

Oracle® GoldenGate

Installing and Configuring Oracle GoldenGate Veridata

12c (12.1.3)

E40590-03

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This guide explains how to install, deinstall, and update the Oracle GoldenGate Veridata data comparison solution.

Oracle GoldenGate Installing and Configuring Oracle GoldenGate Veridata, 12c (12.1.3)

E40590-03

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Preface

This document describes how to use the Oracle GoldenGate Monitor and Veridata installation program to install and configure Oracle GoldenGate Veridata.

Audience

This document is intended for installers and system administrators who are installing, configuring, and running Oracle GoldenGate Veridata.

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc>.

Access to Oracle Support

Oracle customers that have purchased support have access to electronic support through My Oracle Support. For information, visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=info> or visit <http://www.oracle.com/pls/topic/lookup?ctx=acc&id=trs> if you are hearing impaired.

Related Documents

For important information about Oracle Fusion Middleware products, see the following manuals:

- *Planning an Installation of Oracle Fusion Middleware*
This book contains useful information you should read before installing any Oracle Fusion Middleware product.
- *Understanding Oracle Fusion Middleware*
This book introduces the common terms and concepts in an Oracle Fusion Middleware environment.
- *Administering Oracle Fusion Middleware*
This book contains information for managing your Oracle Fusion Middleware environment after installation and configuration is complete.

The complete Oracle GoldenGate documentation set includes the following components:

HP NonStop Guardian Platform

- *Oracle GoldenGate for Mainframe Reference Guide*
- *Oracle GoldenGate for Mainframe Administrator's Guide*
- *Oracle GoldenGate Application Adapters BASE24 Administrator's Guide*
- *Oracle GoldenGate Application Adapters BASE24 Supplemental Guides for D24, T24, and N24*

Windows, UNIX, and Linux Platforms

- *Oracle GoldenGate Installation and Setup Guides per supported database*
- *Oracle GoldenGate Windows and UNIX Administrator's Guide*
- *Oracle GoldenGate Windows and UNIX Reference Guide*
- *Oracle GoldenGate Windows and UNIX Troubleshooting and Tuning Guide*
- *Oracle GoldenGate Upgrade Guide*

Other Oracle GoldenGate Products

- *Oracle GoldenGate Adapters Administrator's Guide for Flat Files*
- *Oracle GoldenGate Adapters Administrator's Guide for Java*
- *Oracle GoldenGate Director Administrator's Guide*
- *Oracle GoldenGate Monitor Administrator's Guide*
- *Oracle GoldenGate Veridata Administrator's Guide*

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, such as "From the File menu, select Save ." Boldface also is used for terms defined in text or in the glossary.
<i>italic, italic</i>	Italic type indicates placeholder variables for which you supply particular values, such as in the parameter statement: <code>TABLE <i>table_name</i></code> . Italic type also is used for book titles and emphasis.
MONOSPACE, monospace	Monospace type indicates code components such as user exits and scripts; the names of files and database objects; URL paths; and input and output text that appears on the screen. Uppercase monospace type is generally used to represent the names of Oracle GoldenGate parameters, commands, and user-configurable functions, as well as SQL commands and keywords.
UPPERCASE	Uppercase in the regular text font indicates the name of a utility unless the name is intended to be a specific case.
{ }	Braces within syntax enclose a set of options that are separated by pipe symbols, one of which must be selected, for example: <code>{<i>option1</i> <i>option2</i> <i>option3</i>}</code> .
[]	Brackets within syntax indicate an optional element. For example in this syntax, the <code>SAVE</code> clause is optional: <code>CLEANUP REPLICAT <i>group_name</i> [, <i>SAVE count</i>]</code> . Multiple options within an optional element are separated by a pipe symbol, for example: <code>[<i>option1</i> <i>option2</i>]</code> .

Installation and Configuration Overview

This chapter explains how to install a new version of the Oracle GoldenGate Veridata software.

To upgrade an existing Oracle GoldenGate Veridata installation, see *Upgrading Oracle GoldenGate Veridata*.

This chapter includes the following sections:

- [Section 1.1, "Understanding Oracle GoldenGate Veridata Components"](#)
- [Section 1.2, "Understanding Oracle GoldenGate Veridata Installation Topology"](#)
- [Section 1.3, "Installation Roadmap for Oracle GoldenGate Veridata"](#)
- [Section 1.4, "Understanding Oracle GoldenGate Veridata Distribution"](#)

1.1 Understanding Oracle GoldenGate Veridata Components

The Oracle GoldenGate Veridata distribution installs the following components:

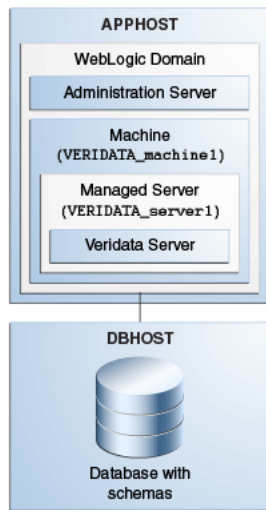
- Oracle GoldenGate Veridata Server
- Oracle GoldenGate Veridata Web User Interface
- Oracle GoldenGate Veridata Repository
- Oracle GoldenGate Veridata Agent
- Oracle GoldenGate Veridata Command-line Utilities

For more information about these components, see "About Oracle GoldenGate Veridata" in *Administering Oracle GoldenGate Veridata*.

1.2 Understanding Oracle GoldenGate Veridata Installation Topology

Oracle GoldenGate Veridata Agent and Oracle GoldenGate Veridata Server are installed into an existing Oracle home containing Oracle Fusion Middleware Infrastructure.

Figure 1–1 Oracle GoldenGate Veridata Standalone Installation Topology



This topology represents a standard WebLogic Server domain that contains an Administration Server and a Managed Server on which the Infrastructure and Veridata Server are deployed. The domain is configured on a single host and requires a supported database where the Veridata Repository Database schema and required Fusion Middleware schema are installed.

All elements in this standard installation topology illustration are described in [Table 1–1](#).

Table 1–1 Description of the Elements in the Standard Installation Topology

Element	Description and Links to Additional Documentation
APPHOST	Standard term used in Oracle documentation referring to the computer that is hosting the application tier.
DBHOST	Standard term used in Oracle documentation referring to the computer that is hosting the database.
WebLogic Domain	A logically related group of Java components (in this case, the administration Server, Managed Servers, and other related software components). For more information, see "What is an Oracle WebLogic Server Domain" in <i>Understanding Oracle Fusion Middleware</i> .
Administration Server	The central control entity of a domain which maintains the domain's configuration objects and distributes configuration changes to Managed Servers. For more information, see "What is the Administration Server" in <i>Understanding Oracle Fusion Middleware</i> .
Machine	Logical representation of the computer that hosts one or more WebLogic Server instances (servers). Machines are also the logical glue between WebLogic Managed Servers and the Node Manager; in order to start or stop a Managed Server with Node Manager, the Managed Server must be associated with a machine.
Managed Server	Host for your applications, application components, Web services, and their associated resources. For more information, see "Understanding Managed Servers and Managed Server Clusters" in <i>Understanding Oracle Fusion Middleware</i> .

Table 1–1 (Cont.) Description of the Elements in the Standard Installation Topology

Element	Description and Links to Additional Documentation
Infrastructure	<p data-bbox="732 260 1240 285">Collection of services that include the following:</p> <ul style="list-style-type: none"> <li data-bbox="732 302 1360 420"> <p data-bbox="732 302 1068 327">■ Metadata repository (MDS)</p> <p data-bbox="777 344 1360 420">This contains metadata for Oracle Fusion Middleware components, such as the Oracle Application Developer Framework.</p> <p data-bbox="777 436 1446 487">For more information, see "What is the Metadata Repository" in <i>Understanding Oracle Fusion Middleware</i>.</p> <li data-bbox="732 499 1370 525">■ Oracle Application Developer Framework (Oracle ADF) <li data-bbox="732 537 1192 562">■ Oracle Web Services Manager (OWSM) <li data-bbox="732 575 1208 600">■ Oracle Platform Security Services (OPSS)
Oracle GoldenGate Veridata Server	<p data-bbox="732 625 1446 701">The Veridata Server coordinates the execution of Oracle GoldenGate Veridata tasks and processes information from multiple Veridata Agents.</p>

1.3 Installation Roadmap for Oracle GoldenGate Veridata

This guide provides all the steps required to install and configure the standard Oracle GoldenGate Veridata topology. Within the procedures, the guide also provides references to additional information you can use if you want to create a slightly modified version of this topology.

Figure 1–2 Oracle GoldenGate Veridata Installation Roadmap

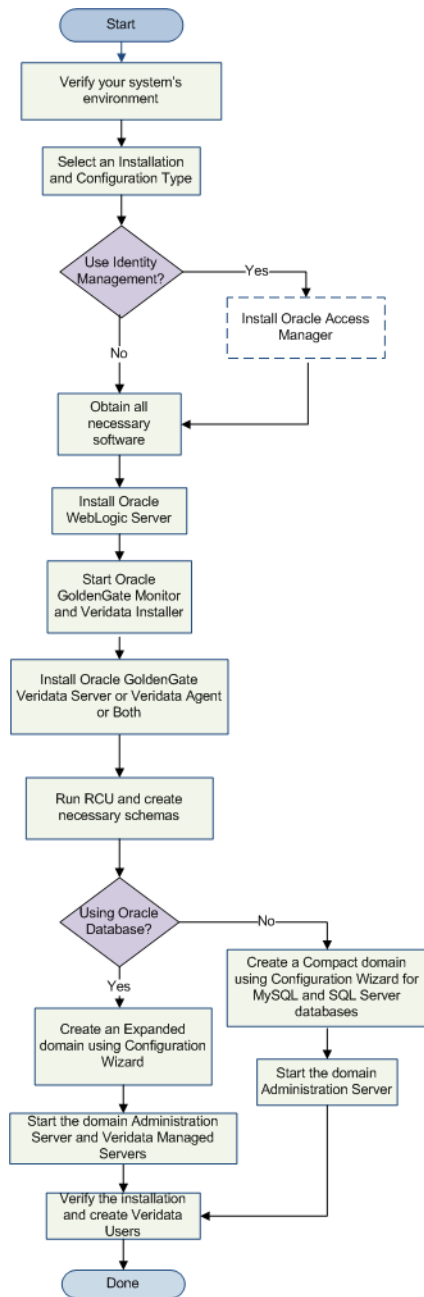


Table 1–2 lists the steps required to install and configure the topology.

Table 1–2 Oracle GoldenGate Veridata Installation Roadmap

Task	Description	Documentation
Verify your system environment and install the prerequisites	Before beginning the installation, verify that the minimum system and network requirements are met.	See Chapter 2, "Oracle GoldenGate Veridata Prerequisites and System Requirements" .
Obtain the appropriate distribution for your installation type	The Oracle GoldenGate Veridata distribution. For Oracle GoldenGate Veridata 12c (12.1.3), the installer is <code>fmw_12.1.3.0.0_ogg.jar</code> .	See Appendix D, "Oracle GoldenGate Veridata Distribution" .
Determine your installation directories	Verify that the directories that will need to be created can be created or accessed by the installer, and exist on systems that meet the minimum requirements.	See "Understanding the Recommended Directory Structure" in <i>Planning an Installation of Oracle Fusion Middleware</i> .
Install Oracle GoldenGate Veridata	Installing software transfers the software to your system and creates the Oracle home directory.	For more information about the install types available during installation, see Section 1.4 . For installation instructions, see Chapter 3, "Installing Oracle GoldenGate Veridata" .
Create Oracle GoldenGate Veridata Repository schema.	Use the Repository Creation Utility (RCU) to create the Repository database schemas.	See Chapter 4, "Creating the Oracle GoldenGate Veridata Repository Schema" .
Create and configure your domain.	Use the configuration wizard to create and configure your domain.	See Chapter 5, "Configuring Domain for Oracle GoldenGate Veridata" to create the domain.

1.4 Understanding Oracle GoldenGate Veridata Distribution

The Oracle GoldenGate Veridata distribution is available as a `.jar` file. You must have a certified JDK already installed on your system in order to install and configure this distribution.

Tip: For more information about distributions, see "Understanding and Obtaining Product Distributions" in *Planning an Installation of Oracle Fusion Middleware*.

For information about how to obtain the distribution and also about the feature sets in the distribution, see [Appendix D](#).

Oracle GoldenGate Veridata Prerequisites and System Requirements

This chapter discusses the supported databases and system requirements to install and run Oracle GoldenGate Veridata.

This chapter includes the following sections:

- [Section 2.1, "General Information"](#)
- [Section 2.2, "Prerequisites for Installing Oracle GoldenGate Veridata 12c \(12.1.3\)"](#)
- [Section 2.3, "Supported Databases for Comparison"](#)
- [Section 2.4, "Oracle GoldenGate Veridata Agent System Requirements"](#)
- [Section 2.5, "Oracle GoldenGate Veridata Server System Requirements"](#)
- [Section 2.6, "Oracle GoldenGate Veridata Web User Interface Requirements"](#)
- [Section 2.7, "SQL/MP Data Exclusions"](#)

2.1 General Information

Oracle GoldenGate Veridata does not require an installation of the Oracle GoldenGate replication software. If you do use that software, install Oracle GoldenGate Veridata in a different location.

2.2 Prerequisites for Installing Oracle GoldenGate Veridata 12c (12.1.3)

This section describes the prerequisites you must meet before you can successfully install and configure Oracle GoldenGate Veridata. The following sections explain the prerequisites:

- [Section 2.2.1, "Install JDK on the Target Machine"](#)
- [Section 2.2.2, "Install Oracle WebLogic Server 12c \(12.1.3\)"](#)
- [Section 2.2.3, "Install a Certified Database for Configuring Veridata Repository"](#)

2.2.1 Install JDK on the Target Machine

Installation of a supported JDK is required for the Oracle GoldenGate Veridata installation.

DB2 for i

DB2 for i 6.# and 5.# support only Java 6 though Java 7 is recommended where it is possible.

All Other Certified Databases

Install JDK 1.7.0_15 or higher and higher on the machine where you run Veridata instance.

For more information about installing and to download the product, go to Java SE Downloads web site:

<http://www.oracle.com/technetwork/java/javase/downloads/index.html>

You must set the `JAVA_HOME` and `PATH` environment variables with the JDK directory path.

2.2.2 Install Oracle WebLogic Server 12c (12.1.3)

After installing the certified JDK for your operating system, use the Oracle Fusion Middleware 12c (12.1.3) Infrastructure installer to install Oracle WebLogic Server and the Oracle Java Required Files (JRF) Infrastructure services.

You need to download the installer `fmw_WLS_version_infrastructure.jar` (where `WLS_version` represents the supported WebLogic Server version), which you can obtain from:

<http://www.oracle.com/technetwork/developer-tools/adf/downloads/index.html>

or from Oracle Software Delivery Cloud at:

<https://edelivery.oracle.com/>

For more details on obtaining Oracle Fusion Middleware Infrastructure installer, see "Understanding and Obtaining the Oracle Fusion Middleware Infrastructure Distribution" in *Installing and Configuring the Oracle Fusion Middleware Infrastructure*.

For details on installing Oracle WebLogic Server and JRF, see "Installing the Oracle Fusion Middleware Infrastructure Software" in *Installing and Configuring the Oracle Fusion Middleware Infrastructure*.

2.2.3 Install a Certified Database for Configuring Veridata Repository

If you do not already have a database where you can install the schemas, you must install and configure a certified database. Oracle GoldenGate Veridata supports the following databases:

- Oracle
- MySQL
- Microsoft SQL Server

See [Section 2.5.3, "Repository Requirements for the Server Component"](#) for more details.

2.3 Supported Databases for Comparison

Oracle GoldenGate Veridata supports the following databases for comparisons:

- DB2 for i, DB2 LUW, and DB2 z/OS
- Enscribe
- Informix
- NonStop SQL/MP
- Oracle

- SQL Server
- Sybase Adaptive Server Enterprise (ASE)
- Teradata

Through its support website, Oracle provides late-breaking updates, discussions, and best practices about pre-upgrade requirements, upgrade processes, post-upgrade, compatibility, and interoperability.

To find the latest information about Oracle GoldenGate Veridata release, including the list of certified database versions and operating systems, go to My Oracle Support at <http://support.oracle.com>.

2.4 Oracle GoldenGate Veridata Agent System Requirements

One Oracle GoldenGate Veridata Agent must be installed for each database instance that contains data that is to be compared. At minimum, therefore, you will install two agents — one to retrieve source rows and one to retrieve target rows (unless you are comparing data within the same database instance). One agent can retrieve rows from multiple databases or schemas within a given database instance. However, one agent cannot retrieve rows from different database instances.

Comparing Multi-Byte Data

The following considerations apply when you are comparing tables with multibyte data:

- A Java agent should be used for all platforms except NonStop, which has only a C-agent.
- The Java agent uses the UTF-8 character for comparing character data. Out-of-sync data is written to the report file using the UTF-8 character set.
- The Oracle GoldenGate Veridata Oracle C-Agent can be used for comparisons between Oracle databases where the source and target use the same character set and the host system uses the same byte order. An Oracle C-Agent cannot be used in a comparison with a Java agent. Character fields that contain characters that are not valid UTF-8 characters are displayed as hexadecimal in the out-of-sync reports.

2.4.1 Oracle GoldenGate Veridata Java Agent

Oracle GoldenGate Veridata provides a Java-based agent for the following databases:

- DB2 for i, DB2 LUW, and DB2 z/OS
- Oracle
- SQL Server
- Sybase ASE
- Teradata

The Java agent connects to the database by using JDBC (Java Database Connectivity). The Java agent enables Oracle GoldenGate Veridata to support comparisons in a heterogeneous environment, where different kinds of databases contain similar, but not identical data types. With a Java agent, one executable supports many operating systems and databases.

You can install the Java agent on the same system as the one where the database is running, or you can install it on a different system, such as the one where Oracle GoldenGate Veridata Server is installed. When considering where to install the agent, weigh the additional and significant use of network bandwidth that will be incurred if the agent is remote from the database, versus the savings in processing resources on the database host when an agent is not running there.

2.4.1.1 Environment Requirements to Use a Java Agent

Windows, UNIX and Linux, all supported databases

A Java environment is required on all platforms. Download and install either the Java Developer Kit (JDK) or the Java Runtime Environment (JRE) from the Oracle website. Java version 1.7.0_15 or higher is preferred because of the performance improvements for Oracle GoldenGate Veridata.

DB2

A TCP/IP port must be configured and active.

Oracle

The listener must be configured and running.

SQL Server

A static TCP/IP port must be configured and enabled.

Sybase

Know the ASE listen port.

Teradata

- Know the host name and port number of the database.
- Download the appropriate JDBC driver from the database vendor's website before installing the Java agent. You will be prompted for the location during the installation steps in this guide.

2.4.2 Oracle GoldenGate Veridata C-Agent

Oracle GoldenGate Veridata also provides a C-code based agent for the following databases:

- The C-agent is required for NonStop SQL/MP and Enscribe databases running on the NonStop platform. This agent can be installed in a Guardian environment.
- The C-agent is supported for the Oracle database, but as of release 11.2.1.0.0, it will no longer be enhanced.
- You must install the C-agent on the same system as the one that hosts the database.
- For Oracle, a dynamically linked C-agent is available. If you use this agent, you must set the following environment variables:

Environment Variables for Dynamically Linked C-Agents

Variable	Operating System
<code>PATH=Oracle_libraries</code>	Microsoft Windows
<code>SHLIB_PATH=Oracle_libraries</code>	HP-UX
<code>LIBPATH=Oracle_libraries</code>	IBM AIX
<code>LD_LIBRARY_PATH=Oracle_libraries</code>	All other supported UNIX platforms

2.4.3 Disk and Memory Requirements for the Agent Component

- The agent requires at least 1GB of RAM.
- The disk space requirements for the Oracle GoldenGate Veridata Agent vary by platform, but up to 200 MB may be required. On UNIX and Linux, additional space might be required to install the Java environment (if not already installed).
- The main consumers of processing resources are the row sorting operations that are required during a comparison. To improve performance, you might need to increase the temporary memory space in the database if the columns that are being used as keys are not a native unique index or primary key. You specify the columns to use as keys when configuring Oracle GoldenGate Veridata.
- Using server-side sorting instead of database sorting might reduce the load on the database server and improve comparison performance, depending on the number of rows, the indexes defined, the keys used, and the way the database is tuned. See [Section 2.5.2, "Disk and Memory Requirements for the Server Component."](#)

2.4.4 Database Privileges for the Agent Component

Oracle GoldenGate Veridata Agent makes use of a database login, which must be created before you can run comparisons. You provide the login and password when you configure connection objects in the Oracle GoldenGate Veridata Web interface. The following are the database privileges that are required for the database user.

Required database privileges for Oracle GoldenGate Veridata Agent

DB2

- `SELECT` privileges on the tables that will be compared.

Oracle

- `GRANT CONNECT`
- `GRANT SELECT` on the tables to be compared. It is recommended, but not necessary, to `GRANT SELECT ANY TABLE`.
- `SELECT_CATALOG_ROLE`

NonStop SQL/MP and Enscribe

- Read access to the SQL/MP system catalog (for queries to `CATALOGS` table).
- Read access to the SQL/MP catalogs that you want Oracle GoldenGate Veridata to use.
- Read access to the DDL dictionaries that you want Oracle GoldenGate Veridata to use.

- Read access to the Enscribe and SQL/MP tables that will be compared.
- Read, write, create, purge permissions for the Oracle GoldenGate Veridata report and trace files, and access to the sub volumes where they are installed.

SQL Server

- `db_datareader` or the equivalent on the tables to be compared.
- `VIEW DEFINITION` in the databases to be compared.
- The database must allow SQL Server authentication.

Sybase ASE

- Access to the databases to be compared.
- `SELECT` privileges on the tables to be compared.
- `SELECT` privileges on the `sysdatabases` system table in the master database to view the list of databases available in the server.

Teradata

- `SELECT` privileges on the tables to be compared.

Required database privileges for using the Repair feature

For all databases, the database user must have the `UPDATE`, `INSERT`, and `DELETE` privileges on the tables to be repaired.

For Sybase database, if the table has triggers and suppression of triggers enabled, the database user must have the `replication_role` privilege.

For SQL Server database, If the table being repaired has 'identity columns', the Repair User specified must be either the table owner, or should have `ALTER` permission on the table that is being repaired.

2.5 Oracle GoldenGate Veridata Server System Requirements

This section describes the installation location, additional programs, disk, memory, and repository requirements for Oracle GoldenGate Veridata Server.

2.5.1 Location for the Server Component

The server and web user interface components are installed from one installation program on Windows, UNIX, and Linux systems. The installer includes all files that are needed to run those programs. One installation can be used for comparisons among all of the supported databases, but multiple installations can be used as needed.

Do not install the server and web user interface components on a NonStop system. To use Oracle GoldenGate Veridata for NonStop databases:

- Install the server and web user interface components on a supported Windows, UNIX, or Linux system.
- Make certain that this system has access over high-speed network connections to the NonStop systems.

2.5.2 Disk and Memory Requirements for the Server Component

The server component uses about 200 MB of fixed virtual memory for basic tasks. The remaining virtual memory is used for comparisons. The main consumers of processing resources on the Oracle GoldenGate Veridata machine are the row sorting operations of the initial comparison step when using server-side sorting.

Enough combined disk space and virtual memory is needed to store all of the rows that are sent for comparison from the source and target systems. To estimate the amount of memory per row:

$$((\text{number of cols in key} + 1) * 4) + 16 + (\text{comparison width of a key col})$$

Where:

comparison width of a key col depends on the comparison format that is selected by Oracle GoldenGate Veridata (or a user override) to use for a comparison.

Comparison format data sizes:

Comparison Format	Data Size
Numbers	One byte for each significant digit. Leading zeros and trailing zeros after the decimal point (such as the right most zeros in 1234.500) are not counted.
Timestamp	19 to 32 bytes depending on the fractional precision.
Date	10 bytes.
Time	8 to 18 bytes depending on the fractional precision.
String	1 to 4 bytes per character for the UTF-8 encoding of the Java agent. The NonStop agent and the Oracle C agent use the database native character set.
Binary	The bytes as stored in the database.

For example, the number 109998877, if compared as a decimal float, would require:

$$((1 + 1) * 4) + 16 + 9 = 33 \text{ bytes of memory for this row}$$

Note: This assumes that all non-key columns are compared by using a hash, not literally. More space is needed for literal comparisons

Oracle GoldenGate Veridata uses an external merge sort to sort the data. As data is received from the agent, the rows are sorted in memory. When a memory buffer is full, the sorted rows are written to disk.

In order to sort the data, the sort process matches the initial data set size for temporary storage space. The required amount of temporary space is determined by the number of rows, the row size, and the amount of available sort memory. The following cases illustrate the different modes of the sort depending on the available resources.

- **In-Memory Sort:** This sorts the data entirely in memory and is the fastest method, but the memory requirements may exceed what is available. The sort memory must be approximately 2.5 times larger than the size of the data set.
- **One Disk Pass:** This sorts data and writes to the disk only once. It requires sort disk space equal to the size of the data set. This process is almost as fast as the in-memory sort and the memory requirements are lower. In general the Oracle

GoldenGate Veridata server can write the rows to disk faster than the agent can read them from the database.

- **Two Disk Passes:** This sorts and writes to the disk twice, requiring sort disk space twice the size of the data set. Although the disk requirement is greater, very large data sets can be sorted with a reasonable amount of memory.
- **Three or More Disk Passes:** After all of the rows have been received from the agent, additional sorting may be required before the rows are ready for the final write to disk. If it is necessary to access the disk three or more times, the required sort space will be three or more times the data set size. This is slow and should be avoided.

The following table shows memory requirements for some sample data sets.

Data Set Size	In-Memory Sort	One Disk Pass	Two Disk Passes
20 MB	50 MB	Not Applicable	Not Applicable
400 MB	1 GB	50 MB	Not Applicable
2 GB	5 GB	125 MB	50 MB
8 GB	20 GB	250 GB	50 MB
50 GB	125 GB	600 MB	80 MB

Note: The numbers in the previous table are for only one side of the comparison. You must allocate twice this to cover both sides

Beyond this allocation, memory is required for storing rows during the second step of processing, the confirmation step. This can be up to 20 MB if you expect a large number of rows to require confirmation, as is usually the case when replication latency is very high. These rows are staged in the main memory before they are confirmed.

The sort performs better if all of the data that needs to be sorted during the initial comparison step can be stored in main memory. On 64-bit systems, more memory can be addressed, so more data can be stored in main memory instead of on slower disk devices. The memory that is used in the initial comparison step is not necessarily all released at once to be available for the confirmation step. Consequently, some memory will be shared between processes. When the sort cannot hold all of the rows in memory, it uses disk storage.

When deciding how much memory to allocate, be aware of the following ways that you can manage it with parameter settings within the Oracle GoldenGate Veridata application:

- The temporary space should be located on a reasonably fast file system. A network file system located on a remote server may slow the comparison processing.
- You can increase disk I/O performance by specifying multiple temporary directories with profile settings. For maximum benefit, put the directories on different physical disks.
- You can control the amount of memory that is allocated to each of the processing steps with profile settings.
- You can use a profile setting to terminate the confirmation step after a given number of out-of-sync rows, to work around resource limitations.

- Additional memory properties can be controlled with server parameters. See "Configuration Parameters" in *Administering Oracle GoldenGate Veridata*.

2.5.3 Repository Requirements for the Server Component

Oracle GoldenGate Veridata Server requires a database to serve as a repository for objects that store the information and environment preferences that users create when using Oracle GoldenGate Veridata Web interface.

Use the Repository Creation Utility (RCU) to create the repository. See [Chapter 4, "Creating the Oracle GoldenGate Veridata Repository Schema"](#).

Note: You must set `NLS_LENGTH_SEMANTICS` to `BYTE` to avoid errors when using RCU; this is an Oracle Fusion Middleware RCU requirement.

You can use the following databases as a repository:

- MySQL
- Oracle
- SQL Server

2.5.3.1 Required Database Privileges for Oracle GoldenGate Veridata Server

MySQL

1. Create a user and identically named database.
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 Veridata is being installed.

Oracle

1. Create a user and password.
2. Specify `QUOTA UNLIMITED` on the user's default tablespace.

SQL Server

1. Create a database and login that is a user of the database where you will be installing the repository.
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

2.5.3.2 Required environment components for Oracle GoldenGate Veridata Server

MySQL

1. The database host name and port number.
2. A login and password, if using an existing database user for the repository.

Oracle

1. The database instance name
2. The ORACLE_HOME (if using TNSNAMES connection method)
3. Default and temporary tablespaces for the repository (if you will be creating a new user for the server component during installation)
4. A login and password, if using an existing database user for the repository.

SQL Server

1. The SQL Server instance must be configured to use a static port number. This port is stored in a configuration file so that it can be referenced to make JDBC connections to the database.
2. A login and password (or integrated authentication), if using an existing database user for the repository.

2.6 Oracle GoldenGate Veridata Web User Interface Requirements

This section describes the Java package, browsers, screen resolution, security, and ports recommended or required for the Oracle GoldenGate Web User Interface.

2.6.1 Location for the Web Component

See [Section 2.5.1, "Location for the Server Component"](#). One installer program installs both Oracle GoldenGate Veridata Web Server component and Oracle GoldenGate Veridata Web User Interface.

2.6.2 Java Environment for the Web User Interface

JDK 1.7.0_15 is required for the Veridata Web User Interface installation.

Note: The Veridata Web User Interface cannot be installed on DB2 for i because it does not support JDK 1.7.

2.6.3 Supported Browsers for the Web User Interface

- Microsoft Internet Explorer version 9 or higher
- Mozilla Firefox version 10 or higher
- Google Chrome version 32
- Apple Safari version 6 or higher

2.6.4 Recommended Screen Resolution for the Web User Interface

Minimum of 1024 x 768

2.6.5 Port Numbers for the Web User Interface

- The Oracle GoldenGate Veridata Web application interacts with Oracle WebLogic Server. Oracle WebLogic Server is installed with Oracle GoldenGate Veridata Server on default ports. You can change the port numbers if needed.
- Oracle GoldenGate Veridata Web makes use of the default port 8830.

2.6.6 Security for the Web User Interface

The web server provides user security roles that control access to certain pages of the Oracle GoldenGate Veridata Web interface. To create users and define user roles, use the Oracle WebLogic Server Administration Console. For more information, see "Securing Access to Oracle GoldenGate Veridata Web Interface by Defining User Roles" in *Administering Oracle GoldenGate Veridata*.

2.7 SQL/MP Data Exclusions

On SQL/MP tables with clustered keys, the right-most portion of the primary key is a timestamp added by the file system. For compare pairs composed of such tables, the timestamp will be different on the source and target systems. As a result, it must be excluded from the comparison, because Oracle GoldenGate Veridata compares keys to ensure that the correct rows are compared.

If, after the timestamp portion of a key is eliminated, the remaining key columns do not produce a unique key value, then those tables must have a unique index or other columns that can be specified to create a unique value. Otherwise, they cannot be compared with Oracle GoldenGate Veridata.

Installing Oracle GoldenGate Veridata

This chapter explains how to install a new, clean copy of the Oracle GoldenGate Veridata software.

Note: You can find installation instructions for DB2 for i and DB2 z/OS platforms in [Appendix B, "Installing Oracle GoldenGate Veridata Java Agent on DB2 for i and DB2 z/OS."](#)

This chapter includes the following sections:

- [Section 3.1, "Starting the Installation Program"](#)
- [Section 3.2, "Navigating the Installation Screens to Install Oracle GoldenGate Veridata"](#)

3.1 Starting the Installation Program

To start the installation program for Oracle GoldenGate Veridata, perform the following steps.

1. Log in to the target system.
2. The installer requires that a certified JDK already exists on your system. For more information, see the appropriate certification document for 12c (12.1.3) on the *Oracle Fusion Middleware Supported System Configurations* page.
3. Go to the directory where you downloaded the installation program. For more information about downloading the installer, see [Appendix D, "Oracle GoldenGate Veridata Distribution"](#).
4. Launch the installation program by invoking `java -jar` from the JDK directory on your system, as shown in the example below:

```
/home/Oracle/jdk7_15/jdk1.7.0_15/bin/java -jar fmw_12.1.3.0.0_ogg.jar
```

Be sure to replace `/home/Oracle/jdk7_15/jdk1.7.0_15` in this example with the location of the JDK on your system.

When the installation program appears, you are ready to begin the installation. See [Section 3.2](#) for a description of each installation program screen.

3.2 Navigating the Installation Screens to Install Oracle GoldenGate Veridata

The installation program displays a series of screens, in the order listed in [Table 3–1](#). If you need additional help with any of the installation screens, click the screen name.

Table 3–1 Oracle GoldenGate Veridata Install Screens

Screen	Description
Installation Inventory Setup	<p>This screen will appear if this is the first time you are installing any Oracle product on this host. Specify the location where you want to create your central inventory. Make sure that the operating system group name selected on this screen has write permissions to the central inventory location.</p> <p>For more information about the central inventory, see "Understanding the Oracle Inventory" in <i>Installing Software with the Oracle Universal Installer</i>.</p>
Welcome	This screen introduces you to the product installer.
Installation Location	<p>Use this screen to specify the location of your Oracle home directory.</p> <p>For more information, see "Selecting Directories for Installation and Configuration" in <i>Planning an Installation of Oracle Fusion Middleware</i>.</p>
Installation Type	<p>Use this screen to select the type of installation and consequently, the products and feature sets you want to install. For Oracle GoldenGate Veridata the following are the installation types:</p> <ul style="list-style-type: none"> ■ Oracle GoldenGate Veridata Server: Installs Veridata Web Server ■ Oracle GoldenGate Veridata Agent: Installs Veridata Java Agent ■ Oracle GoldenGate Veridata Server and Agent: Installs both Web Server and Java Agent
Prerequisite Checks	This screen verifies that your system meets the minimum necessary requirements.
Specify Security Updates	<p>If you already have an Oracle Support account, use this screen to indicate how you would like to receive security updates.</p> <p>If you do not have one and are sure you want to skip this step, clear the check box and verify your selection in the follow-up dialog box.</p>
Installation Summary	<p>Use this screen to verify the installation options you selected. If you want to save these options to a response file, click Save and provide the location and name of the response file. Response files can be used later in a silent installation situation.</p> <p>For more information about silent or command line installation, see "Using the Oracle Universal Installer in Silent Mode" in <i>Installing Software with the Oracle Universal Installer</i>.</p>
Installation Progress	This screen allows you to see the progress of the installation.
Installation Complete	This screen appears when the installation is complete. Review the information on this screen, then click Finish to dismiss the installer.

Creating the Oracle GoldenGate Veridata Repository Schema

This chapter describes how to create the Veridata Repository database schemas using the Repository Creation Utility (RCU).

This step is required before any domain is configured for your Oracle GoldenGate Veridata instance.

This chapter includes the following sections:

- Section 4.1, "Configuring a Certified Database"
- Section 4.2, "Creating Schemas for Oracle Database"
- Section 4.3, "Creating Schemas for non-Oracle Databases"
- Section 4.4, "Starting Repository Creating Utility"
- Section 4.5, "Navigating the RCU Screens to Create the Schema"

4.1 Configuring a Certified Database

Before you begin, make sure you have installed and configured a certified database. For more information about the supported database, see the certification matrix at <http://support.oracle.com>.

For more information, see [Section 2.2.3, "Install a Certified Database for Configuring Veridata Repository"](#).

4.2 Creating Schemas for Oracle Database

If you are using Oracle database to create the Veridata Repository schema, make sure that the Oracle Platform Security Services (OPSS) schema is selected in addition to the Veridata schema.

4.3 Creating Schemas for non-Oracle Databases

For non-Oracle databases (MySQL and SQL Server), OPSS schema is not required. You need to run RCU and create schema for Veridata and Service Table (STB).

[Task 4, "Selecting Components" in Section 4.5, "Navigating the RCU Screens to Create the Schema"](#) explains the procedure.

For MySQL database, you must also set values of the certain parameters as described below.

Setting the configuration parameters for MySQL

Before running RCU for MySQL, execute the following commands at the MySQL command prompt:

```
mysql>SET GLOBAL INNODB_FILE_PER_TABLE="ON";
mysql>SET GLOBAL INNODB_FILE_FORMAT="Barracuda";
mysql>SET GLOBAL INNODB_LARGE_PREFIX="ON";
mysql>SET GLOBAL LOG_BIN_TRUST_FUNCTION_CREATORS="ON";
```

Note: the `INNODB_LARGE_PREFIX` parameter can be configured for MySQL 5.6.3 or higher versions.

4.4 Starting Repository Creating Utility

Navigate to the `ORACLE_HOME/oracle_common/bin` directory and start RCU.

1. Set the `JAVA_HOME` environment variable to your JDK location.

On UNIX operating systems:

```
setenv JAVA_HOME/home/Oracle/Java/jdkversion
```

On Windows operating systems, right-click on the desktop, then select **My Computer**, then select **Properties**. Click **Advanced System Settings** in the left column, then click **Environment Variables** in the System Properties window.

In the Environment Variables window, set `JAVA_HOME` to your JDK location.

2. Start RCU.

On UNIX operating systems:

```
./rcu
```

On Microsoft Windows operating systems:

```
rcu.bat
```

4.5 Navigating the RCU Screens to Create the Schema

Follow the instructions on this section to complete schema creation for Oracle GoldenGate Veridata.

Refer to "Understanding Repository Creation Screens" in *Creating Schemas with the Repository Creation Utility* for more information about any of the screens mentioned in this section.

- [Task 1, "Introducing RCU"](#)
- [Task 2, "Selecting a Repository Creation Method"](#)
- [Task 3, "Providing Database Connection Details"](#)
- [Task 4, "Selecting Components"](#)
- [Task 5, "Specifying Schema Passwords"](#)
- [Task 6, "Map Tablespaces"](#)
- [Task 7, "Completing Schema Creation"](#)

Task 1 Introducing RCU

Click **Next**.

Task 2 Selecting a Repository Creation Method

If you have the necessary permission and privileges to perform DBA activities on your database, select **System Load and Product Load Concurrently**. This procedure assumes that you have the necessary privileges.

For Oracle database, if you do not have the necessary permission or privileges to perform DBA activities in the database, you must select **Prepare Scripts for System Load** on this screen. This option will generate a SQL script, which can be provided to your database administrator. See "Understanding System Load and Product Load" in *Creating Schemas with the Repository Creation Utility*.

Task 3 Providing Database Connection Details

Provide the database connection details for RCU to connect to your database.

Click **Next** to proceed, then click **OK** on the dialog window confirming that connection to the database was successful.

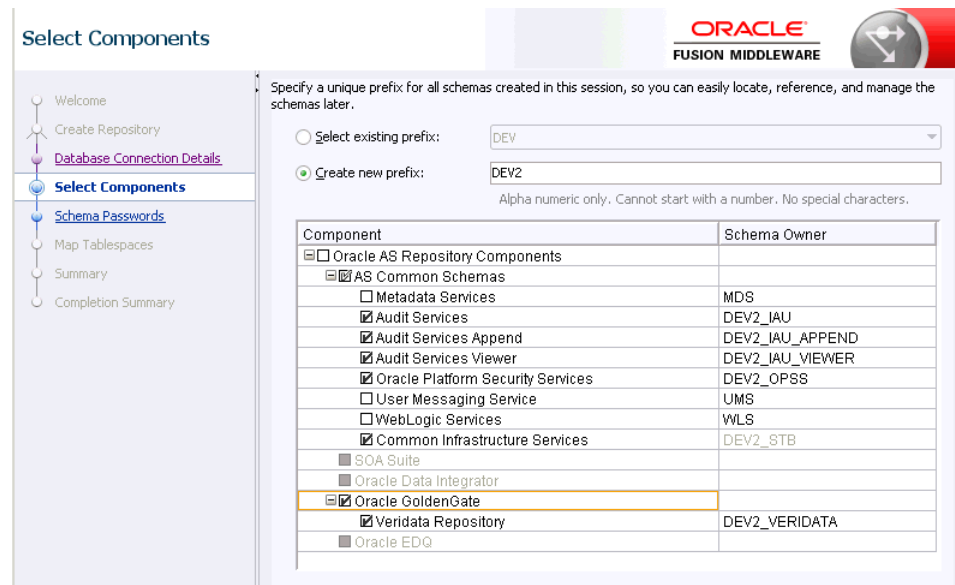
Task 4 Selecting Components

Select **Create new prefix**, specify a custom prefix, then select the Oracle GoldenGate Veridata Repository schema.

The custom prefix is used to logically group these schemas together for use in this domain only; you must create a unique set of schemas for each domain as schema sharing across domains is not supported.

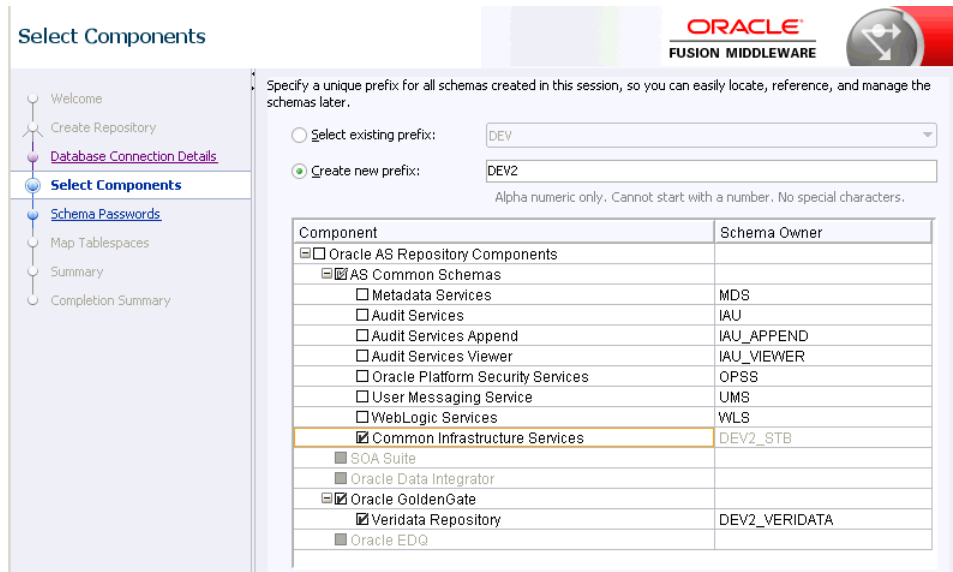
Components for Oracle Database:

For Oracle database, ensure that the Oracle Platform Security Services (OPSS) schema is selected in addition to the Veridata Repository schema as shown below:



Components for non-Oracle Databases:

For MySQL and SQL Server databases, you need not select the OPSS schema. Select only the Veridata Repository schema and Service Table (STB) on this page:



For more information about custom prefixes, see "Understanding Custom Prefixes" in *Creating Schemas with the Repository Creation Utility*.

For more information about how to organize your schemas in a multi-domain environment, see "Planning Your Schema Creation" in *Creating Schemas with the Repository Creation Utility*.

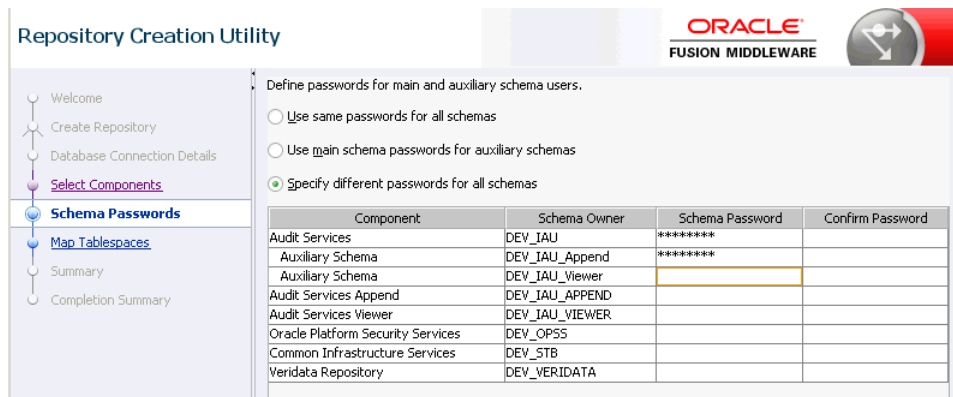
Tip: You must make a note of the custom prefix you choose to enter here; you will need this later on during the domain creation process.

Click **Next** to proceed, then click **OK** on the dialog window confirming that prerequisite checking for schema creation was successful.

Task 5 Specifying Schema Passwords

Specify how you want to set the schema passwords on your database, then specify and confirm your passwords.

Tip: You must make a note of the passwords you set on this screen; you will need them later on during the domain creation process.



Task 6 Map Tablespaces

Specify the Tablespaces for the Oracle GoldenGate Veridata Repository.

Tip: More information about the fields on this screen can be found in *Creating Schemas with the Repository Creation Utility*.

Task 7 Completing Schema Creation

Navigate through the remainder of the RCU screens to complete schema creation. When you reach the Completion Summary screen, click **Close** to dismiss RCU.

Configuring Domain for Oracle GoldenGate Veridata

This chapter describes how to create and configure the domain for the Oracle GoldenGate Veridata standard installation topology.

This chapter includes the following sections:

- [Section 5.1, "Creating the Database Schema"](#)
- [Section 5.2, "Configuring a Domain for Oracle Database"](#)
- [Section 5.3, "Configuring a Compact Domain for MYSQL and MSSQLSERVER Databases"](#)
- [Section 5.4, "Performing Next Steps"](#)

5.1 Creating the Database Schema

Before you can configure the topology for your agent, make sure you have created the necessary schema in your database. See [Chapter 4, "Creating the Oracle GoldenGate Veridata Repository Schema"](#) for instructions.

5.2 Configuring a Domain for Oracle Database

This section describes the procedure for creating an Expanded WebLogic domain for the Veridata agent using the configuration wizard.

For more information about other methods available for domain creation, see "Additional Tools for Creating, Extending, and Managing WebLogic Domains" in *Creating WebLogic Domains Using the Configuration Wizard*.

The following topics are covered in this section:

- [Section 5.2.1, "Starting the Configuration Wizard"](#)
- [Section 5.2.2, "Navigating the Configuration Wizard Screens to Configure the Domain"](#)

5.2.1 Starting the Configuration Wizard

To configure a domain, navigate to the `ORACLE_HOME/oracle_common/common/bin` directory and start the WebLogic Server Configuration Wizard.

On UNIX operating systems:

```
./config.sh
```

On Microsoft Windows operating systems:

```
config.cmd
```

5.2.2 Navigating the Configuration Wizard Screens to Configure the Domain

Follow the instructions in this section to create and configure the domain for the topology.

Note: You can use the same procedure described in this section to extend an existing domain. If your needs do not match the instructions given in the procedure, be sure to make your selections accordingly, or refer to the supporting documentation for additional details.

Domain creation and configuration includes the following tasks:

- [Task 1, "Selecting the Domain Type and Domain Home Location"](#)
- [Task 2, "Selecting the Configuration Templates"](#)
- [Task 3, "Configuring the Administrator Account"](#)
- [Task 4, "Specifying the Domain Mode and JDK"](#)
- [Task 5, "Specifying the Datasource Configuration Type"](#)
- [Task 6, "Specifying JDBC Component Schema Information"](#)
- [Task 7, "Testing the JDBC Connections"](#)
- [Task 8, "Specifying Keystore Details"](#)
- [Task 9, "Selecting Advanced Configuration"](#)
- [Task 10, "Configuring the Administration Server Listen Address"](#)
- [Task 12, "Configuring Managed Servers"](#)
- [Task 13, "Reviewing Your Configuration Specifications and Configuring the Domain"](#)
- [Task 14, "Reviewing Your Domain Home and Administration Server URL"](#)

Task 1 Selecting the Domain Type and Domain Home Location

On the Configuration Type screen, select **Create a New Domain**.

In the Domain Location field, specify your Domain home directory.

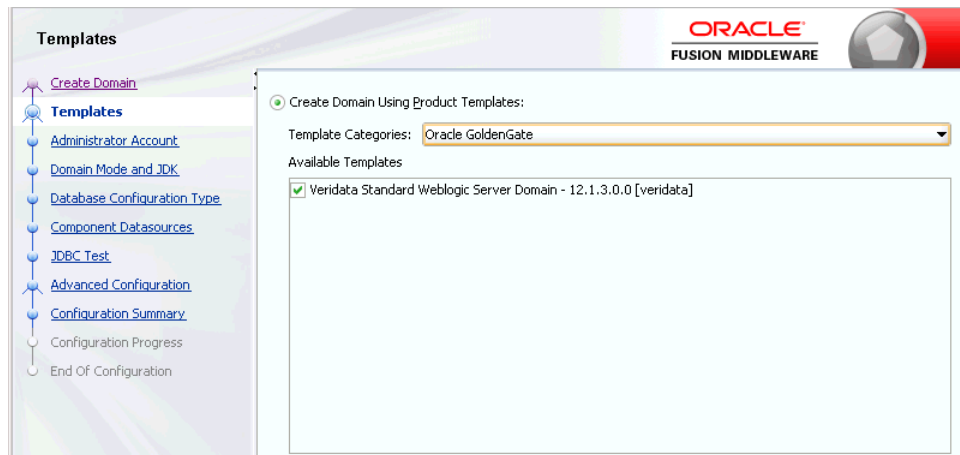
It is recommended that you locate your Domain home in accordance with the directory structure summarized in "Understanding the Recommended Directory Structure" in *Planning an Installation of Oracle Fusion Middleware*, where the Domain home is located outside the Oracle home directory. This directory structure will help you avoid issues when you need to upgrade or reinstall your software.

Tip: More information about the other options on this screen can be found in Configuration Type in *Creating WebLogic Domains Using the Configuration Wizard*.

Task 2 Selecting the Configuration Templates

On the Templates screen, make sure **Create Domain Using Product Templates** is selected, then select **Oracle GoldenGate** from the Template Categories. The following templates are selected:

- Veridata Standard WebLogic Server Domain - 12.1.3.0.0 [veridata]
 - Selecting this template automatically selects the following as dependencies:
 - Oracle JRF - 12.1.3.0 [oracle_common]
 - WebLogic Coherence Cluster Extension - 12.1.3.0 [wlserver]



Tip: More information about the options on this screen can be found in Templates in *Creating WebLogic Domains Using the Configuration Wizard*.

Task 3 Configuring the Administrator Account

On the Administrator Account screen, specify the user name and password for the default WebLogic Administrator account for the domain.

It is recommended that you make a note of the user name and password specified on this screen; you will need these credentials later to boot and connect to the domain's Administration Server.

Task 4 Specifying the Domain Mode and JDK

On the Domain Mode and JDK screen:

- Select **Production** in the Domain Mode field.
- Select the Oracle HotSpot JDK in the JDK field. JDK Version 1.7.0_15 or above is mandatory.

Tip: More information about the options on this screen can be found in Domain Mode and JDK in *Creating WebLogic Domains Using the Configuration Wizard*.

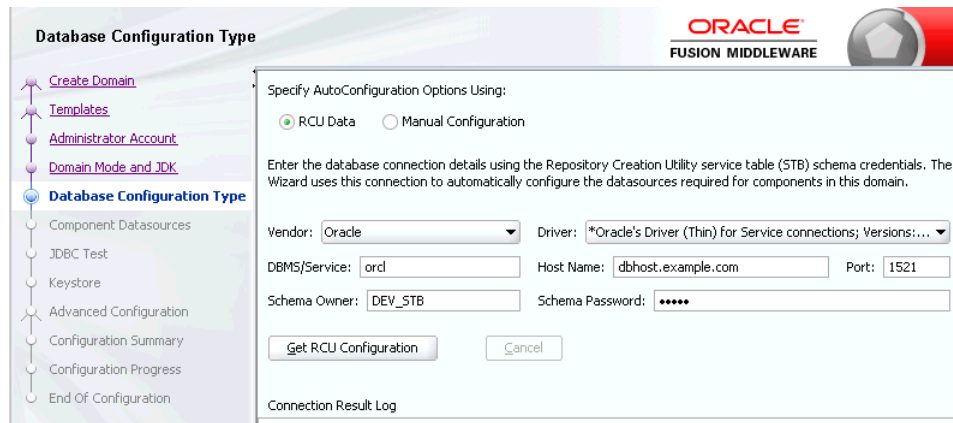
Task 5 Specifying the Datasource Configuration Type

Select **RCU Data** to activate the fields on this screen. The **RCU Data** option instructs the Configuration Wizard to connect to the database and Service Table (STB) schema to automatically retrieve schema information for the schemas needed to configure the domain.

Note: If you choose to select **Manual Configuration** on this screen, you will have to manually fill in the parameters for your schema on the JDBC Component Schema screen.

After selecting **RCU Data**, specify the database connection details in the following fields:

Field	Description
DBMS/Service	Enter the database DBMS name, or service name if you selected a service type driver.
Host Name	Enter the name of the server hosting the database.
Port	Enter the port number on which the database listens.
Schema Owner Schema Password	Enter the username and password for connecting to the database's Service Table schema. This is the schema username and password that was specified for the Service Table component on the "Schema Passwords" screen in RCU (see Section 5.1, "Creating the Database Schema"). The default username is <i>prefix_STB</i> , where <i>prefix</i> is the custom prefix that you defined in RCU.



Click **Get RCU Configuration** when you are finished specifying the database connection information. The following output in the Connection Result Log indicates that the operation succeeded:

```
Connecting to the database server...OK
Retrieving schema data from database server...OK
Binding local schema components with retrieved data...OK
```

Successfully Done.

Tip: More information about the **RCU Data** option can be found in "Understanding the Service Table Schema" in *Creating Schemas with the Repository Creation Utility*.

More information about the other options on this screen can be found in Datasource Defaults in *Creating WebLogic Domains Using the Configuration Wizard*

Task 6 Specifying JDBC Component Schema Information

Verify that the values on the JDBC Component Schema screen are correct for all schemas. If you selected **RCU Data** on the previous screen, the schema table should already be populated appropriately.

Tip: More information about the other options on this screen can be found in JDBC Component Schema in *Creating WebLogic Domains Using the Configuration Wizard*.

Task 7 Testing the JDBC Connections

Use the JDBC Component Schema Test screen to test the datasource connections you have just configured.

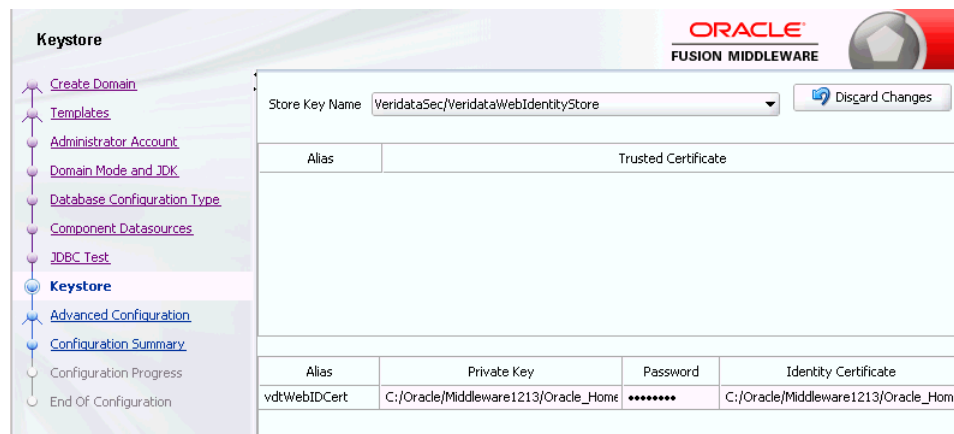
A green check mark in the Status column indicates a successful test. If you encounter any issues, see the error message in the Connection Result Log section of the screen, fix the problem, then try to test the connection again.

Tip: More information about the other options on this screen can be found in Test Component Schema in *Creating WebLogic Domains Using the Configuration Wizard*.

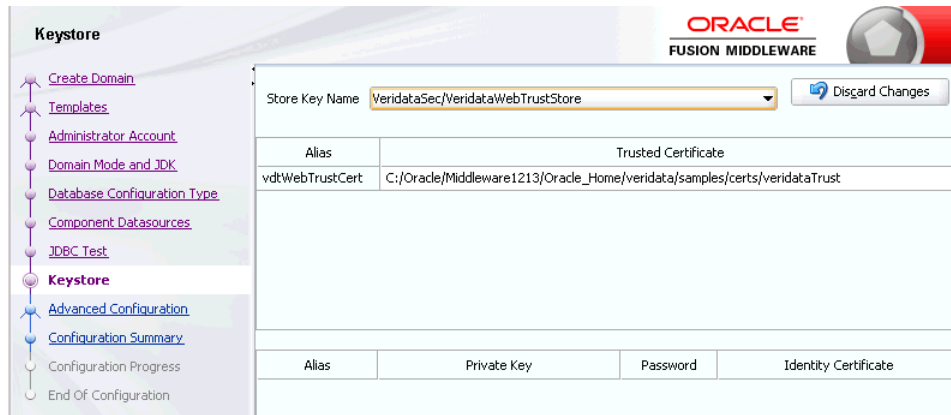
Task 8 Specifying Keystore Details

Use the Keystore screen to specify the path to the trusted certificate for each keystore. You can also specify the path to each keystore's private key, the password for the private key and the path to the Identity Certificate for the private key.

To select an Identity certificate, select the Identity keystore name from the Store Key Name drop down list and specify the paths to the private key and the identity certificate.



When you select the Trust Store from the Store Key Name dropdown list, the path to the sample certificate provided with the Veridata installation is displayed by default. You can specify the path to your trusted certificate on this page.



Tip: More information about the other options on this screen can be found in Keystore in *Creating WebLogic Domains Using the Configuration Wizard*

Task 9 Selecting Advanced Configuration

To complete domain configuration for the topology, select the following options on the Advanced Configuration screen:

- Administration Server
This is required to properly configure the listen address of the Administration Server.
- Node Manager
This is required to configure Node Manager.
- Managed Server, Clusters and Coherence
This is required to configure the Oracle GoldenGate Veridata Managed Server.

Task 10 Configuring the Administration Server Listen Address

On the Administration Server screen, select the drop-down list next to Listen Address and select the IP address on the host where the Administration Server will reside. Do not use "All Local Addresses."

Do not specify any server groups for the Administration Server.

Task 11 Configuring Node Manager

The Node Manager screen can be used to select the type of Node Manager you want to configure, along with the Node Manager credentials.

Select **Per Domain** as the Node Manager type, then specify the Node Manager credentials.

Tip: More information about the options on this screen can be found in Node Manager in *Creating WebLogic Domains Using the Configuration Wizard*.

More information about the types of Node Manager can be found in "Node Manager Overview" in *Administering Node Manager for Oracle WebLogic Server*.

Task 12 Configuring Managed Servers

On the Managed Servers screen, a new Managed Server named VERIDATA_server1 is created:

1. In the Listen Address drop-down list, select the IP address of the host on which the Managed Server will reside. Do not use "All Local Addresses."
2. In the Server Groups drop-down list, select **VERIDATA-MANAGED-SERVERS**. This server group ensures that the Oracle JRF services are targeted to the Managed Servers you are creating.

Server groups target Fusion Middleware applications and services to one or more servers by mapping defined application service groups to each defined server group. A given application service group may be mapped to multiple server groups if needed. Any application services that are mapped to a given server group are automatically targeted to all servers that are assigned to that group. For more information, see "Application Service Groups, Server Groups, and Application Service Mappings" in *Domain Template Reference*.

These server names and will be referenced throughout this document; if you choose different names be sure to replace them as needed.

Note: You must make a note of the IP address and port number for the Managed Server. You will need this information when you configure the agent.

Tip: More information about the options on this screen can be found in Managed Servers in *Creating WebLogic Domains Using the Configuration Wizard*.

Task 13 Reviewing Your Configuration Specifications and Configuring the Domain

The Configuration Summary screen contains the detailed configuration information for the domain you are about to create. Review the details of each item on the screen and verify that the information is correct.

You can go back to any previous screen if you need to make any changes, either by using the **Back** button or by selecting the screen in the navigation pane.

Domain creation will not begin until you click **Create**.

Tip: More information about the options on this screen can be found in Configuration Summary in *Creating WebLogic Domains Using the Configuration Wizard*.

Task 14 Reviewing Your Domain Home and Administration Server URL

The Configuration Success screen will show the Domain home location and URL of the Administration Server you just configured.

You must make a note of both items as you will need them to start the servers in your domain.

Click **Finish** to dismiss the configuration wizard.

5.3 Configuring a Compact Domain for MYSQL and MSSQLSERVER Databases

You must create the compact domain manually. The Oracle WebLogic Server Configuration Wizard does not support creating a compact domain. When you create a compact domain, you deploy the Oracle GoldenGate Veridata application to an Administration Server.

To create a compact domain, go the `ORACLE_HOME/veridata/bin` directory.

On UNIX, run:

```
./vdtCreateCompactDomain.sh Compact_Domain.properties
```

On Windows, run:

```
vdtCreateCompactDomain.bat Compact_Domain.properties
```

where `Compact_Domain.properties` represents the path of a property file that defines the domain configuration details.

A sample domain configuration properties file, `vdtCptDomain.properties`, is included in the `ORACLE_HOME/veridata/samples/` directory and it reads as follows:

Note: This sample file does not support any system properties or environment variables. All '@' variables should be replaced with full paths before you use this file to create a domain.

```
# Copyright (c) 2013, 2014, Oracle and/or its affiliates. All rights reserved.
# Domain configuration details
# deployerUseRelativeDomainLocationPath : If this is - true
#                                         The domain location path will be
considered relative to @ORACLE_HOME
#                                         Default value is true
# deployerDomainLocation                 : Location of the domain to be created
#                                         Default value is :
#                                         @ORACLE_HOME/user_
projects/domains/veridata_compact_domain
#                                         @ORACLE_HOME is the base directory
where this Oracle software
#                                         is installed
# serverName                             : Veridata Server Name
#                                         Default value is : VeridataAdminServer
# serverListenAddress                    : Listen Address for the Server
#                                         It is typically the host name of the
server
#                                         Default is : default :: All Local
Addresses
# serverListenPort                       : Listening Port for the Server
#                                         Default value is : 8830

deployerUseRelativeDomainLocationPath = true
deployerDomainLocation                 = user_projects/domains/veridata_compact_
domain
serverName                             = VeridataAdminServer
serverListenAddress                    = default
serverListenPort                       = 8830

# Veridata KeyStore configuration for SSL
```

```

# Note on Paths                                : Use absolute paths or path relative to
the directory from which the                    script is run , for all the the
#
certificates/files below
#
# vdtConfigureAgentServerSSL                    : In order to setup  SSL communication
between Veridata Agent and server              the following Identity and Trust
#
certificates for the Veridata server           need to be configured.
#
#                                               By Default vdtConfigureAgentServerSSL
= false
#
#                                               If vdtConfigureAgentServerSSL is true ,
the supplied
#
configure the keystore for SSL                 properties below will be used to
#
, the default values                           If vdtConfigureAgentServerSSL is false
#
sample certificates are                        are used for the below properties and
#
#                                               configured.
#                                               @VERIDATA_HOME = @ORACLE_HOME/veridata
#                                               refers to the Veridata home directory
#
in the target server.                          Note : There are no system properties
#
or variables supported in this file.
# vdtSslIDCertLocation                        : Identity certificate location, for this
server                                          Default : @VERIDATA_
#
HOME/samples/certs/veridataIdentity
# vdtSslIDCertPrivateKeyLocation              : PKCS8 Encrypted Private Key file, of
the above Identity Certificate                Default : @VERIDATA_
#
HOME/samples/certs/veridataPk
# vdtSslTrustCertLocation                    : Trust certificate of this server
#
HOME/samples/certs/veridataTrust
#
vdtConfigureAgentServerSSL = false
vdtSslIDCertLocation       = @VERIDATA_HOME/samples/certs/veridataIdentity
vdtSslIDCertPrivateKeyLocation = @VERIDATA_HOME/samples/certs/veridataPk
vdtSslTrustCertLocation    = @VERIDATA_HOME/samples/certs/veridataTrust

# Veridata DataSource configuration
# vdtRepJDBCdriverName      : JDBC Driver Name of the database to be configured.
# vdtRepJDBCurl             : JDBC URL of teh database to be configured.
# vdtRepDBUser              : Veridata Repository Database User Name
# vdtRepDBType              : Type of the Repository database used.
#
#                           Use :
#                           ORACLE_OCI for ORACLE Database
#                           MYSQL       for MYSQL Database.
#                           MS_SQL     for MICROSOFT SQL SERVER Database.

# Sample configuration for all the three supported databases are provided below.
# ORACLE_OCI is uncommented or enabled by default.
# Please uncommnted the section relevant to the Database you want to configure
# and comment/ delete the remaining sample configuration

# Sample for MS_SQL
    
```

```
#vdtRepJDBCDriverName=weblogic.jdbc.sqlserver.SQLServerDriver
#vdtRepJDBCUrl=jdbc:weblogic:sqlserver://<hostname/ip>:<MSSQL Server
port>;databaseName=<DataBase Name>
#vdtRepDBUser=DEV_VERIDATA
#vdtRepDBType=MS_SQL

# Sample for MYSQL
#vdtRepJDBCDriverName=com.mysql.jdbc.Driver
#vdtRepJDBCUrl=jdbc:mysql://<hostname/ip>:<mysql port>/DEV_VERIDATA
#vdtRepDBUser=DEV_VERIDATA
#vdtRepDBType=MYSQL

# Sample for ORACLE_OCI
#vdtRepJDBCDriverName=oracle.jdbc.OracleDriver
#vdtRepJDBCUrl=jdbc:oracle:thin:@dbhost.example.com:1521:orcl
#vdtRepDBUser=DEV_VERIDATA
#vdtRepDBType=ORACLE_OCI
```

5.4 Performing Next Steps

[Chapter 7, "Next Steps After Configuring an Oracle GoldenGate Veridata Domain"](#) contains basic administration tasks. You should familiarize yourself with the tasks described in this section and perform them as needed to verify that your domain is properly configured.

Deploying and Configuring Oracle GoldenGate Veridata Agent

This chapter describes how to deploy and configure the Oracle GoldenGate Veridata agent for the Oracle WebLogic Server domain.

- [Section 6.1, "About Oracle GoldenGate Veridata Agent Deployment Scripts"](#)

6.1 About Oracle GoldenGate Veridata Agent Deployment Scripts

After installing Oracle GoldenGate Veridata Agent using Oracle Universal Installer, you must deploy the agent to a non Oracle Home location and configure the agent before running comparison jobs using a deployment script provided in the installation.

The following table describes the directories and the variables that are used when referring to those directories in this section.

Table 6–1 Directories in an Oracle GoldenGate Veridata Installation

Directory Variable	Directory Path
<i>ORACLE_HOME</i>	<i>/install_location/Oracle_Home</i> . This is the home directory for the Oracle Fusion Middleware products.
<i>VERIDATA_PRODUCT_HOME</i>	<i>/ORACLE_HOME/veridata</i>
<i>AGENT_ORACLE_HOME</i>	<i>/VERIDATA_PRODUCT_HOME/agent</i>
<i>AGENT_DEPLOY_LOCATION</i>	This is the location where the Veridata Agent is deployed in the WebLogic Server domain. Note that this location should be outside the <i>ORACLE_HOME</i> .

The `agent_config.sh|.bat` script located in the *AGENT_ORACLE_HOME* directory is used for deploying the Veridata Agent.

Syntax:

```
agent_config.sh|.bat AGENT_DEPLOY_LOCATION
```

The *AGENT_DEPLOY_LOCATION* can be an absolute path or a path relative to the location from where the script is running.

Note: You must deploy the Oracle GoldenGate Veridata Agent in a directory outside *ORACLE_HOME*.

6.1.1 Using the Oracle GoldenGate Veridata Agent Deployment Script in Debug Mode

For debugging issues with the Veridata Agent deployment, run the `agent_config` script with an additional command line argument as follows:

Syntax:

```
agent_config.sh|.bat AGENT_DEPLOY_LOCATION true
```

When this option is true, the debug logs are printed on the screen.

6.1.2 Running Oracle GoldenGate Veridata as a Windows Service

On Windows platform, after installing the Oracle GoldenGate Veridata Agent, run the agent as a service. The scripts are located in `AGENT_DEPLOY_LOCATION\service`. The `README.txt` file in the `service` directory describes the procedure to run the agent as a service.

To install as a Windows service:

1. Go to the Oracle GoldenGate Veridata Agent installation directory.
2. Open the `Set_Veridata_Agent_Env.bat` file in an editor.
3. Locate the `'_VERIDATA_SERVICE_NAME'` property, and edit it to add a service name for the agent. The name should not contain spaces or any other special characters. Only alphabets and numbers are allowed.
4. Change the value of `'_RUN_AS_SERVICE'` property to true.
5. Save and close the file.
6. Open the command prompt and navigate to the directory where the agent is installed. Run the `Install_veridata_Agent.bat` script.

To uninstall the agent service:

1. Open the command prompt and navigate to the directory where the agent is installed. Run the `Uninstall_veridata_Agent.bat` script.
2. Revert changes made in the `Set_Veridata_Agent_Env.bat` file.
Open the `Set_Veridata_Agent_Env.bat` file in an editor.
Change the value of `'_RUN_AS_SERVICE'` property to false.
Save and close the file.

To start and stop the Veridata agent:

1. Open the command prompt and navigate to the directory where the agent is installed.
2. Run one of the following commands:

```
agent.sh|bat start  
or  
agent.sh|bat stop
```

To reload logging properties of the Veridata agent:

1. Open the command prompt and navigate to the directory where the agent is installed.
2. Run the following command to load the `AGENT_ORACLE_HOME/config/odl.xml` configuration file:

```
agent.sh|bat reloadLog
```

Next Steps After Configuring an Oracle GoldenGate Veridata Domain

This chapter describes common tasks you might want to perform on a newly created domain for Oracle GoldenGate Veridata.

This chapter includes the following sections:

- [Section 7.1, "Verifying the Oracle GoldenGate Veridata Installation"](#)
- [Section 7.2, "Starting the Servers"](#)
- [Section 7.3, "Creating Veridata Users and Assigning Privileges"](#)
- [Section 7.4, "Launching Veridata Web User Interface"](#)

7.1 Verifying the Oracle GoldenGate Veridata Installation

After you complete the installation, you can verify it by successfully completing the following tasks:

- [Reviewing Installation Log Files](#)
- [Verifying the Directory Structure](#)

7.1.1 Reviewing Installation Log Files

Review the contents of the installation log files to make sure that no problems were encountered. For a description of the log files and where to find them, see "Installation and Configuration log files" in *Installing with the Oracle Universal Installer*.

7.1.2 Verifying the Directory Structure

Review the directory structure after installing and configuring Oracle GoldenGate Veridata. For more information about the directory structure you should see after installation, see [Appendix C, "Understanding the Oracle GoldenGate Veridata Directory Structure"](#).

7.2 Starting the Servers

After configuration is complete, do the following to access the tools with which you can manage your domain:

Note: For more information on additional tools you can use to manage your domain, see "Overview of Oracle Fusion Middleware Administration Tools" in *Administering Oracle Fusion Middleware*.

- [Section 7.2.1, "Starting the Administration Server"](#)
- [Section 7.2.2, "Starting the Managed Server using Veridata Scripts"](#)

7.2.1 Starting the Administration Server

To start the Administration Server, go the `DOMAIN_HOME/bin` directory.

On UNIX operating systems, run:

```
./startWebLogic.sh
```

On Windows operating systems, run:

```
startWebLogic.cmd
```

If you selected **Production Mode** on the Domain Mode and JDK screen in [Task 4, "Specifying the Domain Mode and JDK"](#), you will be prompted for the login credentials of the Administrator user as provided on the Administrator Account screen in [Task 3, "Configuring the Administrator Account"](#).

Tip: For more information about starting the Administration Server, see "Starting and Stopping Administration Servers" in *Administering Oracle Fusion Middleware*.

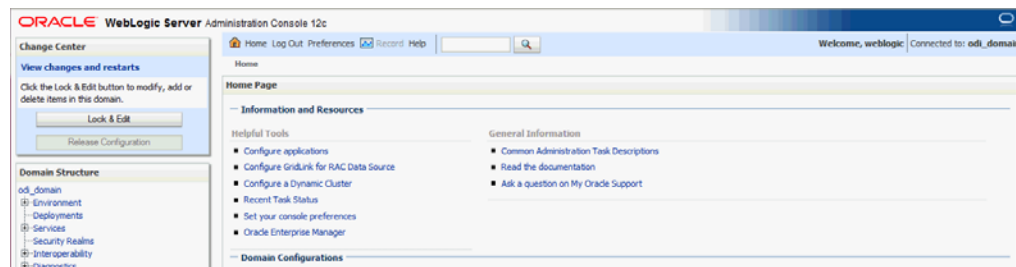
In production mode, a boot identity file can be created to bypass the need to provide a user name and password when starting the Administration Server. For more information, see "Creating a Boot Identity File for an Administration Server" in *Administering Server Startup and Shutdown for Oracle WebLogic Server*.

You can verify that the Administration Server is up and running by access the Administration Server Console. The URL is provided on the Configuration Success screen in [Task 14, "Reviewing Your Domain Home and Administration Server URL"](#).

Note: Make sure that the database hosting your product schemas is up and running and accessible by the Administration Server.

`http://administration_server_host:administration_server_port/console`

The default Administration Server port number is 7001.



For more information about how to use the Administration Console, see "Getting Started Using Oracle WebLogic Server Administration Console" in *Administering Oracle Fusion Middleware*.

7.2.2 Starting the Managed Server using Veridata Scripts

The Veridata installation provides you with a script, `veridataServer (.sh/.bat)`, to start and stop the Veridata Managed Server. These scripts are located in the `DOMAIN_HOME/veridata/bin` folder.

Note: here is no Managed Server in a compact domain. Starting the Administration Server will start the entire domain.

To run the `veridataServer` script:

1. On the system where the Oracle GoldenGate Veridata is installed, run the command shell of the operating system.
2. Navigate to the `DOMAIN_HOME/veridata/bin` directory.
3. Use the following syntax to run the `veridataServer` script.

Syntax

```
veridataServer{.bat|.sh} start/stop [SERVER_NAME] [ADMIN_URL]
```

Optional Parameters	Description
<code>SERVER_NAME</code>	Specifies the name of the Veridata Managed Server that you want to start or stop. If not specified, the script starts the default managed server (<code>VERIDATA_server1</code>).
<code>ADMIN_URL</code>	Specifies the URL for the Veridata domain administration server. Default URL is <code>t3://<admin server>:<port></code> .

7.3 Creating Veridata Users and Assigning Privileges

After you configure the Veridata domain, you must create users and assign privileges for these users to access the Veridata Web User Interface. Use Oracle WebLogic Administration Console to create users.

By default, the WebLogic Domain administrator has privileges to access the Veridata application.

For more information about creating users and groups by using Administration Console, see "Create Users" in *Oracle WebLogic Server Administration Console Online Help*.

To know more about the user roles for Veridata, see "Securing Access to Oracle GoldenGate Veridata Web Interface by Defining User Roles" in *Administering Oracle GoldenGate Veridata*.

7.4 Launching Veridata Web User Interface

To launch Oracle GoldenGate Veridata web application, enter the following URL in a web browser:

```
http://hostname:8830/veridata/
```

where *hostname* represents the host where you have installed the Veridata Server.

To log in to the Veridata application, use the Veridata User credentials specified in the Administration Console. See "[Creating Veridata Users and Assigning Privileges](#)".

Deinstalling Oracle GoldenGate Veridata

This chapter describes how to deinstall or reinstall Oracle Data Integrator.

You should always use the instructions provided in this chapter for removing the software. If you try to remove the software manually, you may experience problems when you try to reinstall the software again at a later time. Following the procedures in this chapter will ensure that the software is properly removed.

This chapter includes the following sections:

- [Section 8.1, "Understanding Product Deinstallation"](#)
- [Section 8.2, "Stopping Oracle Fusion Middleware"](#)
- [Section 8.3, "Removing Your Database Schemas"](#)
- [Section 8.4, "Deinstalling the Software"](#)
- [Section 8.5, "Removing the Oracle Home Directory Manually"](#)
- [Section 8.6, "Removing Your Domain and Application Data"](#)
- [Section 8.7, "Deinstalling Oracle Fusion Middleware Infrastructure"](#)
- [Section 8.8, "Reinstalling the Software"](#)

8.1 Understanding Product Deinstallation

The Oracle Fusion Middleware deinstaller removes the software from the Oracle home directory from which it is started. [Table 8–1](#) summarizes the procedure and provides links to supporting documentation.

Table 8–1 Roadmap for Deinstalling GoldenGate Veridata

Task	Description	Documentation
Stop Oracle Fusion Middleware.	All servers and processes in your domain should be stopped before running the deinstaller.	See Section 8.2 .
Remove your database schemas.	Run Repository Creation Utility to remove your database schemas.	See Section 8.3 .
Remove the software.	Run the product deinstaller to remove Oracle Fusion Middleware Infrastructure.	See Section 8.4 .

Table 8–1 (Cont.) Roadmap for Deinstalling GoldenGate Veridata

Task	Description	Documentation
Remove the Oracle home directory.	The deinstaller does not remove all files and folders from the Oracle home directory. After the deinstaller is finished, you must manually remove the Oracle home to complete your product removal.	See Section 8.5 .
Remove your domain and application data.	The deinstaller does not remove data contained in your Domain home or Application home directories, even if they are located inside the Oracle home. You must remove these directories manually.	See Section 8.6 .
Remove Oracle Fusion Middleware Infrastructure.	In you created the topology for Java EE agents, you can also remove the Oracle Fusion Middleware Infrastructure software from your system.	See Section 8.7 .

8.2 Stopping Oracle Fusion Middleware

Stopping Oracle Fusion Middleware involves the following:

- [Section 8.2.1, "Stopping Your Oracle GoldenGate Veridata Agent"](#)
- [Section 8.2.2, "Stopping the Oracle Fusion Middleware Environment"](#)

8.2.1 Stopping Your Oracle GoldenGate Veridata Agent

Before running the deinstaller, you should stop all agents that are running.

To stop your standalone agent, go to the Veridata Agent deployment directory and run the following commands:

On UNIX operating systems:

```
./agent.sh stop
```

On Windows operating systems:

```
./agent.bat stop
```

8.2.2 Stopping the Oracle Fusion Middleware Environment

Before running the deinstaller, you should stop all servers and processes associated with the Oracle home you are going to remove.

For more information, see "Stopping an Oracle Fusion Middleware Environment" in *Administering Oracle Fusion Middleware*.

8.3 Removing Your Database Schemas

Before your Oracle home is removed, you should run Repository Creation Utility to remove the database schemas associated with this domain. Each domain has its own set of schemas, uniquely identified by a custom prefix (see "Understanding Custom Prefixes" in *Creating Schemas with the Repository Creation Utility*). This set of schemas cannot be shared with any other domain (see "Planning Your Schema Creation" in *Creating Schemas with the Repository Creation Utility*).

If there are multiple sets of schemas on your database, be sure to identify the schema prefix associated with the domain you are removing.

For schema removal instructions, see "Dropping Schemas" in *Creating Schemas with the Repository Creation Utility*.

8.4 Deinstalling the Software

Follow the instructions in this section to start the product deinstaller and remove the software.

- [Section 8.4.1, "Starting the Deinstaller"](#)
- [Section 8.4.2, "Navigating the Deinstallation Screens"](#)

If you want to perform a silent (command-line) deinstallation, see "Running the Oracle Universal Installer for Silent Deinstallation" in *Installing Software with the Oracle Universal Installer*.

8.4.1 Starting the Deinstaller

To start the deinstaller on a Windows operating system, do one of the following:

1. Use a file manager window to go to the `ORACLE_HOME\oui\bin` directory and double click on `deinstall.cmd`.
2. From the command line, go to the `ORACLE_HOME\oui\bin` and enter the following command:

```
deinstall.cmd
```

3. From the **Start** menu, select **All Programs**, then select **Oracle**, then select **OracleHome**, then select **Uninstall Oracle Middleware**.

To start the deinstaller on a UNIX operating system, go to the `ORACLE_HOME/oui/bin` directory and enter the following command:

```
./deinstall.sh
```

8.4.2 Navigating the Deinstallation Screens

The deinstallation program displays a series of screens, in the order listed in [Table 8–2](#).

If you need additional help with any of the deinstallation screens, click the screen name.

Table 8–2 Deinstall Screens and Descriptions

Screen	Description
Welcome	This screen introduces you to the product deinstaller.
Deinstallation Summary	This screen shows the Oracle home directory and its contents that will be deinstalled. Verify that this is the correct directory. Click Deinstall to begin removing the software.
Deinstallation Progress	This screen shows the progress of the deinstallation.
Deinstallation Complete	This screen appears when the deinstallation is complete. Review the information on this screen, then click Finish to dismiss the deinstaller.

8.5 Removing the Oracle Home Directory Manually

After the deinstaller is finished, you must manually remove your Oracle home directory and any existing sub-directories that were not removed by the deinstaller. For example, if your Oracle home directory was `/home/oracle/product/Oracle_Home` on a UNIX operating system:

```
> cd /home/oracle/product
```

```
> rm -rf Oracle_Home
```

On a Windows operating system, if your Oracle home directory was C:\Oracle\Product\Oracle_Home, use a file manager window and navigate to the C:\Oracle\Product directory, then right-click on the Oracle_Home folder and select **Delete**.

8.6 Removing Your Domain and Application Data

To remove your domain and application data:

1. Manually remove your Domain home directory.

For example, if your Domain home directory was /home/oracle/config/domains/veridata_domain on a UNIX operating system:

```
> cd /home/oracle/config/domains
> rm -rf veridata_domain
```

On a Windows operating system, if your Domain home directory was C:\Oracle\Config\domains\odi_domain, use a file manager window and navigate to the C:\Oracle\Config\domains directory, then right-click on the odi_domain folder and select **Delete**.

2. Manually remove your Application home directory.

For example, if your Application home directory was /home/Oracle/config/applications/veridata_domain on a UNIX operating system:

```
> cd /home/Oracle/config/applications
> rm -rf veridata_domain
```

On a Windows operating system, if your Application home directory was C:\Oracle\Config\applications\veridata_domain, use a file manager window and navigate to the C:\Oracle\Config\applications directory, then right-click on the odi_domain folder and select **Delete**.

3. Backup the domain_registry.xml file in your Oracle home, then edit the file and remove the line associated with the domain you are removing. For example, to remove the odi_domain, find the following line and remove it:

```
<domain location="/home/Oracle/config/domains/veridata_domain"/>
```

Save and exit the file when you are finished.

8.7 Deinstalling Oracle Fusion Middleware Infrastructure

After you have removed your Oracle GoldenGate Veridata software, you can choose to remove the Oracle Fusion Middleware Infrastructure from your machine. Before doing so, make sure there are no other products using the Infrastructure; those products will no longer function once the Infrastructure is removed.

For deinstallation instructions, see "Deinstalling Oracle Fusion Middleware Infrastructure" in *Installing and Configuring the Oracle Fusion Middleware Infrastructure*.

8.8 Reinstalling the Software

You can reinstall your software into the same Oracle home as a previous installation only if you have deinstalled the software according to the instructions in this chapter,

including manually removing the Oracle home directory. When you reinstall, you can then specify the same Oracle home as your previous installation.

Consider the following cases where the Oracle home is not empty:

- Installing in an existing Oracle home that contains the same feature sets.
The installer will warn you that the Oracle home you specified during the installation already contains the same software you are trying to install. Your options are to:
 - a. Select a different installation type. In this case, only the feature sets that do not already exist in the Oracle home directory will be installed.
 - b. Select a different Oracle home directory.
- Installing in an existing, non-empty Oracle home.
For example, suppose that you have chosen to create your Domain home or Application home somewhere inside your existing Oracle home. This data is not removed during the deinstallation process, so if you attempt to reinstall into the same Oracle home, the installer will not allow it. Your options are to:
 - a. Deinstall your software from the Oracle home as described in this chapter, and then remove the Oracle home directory. After this is complete, you can reinstall and reuse the same Oracle home location, using the instructions in [Chapter 3, "Installing Oracle GoldenGate Veridata"](#). Any domain or application data that was in the Oracle home will have to be re-created.
 - b. Select a different Oracle home directory.

Installing Oracle GoldenGate Veridata C-Agent

This chapter explains how to install the Oracle GoldenGate Veridata C-agent on a UNIX/Linux, Windows, or NonStop platform.

This chapter includes the following sections:

- [Section A.1, "Installation Overview"](#)
- [Section A.2, "Installing the C-agent on a UNIX or Linux System"](#)
- [Section A.3, "Installing the C-Agent on a NonStop System"](#)

A.1 Installation Overview

These instructions are for installing a new, clean copy of the C-based Oracle GoldenGate Veridata Agent software. To upgrade an existing installation, see *Upgrading Oracle GoldenGate Veridata*.

The Oracle GoldenGate Veridata C-agent is installed on the same system that hosts the database that contains compare data. You will install one Oracle GoldenGate Veridata C-Agent for each database instance where there is data that is to be compared.

A.2 Installing the C-agent on a UNIX or Linux System

To install the C-agent on a UNIX or Linux system, perform the following steps:

1. Create a directory for the agent.
2. Follow the steps in [Appendix D, "Oracle GoldenGate Veridata Distribution"](#) to obtain the software.
3. Extract the `mediapack.zip` file to directory that you created.
4. From the `agent` subdirectory, run `GGSCI`.
5. In `GGSCI`, issue the following command to create the working directories for Oracle GoldenGate Veridata.

```
CREATE SUBDIRS
```

6. In `GGSCI`, issue the following command to create and edit a Manager parameter file.

```
EDIT PARAMS MGR
```

7. On the first line of the file, add the following parameter to specify a port number for the Manager process. This port number must be a unique number that is not

being used by any other process, including any Manager processes for other Oracle GoldenGate software.

PORT *number*

- (Optional) On the next line, add the following parameter to specify a range of up to 256 ports that the Manager process can allocate dynamically. This parameter can be used to specify ports for concurrent processing threads if you will be running batch comparisons.

DYNAMICPORTLIST {*port* | *port-port*} [, ...]

- To specify multiple ports, use a comma-delimited list, for example 7830, 7833.
 - To specify a range of ports, use a dash (-) to separate the first and last port in the range, for example 7830-7835.
 - To specify a range of ports plus an individual port, place a comma between the range and the individual port number, for example 7830-7835, 7839.
- Save and close the parameter file. This file is stored in the `dirprm` directory within the `agent` subdirectory. Do not move it.
 - In GGSCI, start the Manager process. You can defer this step until you are ready to run comparisons. To perform comparisons, Manager must be running.

START MANAGER

- To confirm that Manager is running, issue the following command in GGSCI.

INFO MGR

Note: Oracle GoldenGate Veridata cannot be installed as a service on a UNIX or Linux system.

A.3 Installing the C-Agent on a NonStop System

To install the agent on a NonStop SQL/MP system, the following steps are required:

- Install the Oracle GoldenGate Veridata Agent files.
- Copy `VSNSERV` to remote nodes if they contain table partitions.
- Create a `GLOBALS` parameter file that contains specifications for:
 - Locations of remote nodes where there is a `VSNSERV` process.
 - A unique Manager name (if other Manager processes exist on the system)
- Configure the Manager process.

A.3.1 Installing the Oracle GoldenGate Veridata Agent Files

- Follow the steps in [Section D, "Oracle GoldenGate Veridata Distribution"](#) to download the Oracle GoldenGate Veridata Agent build file to a Windows workstation.
- Using `WinZip` or an equivalent compression product, unzip the files to a temporary directory on your workstation.
- Transfer the files in binary mode to the volume and subvolume on the NonStop Server where you want to install and run the agent. The agent software must be

installed in a dedicated subvolume, including one that is separate from other Oracle GoldenGate software.

4. Alter the VERUNPAK to be an edit file by issuing the following TACL command.

```
FUP ALTER VERUNPAK, CODE 101
```

5. Run the VERUNPAK macro by issuing the following TACL command.

```
RUN VERUNPAK
```

6. At the prompt, verify the installation location. Type Y to confirm the location shown or N to select another location.

```
Installing GoldenGate at $DATA.GoldenGate Veridata
Is this correct? (Y/N) y
UNPAK - File decompression program - T1255G06 - (2002-05-06)
Archive version: 1
File Mode RESTORE Program - T9074G07 (15JAN2002)
Copyright Tandem Computers Incorporated 1981-2002
Summary Information
Files restored = 7 Files not restored = 0
GoldenGate Veridata for Nonstop Installation
Installs the GoldenGate Veridata Product
Enter X at any prompt to quit.
```

7. You are prompted for a SQL catalog for the agent to use. Type the catalog name or type X for no catalog.

```
SQL Catalog for Compilation (X for no catalog)? $data.cpscat
SQL compiling VERIAGT
GoldenGate Veridata Installation Complete.
```

8. Continue with [Section A.3.2, "Copying VSNSERV to Remote Nodes"](#) and [Section A.3.3, "Creating a GLOBALS File"](#) as necessary for your environment.

A.3.2 Copying VSNSERV to Remote Nodes

If your tables have partitions on remote nodes, you will need to place a copy of the VSNSERV module on each of those nodes.

If all of the remote nodes are the same hardware type, you can use a copy of the VSNSERV that is in the Oracle GoldenGate Veridata agent subvolume. Otherwise, you might need to download the correct agent build for that hardware type. It will include the correct VSNSERV.

To place the VSNSERV on each node, you can do either of the following:

- Install the entire Oracle GoldenGate Veridata Agent package on each of the remote nodes, even though the agent itself will not be running on them.
- Copy the VSNSERV object to each of the remote nodes. To use this option, take the following steps.

To copy VSNSERV to remote nodes

1. Copy the appropriate VSNSERV program to each of the remote nodes.
2. Log onto each remote node as a super user.
3. Issue the following commands on each remote node:

```
FUP GIVE vsnserv, SUPER.SUPER
FUP secure vsnserv, "NNNN", PROGID
```

- The first command sets the `VSNSERV` owner as `SUPER.SUPER`.
 - The second command sets security and `PROGID` to run as `SUPER.SUPER`.
4. Specify the location of `VSNSERV` on each remote node by adding a `HOST` parameter for the node in the `GLOBALS` file that resides in the Oracle GoldenGate Veridata Agent installation directory. See [Section A.3.3, "Creating a GLOBALS File."](#)

A.3.3 Creating a GLOBALS File

You need to create a `GLOBALS` file in the Oracle GoldenGate Veridata Agent directory if:

- Other Manager processes exist on this system, such as the one used by Oracle GoldenGate data synchronization software. A unique name for each Manager process must be specified in this file with the `GGSPREFIX` parameter, including the one that will be used by the Veridata agent.
- Partitions for tables that will be compared with Veridata are stored on remote nodes. The name of each node must be specified with the `HOST` parameter in the `GLOBALS` file.

To create a GLOBALS file

1. At the `TACL` prompt, issue the following command.

```
EDIT GLOBALS
```

2. If prompted to create the file, enter `Yes`.
3. In the `GLOBALS` file, add one or both of the following parameters, depending on your environment:

```
GGSPREFIX $aa
HOST system_name [, GGSSUBVOL subvol] [, NODENUM node_number]
[HOST system_name [, GGSSUBVOL subvol] [, NODENUM node_number]]
```

- `GGSPREFIX` specifies a unique, two-character prefix that will be attached to the Manager process name, for example `GGSPREFIX $GV`.
- `HOST` specifies the location of remote nodes where there is a `VSNSERV` component.

Note: If you do not know the expand node number of a system, run `SYSINFO` on that node.

```
SYSINFO - T9268H01 - (01 OCT 2004) SYSTEM \TEST Date 10 Jul 2008,
10:44:54
Copyright 2003 Hewlett-Packard Development Company, L.P.
```

```
System name      \TEST
EXPAND node number 110
Current SYSnn    SYS10
System number    012345
Software release ID H06.13.00
```

4. Save the file without a file extension. The file is stored in the subvolume where the agent resides. Do not move it.

A.3.4 Configuring Manager

1. From TACL, run the GGSCI program that is installed with the agent.

```
RUN GGSCI
```

2. In GGSCI, issue the following command to create and edit a Manager parameter file.

```
EDIT PARAMS MGRPARM
```

3. On the first line of the file, add the following parameter, where *number* is a unique port number that is not being used by any other process, including any Manager processes for other Oracle GoldenGate software.

```
PORT number
```

4. (Optional) On the next line, add the following parameter to specify a range of up to 256 ports that the Manager process can allocate dynamically. You can specify ports for concurrent processing threads if you will be running batch comparisons.

```
DYNAMICPORTLIST {port | port-port} [ , ...]
```

Where:

- To specify multiple ports, use a comma-delimited list, for example 7830, 7833.
 - To specify a range of ports, use a dash (-) to separate the first and last port in the range, for example 7830-7835.
 - To specify a range of ports plus an individual port, place a comma between the range and the individual port number, for example 7830-7835, 7839.
5. Save and close the file.
 6. In GGSCI, issue the following command to start the Manager process. You can defer this step until you are ready to run comparisons. To perform comparisons, Manager must be running.

```
START MANAGER
```

7. To confirm that Manager is running, issue the following command in GGSCI.

```
INFO MGR
```

Installing Oracle GoldenGate Veridata Java Agent on DB2 for i and DB2 z/OS

This chapter explains how to install the Oracle GoldenGate Veridata 12c (12.1.3) Java agent on a DB2 for i or a DB2 z/OS platform. To install the agent on any other platform, see [Chapter 3, "Installing Oracle GoldenGate Veridata"](#).

This chapter includes the following sections:

- [Section B.1, "Installation Overview"](#)
- [Section B.2, "Installing Veridata Java Agent for either DB2 for i or DB2 z/OS Platform"](#)

B.1 Installation Overview

To install the Oracle GoldenGate Veridata Java agent on z/OS platform, download the appropriate file for your operating system from the product distribution. See [Appendix D, "Oracle GoldenGate Veridata Distribution"](#). As a best practice, Oracle recommends that you install the Java agent on the same system that hosts the database that contains compare data though this is not required. You will install one Oracle GoldenGate Veridata Java Agent for each database instance where there is data that is to be compared.

B.2 Installing Veridata Java Agent for either DB2 for i or DB2 z/OS Platform

To install Oracle GoldenGate Veridata Java Agent on either a DB2 for i or DB2 z/OS platform:

1. Create a folder to install the Veridata Agent binary files and download the `GoldenGate_Veridata_Agent_iSeries.zip` or the `GoldenGate_Veridata_Agent_ZOS.zip` file as appropriate for your platform.
2. Unzip the file to a folder. This folder is considered as the `AGENT_ORACLE_HOME` and it contains the binary files and configuration files required for the Veridata Agent. For more information about the directory structure, [Table 6-1, "Directories in an Oracle GoldenGate Veridata Installation"](#)
3. Run the `AGENT_ORACLE_HOME/bin/agent_configure.sh` script to deploy the agent on your platform. See [Chapter 6, "Deploying and Configuring Oracle GoldenGate Veridata Agent"](#).

Understanding the Oracle GoldenGate Veridata Directory Structure

This appendix describes the directory structure that will be created on your system at the end of your Oracle GoldenGate Veridata installation and domain configuration.

Note that the sample directories in this section illustrate the recommended directory structure, as described in "Understanding the Recommended Directory Structure" in *Planning an Installation of Oracle Fusion Middleware*. Your directory structure may differ slightly based on where you choose to create these directories on your system.

C.1 Oracle Home Directory Structure

[Figure C-1](#) shows an example of the basic directory structure of your `ORACLE_HOME` after installation and domain configuration of Oracle GoldenGate Veridata in a WebLogic Server domain. Note that figure shows only important directories. There are other directories and files created too.

Figure C-1 Directory Structure of Oracle_Home

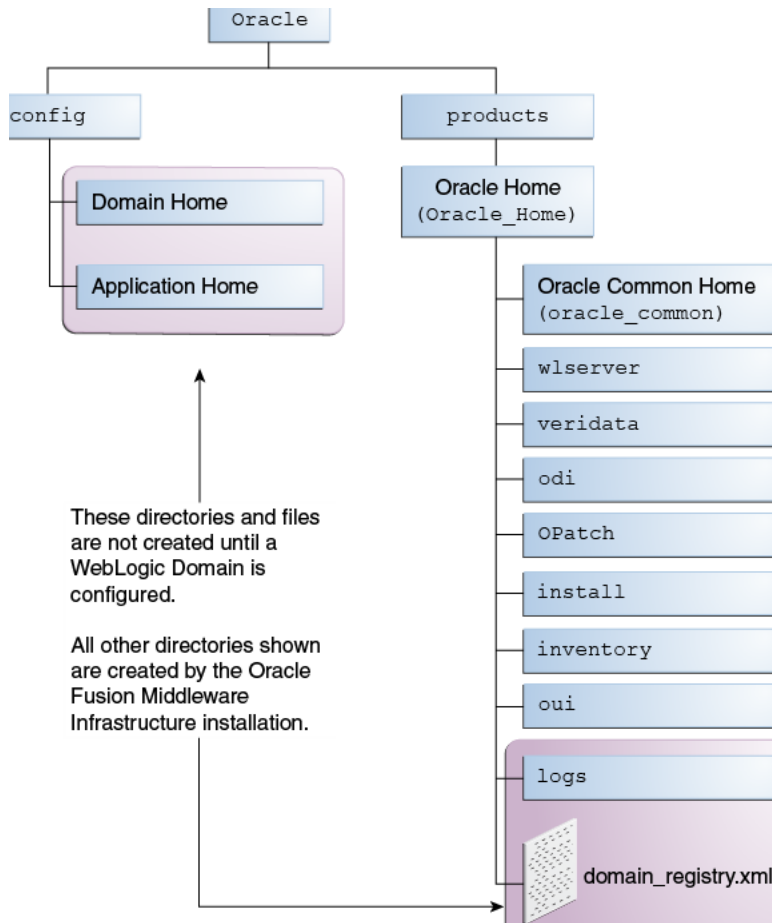


Table C-1 describes these directories in more details.

Table C-1 Directory Description for Oracle GoldenGate Veridata in a WebLogic Server Domain

Directory or file	Description
oracle_common	This directory contains the common binary and library files required for Oracle WebLogic Server.
wlserver	This directory contains a small portion of webLogic Server binaries that are used for management functionality. This directory is also referred to as the WebLogic home directory, or <i>WL_HOME</i> .

Table C-1 (Cont.) Directory Description for Oracle GoldenGate Veridata in a WebLogic Server Domain

Directory or file	Description
veridata	This directory contains the Oracle GoldenGate Veridata binaries and also the following directories: <ul style="list-style-type: none"> ▪ agent: represents the home directory for the Veridata agent ▪ bin: contains the scripts for the Veridata agent ▪ clilib: contains the command-line library files for Veridata ▪ common: contains Veridata domain templates ▪ plugin: contains Veridata plug-in for Upgrade Assistant ▪ samples: contains the sample certificates for SSL configuration ▪ t2p: contains the scripts and instructions for moving from a test to production environment ▪ webapps: contains the Veridata web application EAR file
install	This directory contains install-related files and scripts.
inventory	This directory contains information about the components, feature sets, and patches installed in this Oracle home directory.
logs	This directory contains the log files for your installation and configuration transactions.
odi	This directory contains the ODI binaries.
OPatch	This directory contains OPatch and supported files. OPatch is a tool used to patch Oracle Fusion Middleware software.
oui	This directory contains files used by the Oracle Universal Installer, including the deinstallation program. If you need to run the Oracle Universal Installer again after the product is installed, you should do so from this directory.
domain-registry.xml	This registry file contains the location of all domains currently registered with this WebLogic Server installation. Whenever you add a new domain, it is registered in this file.

C.2 Veridata Domain Home Directory Structure

Figure C-2 shows an example of the basic directory structure of your `VERIDATA_DOMAIN_HOME` after installation and domain configuration of Oracle GoldenGate Veridata in a WebLogic Server domain.

For more information about the domain home and the contents, see "Domain Directory Contents" in *Understanding Domain Configuration for Oracle WebLogic Server*.

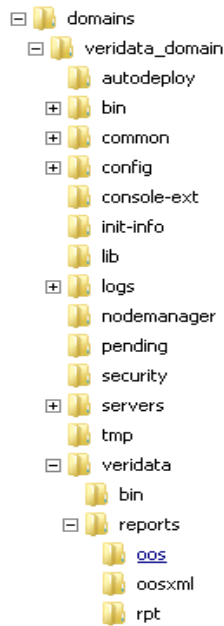
Figure C–2 Veridata Domain Home directory structure

Table C–2 describes the important directories in the Oracle GoldenGate Veridata domain.

Table C–2 Directory Description for Oracle GoldenGate Veridata Domain

Directory or file	Description
bin	This directory contains scripts that are used in the process of starting and stopping the Administration Server and the Managed Servers in the domain.
config	This directory contains the current configuration and deployment state of the domain. The <code>veridata.cfg</code> configuration file is located in a sub directory at <code>config/veridata</code> .
logs	This directory contains the domain-level log files.
servers	This directory contains one subdirectory for each Oracle WebLogic Server instance in the domain.
veridata	This directory contains the following subdirectories: <ul style="list-style-type: none"> ■ bin: contains the Veridata command-line utilities. ■ reports: default location for the out-of-sync files and reports.

Oracle GoldenGate Veridata Distribution

This appendix describes how to download the Oracle GoldenGate Veridata files. It also describes the feature sets included in the Oracle GoldenGate Veridata distribution.

This appendix includes the following sections:

- [Section D.1, "Downloading Oracle GoldenGate Veridata"](#)
- [Section D.2, "Downloading Oracle GoldenGate Veridata C-Agent and Java Agent for DB2 for i or DB2 z/OS"](#)
- [Section D.3, "Downloading the Product"](#)

D.1 Downloading Oracle GoldenGate Veridata

A distribution is an archive file containing an installer; when you run the installer, the set of Oracle GoldenGate Veridata components and feature that are included with the distribution are installed. You will need a certified JDK on your system in order to be able to run the installer from the `.jar` file. For more information, see [Section 2.2, "Prerequisites for Installing Oracle GoldenGate Veridata 12c \(12.1.3\)"](#).

Product distributions can be obtained from either the Oracle Software Delivery Cloud or from Oracle Technology Network. See [Section D.3, "Downloading the Product"](#).

[Table D-1](#) describes the products and feature sets in Oracle GoldenGate Veridata.

Table D-1 Oracle GoldenGate Veridata Product and Feature Sets

Product	Feature Set	Description
Oracle GoldenGate Veridata	Veridata Server	The Veridata Server component includes the web server, the web application, and command-line utilities such as <code>vericom</code> and <code>veridatascripting</code> .
	Veridata Agent	This component installs only the Veridata Agent.
Internal Features	Apache Ant	This is a software tool used for automating build processes.
	FMW Upgrade	This is the upgrade assistant that can be used to upgrade your 11g Oracle GoldenGate Veridata software to 12c. For more information, see <i>Upgrading Oracle GoldenGate Veridata</i> .
	OPatch	The OPatch utility is a tool that allows the application and rollback of interim patches to Oracle products.
	Repository Creation Utility	The Repository Creation Utility (RCU) is used for creating database schemas.

D.2 Downloading Oracle GoldenGate Veridata C-Agent and Java Agent for DB2 for i or DB2 z/OS

Oracle GoldenGate Veridata C-Agent and the Java Agent for DB2 for i or DB2 z/OS platforms are available for download as separate ZIP files on Oracle Technology Network Oracle GoldenGate Downloads page at:

<http://www.oracle.com/technetwork/middleware/goldengate/downloads/index.html>

D.3 Downloading the Product

Follow these steps to download any product from Oracle Software Delivery Cloud:

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