**Oracle® GoldenGate Director**
Administrator's Guide
11*g* Release 1 (11.1.1.1)
**E21515-01**

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# ORACLE®

Oracle GoldenGate Administrator's Guide 11g Release 1 (11.1.1.1)

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# Contents

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# Overview of Oracle GoldenGate Director

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Oracle GoldenGate Director is a multi-tiered client-server application that enables the configuration and management of Oracle GoldenGate instances from a remote client. Oracle GoldenGate Director consists of the components shown in the following diagram.
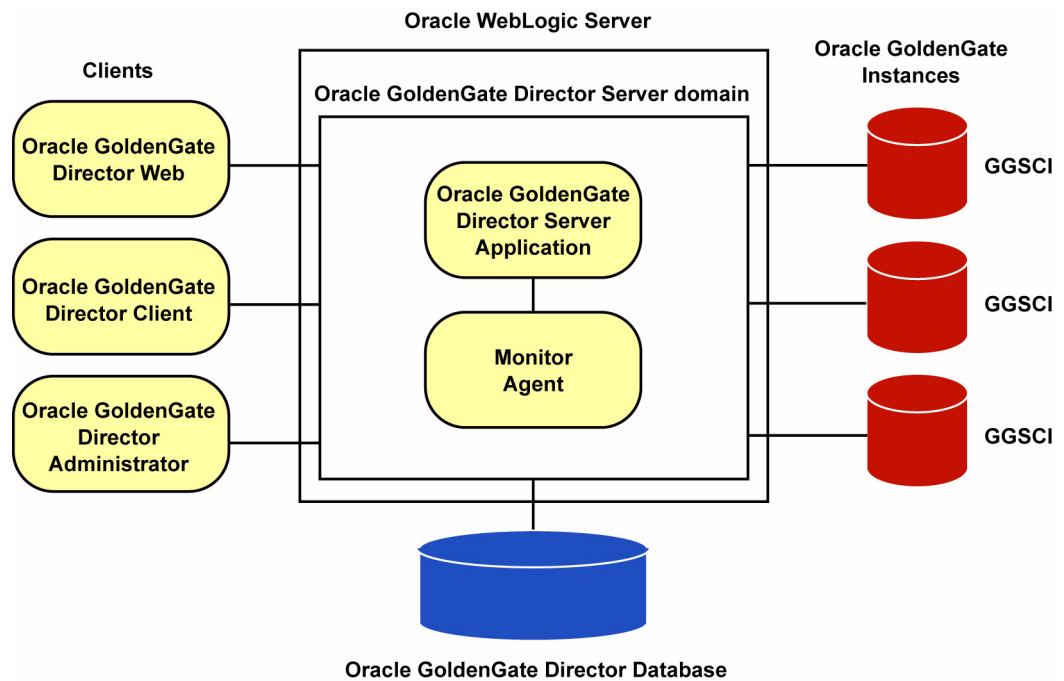


## Oracle GoldenGate instances

Each instance of an Oracle GoldenGate Manger process is identified within Oracle GoldenGate Director by the fully qualified domain name of the host, the port on which Manager is listening, and a user-defined data source name. Because a Manager process is associated with a database, this combination is identified as a *data source* within the Oracle GoldenGate Director Client application.

### Oracle GoldenGate Director Server

Oracle GoldenGate Director Server coordinates the management of Oracle GoldenGate instances. Oracle GoldenGate Director Server is installed as an Oracle WebLogic Server domain.

Oracle GoldenGate Director Server is composed of the following applications:

● The Oracle GoldenGate Director Server application, a collection of services that controls security, host information services, object modeling, diagramming, consolidated event logging, and alert services.

● The Monitor Agent, a client to the Oracle GoldenGate hosts that establishes a dedicated session of GGSCI (GoldenGate Software Command Interface). The connection is used to obtain process status and event information. Oracle GoldenGate Director Server connects to the agent through the Oracle GoldenGate Manager port of each Oracle GoldenGate instance that is to be monitored.

### Oracle GoldenGate Director database

Oracle GoldenGate Director Server uses a database as a central repository to store information about users and groups, graphical diagrams created by users, consolidated events, and other information. A user can log into any Oracle GoldenGate Director Client on any system and retrieve his or her own stored view of the network.

### Oracle GoldenGate Director Client

Oracle GoldenGate Director Client is a client application of Oracle GoldenGate Director Server that provides a graphical user interface (GUI) for managing Oracle GoldenGate instances. The client runs on any platform that supports Java and enables drag-and-drop manipulation, menus and toolbars, and other functionality expected of a desktop application.

### Oracle GoldenGate Director Web

Oracle GoldenGate Director Web is a web application that is hosted within Oracle GoldenGate Director Server. It allows remote, browser-based monitoring and control of Oracle GoldenGate instances without the need to install software on the client system.

### Oracle GoldenGate Director Administrator

Oracle GoldenGate Director Administrator is a client of Oracle GoldenGate Director Server and is used for configuring Oracle GoldenGate Director Server itself. You can use it to add or remove Oracle GoldenGate instances and users, and to manage the overall Oracle GoldenGate Director configuration.

**CHAPTER 2**

# System Requirements and Installation

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## System requirements

### Supported Platforms

- Oracle GoldenGate Director is compatible with versions of the Oracle GoldenGate software that are covered under the current Oracle GoldenGate support policy.
- All systems hosting Oracle GoldenGate instances must be registered with a Domain Name Server (DNS).

### Oracle GoldenGate Director Server

#### *Hardware*

- The system must have 1 GB of RAM, and at least 1 GB to 1.5 GB (recommended) of free disk space.
- The http port that is selected during the installation process must be dedicated to Oracle GoldenGate Director Server. The default port is 7001. The default SSL port is 7002.
- The following operating systems are certified for Oracle GoldenGate Director Server:
  - ○ Windows x86, x64
  - ○ Redhat x86, x64
  - ○ Solaris
  - ○ HPUX
  - ○ AIX

#### *Security*

Oracle GoldenGate Director Server connects to remote Oracle GoldenGate instances through each of their Manager ports. If a firewall is present within the Oracle GoldenGate network, do the following:

1. Use the DYNAMICPORTLIST parameter in each Manager parameter file to specify a list of available ports. For usage and syntax, see the Oracle GoldenGate *Windows and UNIX Reference Guide* or the Oracle GoldenGate *HP NonStop Reference Guide*, as appropriate for the platform.

2. Open those ports, plus the Manager port and the Oracle GoldenGate Director Server http port, through the firewall.

### Software

- The Java Runtime Environment (JRE) version 6 (1.6.*x)* must be available on the system where you are installing Oracle GoldenGate Director Server. If this environment does not exist on the system, see Appendix 1 on page 21.

- The operating system must be able to support the Java 1.6 (6.0) Runtime Environment, which is installed and used by the Oracle GoldenGate Director Server installer and software.

- Oracle WebLogic Server 11g (10.3.1, 10.3.2, 10.3.3, 10.3.4, or 10.3.5) Standard Edition must be installed before you install Oracle GoldenGate Director Server. Oracle WebLogic Server is Oracle's JavaEE application server. Follow the directions in the product documentation to install this software. Installing this version of Oracle WebLogic Server does not interfere with other versions of Oracle WebLogic Server on the system.

  > **NOTE** You need not create a domain for Oracle GoldenGate Director Server. A domain will be created in the Oracle GoldenGate Director installation directory by the installation program.

- Oracle GoldenGate Director Server requires the use of a database to maintain a small repository of tables that contain working data, such as user preferences and information about Oracle GoldenGate instances. The database must be installed, configured, and running before running the Oracle GoldenGate Director Server installer. This database can be one of the following:

  - MySQL 5.x Enterprise version. The installer provides a link to a free trial of this database. You can return to your place in the installer after installing and starting the trial database.
  - SQL Server 2005 and 2008
  - Oracle 9i or later

  To create and populate the repository, the installer makes a JDBC connection to the selected database, which is provided by the JDBC driver jar that is included with Oracle WebLogic Server.

- To use the Oracle GoldenGate Director Server installer on a UNIX or Linux system, a windowing system such as X Window must be available.

- Allow at least 200 MB of space in the database for Oracle GoldenGate Director Server objects and data. The installer creates the following tables and corresponding indexes.

| | |
|---|---|
| ACCOUNTB | GROUPB |
| ACLB | HOSTINFOB |
| ACLENTRYB | LOGENTRYB |
| ACNTGROUPREL | MANAGERREFB |
| ACNTPROPB | MONAGENTB |
| ACONPROCSB | NODESTATEB |
| ACONWATCHB | OBJECTSTATEB |
| ALERTB | STAGEB |
| AUTOINCB | STATSENTRYB |
| CONTCACHEB | SUFFIXB |
| GDSCVERS | UISPROPB |

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### Oracle GoldenGate Director Client

- The Oracle GoldenGate Director Client must be the same version as that of the Oracle GoldenGate Director Server. The client is packaged with the server software. See "Installing Oracle GoldenGate Director Client" on page 10. The use of different client and server versions returns an error.
- The client host must be a Windows or UNIX platform that:
  - ❍ Supports Java Runtime Environment (JRE) version 6.
  - ❍ Is on the same network as the Oracle GoldenGate Director Server host.
- Install Java Runtime Environment (JRE) version 6.0 on each client host. You can use the JRE that is installed with Oracle GoldenGate Director Server if installing the client on the same machine. If you need to install a JRE, see Appendix 1 on page 21.
- The monitor of the client host must have a display resolution (screen area) of at least 1024 x 768 pixels, preferably 1280 x 1024 or greater.

### Oracle GoldenGate Director Web

Oracle GoldenGate Director Web supports the following web browsers:

- Microsoft Internet Explorer version 6.0 or later
- Mozilla Firefox version 2.0 or later

No software is installed on the client system for the Oracle GoldenGate Director Web.

## Installing Oracle GoldenGate Director Server

These instructions apply to new installations. For upgrades, see page 11.

A new installation involves the following steps:

- Assigning database storage and login credentials
- Installing the Oracle GoldenGate Director Server software

### Assigning database storage and login credentials

Before installing Oracle GoldenGate Director Server for the first time, you need to assign a storage location for the repository and assign database login credentials for Oracle GoldenGate Director to use. You can use existing objects or create new ones.

**Table 1      Required database privileges for Oracle GoldenGate Director Server**

| MySQL |
| --- |
| 1. Create a user and identically named database. The password must contain at least eight alphanumeric characters, with at least one alphabet character and one number. |
| 2. Grant the user all DDL and DML privileges in that database when this user connects to the MySQL server from the host where Oracle GoldenGate Director is being installed. |

**Table 1     Required database privileges for Oracle GoldenGate Director Server (continued)**

| Oracle |
| --- |
| **1.** Create a user (schema) and password. The password must contain at least eight alphanumeric characters, with at least one alphabet character and one number. <br> **2.** Specify QUOTA UNLIMITED on the user's default tablespace. |
| **SQL Server** |
| **1.** Create a database or schema and a login that is a user of the database where you will be installing the repository. The password must contain at least eight alphanumeric characters, with at least one alphabet character and one number. <br> **2.** Grant this login sufficient privileges to perform the following operations: <br> CONNECT to the database <br> CREATE, ALTER, DROP TABLE in the database <br> CREATE and DROP INDEX in the database <br> INSERT, UPDATE, DELETE from tables in the database <br> SELECT from tables in the database <br> ALTER SCHEMA of the login's default schema |

## Downloading the Oracle GoldenGate Director 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 Management Pack for Oracle GoldenGate Media Pack.
   ❍ 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 the Oracle GoldenGate Director Server software

*1.* Close other applications as permissible.

*2.* Run ggdirector-serversetup_<version>.

*3.* **Welcome screen**: Click **Next** on the first screen.

> **NOTE** If you have not yet installed Oracle WebLogic Server, click **Cancel** to terminate this installation, and then see the System Requirements on page 6 for more information. Oracle GoldenGate Director must be installed as an Oracle WebLogic Server domain.

*4.* **Choose Installation Location**: Enter, or browse to, the location where you want the Oracle GoldenGate Director installation directory to be created. Make certain there is enough free disk space to meet the requirements shown on the screen.

*5.* **Weblogic Location**: Enter, or browse to, the directory within the Oracle WebLogic Server installation directory that is directly *above* the wlserver_10.3.x directory. For example, in a default installation, you would select the Middleware directory under a directory named Oracle.

*6.* **HTTP port**: Confirm, or change, the HTTP port that Oracle GoldenGate Director Server will use to communicate with Oracle GoldenGate Director Web. In most cases, the default of 7001 should be sufficient.

*7.* **Database**: Select the type of database to use as the Oracle GoldenGate Director Server repository. A database or schema (as applicable) and user account must exist, must be properly configured, and must be running before proceeding with the installation. You can use the repository from a previous version of Oracle GoldenGate Director to preserve existing data source configurations, user accounts, and environments.

*8.* **(Optional, MySQL only)** To use MySQL Enterprise Edition, click the link to download a free trial version for use as the Oracle GoldenGate Director repository. Leave the installer running while you install and start MySQL, and then return to it when you are finished.

*9.* **Database driver configuration**: Enter the following information for Oracle GoldenGate Director Server to connect to the repository database:

❍ the name of the database host server.
❍ the name of the database, or the Oracle SID if using an Oracle database.
❍ the port number of the database. The default port number of the selected database is displayed by the installer.

*10.* **Database User**: Enter the name and password of an existing database user or account that can be used to log on to the database. To use an existing Oracle GoldenGate Director Server repository, use the credentials of the owner of that database or schema. These credentials are used to establish authentication within Oracle GoldenGate

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Director Server. The password is stored in encrypted form. Make certain the password was created with at least eight alphanumeric characters, with at least one alphabet character and one number.

11. (Windows) **Oracle GoldenGate Director Service**: Optionally, you can install Oracle GoldenGate Director Server as a Windows service. Select **Install as a service** (the default), and then supply a name and description for the service. If there are multiple installations of Oracle GoldenGate Director on the system, each service name must be unique. **Note:** The installer creates a Weblogic Domain service; thus a prefix of **beasvc** is prepended to the specified service name, and the host name is appended to it. For example, if the default service name of **oggdirector** is used, the service name is **beasvc oggdirector_localhost**.

12. **Pre-installation summary**: Review your installation input, and then click **Back** to make changes or click **Next** to start the installation.

13. Click **Finish** to close the installer.

## Controlling Oracle GoldenGate Director Server

**Note**: The first time that you start Oracle GoldenGate Director Server after initial installation, it might appear frozen and take some time to start. This is normal.

**To start or stop Oracle GoldenGate Director Server from the command line**

1. Go to the Oracle GoldenGate Director Server installation directory.

2. Use the following programs.

**Table 2    Control commands for Oracle GoldenGate Director Server**

| Action | Windows command | UNIX and Linux command |
|---|---|---|
| Start in foreground | domain\startWebLogic.cmd [1] | domain/startWebLogic.sh or directorControl.sh  start |
| Start in background | (Not available) | directorControl.sh -b start |
| Stop | domain\bin\stopWebLogic.cmd | domain/bin/stopWebLogic.sh or directorControl.sh  stop |
| Start in background and redirect to a file | (Not available) | directorControl.sh  -b start <out_file> |

[1] There may be more than one **startWebLogic** program. Make certain to use the one in the <domain> directory.

The command console must remain open. Oracle GoldenGate Director Server stops running when the command console is closed.

3. (Optional) Configure the host to start and stop Oracle GoldenGate Director Server automatically. Contact your system administrator if you need assistance.

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**To start or stop Oracle GoldenGate Director Server from the Windows Program menu**

From the Windows **Start** menu, go to **Programs**>**Oracle GoldenGate Director Server**, and then select either **Start Oracle GoldenGate Director** or **Stop Oracle GoldenGate Director**.

**To start or stop the Oracle GoldenGate Director Server Windows service**

1. Open the **Services** Control Panel.

2. Do one of the following:

   ❍ Select the service name, and then click **Start the service** or **Stop the service** in the upper left corner.

   ❍ Right-click the service name, and then select **Start** or **Stop** from the context menu.

## Installing Oracle GoldenGate Director Client

These instructions apply to new installations. For upgrades, see "Upgrading and updating Oracle GoldenGate Director" on page 11.

The client version must be the same as the server version. To install the client, follow these steps on all Windows, Linux, or UNIX workstations that will be used to connect to Oracle GoldenGate Director Server.

1. If you did not install Java Runtime Environment on the client machine, do so before proceeding. If installing on the same machine as Oracle GoldenGate Director Server, you can use its JRE.

2. Start Oracle GoldenGate Director Server.

3. Close all Windows applications.

4. Run an Internet browser and type the following address:

   ```
   http://<hostname>:<port>/
   ```

   **Where:** <hostname> is the fully qualified name or IP address of the machine that hosts Oracle GoldenGate Director Server and <port> is the Oracle GoldenGate Director Server port number (default is 7001).

   > **NOTE**  *Do not* use "localhost" as the host name. The correct name and IP address are shown on the Oracle WebLogic Server console at startup. An example is:
   >
   > ```
   > http://dirhost.mycompany.com:7001/acon
   > ```

5. Download the appropriate ggdirector-clientsetup_<platform> build for the client platform, and save it to the workstation.

6. Run the program from the workstation. The installer provides options for choosing:

   ❍ an installation directory.
   ❍ (Windows) a location for the Windows shortcut that starts the client.

## Starting Oracle GoldenGate Director Client

1. Run the startup program as follows:

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❍ On UNIX, run the run-director.sh script from the bin sub-directory of the installation directory.

❍ On Windows, run GoldenGate-Director.exe from the installation directory or from the shortcut that was specified during installation.

*2.* At the login prompts, enter:

❍ the name and password of the Oracle GoldenGate Director admin user

❍ the server name or IP address where Oracle GoldenGate Director Server is running, followed by a colon(:) and then the html port where the server component is running (the default is 7001), for example: sysa:7001.

## Starting Oracle GoldenGate Director Web

> **NOTE** Before you can use this client, you must use Oracle GoldenGate Director Administrator to add user accounts and connection information to Oracle GoldenGate Director Server. See Chapter 3.

To start Oracle GoldenGate Director Web, run a supported web browser and enter the following in the address bar:

```
http://<server_name>:<port>/acon/
```

> **Where:** <system name> is the fully qualified name or IP address of the system where Oracle GoldenGate Director Server is installed, and <port> is the Oracle GoldenGate Director Server port (default is 7001).

> **NOTE** *Do not* use "localhost" as the host name. The correct name and IP address are shown on the Oracle WebLogic Server console at startup.

```
http://dirhost.abc.com:7001/acon
```

## Upgrading and updating Oracle GoldenGate Director

### Software upgrades

*Upgrades from version 2.0 and 11.1.1.0:* You can upgrade from version 2.0 or 11.1.1.0 to version 11.1.1.1 in a seamless manner. All installation files are upgraded, and you can keep the current database repository. To upgrade, run the installer and select the upgrade option.

*Upgrades from version 1.4:* Because Oracle GoldenGate Director Server versions 2.0 and later are installed within Oracle WebLogic Server, a direct upgrade path from version 1.4 does not exist, in the sense that the old installation files can be updated with the new ones. However, you can point the new installation environment to the current database repository, so that the user accounts, environments, and data sources are preserved and the upgrade appears seamless to the Oracle GoldenGate Director Clients.

To point to the current repository, follow the instructions in "Installing Oracle GoldenGate Director Server" on page 6, but do the following:

● Select the database type that contains the current repository.

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> **NOTE**    A MySQL repository must be the Enterprise edition of MySQL.

- Select the correct database driver information for the current repository database.
- Select the database or schema and user that owns the current repository. **Note:** Oracle WebLogic Server requires a password to contain at least eight alphanumeric characters, with at least one alphabet character and one number. You might need to change the current password to satisfy this requirement.

For assistance with the upgrade, open a service request with Oracle Support at http://support.oracle.com.

# Uninstalling Oracle GoldenGate Director

## Uninstalling Oracle GoldenGate Director Server

1. Stop Oracle GoldenGate Director Server (see page 9).

2. (Windows service) If Oracle GoldenGate Director Server is installed as a Windows service, run the uninstall program from the installation directory, or run Oracle GoldenGate Director Server Uninstaller from the Oracle GoldenGate Director Server folder on **Start > Programs**.

3. Remove the Oracle GoldenGate Director Server installation folder.

## Uninstalling Oracle GoldenGate Director Client

**To uninstall Oracle GoldenGate Director Client from a UNIX system**

1. Stop Oracle GoldenGate Director Client.

2. Remove the installation directory.

**To uninstall Oracle GoldenGate Director Client from a Windows system**

1. Stop Oracle GoldenGate Director Client.

2. Use the **Add/Remove Programs** control panel, or run **Uninstall GoldenGate Director.exe** from the Oracle GoldenGate Director Client directory.

3. Remove the installation directory.

# Configuring Oracle GoldenGate Director

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This chapter guides you through the setup of Oracle GoldenGate Director so that clients can connect securely to Oracle GoldenGate Director Server to view Oracle GoldenGate instances.

## Configuring Oracle GoldenGate Director Server

To configure Oracle GoldenGate Director Server, use the Oracle GoldenGate Director Administrator program. You can:

● Change the administrator information and password
● Manage user accounts
● Manage data sources
● Configure the Monitor Agent
● Set default domain suffixes

### To start Oracle GoldenGate Director Administrator

*1.* Do one of the following depending on the platform:

❍ (UNIX) Run the **run-admin.sh** script from the installation directory.
❍ (Windows) From the **bin** sub-directory of the Oracle GoldenGate Director Client directory, run GDSC Admin Tool.exe or use the **Programs** shortcut.

*2.* At the login prompts, enter:

❍ the name and password of the admin user
❍ the name or IP address of the host where Oracle GoldenGate Director Server is running, followed by a colon (:) and then the html port where the server component is running (the default is 7001), for example: sysa:7001.

The first time that you run Oracle GoldenGate Director Administrator, log in as admin with the password admin. You should change the admin password for security purposes. You also can enter or change other information about the admin user. See "To change a user account" on page 14.

### Managing user accounts

All users of Oracle GoldenGate Director Client must have an account with Oracle GoldenGate Director Server. Use the **Accounts** tab to manage Oracle GoldenGate Director user accounts.

**To add a user account**

*1.* At the bottom of the **Accounts** tab, click **New/Clear**.

*2.* Under **Account Info**, type the name of the user. (Required)

*3.* Under **Contact**, type the phone number and email address of the user. (Optional)

*4.* Under **Name**, type the name of the user. (Optional)

*5.* Under **Password**, type and confirm an Oracle GoldenGate Director login password for the user. (Required)

*6.* Click **Save**. The user is added to the **UserID** list.

**To change a user account**

*1.* In the **UserID** list of the **Accounts** tab, select the user whose information you want to change.

*2.* Change the information in **Account Info**, **Contact**, **Name**, and **Password** as needed.

*3.* Click **Save**.

**To delete a user account**

*1.* In the **UserID** list of the **Accounts** tab, select the user that you want to delete. You are prompted to confirm this action.

*2.* Click **Delete** to delete the account.

*3.* Click **Save**.

## Managing Oracle GoldenGate data sources

To view an Oracle GoldenGate instance from Oracle GoldenGate Director Client, its connection information must be stored in the Oracle GoldenGate Director Server repository. Users can add any or all defined instances to their personal views within their clients. Oracle GoldenGate instances appear as *data sources* within the client diagram.

Use the **Data Sources** tab to manage information about Oracle GoldenGate instances. Adding an Oracle GoldenGate instance as a data source adds information about its Manager process to the Oracle GoldenGate Director database repository.

**To add an Oracle GoldenGate data source**

*1.* Start the Manager process of the Oracle GoldenGate instance that you want to add as a data source.

*2.* At the bottom of the **Data Sources** tab, click **New/Clear**.

*3.* Under **Host Identity**, type the following:

   ❍ **Fully Qualified Domain Name**: The fully qualified domain name can be the IP address or the full host name, such as sys1.earth.company.com. A host name must be registered with a Domain Name Server (DNS).

   ❍ **Manager Port**: The port where Manager is running. Click **Check Connection** to make certain a connection can be made.

   ❍ **Data Source Name**: A name for the Oracle GoldenGate instance (for example GGS1). This name is displayed as a data source in the Oracle GoldenGate Director Client interface.

> **NOTE**    Once an Oracle GoldenGate instance has been added as a data source, the fully qualified domain name and port number cannot be changed without deleting the data source and then adding it back again. If that instance is being used as a data source in client diagrams, those diagrams must be recreated, and the logging and reporting streams will be reset. Attributes other than the fully qualified domain name and port number can be changed without affecting user diagrams.

4.  Under **GoldenGate Info**, type or select the following:

    ❍ **Host Operating System**: The type of operating system of the host. Select **WU** for Windows or UNIX, **NSK** for NonStop Server, or **IBM** for IBM z/OS and OS/390 systems running UNIX System Services.

    ❍ **Database**: The type of database against which the Oracle GoldenGate instance is running.

| Database Code | Database |
|---|---|
| DB2 | DB2 |
| MSSQL | Microsoft SQL Server |
| MySQL | MySQL |
| ENSCRIBE SQL/MP | Enscribe or NonStop SQL |
| ODBC | ODBC data source (Open Database Connectivity compliant) |
| ORA | Oracle |
| SYB | Sybase |
| TERA | Teradata |
| SQLMX | NonStop SQL/MX |
| VAM-Generic | Any database (other than Teradata) for which a vendor-access module is used to interface with the Extract process. |

    ❍ **GoldenGate Version**: The *X.x.x.x* version of Oracle GoldenGate that is installed on the system, for example 11.1.1.1. It is important to specify an accurate version so that the correct parameters are displayed in the Oracle GoldenGate Director Client parameter editor.

5.  Under **Default DB Credentials**, enter the following:

    ❍ **DSN**: If Oracle GoldenGate connects to the database through ODBC, type the ODBC Data Source Name of the database; otherwise leave blank.

    ❍ **Username**: The name of a default user for connecting to the database.

    ❍ **Password**: The password for the user.

6.  Under **Access Control**, select the following:

    ❍ **Owner**: One of the users listed on the **Accounts** tab that always will have full control of this data source. If no owner is specified, all users can see and access the processes associated with this data source.

❍ **Host is observable**: Select this option to allow other users to see this data source from their Oracle GoldenGate Director clients. They can see the host, monitor the Manager and Oracle GoldenGate processes, and view the parameters. They can query for status and configuration information, but they cannot control processes or alter configurations.

*7.* Click **Save**. The new information appears in the **Manager Information** list.

**To change an Oracle GoldenGate data source**

Changing data source information in Oracle GoldenGate Director Server does not affect the underlying Manager process in any way.

*1.* In the **Manager Information** list of the **Data Sources** tab, select the Oracle GoldenGate data source that you want to change.

*2.* Change anything in the **Host Identity**, **GoldenGate Info**, **Default DB Credentials**, and **Access Control** groups except for the fully qualified domain name or port number.

*3.* Click **Save**.

**To delete an Oracle GoldenGate data source**

Deleting a data source removes its Manager information from the Oracle GoldenGate Director Server but does not delete or affect the Manager process itself. Client diagrams that use this data source no longer will have access to it.

*1.* In the **Manager Information** list of the **Data Sources** tab, select the Oracle GoldenGate data source that you want to delete.

*2.* Click **Delete**.

*3.* Click **Yes** to confirm that you want to delete the instance.

*4.* Click **Save**.

## Configuring the Monitor Agent

Oracle GoldenGate Director Server creates threads that monitor the Manager processes of the Oracle GoldenGate instances that are registered with Oracle GoldenGate Director Server. Each thread is called a *monitor*.

Use the **Monitor Agent** tab to:

● View Manager processing and monitoring status
● Configure monitor settings
● Start and stop monitor threads

**To view Manager processing and monitoring status**

*1.* To view the monitoring status of an Oracle GoldenGate data source, view the **Monitor Active** column of the **Monitor and Manager Status** list.

*2.* To find out whether or not a Manager process is running, view the **Manager is Alive** column of the **Monitor and Manager Status** list.

*3.* To refresh the **Monitor and Manager Status** list, click **Refresh**. The status of the monitor agent and the associated Manager process is reset every time the **Monitor Agent** tab is made active. It can take up to the amount of time that is specified with **Host Wait Seconds** to update the statistics. **Refresh** starts that interval over again.

**To configure monitor settings**

*1.* In the **Go Back Hours** box, type the number of hours of recent event history to capture. Events are displayed in the Oracle GoldenGate Log in client diagrams. For example, you can capture the last five hours worth of events. To start monitoring from the present time, type 0.

*2.* In the **Host Wait Seconds** box, type the amount of time that Manager should wait for an event before sending a status report. The lower the value, the more reports that are sent. The higher the value, the fewer the reports, but the longer it will take for non-event updates to appear on client diagrams. The monitor agent polls the hosts at the specified interval to make certain the Manager process is alive. If a problem at the level of the operating system were to occur so that Oracle GoldenGate could not write to the event log, the polling ensures that this status is reflected within the Oracle GoldenGate Director Web interface.

> **NOTE**    There is another type of communication between Oracle GoldenGate Director Server and the hosts (besides Manager polling) that involves the immediate communication of changes made to Oracle GoldenGate processes. This communication process is not configurable.

*3.* In the **Log Purge Hours** box, type the number of hours to keep information in the Oracle GoldenGate Log before purging the data. The purge function helps you to maintain the logs at a reasonable size on disk.

*4.* Use **Ignore Alert Events Older Than (Minutes)** if using Oracle GoldenGate Director email alerts. It prevents duplicate alerts from being sent if Oracle GoldenGate Director Server is shut down and restarted. Specify the age, in minutes, of the oldest alert to keep.

*5.* To activate the values that you set, click **Save and Restart**. This action restarts the log purge thread and the active monitor threads.

**To start or stop monitor threads**

- To start or stop monitoring of one or more Oracle GoldenGate data sources, use standard selection methods to select them in the **Monitor and Manager Status** list, and then click **Start Selected Monitor** or **Stop Selected Monitor**.
- To start or stop monitoring of all data sources in the list, click **Start All** or **Stop All**.

## Setting default suffixes

Oracle GoldenGate Director Server attempts to resolve host names or IP addresses into fully qualified domain names. Use the **Default Suffix** tab to add, change, or delete domain suffixes for Oracle GoldenGate Director Server to use when attempting to qualify a non-qualified host name that appears in an Oracle GoldenGate parameter file.

For example, if the domain is anycompany.com and the fully qualified domain name of a host is sysa.anycompany.com, you would put anycompany.com into the suffix table. For more complex domain setups, you could use something like office.anycompany.com and offsite.anycompany.com.

**To add a domain suffix**

1. Click **Add** to display a blank row in the suffixes list.

2. Type the new suffix in the row.

3. Click **Save**.

**To change a domain suffix**

1. In the suffixes list, select the one that you want to change.

2. Change the suffix as needed.

3. Click **Save**.

**To delete a domain suffix**

1. In the suffixes list, put the cursor in the row that you want to delete.

2. Click **Delete**.

3. Click **Yes** to confirm that you want to delete the suffix.

4. Click **Save**.

## Configuring SSL support

SSL (Secure Socket Layer) is an industry-standard method of establishing an encrypted link between a browser and Oracle GoldenGate Director Server. The steps to configure Oracle GoldenGate Director for SSL are divided into phases:

- Obtain and store SSL keys and certificates
- Enable SSL in the Oracle WebLogic Server domain
- Test the SSL setup from Oracle GoldenGate Director Web
- Configure Oracle GoldenGate Director Client for SSL
- Test a client SSL connection

### Obtain and store SSL keys and certificates

1. Work with your security team to obtain a private key, a digital certificate that contains the public key, and a trusted CA certificate (in PEM format) from a reputable authority.

2. Store the private key and trusted CA certificate in a JKS (Java KeyStore).

See the Oracle WebLogic Server documentation for help with these tasks.

### Enable SSL in the Oracle WebLogic Server domain

1. Start Oracle GoldenGate Director Server, and then view the **Start Oracle GoldenGate Director** command console to make sure the startup is complete before moving to the next steps.

2. In a web browser, go to the Oracle WebLogic Server console at the following URL, where *hostname* is the name of the server that hosts Oracle GoldenGate Director Server.

   ```
   http://hostname:7001/console
   ```

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*3.* Log into the Oracle WebLogic Server domain home page with your Oracle WebLogic Server credentials.

*4.* Under **Domain Structure**, expand to **Domain** > **Environments** > **Servers.**

*5.* Under **Summary of Servers**, make the **Configuration** tab active.

*6.* Click *machine_name***(admin)**, for example **localhost(admin)**.

*7.* Under **Settings for** *machine_name*, make the **Configuration** tab active.

*8.* Scroll down to **SSL Listen Port Enabled**, and then select the check box to enable the SSL support.

*9.* For **SSL Listen Port**, specify a SSL port number for this domain, or use the default of 7002.

*10.* At the bottom of the screen, click **Save**.

*11.* In the Oracle WebLogic Server command console, view the trailing entries to confirm that Oracle WebLogic Server is now listening on the specified SSL port.

*12.* On the Oracle WebLogic Server console, make the **SSL** tab active.

*13.* Scroll down to **Private Key Alias**, and then make sure the name of the keystore is the one that you created for use with Oracle GoldenGate Director. If not, make certain that the keystore is stored in a directory that can be accessed by Oracle WebLogic Server and Oracle GoldenGate Director Server.

### Test the SSL setup from Oracle GoldenGate Director Web

*1.* Point a web browser to the following URL (note the "s" in https), where *hostname* is the name of the server that hosts Oracle GoldenGate Director Server:

```
https://hostname:7002/acon
```

*2.* If the browser returns a security message stating that the connection is untrusted, click **I Understand the Risks**, and then take these steps to proceed:

   ❍ Click **Add Exception**.
   ❍ In the **Add Security Exception** dialog, click **Get Certificate**.
   ❍ Click **Confirm Security Exception**.

*3.* Log in to Oracle GoldenGate Director as the Oracle GoldenGate Director administrator. If you log in successfully, you configured SSL correctly. If the login fails, repeat the steps to enable SSL, and make certain that you specify a valid port (the default is recommended) and that you click **Save** after enabling SSL.

### Configure Oracle GoldenGate Director Client for SSL

These steps are the same for all platforms. The examples reflect the UNIX file system.

*1.* Copy the SSL keystore to any directory of the Oracle GoldenGate Director Client machine. This file has a suffix of .jks.

*2.* In the Oracle GoldenGate Director Client installation directory, open the etc/client-properties.conf file.

*3.* Update the following properties. Because this is a Java properties file, use only forward slashes even if the platform is Windows.

❍   Specify the location of the keystore file:

```
weblogic.security.SSL.trustedCAKeyStore=C:/Oracle/Middleware1034/wls
erver_10.3/server/lib/<certificate>
```

> **NOTE**   Replace this directory path with the actual path to your keystore.

❍   Instruct Oracle WebLogic Server not to verify the host name:

```
weblogic.security.SSL.ignoreHostnameVerification=true
```

*4.*   (Optional) In the properties file, you can initialize any other JVM parameters that are required while using SSL mode.

## Test a client SSL connection

*1.*   Run Oracle GoldenGate Director Client.

*2.*   Log in to localhost:7002 (using the SSL port) with the **SSL** check box checked.

*3.*   From the **File** menu, select **Logout**.

*4.*   From the **File** menu, select **Login**.

*5.*   Log in to localhost:7001(this time using the default port) without selecting the **SSL** check box, and make sure that also works.

# Downloading the Java Runtime Environment (JRE)

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The Oracle GoldenGate Director software and installer both rely on components in the Java Runtime Environment (JRE) version 6 (internal version 1.6.*x*). In many cases, this environment already exists because it was installed when the system was configured or when another program was installed. If the system where you are installing the server or client components does not have this environment, you can download it free of charge from Oracle.

1. Go to http://www.oracle.com/technetwork/java/javase/downloads/index.html.

2. Under **Java Platform, Standard Edition**, it shows the text "JDK 6 Update *xx* (JDK or JRE), where *xx* is the current update number." Click either one (the JDK includes the JRE). Do not use any other version or edition of the Java JRE or JDK.

> **NOTE**  The internal version number for this update release is 1.6.*x_xx*-b*xx*. The external version number is 6u21. These numbers may appear in your system displays.

3. Follow the navigation aids to download the JRE or JDK that is appropriate for your operating system.

4. Follow the installation instructions that are provided with the JRE.

5. Save the path to the JRE executable file. You will need it later.

6. Proceed to the next steps in "Verifying the JRE environment".

## Verifying the JRE environment

### UNIX

After installing the JRE, run the following test to verify the version of Java that is recognized by the system.

1. From the command shell of the operating system, issue the following command.

```
java -version
```

2. Make certain the command output shows the version that you downloaded. It should be 1.6.0_*xx*-b*xx*.

### Windows

After installing the JRE, but before installing Oracle GoldenGate Director Server, verify

the path to the JRE. In this procedure, you will:

● Verify the JRE version that is installed on the server machine.

● Verify that the JAVA_HOME system environment variable points to the JRE that you installed, or create the variable if absent.

● Verify that the JAVA_HOME path appears at the beginning of the Path system environment variable, and change it if needed. Programs such as the Oracle database software place the path to their own JRE installations in the location that is expected by Oracle GoldenGate Director Server.

**To verify the JRE version**

*1.* From the **Start** menu, select **Run**.

*2.* In the **Run** dialog box, type **cmd** to run the Windows command console.

*3.* Issue the following command.

```
java -version
```

*4.* Do one of the following:

❍ If the results show 1.6.0_*xx*-b*xx*, continue to the instructions in "Installing Oracle GoldenGate Director Server" on page 6.

❍ If the results do *not* show that version, close the command console and continue with the following steps in "To set the JAVA_HOME system variable".

**To set the JAVA_HOME system variable**

These steps verify, and then create or edit the JAVA_HOME system variable if needed, for the JRE that you installed.

*1.* On the desktop (Windows 2000) or in the **Start** menu (Windows XP), right-click **My Computer** and then click **Properties**.

*2.* Click the **Advanced** tab, and then click **Environment Variables**.

*3.* Under **System Variables**, look for the JAVA_HOME system variable.

The JAVA_HOME path should point to the location that you recorded when you installed the JRE.

*4.* Do one of the following:

❍ If you see the JAVA_HOME system variable and it points to the correct location, leave the **Environment Variables** dialog box open and follow the instructions in "To set the JAVA_HOME system path" on page 23.

❍ If a JAVA_HOME system variable *does not* exist, or if it points to the wrong location, continue to the next step.

*5.* Under **System Variables**, do one of the following:

❍ Click **New** to create a JAVA_HOME variable

❍ Select the existing JAVA_HOME variable and then click **Edit**. This opens a dialog box to edit this variable.

*6.* In the **Variable Name** box, type JAVA_HOME in capital letters.

*7.* In the **Variable Value** box, type the correct path to the JRE.

*8.* Click **OK** to set the path and close the dialog box.

*9.* Leave the **Environment Variables** dialog box open and follow the instructions in "To set the JAVA_HOME system path".

**To set the JAVA_HOME system path**

These steps ensure that the JAVA_HOME path is in the expected location within the Path system variable.

*1.* In the **Environment Variables** dialog box, look for the Path variable under **System Variables**.

*2.* Confirm that the path to JAVA_HOME appears as the *first* path in the list of paths.

%JAVA_HOME%\bin;

*3.* Do one of the following:

❍ If this JAVA_HOME path is the first path in the string, close the **Environment Variables** and **System Properties** dialog boxes and follow the instructions in "Installing Oracle GoldenGate Director Server" on page 6.

❍ If this JAVA_HOME path is *not* the first path in the string, continue to the next step.

*4.* Under **System Variables**, double click the Path variable to open it for editing.

*5.* In the path string, locate the JAVA_HOME path. If it is there, cut and paste it (including the terminating semi-colon) to the *front* of the list; otherwise, type it. The path must be entered as %JAVA_HOME%\bin.

*6.* Click **OK** to close the **Edit System Variable** dialog box.

*7.* Close the **Environment Variables** and **System Properties** dialog boxes.

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