. This starts the server running in a new window if it has not been installed as a service, and in the background if it has.
 - If you installed Oracle GoldenGate Monitor as a service:
From the **Start** menu, select **Control Panel, Administrative Tools**, and then **Services**. Locate the Oracle GoldenGate Monitor service and change its status to **start**. This starts the server as a background process.
 - Run the `monitor.bat` script from the `\bin` subdirectory of the installation directory. This starts the server in a new window if it has not been installed as a Windows service.

```
Shell> monitor.bat start
```
- On UNIX and Linux run the `monitor.sh` script from the `/bin` subdirectory of the installation directory.

NOTE Starting Oracle GoldenGate Monitor Server as a service is supported only on the Windows platform.

The start argument starts the server in the background:

```
Shell> ./monitor.sh start
```

Stopping the Oracle Golden Monitor Server

Follow these steps to stop the Oracle GoldenGate Monitor Server:

- It is recommended that you first stop any running user interface sessions.
- On a Windows system select one of these options:
 - If you created a shortcut during installation select **Stop Monitor Server** from the **Oracle GoldenGate Monitor** program folder of the **Start** menu.
 - If you installed Oracle GoldenGate Monitor as a service, stop the service from **Start, Control Panel, Administrative Tools, Services**.
 - Run the `monitor.bat` script from the `\bin` subdirectory of the installation directory to stop the server.

```
Shell> cd .\installation_directory\bin  
Shell> monitor.bat stop
```

- On UNIX and Linux use the command:

```
Shell> cd ./installation_directory/bin  
Shell> ./monitor.sh stop
```

Starting Oracle GoldenGate Monitor User Interface

Start the Oracle GoldenGate Monitor user interface by entering the URL:

```
http://host_name:http_port/monitor/
```

NOTE The secured https option is not supported in this release.

Once you are logged into the application, the solution discovery process will discover configured solutions.

Running multiple sessions

You can run multiple sessions of Oracle GoldenGate Monitor user interface from the same computer and browser if you are using Internet Explorer. You can also run one Internet Explorer and one Mozilla Firefox session at the same time, but multiple Mozilla Firefox sessions on the same computer are not supported.

Changing Oracle GoldenGate Monitor Server

Utilites are provided to allow you to change your passwords when necessary. You can also change the memory allotment to better tune Oracle GoldenGate Monitor to your needs.

Changing Passwords

Oracle GoldenGate Monitor Server passwords are initially set based on your entries during the installation of the server application. The Oracle Wallet is created by the install program to store the passwords.

The `pw_server_util.bat` and `pw_server_util.sh` utilities are used to change these passwords after the installation.

1. Navigate to the `bin` subdirectory of the installation directory.

```
Shell> cd ./installation_directory/bin
```

2. Run the appropriate `pw_server_util` file using the appropriate runtime argument.

NOTE The password utility can be run only by the user that installed the Oracle GoldenGate Monitor Server.

- On Windows, enter the following at the command line:

```
Shell> pw_server_util.bat -{updateJPA | updateJMX | updateSMTP}
```

Where:

`updateJPA` changes the database connection password

`updateJMX` changes the Oracle GoldenGate Monitor Server's `JMX` password

`updateSMTP` changes the SMTP e-mail password

- On UNIX, enter the following command:

```
Shell> ./pw_server_util.sh -{updateJPA | updateJMX | updateSMTP}
```

Where:

`updateJPA` changes the database connection password

`updateJMX` changes the Oracle GoldenGate Monitor Server's `JMX` password

`updateSMTP` changes the SMTP e-mail password

3. Enter and confirm the new password to implement the change. Press **Enter** without entering any data to cancel the request.
4. Stop and restart the Oracle GoldenGate Monitor server to activate the changes. See "Starting and Stopping Oracle GoldenGate Monitor Server" on page 29 for directions on how to do this.

Changing the Memory Requirement

The amount of RAM allotted to the Oracle GoldenGate Monitor server affects the number of Oracle GoldenGate instances and processes that can be monitored. You can change this allotment by following the steps below. Note that the procedure for changing the memory allotment is different for an Oracle GoldenGate Monitor that has been installed as a Windows service than for one that has not.

NOTE For Oracle GoldenGate Monitor Server to run on a Windows 32 bit system, the maximum memory allotment must be reduced to 800 MB and the `MaxPermSize`

must be reduced to 340 MB. Reducing the memory allotment reduces the number of target systems that can be supported for monitoring. These installations will therefore not be able to monitor the number of target systems supported for other operating systems.

Not Installed as a Service

If Oracle GoldenGate Monitor is *not* installed as a Windows service, change the memory allotment by following these steps:

1. If you have started the Oracle GoldenGate Monitor Server stop it. For directions see “Stopping the Oracle Golden Monitor Server” on page 30.
2. Go to the Oracle GoldenGate Monitor installation location.
3. Go to the `/bin` subdirectory and edit the script that starts and stops Oracle GoldenGate Monitor.
 - For Windows, edit the `monitor.bat` file.
 - For Linux/UNIX, edit the `monitor.sh` file.

4. Locate the following line:

```
JAVA_OPTS=-Xms512m -Xmx1024m -XX:PermSize=256m -XX:MaxPermSize=512m
```

5. Change the 1024 in `-Xmx1024m` to adjust the maximum amount of memory that Oracle GoldenGate Monitor will be allowed to use. Change the 512 in `-XX:MaxPermSize` to adjust the maximum size for the permanent generation heap that holds objects, such as classes and methods.

For example to adjust the maximum memory to 800 megabytes change the line to:

```
JAVA_OPTS=-Xms512m -Xmx800m -XX:PermSize=256m -XX:MaxPermSize=512m
```

For example to adjust the maximum permanent generation size to 340 megabytes change the line to:

```
JAVA_OPTS=-Xms512m -Xmx800m -XX:PermSize=256m -XX:MaxPermSize=340m
```

6. Save and close the file.
7. Restart the Oracle GoldenGate Monitor server. See “Starting Oracle GoldenGate Monitor Server” on page 29 for directions on how to do this.

Installed as a Service

If Oracle GoldenGate Monitor *is* installed as a Windows service, change the memory allotment by following these steps:

1. If you have started the Oracle GoldenGate Monitor Server stop it. For directions see “Stopping the Oracle Golden Monitor Server” on page 30.
2. Go to the Oracle GoldenGate Monitor installation location.
3. Go to the `tomcat/bin` subdirectory and edit the script `monitor-service.bat`.
4. Locate the following line that marks the beginning of the *Set extra parameters* section:

```
rem Set extra parameters
```


5. Search below that line for `--JvMx 1024` to change the maximum memory allotment. Or search for `-XX:MaxPermSize=512m` to adjust the maximum size for the permanent generation heap that holds objects, such as classes and methods.

```
"%EXECUTABLE%" . . . --JvMx 512 --JvMx 1024
```

```
"%EXECUTABLE%" . . . -XX:PermSize=256m;-XX:MaxPermSize=512m"
```

6. Change the `1024` in `-JvMx1024` to adjust the maximum amount of memory that Oracle GoldenGate Monitor will be allowed to use. Or change `-XX:MaxPermSize=512m` to adjust the maximum permanent generation heap.

For example, to adjust the maximum memory to 800 MB change the line to:

```
"%EXECUTABLE%" . . . --JvMx 512 --JvMx 800
```

7. Save the script and exit `monitor-service.bat`. Go to the `/bin` subdirectory for the installation.

8. Uninstall the Windows service with the following command:

```
Shell> monitor.bat uninstall
```

9. Reinstall the Windows service with the following command:

```
Shell> monitor.bat install
```

10. Restart the Oracle GoldenGate Monitor server. See “Starting Oracle GoldenGate Monitor Server” on page 29 for directions on how to do this.

Changing the Session Timeout Interval

The `session-timeout` setting is the number of minutes Oracle GoldenGate Monitor user interface will wait before timing out when there is no activity. To change this value:

1. Navigate to the Oracle GoldenGate Monitor installation location.

2. Edit the `\webapp\WEB-INF\web.xml` file.

3. Locate the following lines:

```
<session-config>  
  <session-timeout>30</session-timeout>  
</session-config>
```

4. Change the numeric value (30 in the example) to the value for the timeout in minutes.

If you do not want the session to expire because of inactivity, set `session-timeout` to `-1` or `0`.

5. Log out of the Oracle GoldenGate user interface.

6. Stop any running user interface sessions and then stop and restart Oracle GoldenGate Monitor Server (See “Starting and Stopping Oracle GoldenGate Monitor Server” on page 29.)

CHAPTER 5

Using the Oracle GoldenGate Agent

.....

Tasks that you may need to perform when using the Oracle GoldenGate Agent include changing passwords and changing settings for the memory allotment.

Changing Oracle GoldenGate Agent passwords

Oracle GoldenGate Agent passwords are set when the Oracle Wallet is first created for the Oracle GoldenGate instance as explained in “Creating the Oracle Wallet” on page 27. The `pw_agent_util.bat` and `pw_agent_util.sh` utilities are used to change these agent passwords after the wallet is created.

To change agent passwords:

1. Navigate to the installation directory.

```
Shell> cd ./installation_directory/
```

2. Run the appropriate `pw_agent_util` file using the appropriate runtime argument.

NOTE The password utility can be run only by the user that installed the Oracle GoldenGate instance.

- On Windows enter the following at the command line:

```
Shell> pw_agent_util.bat -[updateAgentJMX | updateServerJMX]
```

Where:

`updateJAgentMX` changes the agent’s JMX password.

`updateServerJMX` changes Oracle GoldenGate Monitor Server’s JMX password.

- On UNIX enter the following command:

```
Shell> ./pw_agent_util.sh -[updateAgentJMX | updateServerJMX]
```

Where:

`updateAgentJMX` changes the agent’s JMX password.

`updateServerJMX` changes Oracle GoldenGate Monitor Server’s JMX password.

If the wallet exists, the utility will prompt with the password to be modified. If the Oracle Wallet does not exist, the utility will return a message and stop. In that case, see “Creating the Oracle Wallet” on page 27.

3. Enter and confirm the new password to implement the change. Press **Enter** without entering any data to cancel the request.
4. To activate the changes, navigate to the Oracle GoldenGate installation location and bring up GGSCI. Then do one of the following depending on your Oracle GoldenGate release:
 - For Oracle GoldenGate release 11.1.1.1, stop and restart the Oracle GoldenGate Manager.

```
GGSCI> STOP MANAGER
GGSCI> START MANAGER
```
 - For Oracle GoldenGate release 11.2.1 and later, stop and restart the Oracle GoldenGate Agent.

```
GGSCI> STOP JAGENT
GGSCI> START JAGENT
```

Changing Oracle GoldenGate Monitor Agent Memory Allotment

You can change the memory allotment for the standalone agent of Oracle GoldenGate release 11.2.1 and later by following these steps:

1. Navigate to the Oracle GoldenGate installation location.
2. Start GGSCI and edit the agent parameter file.

```
Shell> GGSCI
GGSCI> EDIT PARAMS JAGENT
```
3. The settings for the default memory allotment, `-Xms`, and the maximum memory allotment, `-Xmx`, are included in the start-up string for the agent. The following example sets the default to 64 MB and the maximum to 512 MB.

```
java -jar -Xms64m -Xmx512m dirjar/jagent.jar
```
4. Change the allotment numbers as needed, save the parameter file, and exit the editor.
5. Stop and restart the agent to implement the changes.

```
GGSCI> STOP JAGENT
GGSCI> START JAGENT
```

CHAPTER 6

Configuring and Using 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 Definitions** in the user interface and follow the instructions in the online help.

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.

Configuring E-mail Alerts

You can configure Oracle GoldenGate Monitor alerts to be delivered to e-mail accounts.

To use this feature you must:

1. Enable e-mail alerts by checking the SMTP (Simple Mail Transfer Protocol) alerts box during installation or later setting the e-mail alerts properties in the `monitor.properties` file as explained in the next section.
2. Enter the user's e-mail address in the **User Management** tab of the Oracle GoldenGate Monitor user interface.
3. Go to the **User Profile** in the Oracle GoldenGate Monitor user interface and select e-mail as the notification type for the appropriate severity level.

Setting E-mail Alert Properties

If you did not set up e-mail alerts during the installation, you can do so by setting the following properties in the `monitor.properties` file:

- Enable e-mail alerts by setting the following property to true:
`monitor.smtp.alerts.enabled=true`
- Specify the name of the sender for Oracle GoldenGate Monitor communications generated from the e-mail server.
`monitor.smtp.from=sender_name`

.....

- Specify the host name of the e-mail server.
`monitor.smtp.host=email_host_name`
- Specify the port that the e-mail server uses.
`monitor.smtp.port=port_number`
- Specify whether the e-mail server is in secure mode.
`monitor.smtp.secure={true | false}`
- If the e-mail server is in secure mode, specify the user authorized to log in.
`monitor.smtp.user=user_name`

Setting the Password for Secure Mode

If the e-mail server is running in secure mode, you must use the `pw_server_util.bat` or `pw_server_util.sh` utility to enter the password for the authorized user. See “Changing Passwords” on page 31 for the steps to enter this password.

Configuring CLI Alerts

The Oracle GoldenGate Monitor Command-Line Integration (CLI) allows you to run a script or object file on the Oracle GoldenGate Monitor Server when an alert is triggered.

To use this feature you must enable CLI alerts by checking the CLI alerts box during installation or later setting the `monitor.cli.alerts.enabled` property equal to `true` in the `monitor.properties` file.

Setting Up Command-Line Handlers

The Oracle GoldenGate Monitor installation delivers files to help you configure your CLI interface. These are delivered to the `cfg` subdirectory of the installation location.

- `CommandLineHandlers.xml`
The CLI interface is configured in the `CommandLineHandlers.xml` file.
Two example `CommandLineHandlers.xml` files, one for UNIX and one for Windows, are included with the installation. Each contains sample syntax for configuring a CLI interface. You can copy the appropriate version and then add and change arguments to create the `CommandLineHandlers.xml` that will configure your CLI interface.

NOTE The `CommandLineHandlers.xml` file must be set up outside of the Oracle GoldenGate Monitor user interface by the Oracle GoldenGate Monitor Server host administrator that installed the system.

- `CommandLineHandlers.xsd`
This file contains the definition for the `CommandLineHandlers.xml` file. It can be used to generate the `CommandLineHandlers.xml` using a commercial or open source XML generation tool that creates sample XML from XSD.

After you configure the `CommandLineHandlers.xml`, stop and restart the Oracle

GoldenGate Monitor Server to activate the changes. See “Starting and Stopping Oracle GoldenGate Monitor Server” on page 29 for directions on how to do this.

Command-Line Handler Arguments

The example UNIX configuration below illustrates the structure and arguments of the XML configuration file. The header values should not be changed. These values specify the version and coding of the XML.

Arguments are specified by entering a value within quotation marks after the equal sign (=) as shown in the example. In this illustration namespace and schema information has been omitted as indicated by the elipses (. . .).

```
<?xml version="1.0" encoding="UTF-8"?>
<CommandLineHandlers . . .>
  <CommandLineHandler dateTimeFormat="MMddyyyyHHmmssSSS"
    executeIn="/home/user" name="CMDLINE">
    <externalCommand>touch</externalCommand>
    <arguments>
      <argument argText="filename" name="hostname"
        presentIfEmpty="true" quoted="false"/>
    </arguments>
    <alertMappings>
      <alertMapping alertField="host" name="hostname"/>
    </alertMappings>
  </CommandLineHandler>
</CommandLineHandlers>s
```

CommandLineHandler is the parent tag for the CLI alert handler. This is specified within the CommandLineHandlers tags.

```
<CommandLineHandler dateTimeFormat="MMddyyyyHHmmssSSS"
  executeIn="/home/user" name="CMDLINE">
```

The CommandLineHandler tag includes the following arguments:

- **dateTimeFormat**
This is the standard Java format argument described in Java documentation.
- **executeIn**
The executeIn argument triggers the processing to move into the specified directory before running the external script or object file. The default is to use the current run directory of the virtual machine (VM); the directory in which the script or command was started.

A RuntimeException is generated when the alert is triggered if the specified directory does not exist or if the executeIn attribute is empty or not present.
- **name**
This will always be “CMDLINE”.

The following example illustrates the tags that can be nested within the CommandLineHandler

tags:

```
<externalCommand>touch</externalCommand>
<arguments>
  <argument argText="filename" name="hostname"
    presentIfEmpty="true" quoted="false" />
</arguments>
<alertMappings>
  <alertMapping alertField="host" name="hostname" />
</alertMappings>
```

- **externalCommand**
The value in `externalCommand` specifies the absolute path to the script or object file. If the system path environment variable points to the directory of the file to be run, you can specify the script or object file name without the path.

- **arguments**
The `arguments` tag specifies one or more values that are appended to the directory value specified in the `externalCommand` tag.

For each argument the following attributes can be specified:

`argText` - Specifies a literal text argument that is sent with the `externalCommand` tag.

`name` - Can be a name or it can work with `alertMappings` to find a name as explained below.

`presentIfEmpty` - Works with the `alertMappings` tag to add selected information associated with the alert definition to the `externalCommand` tag. See `alertMappings` below for more detail.

`quoted` - Specifies whether quotation marks should be added.

- **alertMappings**
The `alertMappings` tag appends the value extracted from the alert definition information to the value specified in the `externalCommand` tag.

```
<alertMappings>
  <alertMapping alertField="host" name="hostname" />
</alertMappings>
```

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`.

`alertTime` - The time that the alert was triggered.

`alertSeverity` - The severity level defined for the alert; either `Warning` or `Error`.

`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.

In the following example, the `name` attributes in the `argument` and the `alertMapping` tags are matched to extract the value from the `alertField` attribute. The `argument` name "hostname" is matched to the `alertMapping` name "hostname" to find the value of `alertField`, which is "host". This tells the system to append the host of the Oracle GoldenGate object that triggered the alert to the value specified in the `externalCommand` tag.

```
<arguments>
  <argument argText="text" name="hostname" presentIfEmpty="true"
    quoted="false" />
</arguments>
<alertMappings>
  <alertMapping alertField="host" name="hostname" />
</alertMappings>
```

The `presentIfEmpty` attribute works with the `alertMappings` tag to determine what to do if the `alertField` is not valid or the `name` attributes do not match:

- `presentIfEmpty="true"`
The value in the `argText` attribute is used in the external command.
- `presentIfEmpty="false"`
The entire argument is omitted.

Sample Command-Line Handlers

These examples run a batch script on the Oracle GoldenGate Monitor Server.

Running on a Windows Server

The following example runs the batch script `sample_cli.bat` on a Windows server hosting the Oracle GoldenGate Monitor Server. The server of the Oracle GoldenGate instance ("host") that triggered the alert is appended to the name of the batch script specified in the `externalCommand`.


```
<?xml version="1.0" encoding="UTF-8"?>
<CommandLineHandlers
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.yourlocation/monitor/commandlinehandlers
/CommandLineHandlers.xsd">
  <CommandLineHandler dateTimeFormat="MMddyyyyHHmmssSSS"
executeIn="C:\ " name="CMDLINE">
    <externalCommand>c:\sample_cli.bat</externalCommand>
    <arguments>
      <argument argText="" name="hostname" presentIfEmpty="true"
quoted="false"/>
    </arguments>
    <alertMappings>
      <alertMapping alertField="host" name="hostname"/>
    </alertMappings>
  </CommandLineHandler>
</CommandLineHandlers>
```

Running on a UNIX Host

The following example runs the `sample_cli.sh` script on the UNIX server hosting the Oracle GoldenGate Monitor Server. The server of the Oracle GoldenGate instance (“host”) that triggered the alert is appended to the name of the batch script specified in the `externalCommand`.

```
<?xml version="1.0" encoding="UTF-8"?>
<CommandLineHandlers
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.yourlocation/monitor/commandlinehandlers
/CommandLineHandlers.xsd">
  <CommandLineHandler dateTimeFormat="MMddyyyyHHmmssSSS"
executeIn="/home/user " name="CMDLINE">
    <externalCommand>bash</externalCommand>
    <arguments>
      <argument argText="/home/user/sample_cli.sh" name="hostname"
presentIfEmpty="true" quoted="true"/>
    </arguments>
    <alertMappings>
      <alertMapping alertField="host" name="hostname"/>
    </alertMappings>
  </CommandLineHandler>
</CommandLineHandlers>
```

Configuring SNMP Alerts

The Oracle GoldenGate Monitor Simple Network Management Protocol (SNMP) interface sends alerts in the form of datagrams. These are picked up by an SNMP trap recipient listening on a specified port.

To use this feature you must enable SNMP alerts during installation or later set the `monitor.snmp.alerts.enabled` property equal to `true` in the `monitor.properties` file.

Importing the MIB File

The `GoldenGate-Monitor-mib.mib` file is delivered to the `cfg` subdirectory during the installation of Oracle GoldenGate Monitor. This contains the Management Information Base (MIB) definitions the target uses to interpret the alerts. If you need to interpret information received in the traps, import this file to the target tool.

Configuring SNMP Alerts

The SNMP alert is configured in the `SNMPJMXMapping.xml` file that is delivered to the `cfg` subdirectory during the Oracle GoldenGate installation.

Any changes to the `SNMPJMXMapping.xml` file must be made outside of the Oracle GoldenGate Monitor user interface by the host administrator that installed the Oracle GoldenGate Monitor Server software.

You should only change the sections of the `SNMPJMXMapping.xml` file that set the SNMP version and define the targets.

```
.  
. .  
. .  
<MIBTree>  
. .  
. .  
  <notifications type="NOTIFICATIONS">  
    <notification version="2" enabled="true">  
      <targets>  
        <target timeout="200" retry="0">localhost/162  
        </target>  
      </targets>  
    .  
    .  
    .  
  </notification>  
  <notification version="1" enabled="false">  
    <targets>  
      <target>localhost/162  
      </target>  
    </targets>  
  .  
  .  
  .  
</notification>  
</notifications>  
</MIBTree>
```

Setting the SNMP Version

The SNMP version is initially set based on the entry during installation. You can change it later by resetting the `notification version 1 enabled` value and `notification version 2 enabled` value. Set one to true and the other to false.

The targets that are defined for the enabled version are used. The targets for the disabled version are ignored.

Setting the SNMP Targets

Define your targets within the `<target>` `</target>` tags by entering the host name and port number.

Enabling and Disabling Alerts

An Oracle GoldenGate Monitor administrator can disable any category of alerts so that those alerts are not delivered to remote clients. You might, for example, want to disable alerts during planned outages, such as when processes are stopped during maintenance windows. Although the disabled alerts are not sent to remote clients, they will be recorded in the Oracle GoldenGate Monitor user interface.

To disable alerts:

1. Set the appropriate properties in the `monitor.properties` file of Oracle GoldenGate Monitor Server to false.
 - To disable SMTP delivery, set `monitor.smtp.alerts.enabled=false`
 - To disable CLI delivery, set `monitor.cli.alerts.enabled=false`
 - To disable SNMP delivery, set `monitor.snmp.alerts.enabled=false`
2. Stop and restart Oracle GoldenGate Monitor Server. See “Starting and Stopping Oracle GoldenGate Monitor Server” on page 29 for directions on how to do this.
3. To enable the alerts again, set the properties back to true, and then stop and restart Oracle GoldenGate Monitor Server.

CHAPTER 7

Commands and Parameters

.....

Parameters are set in the Oracle GoldenGate instance to enable monitoring. For Oracle GoldenGate release 11.2.1 and later, GGSCI commands are used to create the storage area for monitoring data and to start the Oracle GoldenGate Monitor Agent that handles monitoring data.

GGSCI Commands

The Oracle GoldenGate Software Command Interface (GGSCI) is the command interface between users and Oracle GoldenGate functional components. The commands listed here are used to set up and control the interface between Oracle GoldenGate and monitoring by Oracle GoldenGate Monitor Server or Oracle Enterprise Manager.

NOTE The commands listed in this section are valid only for Oracle GoldenGate 11.2.1 and later.

CREATE DATASTORE

Use `CREATE DATASTORE` to create a storage area to hold monitoring information supplied by the Oracle GoldenGate Extract, Replicat, and Manager processes. This is a required step to use monitoring. The storage area will be created in the Oracle GoldenGate installation area.

Syntax `CREATE DATASTORE`

REPAIR DATASTORE

Use `REPAIR DATASTORE` to repair the data store for the Oracle GoldenGate installation. It checks that all Extract and Replicat processes are registered and attempts to resolve any internal consistency errors. Use `REPAIR DATASTORE` to apply required updates when upgrading from a previous version of the data store.

Syntax `REPAIR DATASTORE`

INFO JAGENT

Use `INFO JAGENT` to display whether or not the Jagent is running.

.....

Syntax INFO JAGENT

Example The INFO request will respond that the Oracle GoldenGate Agent is running or is down.

```
INFO JAGENT
JAgent is DOWN!
```

START JAGENT

Use `START JAGENT` to start the agent process. To confirm that it has started, use the `INFO JAGENT` or `STATUS JAGENT` command.

Syntax START JAGENT

Example START JAGENT
GGCMD JAGENT started.

STATUS JAGENT

Use `STATUS JAGENT` to determine whether or not the agent is running.

Syntax STATUS JAGENT

Example STATUS JAGENT
JAgent is running.

STOP JAGENT

Use `STOP JAGENT` to stop the agent process. To confirm that it has stopped, use the `INFO JAGENT` or `STATUS JAGENT` command.

Syntax STOP JAGENT

Parameters

Oracle GoldenGate parameters are used to configure, run, and manage Oracle GoldenGate processes. The parameters included here apply to monitoring by Oracle GoldenGate Monitor Server or Oracle Enterprise Manager.

ENABLEMONITORAGENT

Valid for GLOBALS

Use the `ENABLEMONITORAGENT` parameter to enable the Oracle GoldenGate Agent for Oracle GoldenGate release 11.1.1.1. For more information on this parameter, consult the *Oracle GoldenGate Windows and UNIX Reference Guide* for the 11.1.1.1 release.

NOTE `ENABLEMONITORAGENT` is deprecated for Oracle GoldenGate release 11.2.1 and later.

Syntax ENABLEMONITORAGENT

ENABLEMONITORING

Valid for GLOBALS

Use the `ENABLEMONITORING` parameter to enable monitoring for Oracle GoldenGate. Monitoring is enabled for Extract, Replicat, and Manager processes within the instance of Oracle GoldenGate to which it is applied.

`ENABLEMONITORING` activates collection of monitoring points providing status and other information on the Oracle GoldenGate processes to Oracle GoldenGate Monitor or Oracle Enterprise Manager.

NOTE `ENABLEMONITORING` is a valid parameter for Oracle GoldenGate release 11.2.1 and later.

Syntax `ENABLEMONITORING [SHMID number]`

Where: `SHMID` is the identifier for a shared memory segment. This option is required for file systems that do not support shared memory mapping, such as Oracle Database File System (DBFS). The entered memory segment identifier is used to communicate between processes instead of using memory mapped files.

Example `SHMID` is specified in the following example so that the shared memory segment identified by 42 will be used to communicate between processes.

```
ENABLEMONITORING SHMID 42
```

CHAPTER 8

Properties

.....

Property files are delivered to the `cfg` subdirectory when Oracle GoldenGate Monitor and Oracle GoldenGate core are installed. These files contain settings that control the monitoring process. Some property values are preset based on the release of the software and some are set by the installer based on user entries.

Agent Properties

The `Config.properties` file configures an Oracle GoldenGate Agent for communication with the Oracle GoldenGate Monitor Server or Oracle Enterprise Manager (Oracle GoldenGate release 11.2.1 or later). It contains preset properties delivered with the Oracle GoldenGate core installation. Values such as host server names, ports, and users must be reset to valid values for your system.

Some of the properties have default values that are used when a value for the property is not defined in the property file. Default values are not substituted for invalid entries. A message is written to the `jagent.log` and the `ggserr.log` when a default value is used.

Agent Type

You must set the type of agent that will be used to monitor the Oracle GoldenGate instance.

agent.type.enabled

Use `agent.type.enabled` to specify whether monitoring will be done in Oracle GoldenGate Monitor or Oracle Enterprise Manager.

The Oracle GoldenGate Agent polls Manager at configurable intervals to collect monitoring points data.

- Setting `agent.type.enabled` to `OGGMON` causes the Oracle GoldenGate Agent to send the data to the Oracle GoldenGate Monitor Server.
- Setting `agent.type.enabled` to `OEM` causes the Oracle GoldenGate Agent to supply monitoring points data when polled by an Oracle Enterprise Manager agent.

When `agent.type.enabled` is set to `OEM`, the Oracle Enterprise Manager agent will connect to the Oracle GoldenGate Agent through the Remote Method Invocation (RMI) connector, so you must enter the `jagent.rmi.port`.

NOTE This property is valid for the 11.2.1 release of Oracle GoldenGate and later.

Syntax `agent.type.enabled={OGGMON | OEM}`

jagent.rmi.port

Use `jagent.rmi.port` to specify the port number for the RMI connector.

This property is used when `agent.type.enabled` is set to OEM.

NOTE This property is valid for the 11.2.1 release of Oracle GoldenGate and later.

Default 5559

Syntax `agent.rmi.port=port_number`

Hosts and Ports

You need to identify the names and ports for the computers on which the Oracle GoldenGate Manager, Agent and Server reside.

jagent.host

Use `jagent.host` to specify the host name of the computer where the Oracle GoldenGate Agent is running. This should be the host of the Oracle GoldenGate instance.

This property is required. If a valid value is not entered, Manager writes an error to `ggserver.log` during start up and the agent is not initialized successfully.

Syntax `jagent.host=ogg_host_name`

NOTE If a remote trail is specified in the Extract parameter file using `RMTRAIL`, then the host name specified for the `RMTHOST` parameter must match the value set for the Java `jagent.host` entry. The fully qualified host name specified in the parameter file must be the same as the fully qualified name used for `jagent.host`.

jagent.jmx.port

Use `jagent.jmx.port` to specify the JMX port of the agent.

Default 5555.

Syntax `jagent.jmx.port=port_number`

mgr.host

Use `mgr.host` to specify the name or IP address of the computer where the Oracle GoldenGate Manager is running. Together, `mgr.host` and `mgr.port` identify the Oracle GoldenGate instance to the Oracle GoldenGate Agent.

If this property is not entered, the system will assume that the agent is local to the Oracle GoldenGate instance and determine the value by default.

NOTE This property is valid for the 11.2.1 release of Oracle GoldenGate and later. It does not need to be entered for the current releases of Oracle GoldenGate since the agent must be local to the Oracle GoldenGate instance.

Syntax `mgr.host=ogg_host_name`

mgr.port

Use `mgr.port` to specify the port of the Oracle GoldenGate Manager. If this property is not entered, the system will assume that the agent is local to the Oracle GoldenGate instance and determine the value by default.

NOTE This property is valid for the 11.2.1 release of Oracle GoldenGate and later. It does not need to be entered for the current releases of Oracle GoldenGate since the agent must be local to the Oracle GoldenGate instance.

Syntax `mgr.port=manager_port`

monitor.host

Use `monitor.host` to specify the host computer name of the Oracle GoldenGate Monitor Server installation. Use the fully qualified host name. This must match the entry for `monitor.jmx.server.host` in the `monitor.properties` file.

This property is required. If a valid value is not entered, Manager writes an error to `ggserr.log` during start up and the agent is not initialized successfully.

Syntax `monitor.host=monitor_host_name`

monitor.jmx.port

Use `monitor.jmx.port` to specify the JMX port of the Oracle GoldenGate Monitor Server installation. Initially set this to the value entered for the port on the **JMX Server Configuration** screen during the Oracle GoldenGate Monitor Server installation.

Default 5502.

Syntax `monitor.jmx.port=port_number`

monitor.jmx.username

Use `monitor.jmx.username` to specify the user name for the JMX connection to the Oracle GoldenGate Monitor Server. Initially set this to the value entered for the user name on the **JMX Server Configuration** screen during the Oracle GoldenGate Monitor installation.

This property is required. If a valid value is not entered, Manager writes an error to `ggserr.log` during start up and the agent is not initialized successfully.

Syntax `monitor.jmx.username=user_name`

jagent.username

User `jagent.username` to specify the agent user name for the JMX connection to the Oracle GoldenGate Agent. When the agent registers, it passes this name to the Oracle GoldenGate Monitor Server.

This property is required. If a valid value is not entered, Manager writes an error to `ggserr.log` during start up and the agent is not initialized successfully.

Syntax `jagent.username=user_name`

Polling Properties

You can set the polling intervals. These polling interval properties default to the indicated default number of seconds if nothing is entered. An error message is generated if the entered number of seconds is negative or greater than 2147483647.

interval.regular

Use `interval.regular` to specify the polling interval used for monitoring points in the Regular Default Polling Group. The value is in seconds.

Default 60 seconds
Syntax `interval.regular=seconds`

interval.quick

Use `interval.quick` to specify the polling interval used for monitoring points in the Quick Default Polling Group. The value is in seconds.

Default 30 seconds
Syntax `interval.quick=seconds`

reg.retry.interval

Use `reg.retry.interval` to specify the interval to wait before retrying an initial agent registration when an exception occurs.

Default 60 seconds
Syntax `reg.retry.interval=seconds`

instance.query.initial.interval

Use `instance.query.initial.interval` to specify the interval that Jagent will wait to register if Manager is the only running process. If there are still no other processes after this interval, the agent will proceed with the registration.

Default 15 seconds
Syntax `instance.query.initial.interval=seconds`

incremental.registration.quiet.interval

Use `incremental.registration.quiet.interval` to specify the interval that the agent will wait before registration of a new process.

Default 5 seconds
Syntax `incremental.registration.quiet.interval=seconds`

maximum.message.retrieval

Use `maximum.message.retrieval` to specify the maximum number of messages to retrieve from the core Oracle GoldenGate instance when the Oracle GoldenGate Agent starts up.

Default 500 messages

Syntax `maximum.message.retrieval=number`

message.polling.interval

Use `message.polling.interval` to set the interval for agent to poll `ggerr.log` for new messages.

Default 5 seconds

Syntax `message.polling.interval=seconds`

status.polling.interval

Use `status.polling.interval` to set the interval for the agent to poll for the status of new and existing processes.

Default 5 seconds

Syntax `status.polling.interval=seconds`

Monitor Server Properties

The `monitor.properties` file describes the characteristics of Oracle GoldenGate Monitor processing. It includes properties to define the relationship with the JMX server, types of alert notifications to be used, and the timing for connection attempts. Many of these property values are initially set based on user entries during installation.

Restricted Properties

Certain Oracle GoldenGate Monitor properties can cause the system to malfunction if changed. These properties are designated as *restricted*. You should *not* change the preset values for restricted properties.

Restricted properties include:

```
monitor.jmx.internal.mbeans.enabled  
monitor.supported.agent.metadata.version  
monitor.jpa.connection.driver_class  
monitor.jpa.connection.url  
eclipselink.target-database  
eclipselink.weaving  
eclipselink.ddl-generation
```

JMX Server Properties

These properties enable the JMX server, identify the user name, and register the name and port of the JMX server host.

monitor.jmx.server.enabled

Use `monitor.jmx.server.enabled` to enable or disable the JMX server. The JMX server

must be enabled to allow the Jagent to register with the Oracle GoldenGate Monitor Server. The value is initially set to `true` to allow the agent to register.

Default `true`
Syntax `monitor.jmx.server.enabled={true | false}`

monitor.jmx.server.host

Use `monitor.jmx.server.host` to specify the computer name of the Oracle GoldenGate Monitor installation. Set this to the fully qualified host name of the server for the Oracle GoldenGate Monitor installation. This must match the entry for `monitor.server` in the agent's `Config.properties` file. The value is initially set by the installer based on user entries.

Syntax `monitor.jmx.server.host=host_name`

monitor.jmx.server.port

Use `monitor.jmx.server.port` to specify the JMX server port number. The value is initially set by the installer based on user entries.

Syntax `monitor.jmx.server.port=port_number`

monitor.jmx.server.user

Use `monitor.jmx.server.user` to specify the user name to use when communicating with the JMX server. The value is initially set by the installer based on user entries.

Syntax `monitor.jmx.server.user=user_name`

Alert Notification Properties

These properties enable or disable the types of alerts and store information needed for communication to the e-mail server.

monitor.smtp.from

Use `monitor.smtp.from` to specify the sender name for Oracle GoldenGate Monitor communications generated from the e-mail server. The value is initially set by the installer based on user entries.

Syntax `monitor.smtp.from=sender_name`

monitor.smtp.host

Use `monitor.smtp.host` to specify the host name for the e-mail server. The value is initially set by the installer based on user entries.

Syntax `monitor.smtp.host=email_host_name`

monitor.smtp.port

Use `monitor.smtp.port` to specify the port for sending e-mail alerts. The value is initially set by the installer based on user entries.

Syntax `monitor.smtp.port=port_number`

monitor.smtp.secure

Use `monitor.smtp.secure` to specify whether the SMTP server is in secure mode. The value is initially set by the installer based on user entries.

Syntax `monitor.smtp.secure={true | false}`

monitor.smtp.user

If the SMTP server is in secure mode, specify the user authorized to log in. The value is initially set by the installer based on user entries.

Syntax `monitor.smtp.user=user_name`

monitor.smtp.alerts.enabled

Use `monitor.smtp.alerts.enabled` to specify whether e-mail alerts are enabled. The value is initially set by the installer based on user entries.

Syntax `monitor.smtp.alerts.enabled={true | false}`

monitor.snmp.alerts.enabled

Use `monitor.snmp.alerts.enabled` to specify whether SNMP alerts are enabled. The value is initially set by the installer based on user entries.

Syntax `monitor.snmp.alerts.enabled={true | false}`

monitor.cli.alerts.enable

Use `monitor.cli.alerts.enabled` to specify whether command-line interface alerts are enabled. The value is initially set by the installer based on user entries.

Syntax `monitor.cli.alerts.enabled={true | false}`

Connection Properties

These properties define characteristics of the connections. They can be changed, but it is recommended that you first consult with Oracle Support. For more information go to <http://support.oracle.com>.

monitor.default_agent_connection.max_attempts

Use `monitor.default_agent_connection.max_attempts` to specify the number of unsuccessful connections before the process will stop attempting to connect. An entry of 0 or a negative number specifies no limit on the number of times the connection should be tried. The value is initially set to 0.

Syntax `monitor.default_agent_connection.max_attempts=number`

monitor.default_agent_connection.interval

Use `monitor.default_agent_connection.interval` to specify the number of seconds to

wait between each unsuccessful attempt to connect. The value is initially set to 30.

Syntax `monitor.default_agent_connection.interval=seconds`

monitor.default_agent_connection.reconnect_interval

Use `monitor.default_agent_connection.reconnect_interval` to specify the number of seconds to wait after an existing connection is broken before an attempt is made to reconnect. The value is initially set to 5.

Syntax `monitor.default_agent_connection.reconnect_interval=seconds`

monitor.events.dispatcher.threads_size

Use `monitor.events.dispatcher.threads_size` to specify the number of threads that will be used by the events dispatcher process. The value is initially set to 30.

Syntax `monitor.events.dispatcher.threads_size=number`

Repository properties

The repository database is selected during the installation of Oracle GoldenGate Monitor. Contact Oracle Support if you need to change the repository after installation. For more information on contacting support, go to <http://support.oracle.com>.

monitor.jpa.connection.user

Use `monitor.jpa.connection.user` to specify the repository database user name. The value is initially set by the installer based on user entries.

Syntax `monitor.jpa.connection.user=user_name`

Configuration Management Properties

These properties set the timeout value and the threshold number of events to trigger processing.

monitor.cm.event.timeout

Use `monitor.cm.event.timeout` to specify the time in milliseconds for the solution discovery process to wait between inquiries for new agents registered with the Oracle GoldenGate Monitor Server. The solution discovery process starts if a new agent is found. The value is initially set to 2000 milliseconds.

Syntax `monitor.cm.event.timeout=milliseconds`

monitor.cm.event.max.size

Use `monitor.cm.event.max.size` to specify the threshold number of events that triggers the solution discovery process not to wait `monitor.cm.event.timeout` seconds before processing the remaining events. The value is initially set to 1000 events.

Syntax `monitor.cm.event.max.size=1000`

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