

Oracle®

Using Oracle GoldenGate Free



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The Oracle logo, consisting of a solid red square with the word "ORACLE" in white, uppercase, sans-serif font centered within it.

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Oracle Using Oracle GoldenGate Free, 21c

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1

Start

Oracle GoldenGate Free is a free edition of Oracle GoldenGate, licensed under the Oracle Free Use Terms and Conditions license. GoldenGate Free provides a simpler user experience for users new to Oracle GoldenGate. It functions similar to Oracle GoldenGate with some restrictions.

Articles in this category:

- [Get started with GoldenGate Free](#)
Discover what you need and how to get started with GoldenGate Free

GoldenGate Free Release notes

Review release information before you install and work with GoldenGate Free. This document is accurate at the time of publication and is updated periodically with each new software release.

What's supported

Visit [Supported connection types](#) to learn which Oracle Database and Oracle GoldenGate versions Oracle GoldenGate Free supports as source and target connections.

How to get help

Oracle GoldenGate Free is not supported by Oracle Support. Questions regarding GoldenGate Free can be posted in the [GoldenGate Free Community Forum](#).

Licensing information

Visit Oracle GoldenGate Licensing Information to review detailed licensing compliance information for Oracle GoldenGate Free.

Source code availability

For third party technology that you receive from Oracle in binary form, which is licensed under an open source license that gives you the right to receive the source code for that binary, you can obtain a copy of the applicable source code from <https://www.oracle.com/downloads/opensource/software-components-source-code.html>.

For Helidon, visit <https://github.com/helidon-io/helidon>.

If the source code for the technology was not provided to you with the binary, you can also receive a copy of the source code on physical media by submitting a written request to:

Oracle America, Inc
Attn: Associate General Counsel
Development and Engineering Legal

500 Oracle Parkway, 10th Floor
Redwood Shores, CA 94065

Or, you may send an email to Oracle using the form located at: <https://apex.oracle.com/pls/apex/f?p=34135:1:.....>. Ensure your request includes:

The name of the component or binary file(s) for which you are requesting the source code

The name and version number of the Oracle product

The date you received the Oracle product

Your name

Your company name (if applicable)

Your return mailing address and email

A telephone number in the event we need to reach you.

We may charge you a fee to cover the cost of physical media and processing. Your request must be sent (i) within three (3) years of the date you received the Oracle product that included the component or binary file(s) that are the subject of your request, or (ii) in the case of code licensed under the GPL v3, for as long as Oracle offers spare parts or customer support for that product model.

Known issues and limitations

Learn about known issues and limitations within the current release version.

GoldenGate Free uses only one deployment

Oracle GoldenGate Free only uses a single deployment. While it is possible to create multiple deployments, GoldenGate Free recognizes only the first deployment created during the initial installation. This deployment is referred to as the primary deployment.

GoldenGate Free doesn't recognize additional deployments created after the primary deployment. If you remove the primary deployment, then it is deregistered with GoldenGate Free. At this point, if a deployment is created and no primary deployment exists, then the new deployment becomes the primary deployment.

Don't delete a deployment while a pipeline is running

If you delete the deployment while a pipeline is running, then the error `n[Object.keys(...)[0]] is undefined` appears on the pipeline's Runtime page, and the pipeline's status changes to "Not started" on the Pipelines page.

Recommendation: Ensure that no pipelines are running if and when you decide to delete the deployment.

(Optional) Disable Distribution Service in GoldenGate Free installer

Since GoldenGate Free uses only one deployment, you can deselect **Enable Distribution Service**. The Distribution Service is only used when data must be replicated in a distributed environment (requiring multiple deployments).

You can leave the option selected for use with deployments not managed by GoldenGate Free .

Ignore nonsecure to secure replication option in GoldenGate Free installer

Oracle GoldenGate Free doesn't support multiple deployments, so you can ignore the "This non-secure deployment will be used to send trail data to a secure deployment" option on the Security Options screen of the GoldenGate Free Configuration Assistant.

Get started with GoldenGate Free

Discover what you need and how to get started with GoldenGate Free.

What you need

To use Oracle GoldenGate Free, you need the following:

- A system running one of the following:
 - Docker, or a compatible container runtime such as Podman
 - Linux
- Internet connectivity to access the container registry or Oracle Technology Network (OTN)
- A valid Oracle.com login

Get GoldenGate Free

You can get GoldenGate Free from the Oracle Container Registry (OCR) or Oracle Technology Network (OTN). Follow the applicable instructions to access GoldenGate Free.

From Oracle Container Registry

Follow these instructions to access the GoldenGate Free from Oracle Container Registry (OCR).

You must sign in to your Oracle account and accept the license agreement before you can pull the GoldenGate Free docker image from the Oracle Container Registry.

To access the GoldenGate Free docker image:

1. Accept the license agreement.
2. In your Docker client, enter the following command to log in to the Oracle Container Registry:

```
docker login container-registry.oracle.com
```

3. When prompted, enter your Oracle account username and password.
4. Copy the `docker pull` command to pull the latest GoldenGate Free image, and run it in your Docker client:

```
docker pull container-registry.oracle.com/goldengate/goldengate-free:latest
```


From Oracle Technology Network

Follow these instructions to access the GoldenGate Free from Oracle Technology Network (OTN).

You must sign in to your Oracle account and accept the license agreement before you can download the GoldenGate Free configuration assistant from the Oracle Technology Network.

To download the GoldenGate Free configuration assistant:

1. Open Oracle Technology Network in your browser.
2. On the Software Download page, scroll down, and then select **Middleware**.
3. Under Middleware, select **GoldenGate Free**.
4. On the Oracle GoldenGate Free Downloads page, select the available installer package.
5. Accept the license agreement.
6. When prompted, save the installer package to your local machine and take note of its location.

Start and run Oracle GoldenGate Free

Learn to start and run your GoldenGate Free instance. Ensure that you follow the applicable instructions for your docker image, or the GoldenGate Configuration Assistant.

Start and run the GoldenGate Free docker image

Learn to start and run GoldenGate Free after pulling the docker image from Oracle Container Registry.

To start and run GoldenGate Free:

1. In your Docker client, you can enter a run command with default settings or enter a run command with parameter values:
 - To run GoldenGate Free with default settings:

```
docker run oracle/goldengate-free:21.9.0.0.0
```

A container instantiates with the following default options:

- auto generated container name
- 80 port for HTTP Server
- 443 port for HTTPS Server
- oggadmin for the name of the administrative account
- auto generated the password for the administrative account
- Local for the name of the deployment
- Use container storage for /u02 and /u03 volume

- auto generated self-signed certificate
- To run GoldenGate Free with modified settings:

```
docker run \  
  --name <container-name> \  
  -p <host port>:80 \  
  -p <host port>:443 \  
  -e OGG_ADMIN=<admin user name> \  
  -e OGG_ADMIN_PWD=<admin password> \  
  -e OGG_DEPLOYMENT=<deployment name> \  
  -e OGG_DOMAIN=<domain name> \  
  -v [<host mount point>:]/u02 \  
  -v [<host mount point>:]/u03 \  
  -v [<host mount point>:]/etc/nginx/cert \  
  container-registry.oracle.com/goldengate/goldengate-free:21.9.0.0-  
oracle
```

Parameter descriptions:

- <container-name>: Name for the container. Auto-generated by default.
- -p <host-port>:80: The host port to map the Oracle GoldenGate HTTP server. No mapping by default.
- -p <host-port>:443: The host port to map the Oracle GoldenGate HTTPS server. No mapping by default.
- -e OGG_ADMIN: The name of the administrative account to create. oggadmin by default.
- -e OGG_ADMIN_PWD: The password of the administrative account. Auto-generated by default.

Tip:

Ensure the password meets the following requirements:

- * At least one lowercase character [a...z]
- * At least one uppercase character [A...Z]
- * At least one digit [0...9]
- * At least one special character [- ! @ % & * . #]
- * The length should be between 8 and 30 characters.

- -e OGG_DEPLOYMENT: The name of the deployment. Local by default.
- -e OGG_DOMAIN=<domain name>: The domain name to use for the self-signed certificate (default: hostname of the container). Not needed if you bring your own ssl certificates.
- -v /u02: The volume used for persistent GoldenGate data. Use container storage by default.
- -v /u03: The volume used for temporary GoldenGate data. Use container storage by default.

- `-v /etc/nginx/cert:` The volume used for storing the SSL certificate for the HTTPS server. Creates a self-signed certificate by default.

Data storage volumes

- `/u01:` the volume for the GoldenGate system
- `/u02:` the volume for persistent GoldenGate data
- `/u03:` the volume for temporary GoldenGate data

Administrative account password

On first startup of the container, a random password is generated for the Oracle GoldenGate if one is not provided for `OGG_ADMIN_PWD`. You can find this password at the start of the container log:

```
docker logs <container-name> | head -3
```

2. After a few minutes, you should see `Server started at: http://localhost:8080. GoldenGate Free is now ready for you to use.`
3. Launch a web browser, and go to `http://localhost:8080`.
4. On the GoldenGate Free login screen, enter the username and password that you passed to the docker run command, and then click **Log in**.

After you log in successfully, you're brought to the GoldenGate Free Home page.

Install and run GoldenGate Free using the Configuration Assistant

Learn to use the GoldenGate Configuration Assistant to install and run GoldenGate Free on Linux.

To install and run GoldenGate Free using the GoldenGate Configuration Assistant on Linux:

1. Navigate to the location on your local machine where you downloaded the Oracle GoldenGate Free installer.

2. Create a temporary staging directory in which to install Oracle GoldenGate Free.

For example, `mkdir /u01/stage/oggf`.

3. Extract the installation .zip file to the temporary staging directory.

For example,

```
unzip ./fbo_ggs_Linux_x64_Oracle_services_free_shiphome.zip -  
d ./u01/stage/oggf
```

4. From the expanded directory, run the `fbo_ggs_Linux_x64_Oracle_services_free_shiphome/Disk1/runInstaller` program. The Oracle GoldenGate Configuration Assistant opens.
5. In the Oracle GoldenGate Configuration Assistant, on the **Select Service Manager Options** screen, select **Create New Service Manager**.
 - a. For Service Manager Deployment Home, you can leave the default **Service Manager Deployment Home** location, or select a new location.
 - b. (Optional) Select **Register Service Manager as a system service/daemon**.

- c. For **Listening hostname/address**, enter a hostname.
 - d. For **Listening port**, enter a valid port number for Service Manager to use.
 - e. Click **Next**.
6. On the **Select Configuration Options** screen, select **Add new GoldenGate deployment**, and then click **Next**.
7. On the **Specify Deployment Details** screen:
 - a. For **Deployment Name**, enter a name for your deployment.
 - b. For **Software Home**, you can leave the default location or select a new location.
8. On the **Specify Deployment Directories** screen:
 - a. You can leave the default **Deployment Home** location, or select a new one.
 - b. (Optional) Select **Customize directories** to change the default GoldenGate directories.

 **Note:**

You can ignore FIPS mode and Sharding options.

- c. Click **Next**.
9. On the **Specify Environment Variables** screen, verify the environment variables settings, and then click **Next**.
10. On the **Specify Administrator Account** screen, you can leave the default Administrator account username and password settings, or update the values as needed, and then click **Next**.
11. (Optional) On the **Specify Security Options** screen, you can select SSL/TLS security, and then click **Next**.

 **Note:**

This non-secure deployment will be used to send trail data to a secure deployment doesn't apply to GoldenGate Free and should be ignored.

12. On the **Specify Port Settings** screen, you can leave the default port number selections or update them as needed, and then click **Next**.

 **Note:**

Do not deselect any of the Services.

13. On the **Specify Replication Settings** screen, review the default schema, and then click **Next**.
14. On the **Specify UI Settings** screen, review the **Listening port (HTTP)** and **Data Storage home** settings, and then click **Next**.

 **Note:**

If you enabled SSL/TLS on the Security Options screen, and additional Security section appears. This section includes the **Listening Port (HTTPS)**, **Certificate**, and **Passphrase** fields.

15. On the **Summary screen**, review your configuration settings, and then click **Finish**.
16. On the Configure Deployment screen, the installation starts and you can review the status of each step in realtime.

The Oracle GoldenGate Free start up script is also run. When completed, you can connect to the Oracle GoldenGate Free console in your web browser.
17. On the Finish screen, you should see a confirmation message when the installation and configuration of your Oracle GoldenGate Free deployment completes successfully. Click **Close**.
18. Launch the Oracle GoldenGate Free console in your web browser using one of the following URLs:
 - `http://<listening-hostname>:<listening-port>` if you didn't enable SSL/TLS in Step 11.
 - `https://<listening-hostname>:<listening-port>` if you enabled SSL/TLS in Step 11.

Log in using the Administrator Account username and password.

Next steps

Now that you're in GoldenGate Free, you can:

- [Learn about GoldenGate Free](#)
- [Learn about connections](#)
- [Create a connection](#)

2

Overview

Learn about Oracle GoldenGate Free, who it's meant for, and concepts to help you get started.

Articles in this category:

- [What is Oracle GoldenGate Free?](#)
Get an overview of GoldenGate Free.

What is Oracle GoldenGate Free?

GoldenGate Free is a starter version of Oracle's best in class replication software. With GoldenGate Free, application database administrators (DBAs) can learn basic concepts while creating simple data replication processes in a simplified user interface.

Want to learn more? Watch this [short overview video](#).



Who is GoldenGate Free for?

Discover if GoldenGate Free is right for you.

Anyone can use GoldenGate Free! If you're new to data replication and want to learn the basics without the overhead cost or spending a lot of time on set up and configuration, then GoldenGate Free is for you!

What can I use GoldenGate Free for?

You can use GoldenGate Free:

- As a development or test environment
- As a production environment*, if your database is 20GB or smaller
- As a training tool in a learning environment

* Oracle GoldenGate Free is not supported by Oracle Support. Questions regarding GoldenGate Free can be posted in the [GoldenGate Free Community Forum](#).

What are GoldenGate Free's limitations?

Learn about the limitations for using GoldenGate Free.

GoldenGate Free is limited to:

- Oracle Databases, no more than 20 gigabytes (GB) in size.

 **Note:**

For Container Databases (CDBs), this includes the total size of all Pluggable databases (PDBs).

- Support through community forums, instead of Oracle Support.
- Patches provided at Oracle's discretion in the form of new builds available through Oracle Container Registry.
- Interaction with other GoldenGate Free instances. You can't use GoldenGate Free with fully licensed Oracle GoldenGate products or other third-party integration tools.
- Integrated and Nonintegrated Replicats, ensuring that you don't use Replicat-only features with licensed Extracts.

 **Note:**

Refrain from changing the Replicat type in the Oracle GoldenGate Microservices console, or making changes to the underlying parameter file, as it affects GoldenGate Free's ability to manage the pipeline.

- No Active Data Guard (ADG) or XStream entitlements.
- No support for Downstream capture.

Concepts

Get familiar with the following concepts and other commonly used terms before you get started with GoldenGate Free.

- **Recipe:** A recipe is a pipeline template for common data replication use cases. Follow a recipe to get started quickly and easily.
- **Connection:** A connection contains the network connectivity details to data stores and other GoldenGate instances.
- **Pipeline:** A pipeline is an instance of a recipe. It enables you to select your source connection, the type of replication action to apply, and the target connection. After a pipeline starts, you can observe the replication process in real time.

Other commonly used terms in this guide:

- **Oracle GoldenGate Free console:** The main user interface for GoldenGate Free, where you create and manage database connections and pipelines.
- **Oracle GoldenGate Microservices console:** The user interface for experienced GoldenGate users to configure advanced settings, monitor performance, and perform other common Oracle GoldenGate activities.
- **Extract:** A process that runs against the source database to extract, or capture, data.
- **Replicat:** A process that delivers data to the target database.

3

Replicate

Learn to use GoldenGate Free to replicate data.

Articles in this category:

- [How to replicate data](#)
- [Create database connections](#)
- [Create pipelines](#)
- [Configure advanced settings](#)

How to replicate data

Replicating data in GoldenGate Free is as easy as 1-2-3.

To create a replication process in GoldenGate Free:

1. [Create your source and target database connections.](#)
2. [Create a pipeline.](#)
3. [Start the pipeline.](#)

Create database connections

Connections contain the network connectivity information for Oracle Database sources and targets.

Explore connections

Learn about the connection types you can use with GoldenGate Free and how to create them.

What is a connection?

A connection contains the connectivity details for a data source or target.

GoldenGate Free currently supports Oracle Database connections.

Supported connection types

Check the following list for specific Oracle Database versions you can use as sources and targets in GoldenGate Free.

The following Oracle Database versions are supported:

- Oracle Database 11.2.0.4
- Oracle Database 12.1.0.2

- Oracle Database 19c
- Oracle Database 21c, 21c XE



Note:

Oracle Autonomous Database and wallet authentication are not supported.

Create an Oracle Database connection

Learn to create a connection to Oracle Database to use as a GoldenGate Free source or target.

Watch this [short video](#) to learn how to create a database connection:



Tip:

- Before you create a connection, ensure that you enable Archive Log Mode and restart your database.
- If your database is a container database (CDB), it's recommended that you have the `sys` or `system` user credentials, or assistance from your DBA.

To create the Oracle Database connection:

1. From the GoldenGate Free Home page, click **Create connection**.
2. The Create database connection configuration panel consists of six pages. On the **General Information** page, enter a **Database name**, and optionally, a **Description**.
3. Click **Next**.
4. On the **Connections details** page, select a **Connection role**.
 - Select **Source**, to create a source database connection.
 - Select **Target**, to create a target database connection.
5. Select **Basic** from the **Connection type** dropdown.
6. Enter the database's **Hostname** and **Port**.
7. For **Database type**:
 - If your database is a Container database (CDB), select **Pluggable database in container database**.
 - a. Enter the **Container database service name**.
 - b. If you have DBA privileges for the container database, select **SYSDBA privileges available**, and then log in as `sys` or `system` in the Administrator Credentials dialog.

- c. Enter the **Pluggable database service name**. If you logged in with DBA privileges, the field autopopulates with the PDB name or you can click **Get PDB list** and then select it from the dropdown.
- If your database is not a Container database, then select **Non-container database**, and then enter the **Database service name**

 **Note:**

Database names with a domain name should be entered in the **Database service name** field.

8. Click **Next**.
9. On the **GoldenGate admin user** page:
 - a. Select **Add GoldenGate admin database user** if one doesn't yet exist.
 - b. Enter the GoldenGate username and password.

 **Note:**

- a. For a container (CDB) Oracle Database connection, the GoldenGate admin user is typically `c##ggadmin`. For a non-CDB Oracle Database connection, use `ggadmin`.
- b. See Non-supported special characters for the list of non-supported characters in object and user names. If a user name contains any of the characters in this list, you will encounter issues with your pipelines.

10. Click **Next**.
11. (If you logged in with DBA privileges, skip to step 13.) On the **Validate configuration** page, click **Validate** to ensure that your database is accessible and ready for GoldenGate to use.

The database connection only validates when the correct service name and password are used. If the service name or password is incorrect, then an error message appears and action must be taken by your database administrator to update the analysis script. [Learn more about the script.](#)

 **Tip:**

Click the ellipsis (three dots) menu to view log messages for each step.

12. Click **Next**.
13. On the **Configuration** page:
 - If you have DBA privileges, click **Run analysis**. Review the generated script completely, take note of recommended actions, and then select **Run SQL** to run it now, or **Download SQL** for your DBA to run the script separately.
 - If you don't have DBA privileges, click **Download analysis script** and have your DBA run it for you. [Learn more about the script.](#)

- If Archive Log Mode is not enabled, you must download the SQL script and follow the instructions in the script to enable Archive Log Mode, and then restart the database. You can then run the SQL manually to prepare the database. After you run the script, return to the user interface and click **Run analysis** again to validate and continue creating the connection.
14. On the Confirmation page review a summary of your connection details, and then click **Create**.

About the configuration script

The configuration script prepares your database for Oracle GoldenGate and creates the GoldenGate user, with whom Oracle GoldenGate uses to perform operations on the database. This interactive script detects inconsistencies and directs you on how to address them.

If you choose to run your script on your own, or have your database administrator run it for you, you must have SYSDBA privileges.

Ensure you provide following information in the SQL script:

- The **Service name** of the database (container (CDB), pluggable (PDB), or non-container (CDB)).
- A **Password** for the Oracle GoldenGate user to use.

The following are default values for Oracle GoldenGate user names and tablespace names. While you can change these values, it is recommended that you keep the default names.

- CDB user: **C##GGADMIN**.
- PDB user: **GGADMIN**.
- Non-CDB user: **GGADMIN**.

The default Oracle GoldenGate tablespace name is **GG_ADMIN_DATA**.

Learn more about preparing your database for Oracle GoldenGate.

After the script is run, the output displays the database information, the status of the database settings set for Oracle GoldenGate, and confirmation of database privileges granted to the Oracle GoldenGate user. Inconsistencies and errors reported in the script output will also include guidance on how to fix them. These errors must be fixed before you can create connections and pipelines.

For example, if your database doesn't have Archive Log Mode enabled, which is required for Oracle GoldenGate, then the analysis output includes instructions about how to enable Archive Log Mode, and then restart the database.

Next steps

After you have source and target connections created in GoldenGate Free, you can:

- [Learn about pipelines](#)
- [Create a pipeline](#)

Create pipelines

Learn to create a data replication process using pipelines and recipes.

About pipelines

A pipeline is an instance of a recipe. It enables you to select your source connection, the type of replication action(s) to apply, and the target connection. After a pipeline starts, you can observe the replication process in real time.

If you're familiar with Oracle GoldenGate Extract and Replicats, then pipelines are an abstraction of the Oracle GoldenGate replication process. When you start a pipeline, GoldenGate Free:

- Prepares the database objects for extraction
- Creates a Heartbeat Table
- Creates and runs the Extract process
- Performs an Initial Load using Oracle Data Pump
- Creates the Checkpoint Table
- Creates and runs the Replicat process

These steps can be observed during the pipeline's Initialization phase on the Pipeline Details page.

You can view pipelines on the Home page, as well as the Pipelines page. Before you create a pipeline, ensure that you have [source and target connections created](#).

Create a pipeline

Learn to create a pipeline by following a recipe.

Watch this [short video](#) to learn how to create a pipeline.

**Tip:**

Ensure that you have a source and target connection before creating a pipeline.

To create a pipeline:

1. From the GoldenGate Free Home page, click **Create pipeline**.
You can also select **Pipelines** from the navigation menu, and then click **Create pipeline** on the Pipelines page.
2. The Create Pipeline process consists of three pages. On the Recipe page, select a recipe, and then click **Next**.
3. On the Overview page, enter a **Name** for the pipeline, and optionally, a **Description**, and then click **Next**.

- On the Connections page, select your source and target connections from their respective dropdowns, and then click **Save & configure**.

After your pipeline is created, you're brought to the Pipeline Configuration screen. [Learn how to configure a pipeline.](#)

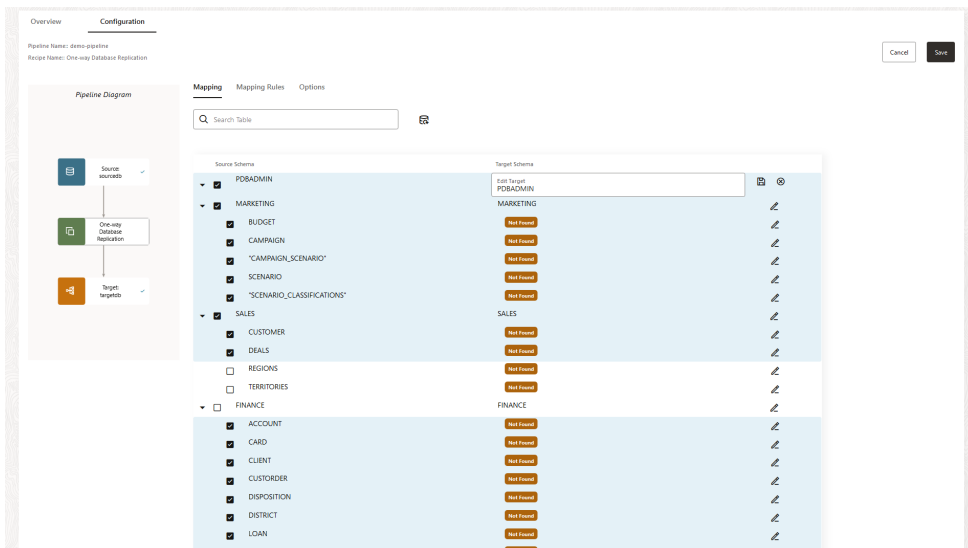
Configure a pipeline

After you create a pipeline, you're brought to its Configuration screen. If you're revisiting a pipeline after you created it, you can select the pipeline from the Pipelines page to view its details, and then click **Configuration** to return to the Configuration screen.

You must have a pipeline created before you can configure it.

To configure a pipeline:

- Under **Mapping**, you can review and select the source database schemas and tables to replicate.



Note:

Target schemas and tables show only when they exist in the target, otherwise they show as Not found.

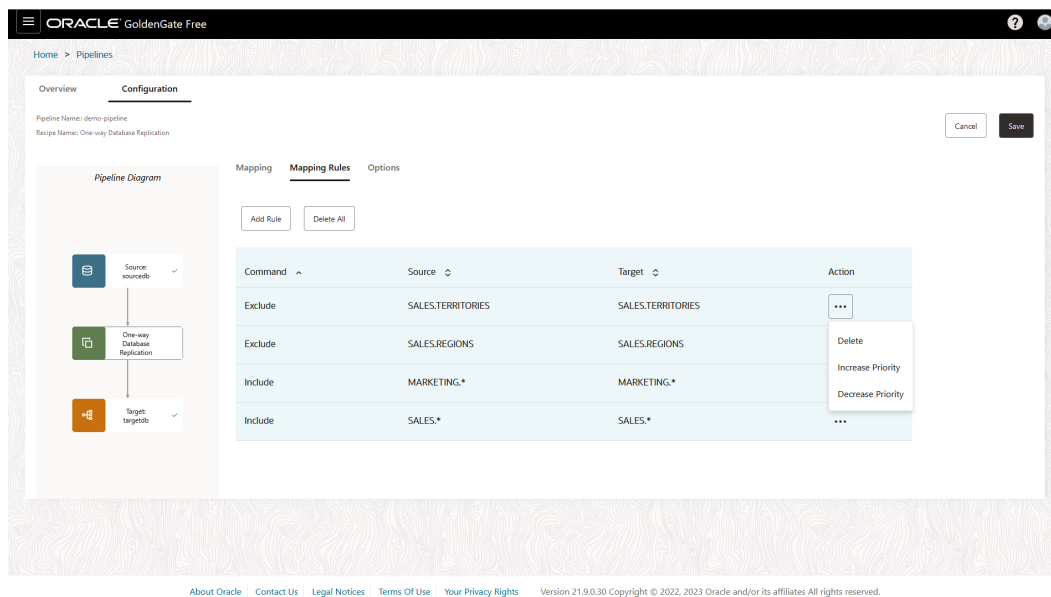
You can:

- Click **Edit** (pencil icon) to rename a target schema or table. This redirects the replication to the renamed schemas and tables.
- Include a schema and all its tables. This also ensures that any tables added to the schema in the future are also implicitly included and replicated.
- Include a schema but not all its tables. Tables **not** included will not be replicated, however, future tables added to the schema are implicitly included and replicated to the target.
- Exclude the schema but include its tables. Any tables added to the schema in the future are **not** included.

- Exclude an entire schema and all its tables.

As you select or deselect source schemas and tables, or edit target schemas or tables, rules are added to **Mapping Rules**.

2. Under **Mapping Rules**, you can review, add, delete, and reorder rules.



Keep in mind:

- Exclude rules take precedence over Include rules.
 - To delete a rule, click **Actions** (ellipsis icon) and select **Delete**.
 - To reorder a rule, click **Actions** (ellipsis icon) and then select either **Increase priority** or **Decrease priority**.
 - To add a new rule, click **Add rule**. You can use the following special characters when constructing rules:
 - Asterisk (*) as a wildcard for any number of characters
 - Underscore (_)
 - Space ()
 - Double quotes (") to enclose schema or table names that include spaces or when case sensitivity is required.
 - Individual rules take precedence over group rules.
 - **Delete all** removes all rules in the list.
3. Under **Options**, you can configure a limited set of GoldenGate parameters:
 - **Initial Load of existing schemas and/or tables**
 - **Replicate Data Definition Language (DDL)**
 - **Advanced options** for Initial Load (Data Pump), Extract, or Replicat

 **Note:**

Refrain from making changes to the underlying parameter file as it affects the ability to manage the pipeline in GoldenGate Free. Likewise, if using the Oracle GoldenGate console, refrain from changing the Replicat type.

4. Click **Save** to save your configuration settings.
5. After configuring your pipeline, click **Start** to run it.

You can review the initialization procedure, the status and progress of each step in the replication process, and how much time it takes for each step to complete.

6. After the initialization completes, you're brought to the **Runtime** view where you can observe data capture operations on the source database replicated to the target.

The pipeline runs continually until it's stopped.

Next steps

After your pipeline is created, configured, and running, learn to [manage pipelines](#).

Follow recipes

Recipes are templates for common replication scenarios that you can use to accelerate your data replication journey.

Explore recipes

More recipes are on the way!

One-way database replication: Performs an Initial Load and ensures the target database is kept in sync with the source database.

Follow a recipe

To follow a recipe:

1. From the GoldenGate Free Home page, click **Create pipeline**.
2. On the Recipe page, select a recipe to follow.
3. Follow the instructions to [Create a pipeline](#).

Configure advanced settings

If you're an experienced GoldenGate user, then you can access the Oracle GoldenGate Microservices console to configure advanced settings, monitor performance, and perform other common Oracle GoldenGate activities.

 **Note:**

While you can use the Oracle GoldenGate Microservices console to perform common Oracle GoldenGate tasks, you're still bound within the limits of GoldenGate Free.

To access the Oracle GoldenGate console:

1. Open `<hostname>:<port-number>/ogg` in your web browser

 **Note:**

Your protocol (http or https) depends on whether you enabled SSL/TLS during the initial configuration/installation process.

2. In the Oracle GoldenGate Service Manager, select one of the following services to open:
 - Administration Service
 - Distribution Service
 - Performance Metrics Service
 - Receiver Service

After you create and run a pipeline, you can also access the GoldenGate Administration Service from a process's ellipsis menu.

4

Manage

Learn to manage your GoldenGate Free resources.

Articles in this category:

- [Manage connections](#)
- [Manage pipelines](#)

Manage connections

Learn about connection management tasks including how to edit, clone, and delete connections.

View connection details

Select a connection from the Database connections page to view its details. On the Connection details page, you can:

- View connection details such as:
 - Connection name, description, when it was created, and when it was last updated
 - Database type, hostname, port, username, connector, and connection type
 - Connection role (source or target)
- Edit the connection details
- Validate the connection details
- Clone the connection
- Delete the connection

Edit a connection

To edit a connection:

1. On the Database connections page, select a connection to edit. You're brought to the connection's detail page.
2. On the connection's detail page, click **Edit**.
3. In the **Configure Database Connection Configuration** panel, review the connection settings, make your updates, and then click Next to progress through the Edit connection pages.
4. Click **Save changes**.

Clone a connection

To clone a connection:

1. On the Database connections page, select the connection to clone. You're brought to the connection's details page.
2. On the connection details page, click **Clone**.

You're brought back to the Database connections page, where the cloned connection appears in the list.

Validate a connection

If you create a connection without completing the database validation, then you must validate the connection before you can use it in a pipeline.

To validate a connection:

1. On the Database connections page, open the **Actions** menu (ellipsis icon) for the connection to validate.
2. From the Action menu, select **Validate**.

You're brought to the **Validate configuration** page of the Configure database connection panel.

3. On the Validate configuration screen, click **Validate**.

Note:

This action ensures that your database is accessible and ready for GoldenGate to use. If the service name or password provided is incorrect, then action must be taken by your database administrator to update and run the database configuration script. [Learn more about the script.](#)

4. After the test completes successfully, click **Cancel** to exit the panel.

You're brought back to the Database connections page.

Delete a connection

Before you delete a connection, ensure that the connection is not currently in use by an active pipeline.

To delete a connection:

1. On the Database connections page, select the connection to delete. You're brought to the connection details page.
2. On the connection details page, click **Delete**.
3. In the Delete connection dialog, confirm that you want to delete the connection, and then click **Delete**.

The Database connections list is refreshed and the deleted connection removed. You cannot undo a delete operation.

Manage pipelines

Learn about pipeline management tasks including how to edit, start, stop, and delete pipelines.

View pipeline details

The screenshot displays the Oracle GoldenGate Free interface for managing pipelines. The main view is the 'Overview' tab for a pipeline named 'demo-pipeline'. The interface includes a 'Pipeline Diagram' on the left showing a 'One-way Database Replication' setup between 'Source: sourcepdb' and 'Target: targetpdb'. The main area shows a table of processes and two line graphs for 'Operations Extract' and 'Operations Replicat'. The table lists processes E5 (Extract) and R9 (Replicat), both with a status of 'RUNNING'. The 'Operations Extract' graph shows three peaks of approximately 1.0, and the 'Operations Replicat' graph shows three peaks of approximately 2.0. The interface also features buttons for 'Cancel', 'Stop', and 'Start', and a 'Configuration' tab.

On the Pipelines page, select a pipeline to view its details. On the pipeline's details page, you can:

1. Review pipeline details such as the pipeline name, description, when it was created, when it was last run, and whether it ran successfully
2. Edit the pipeline's configuration, mappings, mapping rules, and advanced options
3. Start the pipeline
4. Stop the pipeline

Note:

The pipeline runs continuously until you click **Stop**.

5. View its initialization steps, the status and logs for each step, and initial load details

Note:

To view message logs for a step, click its ellipsis (three dots) icon, and then select **View details**.

6. View the pipeline as it runs in realtime

Edit a pipeline

To edit a pipeline:

1. On the Pipelines page, open the Action menu (ellipsis icon) for the pipeline you want to edit.
2. From the Pipeline's Action menu, select **Edit configuration**.
3. In the Edit pipeline panel, you can edit the following values:
 - Name
 - Description
4. Click **Save & configure**.

Start a pipeline

Before you can start a pipeline, you must first [configure it](#).

To start a pipeline:

1. On the Pipelines page, select the pipeline to start. You're brought to the pipeline's details page.
2. On the pipeline's details page, click **Start**.

You're brought to the pipeline's initialization page, where you can observe the initial load tasks performed on the target database, as well as the creation and start of Extract and Replicat processes.
3. After the pipeline is initialized, you're brought to the Runtime page, where you can observe data capture operations on the source database replicated to the target database.

The pipeline runs continuously until it's stopped.

Stop a pipeline

You can only stop a pipeline that is running. Pipelines run continuously until you manually stop them. When you stop a pipeline, GoldenGate Free stops both the Extract and Replicat processes.

To stop a pipeline:

1. On the Pipelines page, select the pipeline to stop. You're brought to the pipeline's details page.
2. On the pipeline's details page, click **Stop**.

After the pipeline stops, you can click **Start** to restart it. GoldenGate Free resumes the Extract and Replicat processes, replicating any transactions that occurred while the pipeline was stopped.

Delete a pipeline

To delete a pipeline:

1. On the Pipelines page, from the Action menu (ellipsis icon) of the pipeline you want to delete, select **Delete**.

2. In the Delete dialog, select whether you want to also delete the GoldenGate configuration.

 **Note:**

GoldenGate configuration includes the Extract and Replicat processes created when the pipeline was originally initialized.

3. Click **Delete**.

The Pipeline page refreshes, and the deleted pipeline no longer appears in the list. Once deleted, you can't undo the action.

5 Monitor

Learn to monitor your GoldenGate Free processes and how to use the information reported.

Articles in this category:

- [Monitor pipelines](#)
- [Monitor performance using the Oracle GoldenGate Microservices console](#)

Monitor pipelines

Monitor your pipelines to ensure that your data replication processes are running smoothly without lag. Use the tools available to troubleshoot or diagnose issues you may encounter.

The screenshot displays the Oracle GoldenGate Free console interface for monitoring a pipeline. The interface is divided into several sections:

- Overview:** Shows pipeline name, description, creation date, and last run date. A green 'SUCCESSFUL' status indicator is present.
- Pipeline Diagram:** A visual flow diagram showing the data flow from 'Source SOURCE' to 'Create Replica'.
- Runtime:** A table listing active processes with columns for Process Name, Type, Status, Latency, Last Operation Processed, and Total Operation Count.
- Operations Extract:** A line graph showing the volume of operations extracted over time, categorized by type (Inserts, Updates, Upserts, Deletes, Truncates, DDLs, Discards, Ignores).
- Operations Replicat:** A line graph showing the volume of operations replicated over time, categorized by type (Inserts, Updates, Upserts, Deletes, Truncates, DDLs, Discards, Ignores).

Processes Name	Processes Type	Status	Latency	Last Operation Processed	Total Operation Count
E24	Extract	RUNNING	41 ms	Mon, Nov 21, 2022 19:37:37 UTC	7512
R20	Replicat	RUNNING	3.8 sec	Mon, Nov 21, 2022 19:37:00 UTC	14945

When you select an active pipeline from the Pipelines page, you're brought to the pipeline's Runtime page. Here, you can view:

1. Basic pipeline information, including the pipeline's name, description, created date, and run date.
2. A realtime visual pipeline diagram, that updates as you make changes to the pipeline configuration.
3. Information about the pipeline processes, including process names, process types, their statuses, their latency, when their last operation was processed, and their total operation count. You can also view the processes' log events, reports, latency graphs, or launch the full GoldenGate console for advanced monitoring from the processes' Action menus.
4. Operations Extract graph, showing inserts, updates, upserts, deletes, truncates, DDLs, discards, and ignores over time

5. Operations Replicat graph, showing inserts, updates, upserts, deletes, truncates, DDLs, discards, and ignores over time
6. (Not shown) A list of critical events, along with their codes, when they occurred, their severity, and message details.

For each process, you can access the following when you open the ellipsis (three dots) menu:

- View log events
- Access the Oracle GoldenGate Administration Server UI
- Download reports
- Download latency details

For more information about performance monitoring in the Oracle GoldenGate Microservices UI, see [Monitor performance using the Oracle GoldenGate console](#).

Monitor performance using the Oracle GoldenGate Microservices console

You can monitor the status and health of your pipelines using the Runtime view on your pipeline's details page. For more advanced monitoring and reporting, you can access the Oracle GoldenGate Microservices console.

Note:

While you can access the Oracle GoldenGate Microservices console, you're still bounded to the limitations of GoldenGate Free.

You can access the Oracle GoldenGate Microservices console one of two ways:

- When viewing the pipeline processes in the Runtime view, click the ellipsis menu and select **GoldenGate console**.
- Open `<hostname>:<port-number>/ogg` in your web browser. You're brought to the Oracle GoldenGate Service Manager, where you can access:

Note:

Your protocol (http or https) depends on whether you enabled SSL/TLS during the initial configuration/installation process.

- **Administration Service:** View and manage Extract and Replicat process details, reports, and statistics.
- **Distribution Service:** View and manage Distribution Path details.
- **Performance Metrics Service:** View service and process performance metrics.
- **Receiver Service:** View and manage Receiver Path details.

For more information about using the Performance Metrics Service, see Monitor Processes from the Performance Metrics Service.

6

Reference

Explore GoldenGate Free reference materials.

Reference guides in this category:

- [Frequently asked questions](#)

Frequently asked questions

Have a question about GoldenGate Free? Explore the frequently asked questions (FAQs) for the answer to your question.

What database versions are supported?

See [Supported connection types](#).

What are the limitations of GoldenGate Free?

GoldenGate Free is limited to:

- Oracle Databases, no more than 20 gigabytes (GB) in size.

 **Note:**

For Container Databases (CDBs), this includes the total size of all Pluggable databases (PDBs).

- Support through community forums, instead of Oracle Support.
- Patches provided at Oracle's discretion in the form of new builds available through Oracle Container Registry.
- Interaction with other GoldenGate Free instances. You can't use GoldenGate Free with fully licensed Oracle GoldenGate products or other third-party integration tools.
- Integrated and Nonintegrated Replicats, ensuring that you don't use Replicat-only features with licensed Extracts.

 **Note:**

Refrain from changing the Replicat type in the Oracle GoldenGate Microservices console, or making changes to the underlying parameter file, as it affects GoldenGate Free's ability to manage the pipeline.

- No Active Data Guard (ADG) or XStream entitlements.
- No support for Downstream capture.

How can I get help?

Oracle GoldenGate Free is not supported by Oracle Support. Questions regarding GoldenGate Free can be posted in the [GoldenGate Free Community Forum](#).

Can you use GoldenGate Free with a licensed Oracle GoldenGate?

No, you can only use GoldenGate Free with other GoldenGate Free instances. You can't use GoldenGate Free with licensed Oracle GoldenGate products.

What's the default GoldenGate Free administrative account password?

On first startup of the container, a random password is generated for the Oracle GoldenGate if one is not provided for `OGG_ADMIN_PWD`. You can find this password at the start of the container log:

```
$ docker logs <container-name> | head -3
```

See [Start and run the GoldenGate Free docker image](#) for more information.