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Oracle GoldenGate Administrator's Guide 11g Release 1 (11.1.1)

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CHAPTER 1 Overview of Oracle GoldenGate Director

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 Director Database

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.

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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 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

System requirements

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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

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

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 18.

• 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) Standard Edition. This is Oracle's JavaEE application server. This software must be installed according to the product documentation prior to installing Oracle GoldenGate Director Server. Installing this version of Oracle Weblogic Server will not interfere with other installed versions of Oracle Weblogic Server.
 - **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.
- One of the following databases, in which Oracle GoldenGate Director Server will install and maintain a repository of some small tables that contain working data, such as user preferences and information about Oracle GoldenGate instances.
 - MySQL 5.x Enterprise version.
 - SQL Server 2000 and 2005
 - Oracle 9i or later.

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

- To use the installer on a UNIX or Linux system, a windowing system such as X Window must be available.
- 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 | JMS_ROLES |
|--------------|-------------------|
| ACLB | JMS_SUBSCRIPTIONS |
| ACLENTRYB | JMS_TRANSACTIONS |
| ACNTGROUPREL | JMS_USERS |
| ACNTPROPB | LOGENTRYB |
| ACONPROCSB | MANAGERREFB |
| ACONWATCHB | MONAGENTB |
| ALERTB | NODESTATEB |
| AUTOINCB | STAGEB |
| GDSCVERS | STATSENTRYB |
| GROUPB | SUFFIXB |
| HOSTINFOB | UISPROPB |
| JMS MESSAGES | |

Oracle GoldenGate Director Client

- 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 system. 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 18.
- Monitor display resolution (screen area) of at least 1024 x 768 pixels, preferably 1280 x 1024 or greater.

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Oracle GoldenGate Director Web

Oracle GoldenGate Director Web supports the following web browsers:

- Microsoft Internet Explorer version 5.0 or later
- Mozilla Firefox version 1.3 or later
- Apple Safari version 1.2 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.

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.
- 2. Specify QUOTA UNLIMITED on the user's default tablespace.

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

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.
- 2. Grant this login sufficient privileges to perform the following operations:

CONNECT to the database CREATE, ALTER, DROP TABLE in the database CREATE and DROP INDEX in the database INSERT, UPDATE, DELETE from tables in the database SELECT from tables in the database 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 a repository that was used by a previous version of Oracle GoldenGate Director. This will preserve user accounts, data source configurations, and user environments.
- 8. (MySQL only) If you have not yet downloaded and installed MySQL Enterprise Edition, you can optionally install a free trial version for use as the Oracle GoldenGate Director repository. To use MySQL, you must use the Enterprise Edition. Click the link to the MySQL website. Install MySQL and then start it. You can leave the installer running while you do this.
- **9.** Database driver configuration: Enter the following information for Oracle GoldenGate Director Server to connect to the selected database:
 - \circ the name of the database host server.
 - \circ $\,$ the name of the database, or the Oracle SID if using an Oracle database.
 - $\circ~$ 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 a database user that can be used to log on to the database. This user must already exist in the database; the installer cannot create one. To use an existing Oracle GoldenGate Director Server repository, use the credentials of the user that owns that database or schema. These credentials are used to establish authentication within Oracle GoldenGate 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. Pre-installation summary: Review your installation input, and then click **Back** to make changes or click **Next** to start the installation.

- 12. Click Finish to close the installer.
- **13.** (Windows) To create a Windows service for Oracle GoldenGate Director Server, see the Oracle Weblogic Server documentation.

Controlling Oracle GoldenGate Director Server

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

- 1. Before starting Oracle GoldenGate Director Server, start Oracle Weblogic Server.
- 2. Go to the Oracle GoldenGate Director Server installation directory.
- **3.** Use the following programs.

| lable 2 | Control commands for Oracle GoldenGate Director Server | |
|---------|--|--|
| | | |

| Action | Windows command | UNIX and Linux command |
|-----------------------|-----------------------------|----------------------------|
| Start Director Server | domain\startWebLogic.cmd | domain/startWebLogic.sh |
| Stop Director Server | domain\bin\stopWebLogic.cmd | domain/bin/stopWebLogic.sh |
| | | |

NOTE 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.

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

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

- 1. Before starting Oracle GoldenGate Director Server, start Oracle Weblogic Server.
- 2. From the Windows Start menu, click Programs>GoldenGate Director Server, and then select either Start Director or Stop Director.

Installing Oracle GoldenGate Director Client

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

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://<servername>:<port>/download

- **Where:** <servername> 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.abc.com:7001/acon

- 5. Select GoldenGate Director Client.
- **6.** Download either ggdirector-clientsetup.exe or ggdirector-clientsetup.sh, depending on the client platform, and save it to the workstation.
- 7. Run the program from the workstation. The installer provides options for choosing:
 - \circ an installation directory.
 - \circ a location for the Windows shortcut that starts the client.

Starting Oracle GoldenGate Director Client

- 1. Run the startup program:
 - 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:
 - o the name and password of the admin user
 - the server name or IP address where Oracle GoldenGate Director Server is running, a colon, and the html port where it is running (the default is 7001, but it might have been changed during installation). Example: sysa:7001

Starting Oracle GoldenGate Director Web

NOTE Before you can use the Oracle GoldenGate Director Web client, you must first use Oracle GoldenGate Director Administrator to configure the server component with user accounts and connection information for Oracle GoldenGate instances. See Chapter 3.

To start Oracle GoldenGate Director Web, run an Internet browser and enter the following in the address bar:

http://<system 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

From version 2.0: You can upgrade from version 2.0 to version 11.1.1 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.

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.

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.

If you need 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. (Optional) Remove the Oracle GoldenGate Director Server installation folder.

Uninstalling Oracle GoldenGate Director Client

- To uninstall Oracle GoldenGate Director Client from a UNIX system, stop the Oracle GoldenGate Director Client application and then remove the installation directory and files.
- To uninstall Oracle GoldenGate Director Client from a Windows system, stop the Oracle GoldenGate Director Client application and then use the Add/Remove Programs control panel, or run Uninstall GoldenGate Director.exe from the Oracle GoldenGate Director Client directory.

CHAPTER 3 Configuring Oracle GoldenGate Director Server

Running Oracle GoldenGate Director Administrator

Use the Oracle GoldenGate Director Administrator program to configure Oracle GoldenGate Director Server. 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. From the **bin** sub-directory of the Oracle GoldenGate Director Client directory, run GDSC Admin Tool.exe. On Windows systems, you can run Oracle GoldenGate Director Administrator from the shortcut that was specified during installation.
- 2. At the login prompts, enter:
 - o the name and password of the admin user
 - the server name or IP address where Oracle GoldenGate Director Server is running, a colon, and the html port where it is running (the default is 7001, but it might have been changed during installation). 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 13.

Managing user accounts

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Users must have an account with Oracle GoldenGate Director Server before they can log in from Oracle GoldenGate Director Client. 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)

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- 4. Under Name, type the first, middle, and last names 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.

To add an Oracle GoldenGate data source

Adding an Oracle GoldenGate instance as a data source adds information about its Manager process to the Oracle GoldenGate Director database repository.

- 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 will have to 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 |
| NSK | 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* version of Oracle GoldenGate that is installed on the system, for example 11.1.1. 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**: The data source name of the database. Only required for ODBC databases; 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, then 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 will be able to 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 the Manager process itself or affect it in any way. 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 List. 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 List 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. Purging the data maintains 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**, which 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 always 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.

APPENDIX 1 Downloading the Java Runtime Environment (JRE)

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. Write down 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

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

1. From the operating system's command line, issue the following command.

java -version

2. Make certain it is the version that you downloaded. It should be 1.6.0_xx-bxx.

Windows

After installing the JRE, but before installing Oracle GoldenGate Director Server, the path to the JRE must be verified. 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 20.
 - 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, either click New to create a JAVA_HOME variable, or select the existing JAVA_HOME variable and 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" on page 20.

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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 shown below 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 written as %JAVA_HOME%\bin.

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- 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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