

Oracle® Database

Command Line Interface Reference for Oracle GoldenGate



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Audience

This guide is intended for system administrators or application developers who need to learn about Oracle GoldenGate concepts. It is assumed that readers are familiar with web technologies and have a general understanding of Windows and UNIX platforms.

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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</i> <i>italic</i>	Italic type indicates placeholder variables for which you supply particular values, such as in the parameter statement: <code>TABLE table_name</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 process or utility unless the name is intended to be a specific case. Keywords in upper case (ADD EXTRACT, ADD EXTTRAIL, FORMAT RELEASE).
LOWERCASE	Names of processes to be written in lower case. Examples: ADD EXTRACT exte, ADD EXTRAIL ea.
{ }	Braces within syntax enclose a set of options that are separated by pipe symbols, one of which must be selected, for example: { <i>option1</i> <i>option2</i> <i>option3</i> }.
[]	Brackets within syntax indicate an optional element. For example in this syntax, the SAVE clause is optional: CLEANUP REPLICAT <i>group_name</i> [, SAVE <i>count</i>]. Multiple options within an optional element are separated by a pipe symbol, for example: [<i>option1</i> <i>option2</i>].
Sample Locations	Compass directions such as east, west, north, south to be used for demonstrating Extract and Replicat locations. Datacenters names to use the standard similar to dc1, dc2.
Group names	Prefixes for each process, as follows: <ul style="list-style-type: none">• Extract: ext. Usage with location: extn, where <i>n</i> indicates 'north' compass direction.• Replicat: rep. Usage with location: repn, where <i>n</i> indicates 'north' compass direction.• Distribution Path: dp. Usage with location: dpn, where <i>n</i> indicates 'north' compass direction.• Checkpoint table: ggs_checkpointtable• Trail file names: e or d depending on whether the trail file is for the Extract or distribution path. Suffix derived in alphabetical order. Usage for an Extract trail file: ea, eb, ec.• Trail file subdirectory: The name will use compass directions to refer to the trail subdirectories. Example for trail subdirectory name would be /east, /west, /north, /south.

Related Information

The Oracle GoldenGate Product Documentation Libraries are found at:

[Oracle GoldenGate Documentation](#)

Oracle GoldenGate for Big Data Documentation:

<https://docs.oracle.com/en/middleware/goldengate/big-data/index.html>

For additional information on Oracle GoldenGate, refer to:

<https://www.oracle.com/middleware/technologies/goldengate.html>

[Oracle Database High Availability](#)

1

About the Command Line Interfaces

Oracle GoldenGate provides a command line interface (CLI) for both the Microservices Architecture (MA) and the Classic Architecture (CA).

Admin Client is used with Microservices Architecture whereas GGSCI is used with Classic Architecture.

What is the Admin Client?

Admin Client is used to create, modify, and remove processes, instead of using the MA web user interface. The Admin Client program is located in the `$OGG_HOME/bin` directory, where `$OGG_HOME` is the Oracle GoldenGate home directory. If you need to automate the Admin Client connection with the deployment, you can use an Oracle Wallet to store the user credentials. The credentials stored must have the following characteristics:

- Single user name (account) and password
- Local to the environment where the Admin Client runs
- Available only to the currently logged user
- Managed by the Admin Client
- Referenced using a credential name
- Available for Oracle GoldenGate deployments and proxy connections.

1. In Linux, set the `OGG_HOME`, and `PATH` environment variable to the following:

```
export PATH=$OGG_HOME/bin:$PATH
```

```
export OGG_HOME=ogg_install_location
```

2. Move to `$OGG_HOME/bin` and run the command:

```
[oracle@bigdatalite bin]$ ./adminclient
Oracle GoldenGate Administration Client for Oracle
Version 21.4.0.0.0 OGGCORE_21.4.0.0.0_PLATFORMS_yymmdd.HHMM_FBO
```

```
Copyright (C) 1995, 2022, Oracle and/or its affiliates. All rights reserved.
```

```
Linux, x64, 64bit (optimized) on Dec 31 2016 23:58:36
Operating system character set identified as UTF-8.
```

```
OGG (not connected) 1>
```

3. Connect to a deployment or to a proxy server from the Admin Client as a security user. This is the user you created while adding the deployment for your Oracle GoldenGate instance using OGGCA.

```
CONNECT http(s)://localhost:port DEPLOYMENT deployment name AS
security role user PASSWORD password
```

 **Note:**

If your password to connect to a secure or non-secure deployment from the Admin Client has an exclamation mark (!) at the end, then you must enter the password in double quotes when using the `CONNECT` command in a single line. Otherwise, the password is not accepted and the connection fails. This is required for all deployments with a strong password policy.

Syntax:

```
CONNECT - Connect to an Oracle GoldenGate Service Manager
|CONNECT server-url [ DEPLOYMENT deployment-name]
|[ ( AS deployment-credentials-name|
| USER deployment-user-name )
|[PASSWORD deployment-password] ]
|[PROXY proxy-uri|
|[(AS proxy-credentials-name
|USER proxy-user-name)
|[ PASSWORD proxy-password] ] ] [ ! ]
```

See the `CONNECT` command in the *Command Line Interface Reference for Oracle GoldenGate* to know more.

 **Note:**

The deployment credentials cannot be stored as a `USERIDALIAS` in the credential store because the Oracle wallet used for storing database credentials is managed by the Administration Service. Instead, a separate Oracle wallet is created for the Admin Client. The Oracle wallet is stored in the users home directory.

The following example shows the connection to a deployment and to a proxy server:

```
ADD CREDENTIALSTORE admin USER oggadmin PASSWORD oggadmin-A1
2019-02-14T00:35:38Z INFO OGG-15114 Credential store altered.
ADD CREDENTIALSTORE proxy USER oggadmin PASSWORD oggadmin-A2
2019-02-14T00:35:48Z INFO OGG-15114 Credential store altered.
CONNECT http://www.example.com:12000 AS admin PROXY
http:111.1.1.1:3128 as proxy
```

```
Using default deployment 'Local'
OGG (http://www.example.com:12000 Local) 4>
```

If the credentials are invalid for a proxy connection, then an error similar to the following error occurs:

```
OGG (not connected) 2> ADD CREDENTIALS proxy USER proxyadmin PASSWORD
invalid
2019-02-14T00:48:12Z INFO OGG-15114 Credential store altered.
OGG (not connected) 3> CONNECT http://abc.oracle.com:12000 AS admin PROXY
http://111.1.1.1:3128 as proxy
ERROR: Proxy server user name 'proxyadmin' or password is incorrect.
```

4. You can view the full list of Admin Client commands using the `HELP` command. Use the `HELP SHOWSYNTAX` command to view the syntax for specific commands.

What is the Oracle GoldenGate Software Command Interface (GGSCI)?

Use the `ggsci` program located in the home directory of the Oracle GoldenGate installation to create, delete, and manage Oracle GoldenGate processes. Commands can be entered manually into `ggsci` or can be loaded as input from an `OBEY` file.

For more information on using `OBEY` files, see *Storing and Calling Frequently Used Command Sequences* in *Administering Oracle GoldenGate*.

Note:

When `LANG` is set at the operating system level to `en_US.UTF-16`, it causes GGSCI to hang. The setting of `en_US.UTF-8` is allowed. Setting in Linux, which would cause GGSCI or Admin Client to hang is: `[celclnx29]/bugmnt3/am/celclnx29/SRx.xxxxxxxxxx/user/gg122> echo $LANG en_US.UTF-16`

How to Use this Reference

This book is divided into two parts:

- **Admin Client Command Line Interface Commands:** This part includes all the commands that can be executed from the Admin Client command line.
- **GGSCI Command Line Interface Commands:** This part includes all the commands that can be executed from the GGSCI command line.

2

Admin Client Command Line Interface Commands

Learn how to use the Oracle GoldenGate Microservices Architecture Admin Client commands and options, and review examples.

Topics:

- [!](#)
- [ADD AUTHORIZATIONPROFILE](#)
- [ADD CHECKPOINTTABLE](#)
- [ADD CREDENTIALS](#)
- [ADD DISTPATH](#)
- [ADD ENCRYPTIONPROFILE](#)
- [ADD EXTRACT](#)
- [ADD EXTTRAIL](#)
- [ADD HEARTBEATTABLE](#)
- [ADD MASTERKEY](#)
- [ADD PROFILE](#)
- [ADD PROCEDURETRANDATA](#)
- [ADD REPLICAT](#)
- [ADD RECVPATH](#)
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- [ADD SCHEMATRANDATA](#)
- [ADD TRACETABLE](#)
- [ADD TRANDATA](#)
- [ALTER AUTHORIZATIONPROFILE](#)
- [ALTER DISTPATH](#)
- [ALTER ENCRYPTIONPROFILE](#)
- [ALTER RECVPATH](#)
- [ALLOWNESTED](#)
- [ALTER CREDENTIALSTORE](#)
- [ALTER EXTRACT](#)
- [ALTER EXTTRAIL](#)
- [ALTER HEARTBEATTABLE](#)

- ALTER REPLICAT
- ALTER RMTTRAIL
- CD
- CLEAR INSTANTIATION CSN
- CLEANUP CHECKPOINTTABLE
- CLEANUP EXTRACT
- CLEANUP REPLICAT
- CONNECT
- DBLOGIN USERIDALIAS
- DELETE AUTHORIZATIONPROFILE
- DELETE CHECKPOINTTABLE
- DELETE CREDENTIALS
- DELETE CREDENTIALSTORE
- DELETE DISTPATH
- DELETE ENCRYPTIONPROFILE
- DELETE PROFILE
- DELETE RECVPATH
- DISABLE SERVICE
- DISCONNECT
- DELETE EXTRACT
- DELETE EXTTRAIL
- DELETE HEARTBEATENTRY
- DELETE HEARTBEATTABLE
- DELETE MASTERKEY
- DELETE PROCEDURETRANDATA
- DELETE REPLICAT
- DELETE RMTTRAIL
- DELETE SCHEMATRANDATA
- DELETE TRACETABLE
- DELETE TRANDATA
- EDIT ENCKEYS
- EDIT GLOBALS
- EDIT PARAMS
- ENCRYPT PASSWORD
- EXIT
- ENABLE SERVICE
- FLUSH SEQUENCE

- HELP
- HEALTH DEPLOYMENT
- HISTORY
- INFO ALL
- INFO AUTHORIZATIONPROFILE
- INFO CHECKPOINTTABLE
- INFO CREDENTIALS
- INFO CREDENTIALSTORE
- INFO DISTPATH
- INFO ENCRYPTIONPROFILE
- INFO ER
- INFO EXTRACT
- INFO EXTTRAIL
- INFO HEARTBEATTABLE
- INFO MASTERKEY
- INFO PARAM
- INFO PROFILE
- INFO PROCEDURETRANDATA
- INFO REPLICAT
- INFO RECVPATH
- INFO RMTTRAIL
- INFO SCHEMATRANDATA
- INFO TRACETABLE
- INFO TRANDATA
- KILL ER
- KILL EXTRACT
- KILL REPLICAT
- LAG ER
- LAG EXTRACT
- LAG REPLICAT
- LIST TABLES
- MININGDBLOGIN
- NOALLOWNESTED
- OBEY
- PURGE WALLET
- PURGE EXTTRAIL
- REGISTER EXTRACT

- RENEW MASTERKEY
- RESTART DEPLOYMENT
- RESTART ER
- RESTART EXTRACT
- RESTART REPLICAT
- RESTART SERVICE
- SEND ER
- SEND EXTRACT
- SEND REPLICAT
- SET EDITOR
- SET COLOR
- SET DEBUG
- SET INSTANTIATION CSN
- SET PAGER
- SET VERBOSE
- SHELL
- SHOW
- START DEPLOYMENT
- START DISTPATH
- START ER
- START EXTRACT
- START REPLICAT
- START RECVPATH
- START SERVICE
- STATS DISTPATH
- STATS ER
- STATS EXTRACT
- STATS RECVPATH
- STATS REPLICAT
- STATUS DEPLOYMENT
- STATUS ER
- STATUS EXTRACT
- STATUS REPLICAT
- STATUS SERVICE
- STOP DEPLOYMENT
- STOP ER
- STOP EXTRACT

- STOP DISTPATH
- STOP RECVPATH
- STOP REPLICAT
- STOP SERVICE
- SYNCHRONIZE REPLICAT
- UNDELETE MASTERKEY
- VIEW ENCKEYS
- UNREGISTER EXTRACT
- UPGRADE CHECKPOINTTABLE
- UPGRADE HEARTBEATABLE
- VALIDATE AUTHORIZATIONPROFILE
- VERSIONS
- VIEW DISCARD
- VIEW GLOBALS
- VIEW MESSAGES
- VIEW PARAMS
- VIEW REPORT

RESTART EXTRACT

Use `RESTART EXTRACT` to stop then start an Extract group.

Syntax

```
RESTART EXTRACT group_name [ATCSN csn | AFTERCSN csn]
```

group_name

The name of an Extract group or a wildcard (*) to specify multiple groups. For example, `T*` starts all Extract groups whose names begin with T.

ATCSN *csn* | AFTERCSN *csn*

Specifies an alternate start point.

ATCSN

Directs Extract to position its start point at the first transaction that has the specified CSN. Any transactions in the data source that have CSN values less than the specified one are skipped.

AFTERCSN

Directs Extract to position its start point at the beginning of the first transaction after the one that has the specified CSN. Any transactions in the data source that have CSN values that are less than, or equal to, the specified one are skipped.

csn

Specifies a CSN value. Enter the CSN value in the format that is valid for the database. Extract abends if the format is invalid and writes a message to the report file. To determine the CSN to supply after an initial load is complete, use the serial identifier at which the load utility completed. Otherwise, follow the instructions in the initial load procedure for determining when to start Extract.

The following are additional guidelines to observe when using `ATCSN` and `AFTERCSN`:

- The CSN is stored in the file header so that it is available to downstream processes.
- When a record that is specified with a CSN is found, Extract issues a checkpoint. The checkpoint ensures that subsequent Extract start ups begin from the requested location, and not from a point prior to the requested CSN.
- You must establish a physical start point in the transaction log or trail for Extract with `ADD EXTRACT` or `ALTER EXTRACT` before using `ATCSN` or `AFTERCSN`. These options are intended to be an additional filter after Extract is positioned to a physical location in the data source.

Examples

```
RESTART EXTRACT finance
```

```
RESTART EXTRACT finance ATCSN 684993
```

```
RESTART EXTRACT finance AFTERCSN 684993
```

RESTART REPLICAT

Use `RESTART REPLICAT` to stop then start a Replicat group. To confirm that Replicat has started, use the `INFO REPLICAT` or `STATUS REPLICAT` command.

Normal Start Point

Replicat can be started at its normal start point (from initial or current checkpoints) or from an alternate, user-specified position in the trail.

`RESTART REPLICAT`, without any options, causes Replicat to start processing at one of the following points to maintain data integrity:

- After graceful or abnormal termination: At the first unprocessed transaction in the trail from the previous run, as represented by the current read checkpoint.
- First-time startup after the group was created: From the beginning of the active trail file (seqno 0, rba 0).

Alternate Start Point

The `SKIPTRANSACTION`, `ATCSN`, and `AFTERCSN` options of `START REPLICAT` cause Replicat as a whole, or specific threads of a coordinated Replicat, to begin processing at a transaction in the trail other than the normal start point. Use these options to:

- Specify a logical recovery position when an error prevents Replicat from moving forward in the trail. Replicat can be positioned to skip the offending transaction or transactions, with the understanding that the data will not be applied to the target.
- Skip replicated transactions that will cause duplicate-record and missing-record errors after a backup is applied to the target during an initial load. These options cause Replicat to discard transactions that occurred earlier than the most recent set of changes that were captured in the backup. You can map the value of the serial identifier that corresponds to the completion of the backup to a CSN value, and then start Replicat to begin applying transactions from the specified CSN onward.

Syntax

```
RESTART REPLICAT group_name_wildcard
[SKIPTRANSACTION | {ATCSN csn | AFTERCSN csn}]
[FILTERDUPTRANSACTIONS | NOFILTERDUPTRANSACTIONS]
[THREADS (threadID[, threadID][, ...][, thread_range[, thread_range][, ...])
```

group_name_wildcard

The name of a Replicat group or a wildcard (*) to specify multiple groups. For example, `T*` starts all Replicat groups whose names begin with `T`.

SKIPTRANSACTION

Causes Replicat to skip the first transaction after its expected startup position in the trail. All operations from that first transaction are excluded.

If the `MAXTRANSOPS` parameter is also being used for this Replicat, it is possible that the process will start to read the trail file from somewhere in the middle of a transaction. In that case, the remainder of the partial transaction is skipped, and Replicat resumes normal processing from the next begin-transaction record in the file. The skipped records are written to the discard file if the `DISCARDFILE` parameter is being used; otherwise, a message is written to the report file that is similar to:

```
User requested START SKIPTRANSACTION. The current transaction will be
skipped. Transaction ID txid, position Seqno seqno, RBA rba
```

`SKIPTRANSACTION` is valid only when the trail that Replicat is reading is part of an online change synchronization configuration (with checkpoints). Not valid for task-type initial loads (where `SPECIALRUN` is used with `ADD REPLICAT`).

ATCSN *csn* | AFTERCSN *csn*

Sets a user-defined start point at a specific CSN. When `ATCSN` or `AFTERCSN` is used, a message similar to one of the following is written to the report file:

```
User requested start at commit sequence number (CSN) csn-string
```

```
User requested start after commit sequence number (CSN) csn-string
```

General information about these options:

- Valid only when the trail that Replicat is reading is part of an online change synchronization configuration (with checkpoints). Not valid for task-type initial loads (where `SPECIALRUN` is used with `ADD REPLICAT`).
- To support starting at, or after, a CSN, the trail must be of Oracle GoldenGate version 10.0.0 or later, because the CSN is stored in the first trail record of each transaction. If Replicat is started with `AFTERCSN` against an earlier trail version, Replicat will abend and write an error to the report stating that the trail format is not supported.

ATCSN

Causes Replicat to start processing at the transaction that has the specified CSN. Any transactions in the trail that have CSN values that are less than the specified one are skipped.

AFTERCSN

Causes Replicat to start processing at the transaction that occurred after the one with the specified CSN. Any transactions in the trail that have CSN values that are less than, or equal to, the specified one are skipped.

csn

Specifies a CSN value. Enter the CSN value in the format that is valid for the database. See *Administering Oracle GoldenGate* for CSN formats and descriptions. Replicat abends if the format is invalid and writes a message to the report file. To determine the CSN to supply after an initial load is complete, use the commit identifier at which the load utility completed the load. Otherwise, follow the instructions in the initial load procedure for determining when to start Replicat.

FILTERDUPTRANSACTIONS | NOFILTERDUPTRANSACTIONS

Causes Replicat to ignore transactions that it has already processed. Use when Extract was repositioned to a new start point (see the `ATCSN` or `AFTERCSN` option of "`START EXTRACT`") and you are confident that there are duplicate transactions in the trail that could cause Replicat to abend. This option requires the use of a checkpoint table. If the database is Oracle, this option is valid only for Replicat in nonintegrated mode. In case of Integrated mode and automatic target trail file regeneration, the Integrated mode handles the duplicate transactions transparently. The default is `FILTERDUPTRANSACTIONS`.

THREADS *thread_list*

Valid for `SKIPTRANSACTION`, `ATCSN`, and `AFTERCSN` when Replicat is in coordinated mode. Not valid for `RESTART REPLICAT` without those options. Starts the specified Replicat thread or threads at the specified location.

thread_list

A comma-delimited list of ranges in the format of threadIDlow-threadIDhigh, threadIDlow-threadIDhigh.

!
(Exclamation point) Restarts Replicat immediately. The transaction is stopped.

Examples

```
RESTART REPLICAT finance
```

The following starts Replicat at a-specific CSN.

```
RESTART REPLICAT finance, ATCSN 6488359
```

The following causes threads 4 and 5 of a coordinated Replicat to skip the first transaction after their last checkpoint when Replicat is started. If this were a 10-thread coordinated Replicat, threads 0-3 and 6-10 would all start at the normal start point, that of their last checkpoint.

```
RESTART REPLICAT fin SKIPTRANSACTION THREADS (4-5)
```

The following example causes threads 1-3 of a coordinated Replicat to start at CSN 6488359, threads 9-10 to start after CSN 6488360, and threads 7 and 8 to skip the first transaction after its last checkpoint.

```
RESTART REPLICAT fin ATCSN 6488359 THREADS (1-3), AFTERCSN 6488360 THREADS (9-10), SKIPTRANSACTION THREADS (7,8)
```

RESTART SERVICE

Use `RESTART SERVICE` to restart the specified Oracle GoldenGate services.

Syntax

```
RESTART SERVICE service-name-wildcard
```

service-name-wildcard

The name of an service or a wildcard (*) to specify multiple services. Valid services are ADMIN\$SRV, DIST\$SRV, REC\$SRV, and PMS\$SRV.

Example

```
RESTART SERVICE ADMIN*
```

!

Use the `!` command to execute a previous Admin Client command without modifications. To modify a command before executing it again, use the `FC` command. To display a list of previous commands, use the `HISTORY` command. The `!` command without arguments executes the most recent command. Options enable you to execute any previous command by specifying its line number or a text substring. Previous commands can be executed again only if they were issued during the current session, because command history is not maintained from session to session.

Admin Client Syntax

```
! n
```

n

Executes the command from the specified line. Each command line is sequenced, beginning with 1 at the start of the session.

Examples

```
! 9
```

```
! -3
```

```
! sta
```

ADD AUTHORIZATIONPROFILE

When a profile is created for an Oracle GoldenGate deployment, the content which describes the profile will exist only in that deployment. This applies for both Service Manager deployments and non-Service Manager deployments. Information that is not sensitive will be stored with other configuration data. All profile information will be available throughout the entire Oracle GoldenGate deployment however, the profile information is not shared across deployments.

Only security administrators for an Oracle GoldenGate deployment can create authorization profiles. Security administrators can only create an authorization profile, which holds information for a specific IDP server and application.



Note:

You cannot create, modify or delete the `localCredentialStore` profile. This profile will always exist.

Syntax:

```
ADD AUTHORIZATIONPROFILE profile-name
    DEPLOYMENT deployment-name
    IDCS
```

```

ID client-id [ SECRET client-secret ]
DISCOVERYURI discovery-uri
GROUPS
  SECURITY security-group
  [ ADMINISTRATOR administrator-group ]
  [ OPERATOR operator-group ]
  [ USER user-group ]
[ TTLSECONDS ttnumber ]
[ DESCRIPTION description ]

```

profile-name

Name of the authorization profile.

deployment-name

Name of the deployment associated with the authorization profile.

ID *client-id* SECRET *client-secret*

Specify the IDP Application's client ID and IDP Application's Client Secret (securely stored).

DISCOVERYURI *discovery-uri*

IDP server's OpenID Discovery Docs endpoint.

GROUPS

IDP groups to Oracle GoldenGate user roles mapping. Possible values are:

SECURITYGROUP *security-group* (Mandatory)

[ADMINGROUP *admin-group*]

[OPERATORGROUP *operator-group*]

[USERGROUP *user-group*]

See Add New Users to the Deployment to know about Oracle GoldenGate user roles and privileges.

TTL *value*

The time, in seconds, needed to pass before the OpenID JSON Web Key (JWK) containing the OpenID signing certificate used to validate an access token needs to be queried again.

DESCRIPTION

Describe the authorization profile.

Example

Here's an example of adding an authorization profile with 2 mapped groups:

```

ADD AUTHORIZATIONPROFILE apn
DEPLOYMENT IDCS CLIENT ID SECRET DISCOVERYURI
GROUPS SECURITY group_security OPERATOR group_operator

```

 **Note:**

When you successfully create the authorization profile, the system will not show any success message. This behavior occurs with other commands use for authorization profile management, including [ALTER AUTHORIZATIONPROFILE](#), [VALIDATE AUTHORIZATIONPROFILE](#), and [DELETE AUTHORIZATIONPROFILE](#).

ADD CHECKPOINTTABLE

Not valid for Replicat for Java, Oracle GoldenGate Applications Adapter, or Oracle GoldenGate for Big Data.

Valid for non-parallel Replicats.

For a parallel Replicat, the checkpoint table is created as part of the command to add the parallel Replicat and does not require that the checkpoint table be created before adding the parallel Replicat.

Use `ADD CHECKPOINTTABLE` to create a checkpoint table in the target database. Replicat uses the table to maintain a record of its read position in the trail for recovery purposes.

The use of a checkpoint table is strongly recommended, because it causes checkpoints to be part of the Replicat transaction. This allows Replicat to recover more easily in certain circumstances than when a checkpoint file alone is used. Parallel and coordinated Replicats require checkpoint tables.

One table can serve as the default checkpoint table for all Replicat groups in an Oracle GoldenGate instance if you specify it with the `CHECKPOINTTABLE` parameter in a `GLOBALS` file. More than one instance of Oracle GoldenGate (multiple installations) can use the same checkpoint table. Oracle GoldenGate keeps track of the checkpoints even when the same Replicat group name exists in different instances.

Use the `DBLOGIN` command to establish a database connection before using this command. Do not change the names or attributes of the columns in this table. You may, however, change table storage attributes.

See About Checkpoints.

Admin Client Syntax

```
ADD CHECKPOINTTABLE [[container. | catalog.] owner.table]
```

The name cannot contain any special characters, such as quotes, backslash, dollar sign, and percent symbol. Record the name of the table, because you need it to view statistics or delete the table if needed.

container. | *catalog.*

The Oracle pluggable database, if applicable. If this option is omitted, the pluggable database defaults to the one that is associated with the `SOURCEDB`, `USERID`, or `USERIDALIAS` portion of the `DBLOGIN` command (depending on the database).

owner.table

The owner and name of the checkpoint table to be created. The name cannot contain any special characters, such as quotes, backslash, dollar sign, and percent symbol.

The name of a MySQL checkpoint table can contain no more than 58 characters.

The owner and name can be omitted if you are using this table as the default checkpoint table and it is listed with `CHECKPOINTTABLE` in the `GLOBALS` file.

It is recommended, but not required, that the table be created in a schema dedicated to Oracle GoldenGate. If an owner and name are not specified, a default table is created based on the `CHECKPOINTTABLE` parameter in the `GLOBALS` parameter file.

Record the name of the checkpoint table as that will be used when you add a Replicat, or delete a Replicat and need to drop the checkpoint table using the `DELETE CHECKPOINTTABLE` command.

In MA, the default schema for the checkpoint table is controlled by the Oracle GoldenGate user that is defined for each deployment. See Replication Settings.

Examples

The following adds a checkpoint table with the default name specified in the `GLOBALS` file.

```
ADD CHECKPOINTTABLE
```

The following adds a checkpoint table with a user-defined name.

```
ADD CHECKPOINTTABLE ggadmin.ggs_checkpoint
```

ADD CREDENTIALS

The `ADD CREDENTIALS` command adds a new username and password to an Oracle wallet that resides on the same system where the Admin Client is running. This credential is used to log in to Oracle GoldenGate Service Manager and Admin Client command line using the `CONNECT` command.

The username and password are referenced using a credential name.

Syntax:

```
ADD CREDENTIALS credentials-name | USER username | [ PASSWORD password ]
```

Example:

```
ADD CREDENTIALS dbnorth USER ggadmin PASSWORD oggadmin-A1
```

In this example, a credential called `dbnorth` is added with a username `ggadmin` and password `oggadmin-A1`. If the password is not specified in the `ADD CREDENTIALS` command, you will be prompted to enter the password interactively, without displaying it on the terminal.

ADD DISTPATH

Use `ADD DISTPATH` to create a distribution path. Distribution paths are created to link the Distribution Service of one deployment to the Receiver Service of another deployment, in order to send trails from the source to that target deployment.

Syntax

```
ADD DISTPATH path-name
    SOURCE source-uri
    TARGET target-uri|
    [TARGETTYPE ( MANAGER | COLLECTOR | RECVSRVR )] |
    AUTHENTICATION ( OAUTH
        | (CERTIFICATE certificate-name)
        | (USERIDALIAS alias [DOMAIN domain])
        | [ENCRYPTIONPROFILE encryption-profile-name ]
```

path-name

The unique name of the distribution path you want to add.

source-uri

Specifies the source URI after the source keyword to indicate where the data is originated. The format of this URI contains the protocol (only supports trail), hostname, port number of the Distribution Service, and location of the source trail files.

target-uri

Specifies the target URI after the target keyword to indicate where the data will be sent to. The format of this URI is:

a supported protocol, `udt`, `ogg`, web socket `ws`, or secure web socket `wss`

a hostname,

the port number of the Receiver Service,

and the location of the target trail files.

TARGETTYPE

Specifies the target type in case the distribution path uses the legacy protocol. This argument is only valid if the target URI schema is `ogg://`.

Choose `MANAGER` if the target is a legacy deployment with a manager running.

Choose `COLLECTOR` if the target is a legacy deployment with a static collector running.

Choose `RECVSRVR` if the target is an Microservices Architecture deployment with a Receiver Service running.

AUTHENTICATION OAUTH

Use this option if you are using external Identity Provider (IDCS) authorization profile. This will set up the flow from the Distribution Service to the Receiver Service.

Note:

If your deployment is enabled for IDCS, you can still choose to authentication using other authentication options.

AUTHENTICATION CERTIFICATE *certificate-name*

Identifier of distribution path-specific client certificate uploaded and managed in Administration Service.

AUTHENTICATION USERIDALIAS

(Alternative to certificate authentication,) you can associate each distribution path with a target DBLOGIN USERIDALIAS.

ENCRYPTIONPROFILE

Specifies the name of the encryption profile for the distribution path.

Examples

```
ADD DISTPATH dpe SOURCE trail://localhost:9002/services/v2/sources?trail=ea
TARGET wss://localhost:9003/services/v2/targets?trail=ea
```

The target trail must specify the directory that contains your trail files. The default dirdat directory is used in this example.

```
ADD DISTPATH dpe SOURCE trail://localhost:9002/services/v2/sources?trail=ea
TARGET ogg://localhost:9003/services/v2/targets?
trail=dirdat/eb
TARGETTYPE MANAGER
```

A fully-qualified DBLOGIN USERIDALIAS.

```
ADD DISTPATH dpe SOURCE ... TARGET ws://recvsrvr-host:recvsrvr-port ...
AUTHENTICATION USERIDALIAS target-dblogin-useridalias DOMAIN target-domain
```

A DBLOGIN USERIDALIAS from a default domain.

```
ADD DISTPATH dpe SOURCE ... TARGET wss://recvsrvr-host:recvsrvr-port ...
```

An example of this implementation is:

```
ADD DISTPATH dpe SOURCE ... TARGET wss://recvsrvr-host:recvsrvr-port ...
AUTHENTICATION USERIDALIAS ggeast DOMAIN OracleGoldenGate
```

You can alternatively choose to run the command with base64-encoded user:password for authenticating with the USERIDALIAS that is managed in the credential store.

```
ADD DISTPATH dpe SOURCE ... TARGET ws://webuser:webpass@recvsrvr-
host:recvsrvr-port...
```

In this example, webuser is the user and webpass is the password.

ADD ENCRYPTIONPROFILE

Use ADD ENCRYPTIONPROFILE to add an encryption profile for Oracle Key Vault using Oracle GoldenGate.

An encryption profile is used to retrieve a master key from an external Key Management System (KMS). You can choose between Oracle Key Vault (OKV) and Oracle Cloud

Infrastructure Keys Management System (OCIKMS). If there is no explicitly defined encryption profile, then a Local Wallet is used as the default profile.

To know more, see [What is an Encryption Profile?](#).

Syntax

```
ADD ENCRYPTIONPROFILE encryption-profile-name
| OKV
  OKVPATH dir-path
  [KEYNAMEATTRIBUTE key-name-attribute]
  [KEYVERSIONATTRIBUTE key-version-attribute]
  MASTERKEY NAME masterkey-name
  [VERSION masterkey-version]
  [ TTL t1 ]
| OCIKMS (
  ENDPOINT endpoint
  TENANCY tenancy-ocid
  USER user-ocid
  APIKEY api-key
  FINGERPRINT fingerprint
  KEY key-OCID ) )
[DEFAULT [ YES | NO ]
```

OKV options:

OKVPATH

Specifies the directory where Oracle Key Vault client is installed.

KEYNAMEATTRIBUTE

Custom attribute used in Oracle Key Vault server to specify the masterkey name

KEYVERSIONATTRIBUTE

Custom attribute used in Oracle Key Vault server to specify the masterkey version.

MASTERKEY [NAME]

Name of the master key. This value must match the key name in the KMS parameter in Oracle GoldenGate and cannot be changed once replication has started.

MASTERKEY [VERSION]

Version of the master key. This must be a numeric value.

OCI KMS

Endpoint

Specify the Cryptographic endpoint of the OCI KMS Vault.

Tenancy

Specify the tenancy OCID.

User

Specify the OCID for the user.

APIKEY

Specify the path to the file containing the OCI API Signing Key. The key is read from this file and sent to Oracle GoldenGate. If you need to change the OCI API KEY at some point, you can use the [ALTER ENCRYPTIONPROFILE](#) command.

KEY

Specify the key OCID that belongs to a key stored in your OCI KMS Vault, this is the key used by Oracle GoldenGate for encryption (trail encryption).

Fingerprint

Hash (MD5) of the API signing key.

DEFAULT

Specifies the current encryption profile. If you set `DEFAULT YES` then the encryption profile is set to be the current encryption profile. If you set `DEFAULT NO` then the encryption profile is removed. If there is no explicitly defined current encryption profile (you set as `DEFAULT NO` to the previously current one) then the implicitly default profile is `LocalWallet`.

**Note:**

Do not upload keys with duplicate values of `KeyName` and `KeyVersion`. At the time of startup, restart, or rollover, Oracle GoldenGate processes retrieve the highest `KeyVersion` value.

ADD EXTRACT

Use `ADD EXTRACT` to create an Extract group. Unless a `SOURCEISTABLE` task or an alias Extract is specified, `ADD EXTRACT` creates an online group that uses checkpoints so that processing continuity is maintained from run to run.

For Db2 for i, this command establishes a global start point for all journals and is a required first step. After issuing the `ADD EXTRACT` command, you can then optionally position any given journal at a specific journal sequence number by using the `ALTER EXTRACT` command with an appropriate journal option.

Oracle GoldenGate recommends keeping the combined number of Extract and Replicat groups at the default level of 300 or lower to manage the environment effectively.

**Note:**

Oracle GoldenGate supports a large number of concurrent Extract and Replicat groups per instance of a deployment, depending on the resources available with the operating system. At the supported level, all groups can be controlled and viewed in full with commands such as `INFO` and `STATUS`.

This command cannot exceed 500 bytes in size for all keywords and input, including any text that you enter for the `DESC` option.

Admin Client Syntax

```

ADD EXTRACT group-name
|          ( SOURCEISTABLE |
|          ( [ INTEGRATED ] TRANLOG )
|          ( BEGIN      ( NOW | yyyy-mm-ddThh:mm:ssZ ) |
|
|          [, LSN value |
|          [ EXTRBA archive-offset-number ] |
|          SCN      scn
|          ) )
|          [ DESC      description      ]
|          [ CRITICAL  [ YES | NO ]      ]
|          [ ENCRYPTIONPROFILE encryption-profile-name]
|          [ PROFILE
|              [ AUTOSTART  [ YES | NO ]
|                  [ DELAY    delay-number  ] ]
|              [ AUTORESTART [ YES | NO ]
|                  [ RETRIES    retries-number ]
|                  [ WAITSECONDS wait-number ]
|                  [ RESETSECONDS reset-number ]
|                  [ DISABLEONFAILURE [ YES | NO ] ] ] ]
|          [ LOGNUM lognum]
|          [ LOGPOS logpos

```

group_name

The name of the Extract group. The name of an Extract group can contain up to eight characters, see [Choosing Names for Processes and Files](#).

SOURCEISTABLE

Creates an Extract task that extracts entire records from the specified tables for an initial load using Oracle GoldenGate. If **SOURCEISTABLE** is not specified, **ADD EXTRACT** creates an online change-synchronization process, and one of the other data source options must be specified. When using **SOURCEISTABLE**, do not specify any service options. Task parameters must be specified in the parameter file, see [Add Initial Load Extract Using the Admin Client in Oracle GoldenGate Microservices Documentation](#).

TRANLOG [bsds_name]

Use this option for all databases. **TRANLOG** requires the **BEGIN** option.

(Db2 on z/OS) You can use the *bsds_name* option for Db2 on a z/OS system to specify the Bootstrap Data Set file name of the transaction log, though it is not required and is not used. You do not need to change existing **TRANLOG** parameters.

(Oracle) Extract reads the Oracle redo logs directly. See **INTEGRATED TRANLOG** for an alternate configuration.

INTEGRATED TRANLOG

Valid for Oracle.

Adds Extract in integrated capture mode. In this mode, Extract integrates with the database logmining server, which passes logical change records (LCRs) directly to Extract. Before using **INTEGRATED TRANLOG**, use the **REGISTER EXTRACT** command.

BEGIN {NOW | *yyyy-mm-ddthh:mm:ssZ*}

Specifies a timestamp in the data source at which to begin processing.

- **NOW**

NOW specifies the time at which the **ADD EXTRACT** command is issued.

For Db2 LUW, only commit and end transaction records contain timestamps, so the Extract starting position can only be calculated relative to those timestamps. This is a limitation of the API that is used by Oracle GoldenGate. It must be noted that positioning by timestamp is not accurate and can also take a long time. It is recommended to use **LRI** or **EOF** options wherever possible.

- **yyyy-mm-ddthh:mm:ssZ**

A date and time (timestamp) in the given form. For example, 2017-07-14T14:54:45Z.

- **yyyy-mm-ddT[hh:mi:[ss[.cccc]]]Z**

A date and time (timestamp) in the given form. For an Oracle Extract in integrated mode, the timestamp value must be greater than the timestamp at which the Extract was registered with the database.

Positioning by timestamp in PostgreSQL includes the following scenarios:

- * Scenario 1

If `track_commit_timestamp` is off, the following output will be displayed when the Extract process starts irrespective of what positioning method is used:

```
2020-04-29T02:15:54Z
```

- * Scenario 2

If the `track_commit_timestamp` is enabled before Extract is registered then the correct timestamp will be displayed once the records are pushed in the source database as mentioned in the following example:

```
2020-04-29 02:19:07 INFO OGG-01515 Positioning to begin time Apr
29,2020 2:18:38 AM.
```

- * Scenario 3

If `track_commit_timestamp` is enabled after the Extract is registered, then there may be chances that the older records are available in the log for which the commit timestamp is not built up with the associated `transaction ID`. In that case, if Extract does not get the timestamp then it will fallback using the default timestamp mentioned in scenario 1. The output will be similar to the following:

```
020-04-29 01:55:07 INFO OGG-01517 Position of first record
processed LSN: 0/221D028, Jan 1, 1970 12:00:00 PM.
```

- * Past timestamp cannot be specified if the replication slot has moved away.

EXTRBA *archive-offset_number*

Valid for Db2 z/OS.

Specifies the relative byte address within a transaction log at which to begin capturing data. The required format is `0Xnnn`, where `nnn` is a 1 to 20 digit hexadecimal number (the first character is the digit zero, and the second character can be upper or lower case letter `x`).

EOF

Valid for Db2 for i, Db2 LUW, MySQL, PostgreSQL, and SQL Server.

Configures processing to start at the end of the log files (or journals) that the next record will be written to. Any active transactions will not be captured.

For Db2 LUW, it configures processing to start at the active `LRI` value in the log files. The active `LRI` is the position at the end of the log files that the next record will be written to. Any active transactions will not be captured.

For PostgreSQL, `DBLOGIN` is required for position by `EOF`.

For MySQL, it finds the position corresponding to the end of the file and starts reading transactions from there. The `EOF` position is not exact, if data is continuously written to the binary log.

LSN value

Valid for SQL Server, DB2 z/OS, and PostgreSQL.

Specifies the transaction `LSN` at which to start capturing data. An alias for this option is `EXTLSN`.

Positioning to an LSN is precise.

For PostgreSQL, `LSN` value can be `hi` or `lo`. Set the value as `hi` for the entry point of the log file. `lo` is the offset in the log file. The `LSN` position should lie between the replication slot restart position and write ahead log current location. If the position specified itself exists between the mentioned range then Extract will throw an error. (SQL Server) specifies the transaction `LSN` at which to start capturing data. An alias for this option is `EXTLSN`.

The specified `LSN` should exist as a valid `tran_begin_lsn` found in the `cdc.lsn_time_mapping` system table, otherwise the Extract will attempt to position after the `LSN` value provided.

Valid `LSN` specification consists of the following:

- Colon separated hex string (8:8:4) padded with leading zeroes and `0X` prefix, as in `0X00000d7e:0000036b:0001`
- Colon separated decimal string (10:10:5) padded with leading zeroes, as in `0000003454:0000000875:00001`
- Colon separated hex string with `0X` prefix and without leading zeroes, as in `0Xd7e:36b:1`
- Colon separated decimal string without leading zeroes, as in `3454:875:1`
- Decimal string, as in `3454000000087500001`

You can find the minimum LSN available by querying the following:

```
SELECT min([tran_begin_lsn]) FROM [cdc].[lsn_time_mapping] with
(noLOCK) where tran_id <> 0x00
```

Example:

```
ADD EXTRACT extn TRANLOG, LSN 0X00000d7e:0000036b:0001
```

LRI value

Valid for Db2 LUW. Specifies a start position in the transaction logs when Extract starts.

You can use the `LRI` option for Db2 LUW systems to specify the `LRI` at which extract can start capturing records from the transaction log. You can use the Db2 utility `db2logsForRfwd` to obtain the `LRI`. This utility provides `LRI` ranges present in the Db2 logs.

Note that, although Extract might position to a given `LRI`, that `LRI` might not necessarily be the first one that Extract will process. There are numerous record types in the log files that Extract ignores, such as Db2 internal log records. Extract will report the actual starting `LRI` to the Extract report file.

LOGNUM *lognum*

Valid for MySQL.

This is the log file number. `ADD EXTRACT` will fail if the `LOGNUM` value contains zeroes preceding the value. For example, `ADD EXTRACT ext1, TRANLOG, LOGNUM 000001, LOGPOS 0` will fail. Instead, set `LOGNUM` to 1 for this example to succeed.

LOGPOS *logpos*

This is an event offset value within the log file that identifies a specific transaction record. Event offset values are stored in the header section of a log record. To position at the beginning of a binlog file, set the `LOGPOS` as 0.

SEQNO *sequence_number*

Valid for Db2 for i. Starts capture at, or just after, a system sequence number, which is a decimal number up to 20 digits in length.

SCN *value*

Valid for Oracle.

Starts Extract at the transaction in the redo log that has the specified Oracle system change number (SCN). For Extract in integrated mode, the SCN value must be greater than the SCN at which the Extract was registered with the database. For more information, see [REGISTER EXTRACT](#).

PARAMS *file_name*

Specifies the full path name of an Extract parameter file in a location other than the default of `dirprm` within the Oracle GoldenGate directory.

REPORT *file_name*

Specifies the full path name of an Extract report file in a location other than the default of `dirrpt` within the Oracle GoldenGate directory.

DESC *'description'*

Specifies a description of the group, such as 'Extracts account_tab on Serv1'. Enclose the description within single quotes. You may use the abbreviated keyword `DESC` or the full word `DESCRIPTION`.

ENCRYPTIONPROFILE

Specifies the name of the Oracle GoldenGate encryption profile associated with the specific client.

CRITICAL

Indicates if the process is critical for the deployment.

PROFILE

Name of the auto start profile.

AUTOSTART

Specifies whether the managed process has to be started automatically when the Administration Service starts. The default value is `YES`.

RETRIES

The maximum number of tries for restarting the task before canceling retry efforts. This is optional.

WAITSECONDS

The duration (in seconds) in which the retries are counted.

RESETSECONDS

Resets the duration in which the retries are counted.

DISABLEONFAILURE

If set to `TRUE`, then the task is disabled when the number of retries is exhausted.

SOCKSPROXY {*host_name* | *IP_address*][:*port*] [**PROXYCSALIAS** *credential_store_alias* [**PROXYCSDOMAIN** *credential_store_domain*]

Use for an alias Extract. Specifies the DNS host name or IP address of the proxy server. You can use either one to define the host though you must use the IP address if your DNS server is unreachable. If you are using an IP address, use either an IPv6 or IPv4 mapped address, depending on the stack of the destination system. You must specify the **PROXYCSALIAS**. In addition, you can specify the port to use, and the credential store domain.

Examples

The following example creates an Extract group named `exte` that captures database changes from the transaction logs. Extraction starts with records generated at the time when the Extract group was created and started with `ADD EXTRACT`.

```
ADD EXTRACT extn, TRANLOG, BEGIN NOW
```

In the following example, from the Admin Client, an Extract group name `extw` is created to get the database changes from the transaction logs beginning from the specified time.

```
ADD EXTRACT extn, TRANLOG, BEGIN 2020-08-02T06:05:30.000Z
```

The following creates an integrated Extract group.

```
ADD EXTRACT extn, INTEGRATED TRANLOG, BEGIN NOW
```

The following creates an initial-load Extract named `extei`.

```
ADD EXTRACT extn, SOURCEISTABLE
```

The following creates an alias Extract group named `extw`. The alias Extract is associated with a passive Extract named `extw` on source system `sys`. The Manager on that system is using port 7800.

```
ADD EXTRACT extn, RMTHOST sys, MGRPORT 7800, RMTNAME extw
```

The following examples create and position Extract at a specific Oracle system change number (SCN) in the redo log.

```
ADD EXTRACT extn TRANLOG SCN 123456
```

```
ADD EXTRACT extn INTEGRATED TRANLOG SCN 123456
```

The following example creates an alias Extract specifying the host to use.

```
ADD EXTRACT extn DESC 'alias extract'  
RMTHOST server1.dcl.north.example.com  
MGRPORT 7813  
RMTNAME ppmp  
SOCKSPROXY server2.dcl.north.example.com PROXYCSALIAS ggnorthproxy
```

The following example creates an Extract on a Db2 LUW system.

```
ADD EXTRACT extn, TRANLOG LRI 8066.322711
```

The following example creates an Extract with the autostart option using Admin Client.

```
ADD EXTRACT extn, TRANLOG , BEGIN NOW , AUTOSTART yes
```

The output for this command shows:

```
2019-11-20T23:22:54Z  
INFO OGG-08100 EXTRACT added.
```

ADD EXTTRAIL

Use `ADD EXTTRAIL` to create a trail for online processing on the local system and:

- Associate it with an Extract group.
- Assign a maximum file size.

See `EXTTRAIL` in the *Reference for Oracle GoldenGate*

Syntax

```
ADD EXTTRAIL trail_name, EXTRACT group_name  
[, MEGABYTES n]  
[SEQNO n]
```

trail_name

(For Microservices Architecture) A two character (alpha-numeric) maximum trail name, with no path listed, and the first character must not be a number. For example: `ea`.

Oracle GoldenGate appends this name with a nine-digit sequence number whenever a new file is created. For example, a trail named `ea` would have trail files named `ea000000000`, `ea000000001`.

group_name

The name of the Extract group to which the trail is bound. A trail can only be assigned to one Extract. Multiple Extracts cannot write to the same trail. However, one Extract can write to multiple distinct trails if needed, but this is not normally required.

MEGABYTES n

Valid for Extract. The maximum size, in megabytes, of each trail file in the sequence. The default is 2000.

SEQNO n

Specifies that the first file in the trail will start with the specified trail sequence number. Do not include any zero padding. For example, to start at sequence 3 of a trail named `tr`, specify `SEQNO 3`. The actual file would be named `/ea000000003`. This option can be used during troubleshooting when Replicat needs to be repositioned to a certain trail sequence number. It eliminates the need to alter Replicat to read the required sequence number. The default value is 1.

Examples**Admin Client**

```
ADD EXTTRAIL north/ea, EXTRACT exte, MEGABYTES 200
```

The following command creates a trail name `ea` using the Admin Client:

```
ADD EXTTRAIL north/ea EXTRACT exte MEGABYTES 1500
```

The output is displayed as follows:

```
2019-11-20T23:49:19Z INFO OGG-08100 EXTTRAIL added.
```

ADD HEARTBEATABLE

Valid for Oracle, Db2 z/OS, Db2 LUW, Db2 for i, MySQL, PostgreSQL, SQL Server, Teradata and TimesTen.

This command requires a database login using `DBLOGIN`.

Use `ADD HEARTBEATABLE` to create the objects necessary to use the automatic heartbeat functionality. This command performs the following tasks

- Creates a heartbeat seed table, heartbeat table, and heartbeat history table.
- Creates the `GG_LAG` and `GG_LAG_HISTORY` views.
- Creates the `GG_UPDATE_HB_TAB` and `GG_PURGE_HB_TAB` procedures that are called by the scheduler jobs.
- Creates the scheduler jobs that periodically update the heartbeat and seed table, and purge the history table. However, it does not create these jobs for PostgreSQL, Teradata, and TimesTen.

- Populates the seed table.
- For Oracle multitenant databases:
 - The heartbeat objects and jobs are created in the user's schema that is connected to the database using the `DBLOGIN` command. Oracle GoldenGate Extract and Replicat look for the heartbeat objects in the `USERID` or `USERIDALIAS` schema. When making the connection using `DBLOGIN`, make sure that it is set to the appropriate `USERID` or `USERIDALIAS` schema that your Extract and Replicat processes will use.
 - Extract: Use the schema name in each PDB. Each PDB with which the Extract is registered should have its own heartbeat table. To instruct Extract which schema to find the heartbeat tables in, use the syntax `GGSCHEMA pdb.schemaname` within the `GLOBALS` file.
 - Replicat: Each Replicat must have its own heartbeat table for its PDB.
 - For bidirectional, active/active replication, the heartbeat table should be in the same schema for the outgoing Extracts and incoming Replicats at each site. For example, see the following use case:

Site A Site B

EAB -----> RAB

RBA -----> EBA

In this example, `EAB` and `RBA` heartbeat tables must use the same schema. However, `EAB` and `RAB` can use different schemas.

- Oracle GoldenGate for Oracle heartbeat table administration has been simplified by eliminating the need for `GGSCHEMA` (or `HEARTBEATTABLE` parameter) except for limited circumstances. Heartbeat table administration operations are only done in the schema of the `DBLOGIN` user. Except for Oracle CDB root Extract, the Extract and Replicat processes look in the schema of the ER connected user for heartbeat tables. The following table shows the Extract and Replicat behavior for Oracle database:

Extract/Replicat Processes	Behavior
Non-root Extract (non-CDB, and PDB)	If it is the first Extract user, then <code>GGSCHEMA</code> is used or in case of Autonomous Database (ADB), user must be <code>ggadmin</code> . If heartbeat is created after Extract starts, then look only in Extract user.
CDB Root Extract	<code>GGSCHEMA</code> is used.
Replicat	If it is the first Replicat user, then <code>GGSCHEMA</code> is used. For ADB, user must be <code>ggadmin</code> . If heartbeat is created after Replicat starts, then look only in the Replicat user.
<code>DELETE EXTRACT/REPLICAT</code>	If it is the first Extract or Replicat user, then <code>GGSCHEMA</code> is used. For ADB, user must be <code>ggadmin</code> .

This feature allows the usage of heartbeat tables in Oracle GoldenGate Hub deployments, where multiple databases are managed with differing Oracle GoldenGate administrator schemas.

 **Note:**

The heartbeat table objects should never be created in the root CDB of an Oracle Multitenant Database.

- For heterogeneous or non-Oracle databases, the heartbeat objects and jobs are created in the `GGSCHEMA` value listed in the `GLOBALS` file.

The default seed, heartbeat, and history table names are `GG_HEARTBEAT_SEED`, `GG_HEARTBEAT`, and `GG_HEARTBEAT_HISTORY` respectively.

- The default names can be overridden by specifying `HEARTBEATTABLE` `hbschename.hbtablename` in the `GLOBALS` file.
- The tables, procedures, and jobs are created in the schema, `hbschename`.
- The seed and history table are created by appending a `_SEED` and `_HISTORY` to the table, `hbtablename`.

For Db2 LUW, you must set the `DB2_ATS_ENABLE` property with the `db2set DB2_ATS_ENABLE=yes` command.

For Db2 for i, to handle upgrade or misconfiguration of heartbeat table functionality, you can run the `ADD HEARTBEATTABLE` command again, which will repair the functionality of an existing heartbeatable setup without deleting the existing heartbeat data.

For Db2 for i, the heartbeat table must be journaled to the same journal as the objects that are being replicated in the Extract using the said heartbeat table. If not, the Extract will abend indicating that more than one journal is available. In addition, any other Extract in the specific Oracle GoldenGate installation that is not reading the same journal cannot have the heartbeat table enabled for it.

For Amazon Aurora MySQL, the global variable `event_scheduler` must be enabled in the parameter group because Amazon RDS doesn't allow setting global variables. When the database is restarted, the `event_scheduler` returns to being disabled. To avoid this, you need to enable the `event_scheduler` in the `my.cnf/ini` file.

For PostgreSQL, a system job must manually be created to periodically call the heartbeat record update and history record purge function, `gg_hb_job_run`. For example, a cron job could be created that runs every minute. The function will check the actual heartbeat record update and purge frequency settings of the heartbeat configuration and only process operations within those boundaries:

```
PGPASSWORD="$passwd" psql -U gguser -d dbname -h dbhostname -p dbport#
-c "select <ggschema.gg_hb_job_run();" >/dev/null 2>&1
```

Admin Client Syntax

```
ADD HEARTBEATTABLE
[, FREQUENCY number_in_seconds]
[, RETENTION_TIME number_in_days] |
[, PURGE_FREQUENCY number_in_days]
```

[, PARTITIONED]
[, TARGETONLY]

FREQUENCY *number_in_seconds*

Specifies how frequently the heartbeat records are generated. The default is 60 seconds. Consider the following limits:

- For Oracle Database, the minimum value is 0 and the maximum is 7999.
- For Db2 for i Series, the minimum value is 0 and the maximum is 7999.
- For Db2 LUW and Db2 z/OS, the minimum value is 60 and the maximum is 7999.
- The frequency for Db2 /zOS and Db2 LUW must be a multiple of 60 for values less than 3600 and multiples for 3600 for values greater or equal to 3600.
- For MySQL, the minimum value is 0 and the maximum is 7999, with default being 60 seconds.
- For SQL Server, the minimum value is 10 and the maximum is 7999.
- For PostgreSQL, the minimum value is 60 and the maximum is 7999.
- Databases that support setting `FREQUENCY` to 0 will pause the heartbeat record scheduler.

RETENTION_TIME *number_in_days*

Specifies that heartbeat entries older than the retention time in the heartbeat history table are purged. The default is 30 days.

The minimum value for all databases is 1 and the maximum is 2147483646.

PURGE_FREQUENCY *number_in_days*

Specifies how often the purge scheduler is run to delete table entries that are older than the retention time from the heartbeat history table. The default is 1 day.

For Db2 LUW and Db2 z/OS, the minimum value is 1 and the maximum is 31.

For all other supported databases, the minimum value is 1 and the maximum value is 199.

PARTITIONED

Valid for Oracle.

Enables partitioning on the heartbeat history table. The column for the heartbeat time stamp received is used to partition the table with an interval of one day. By default the heartbeat history table is not partitioned.

TARGETONLY

Valid for Oracle Database, Db2 i Series, Db2 LUW, Db2 z/OS, MySQL, PostgreSQL, and SQL Server.

Does not enable supplemental logging on both the heartbeat seed and heartbeat tables and it does not create a scheduler job for updating the heartbeat table.

Examples

The following command creates default heartbeat tables, procedures and jobs.

```
ADD HEARTBEATABLE
```

The following command creates the heartbeat tables, procedures and jobs with custom frequency, retention time, and purge frequency.

```
ADD HEARTBEATTABLE, FREQUENCY 120, RETENTION_TIME 10, PURGE_FREQUENCY 2
```

The following command creates the heartbeat tables, procedures and jobs with partitioning enabled in the heartbeat history table, and supplemental logging is not enabled in the heartbeat and heartbeat seed tables.

```
ADD HEARTBEATTABLE, partitioned, TARGETONLY
```

ADD MASTERKEY

Use the `ADD MASTERKEY` command to add a master key to a master-key wallet. The master key is used by Extract and Replicat to encrypt the encryption keys that secure data being sent across the network and in the trail files, so that those keys can be sent to, and used, by downstream processes. The master key omits the need to use wallet storage for the keys that actually encrypt the data.

The master-key wallet must be open to add a key.

The master key is generated as a random sequence of bits. The length is 256 bits by default. The key name is `OGG_DEFAULT_MASTERKEY`.

After adding a master key to a wallet that is not maintained centrally on shared storage, the updated wallet must be copied to all of the other systems in the Oracle GoldenGate configuration that use this wallet. Before doing so, Extract must be stopped and then all of the downstream Oracle GoldenGate processes must be allowed to finish processing their trails and then be stopped. After the wallet is copied into place, the processes can be started again. For detailed instructions, see [Encrypting Data with the Master Key and Wallet Method](#).

Syntax

```
ADD MASTERKEY
```

Example

```
ADD MASTERKEY
2019-11-21T19:37:23Z ERROR   OGG-06137 Master key
'OGG_DEFAULT_MASTERKEY' does not exist in Oracle Wallet.
2019-11-21T19:37:23Z INFO    OGG-06142 Created version 1 of master
key 'OGG_DEFAULT_MASTERKEY' in Oracle Wallet.
```

ADD PROFILE

This command is used to create a profile for managed Extract and Replicat processes from the Admin Client.

For Distribution and Receiver path processes, you need to use the `AUTOSTART` and `AUTORESTART` options available with the [ALTER DISTPATH](#) and [ALTER RECVPATH](#) commands.

Syntax:

```
ADD PROFILE profile-name
      [ AUTOSTART          [ YES | NO ]
      [ DELAY              delay-number ]
      [ AUTORESTART       [ YES | NO ]
      [ RETRIES            retries-number]
      [ WAITSECONDS        wait-number]
      [ RESETSECONDS       reset-number]
      [ DISABLEONFAILURE [ YES | NO ] ]
```

profile-name

Name of the profile for the specific managed process.

AUTOSTART

Specifies whether the managed process has to be started automatically when the Administration Service starts. The default value is YES.

DELAY

Set the *delay-number* to configure the delay time to automatically start the managed process.

AUTORESTART

Specifies whether the managed process has to be restarted if it stops or abends. The default value is YES.

RETRIES

Specifies the number of retries for attempting to automatically restart the managed process.

WAITSECONDS

Specifies the time to wait before attempting another retry to restart.

RESETSECONDS

Used to reset the time for the retries.

DISABLEONFAILURE

Specifies if the managed process has to be disabled if it fails to restart. The default value is NO.

Example:

```
ADD PROFILE Critical AUTOSTART AUTORESTART RETRIES 1 WAITSECONDS 0
RESETSECONDS 0 DISABLEONFAILURE NO
```

Command succeeded with no output.

ADD PROCEDURETRANDATA

Valid for Oracle.

Use ADD PROCEDURETRANDATA to add supplemental logging for Procedural Replication.

group_name

The name of the Replicat group. If you don't specify any option, then it creates a classic Replicat. The name of a coordinated and parallel Replicat group can contain a maximum of five characters. The name of a regular Replicat group can contain up to eight characters, see [Choosing Names for Processes and Files](#).

INTEGRATED

(Oracle) Creates the Replicat in integrated mode. Without this option, `ADD REPLICAT` creates the Replicat in non-integrated (classic) mode. This option works for parallel Replicat too. In this mode, the Replicat process leverages the apply processing functionality that is available within the Oracle Database. In this mode, Replicat operates as follows:

- Reads the Oracle GoldenGate trail.
- Performs data filtering, mapping, and conversion.
- Constructs logical change records (LCR) that represent source database DML or DDL transactions (in committed order).
- Attaches to a background process in the target database known as a database inbound server by means of a lightweight streaming interface.
- Transmits the LCRs to the inbound server, which applies the data to the target database.
- A Replicat in integrated mode (either normal integrated or parallel integrated) must be used if any of the following features are used:
 - Automatic conflict detection and resolution
 - Procedural replication
 - DML or DDL Handlers

Do not use `INTEGRATED` with the `SPECIALRUN` or `EXTFILE` options. `INTEGRATED` must be used for an online change-synchronization Replicat that reads from a local `EXTTRAIL`-specified trail.

Both integrated Replicat and parallel Replicat in integrated mode maintain the checkpoint table if it exists. Also see [ADD CHECKPOINTTABLE](#).

`TRACETABLE` is not maintained by integrated Replicat or parallel Replicat in integrated mode. When in integrated mode, Replicat does not support the following parameters:

- `BULKLOAD` (Do not use integrated Replicat as an initial-load Replicat.)
- `SPECIALRUN`
- `GENLOADFILES`
- `SHOWSYNTAX`
- `MAXTRANSOPS` (is ignored)

PARALLEL

Valid for Oracle, SQL Server, MySQL, Db2, TimesTen, PostgreSQL, and Teradata. Adds the Replicat in parallel mode. In this mode, Replicat applies transactions in parallel to improve the performance. It takes into account dependencies between transactions.

`PARALLEL INTEGRATED` Replicat is valid for Oracle only. It adds the parallel Replicat in integrated mode, which like Integrated Replicat leverages the apply processing functionality that is available within the Oracle Database.

COORDINATED [**MAXTHREADS** *number*]

Creates the Replicat in coordinated mode. A coordinated Replicat is multithreaded to enable parallel processing. This option adds the coordinator (identified by the group name) and the maximum number of processing threads that are specified by default or with **MAXTHREADS**. Dependencies are computed and coordinated by the coordinator, and the SQL processing is performed by the threads.

To create a **COORDINATED** Replicat, a checkpoint table is required.

Do not use **COORDINATED** with the **SPECIALRUN** or **EXTFILE** options. **COORDINATED** must be used for an online change-synchronization Replicat that reads from a local **EXTTRAIL**-specified trail.

 **Note:**

The group name of a coordinated Replicat can contain only five characters.

MAXTHREADS *number*

Specifies the maximum number of processing threads that this Replicat group can spawn. These threads are all created on startup, but depending on what is specified in the **MAP** statements in the parameter file, some or all of these threads will process the workload at any given time. As a general rule, specify twice the number of threads that you specify in the **MAP** statements when you partition the workload. This allows you to add threads in the event that the workload increases, without having to drop and recreate the Replicat group, see **TABLE | MAP** for more information about how to partition the workload across threads.

The default number of threads is 25 if **MAXTHREADS** is omitted. The maximum number of threads is 500.

MAXTHREADS has a relationship to the **MAXGROUPS** parameter. **MAXGROUPS** controls the maximum number of process groups (Extract and Replicat) allowed per instance of Oracle GoldenGate. Each Replicat thread is considered a Replicat group in the context of **MAXGROUPS**. Therefore, the number of Extract and Replicat groups in the Oracle GoldenGate instance, plus the value of **MAXTHREADS**, cannot exceed the value of **MAXGROUPS**, see **MAXGROUPS**

SPECIALRUN

Creates a Replicat special run as a task. Either **SPECIALRUN**, **EXTFILE**, or **EXTTRAIL** is required. When Extract is in **SPECIALRUN** mode, do not start Replicat with the **START REPLICAT** command. Do not use this option with the **INTEGRATED** or **COORDINATED** option.

EXTFILE *file_name*

Specifies the relative or fully qualified name of an extract file that is specified with **RMTFILE** in the Extract parameter file. Do not use this option with the **INTEGRATED** option.

EXTTRAIL *trail_name*

Specifies the relative or fully qualified name of a trail that was created with the **ADD RMTTRAIL** or **ADD EXTTRAIL** command.

BEGIN {**NOW** | **yyyy-mm-ddT[hh:mm[:ss[.cccc]]Z**}

Defines an initial checkpoint in the trail.

NOW

Begins replicating changes from the time when the group is created.

yyyy-mm-ddT [hh:mm[:ss[.cccccc]]]Z

Begins extracting changes from a specific time.

EXTREBA *extrba*

Valid for Db2 z/OS.

Specifies the relative byte address within the trail file that is specified by `EXTSEQNO`. Contact Oracle Support before using this option.

CHECKPOINTTABLE *owner.table*

Not valid for Oracle GoldenGate Applications Adapter or Oracle GoldenGate Big Data.

Oracle strongly recommends using a checkpoint table. Parallel and coordinated Replicat in integrated and non-integrated mode require a checkpoint table.

Specifies that this Replicat group will write checkpoints to the specified table in the database. Include the owner and table name, as in `ggadmin.ggs_checkpoint`. This argument overrides any default `CHECKPOINTTABLE` specification in the `GLOBALS` file. The table must first be added with the `ADD CHECKPOINTTABLE` command.

When `NODBCHECKPOINT` is specified, this Replicat group will not write checkpoints to a checkpoint table. This argument overrides any default `CHECKPOINTTABLE` specification in the `GLOBALS` file. This argument is required if you do not want to use a checkpoint table with the Replicat group that is being created.

REPORT *file_name*

Specifies the full path name of a process report file in a location other than the default of `dirrpt` within the Oracle GoldenGate directory.

DESC '*description*'

Specifies a description of the group, such as `'Loads account_tab on Serv2'`. Enclose the description within quotes. You can use either the abbreviated keyword `DESC` or the full word `DESCRIPTION`.

ENCRYPTIONPROFILE

Specifies the name of the encryption profile for the Replicat.

Examples: Admin Client

The following example adds an integrated Replicat named `repe`. The output is displayed using the `INFO` command.

```
ADD REPLICAT repe, INTEGRATED, EXTTRAIL ea
```

The output shows as:

```
2019-11-21T20:01:10Z INFO OGG-08100 REPLICAT (Integrated) added.
```

Here's an example of adding a parallel Replicat named `reps`.

```
ADD REPLICAT repe, INTEGRATED, PARALLEL, EXTTRAIL ea, checkpointtable  
ggadmin.ggs_checkpoint
```

The output shows:

```
2019-11-21T20:07:26Z INFO OGG-08100 REPLICAT (Parallel) added.
```

ADD RECVPATH

Use `ADD RECVPATH` to create a target-initiated distribution path in the Receiver Service.

Syntax

```
ADD RECVPATH path-name source-uri target-uri  
[ENCRYPTIONPROFILE encryption-profile-name ]
```

path-name

The unique name of the distribution path you want to add.

source-uri

Specifies the source URI after the source keyword to indicate the location from where the data has originated. The format of this URI contains the protocol (only supports web socket `ws` protocol and secure web socket `wss` protocol), hostname, port number of the Distribution Service, and the location of the source trail files.

target-uri

Specifies the target URI after the target keyword to indicate the destination where the data will be sent to. The format of this URI contains the protocol (only supports trail), hostname, port number of Receiver Service, and location of the target trail files.

ENCRYPTIONPROFILE

This is the name (string) of the encryption profile for the Receiver path.

Examples

```
ADD RECVPATH rpe SOURCE ws://user:passwd@localhost:9002/services/v2/  
sources?trail=ea TARGET  
trail://localhost:9003/services/v2/targets?trail=da
```

ADD RMTTRAIL

Use `ADD RMTTRAIL` to create a trail for online processing by a Replicat on a remote, target system. The command:

- Assigns a maximum file size.
- Associates the trail with an Extract group.
- Uses remote trails in a Pump Extract.

Syntax

```
ADD RMTTRAIL trail_name, EXTRACT group_name  
[, FORMAT RELEASE major.minor]
```

```
[, MEGABYTES n]  
[, SEQNO n]
```

trail_name

For Microservices Architecture, a two character (alpha-numeric) maximum trail name, with no path listed, and the first character must not be a number. For example `ea`. Oracle GoldenGate appends this name with a nine-digit sequence number whenever a new file is created. For example, a trail named `ea` would have trail files named `ea000000000`, `ea000000001`.

group_name

The name of the Extract group to which the trail is bound. A remote trail can only be assigned to one Extract. Multiple Extracts cannot write to the same trail. However, one Extract can write to multiple distinct remote trails.

MEGABYTES *n*

The maximum size, in megabytes, of a file in the trail. The default is 500, however, the value can be between 1 MB and 2000 MB (maximum).

SEQNO *n*

Specifies that the first file in the trail will start with the specified trail sequence number. Do not include any zero padding. For example, to start at sequence 3 of a trail named `ea`, specify `SEQNO 3`. The actual file would be named `ea000000003`. This option can be used during troubleshooting when Replicat needs to be repositioned to a certain trail sequence number. It eliminates the need to alter Replicat to read the required sequence number.

Example**Admin Client**

```
ADD RMTTRAIL north/ea, EXTRACT exte, MEGABYTES 200
```

ADD SCHEMATRANDATA

Valid for Oracle.

Use `ADD SCHEMATRANDATA` to enable schema-level supplemental logging for a table. `ADD SCHEMATRANDATA` acts on all of the current and future tables in a given schema to automatically log a superset of available keys that Oracle GoldenGate needs for row identification.

To perform `ADD SCHEMATRANDATA` against a schema in the PDB of a multitenant database, you need to login to PDB to issue the command.

`ADD SCHEMATRANDATA` is valid for Extract and does the following:

- Enables Oracle supplemental logging for new tables created with a `CREATE TABLE`.
- Updates supplemental logging for tables affected by an `ALTER TABLE` to add or drop columns.
- Updates supplemental logging for tables that are renamed.
- Updates supplemental logging for tables for which unique or primary keys are added or dropped.

- Enables a table for auto-capture. The command add schema-level PK, UI, FK, ALLKEYS supplemental logging data.

By default, `ADD SCHEMATRANDATA` logs the key columns of a table in the following order of priority:

1. Primary key
2. In the absence of a primary key, all of the unique keys of the table, including those that are disabled, unusable or invisible. Unique keys that contain ADT member columns are also logged. Only unique keys on virtual columns (function-based indexes) are not logged.
3. If none of the preceding exists, all scalar columns of the table are logged. (System-generated row-OIDs are always logged.)

`ADD SCHEMATRANDATA` also supports the conditional or unconditional logging requirements for using integrated Replicat.

Use `ADD SCHEMATRANDATA` in the following cases:

- For all tables that are part of an Extract group that is to be configured for integrated capture. `ADD SCHEMATRANDATA` ensures that the correct key is logged by logging all of the keys.
- For all source tables that will be processed in an integrated Replicat group. Options are provided that enable the logging of the primary, unique, and foreign keys to support the computation of dependencies among relational tables being processed through different apply servers.
- When DDL replication is active and DML is concurrent with DDL that creates new tables or alters key columns. It best handles scenarios where DML can be applied to objects very shortly after DDL is issued on them. `ADD SCHEMATRANDATA` causes the appropriate key values to be logged in the redo log atomically with each DDL operation, thus ensuring metadata continuity for the DML when it is captured from the log, despite any lag in Extract processing.

Database-level Logging Requirements for Using `ADD SCHEMATRANDATA`

Oracle strongly encourages putting the source database into forced logging mode and enabling minimal supplemental logging at the database level when using Oracle GoldenGate. This adds row chaining information, if any exists, to the redo log for update operations.

Additional Considerations for Using `ADD SCHEMATRANDATA`

- Before using `ADD SCHEMATRANDATA`, issue the `DBLOGIN` command. The user who issues the command must be granted the Oracle Streams administrator privilege.

```
EXEC DBMS_STREAMS_AUTH.GRANT_ADMIN_PRIVILEGE ('GGADMIN')
```

- `ADD SCHEMATRANDATA` can be used instead of the `ADD TRANDATA` command when DDL replication is not enabled. Note, however, that if a table has no primary key but has multiple unique keys, `ADD SCHEMATRANDATA` causes the database to log all of the unique keys. In such cases, `ADD SCHEMATRANDATA` causes the database to log more redo data than does `ADD TRANDATA`. To avoid the extra logging, designate one of the unique keys as a primary key, if possible.

- For tables with a primary key, with a single unique key, or without a key, `ADD SCHEMATRANDATA` adds no additional logging overhead, as compared to `ADD TRANDATA`.
- If adding `SCHEMATRANDATA` on a schema in a PDB, you need to be logged into that PDB in `DBLOGIN`. For example, for `PDBEAST` and schema `HR`, use the following command:

```
ADD SCHEMATRANDATA pdbeast.hr
```
- If you must log additional, non-key columns of a specific table (or tables) for use by Oracle GoldenGate, such as those needed for `FILTER` statements and `KEYCOLS` clauses in the `TABLE` and `MAP` parameters, issue an `ADD TRANDATA` command for those columns. That command has a `COLS` option to issue table-level supplemental logging for the columns, and it can be used in conjunction with `ADD SCHEMATRANDATA`.

Admin Client Syntax

```
ADD SCHEMATRANDATA schema
{
  [ALLOWNONVALIDATEDKEYS]
  [NOSCHEDULINGCOLS | ALLCOLS]}
[NOVALIDATE]
[PARTIALJSON]
[PREPARECSN {WAIT | LOCK | NOWAIT | NONE}]
```

schema

The schema for which you want the supplementary key information to be logged. Do not use a wildcard. To issue `ADD SCHEMATRANDATA` for schemas in more than one pluggable database of a multitenant container database, log in to each pluggable database separately with `DBLOGIN` and then issue `ADD SCHEMATRANDATA`. From the root container, you may add `schematrandata` with the container prefix `ADD SCHEMATRANDATA [pdb_name].schema`. If you run the command from `cdb$root`, make sure that you also set the following user privilege on the database side:

```
ALTER USER userID SET CONTAINER_DATA = ALL CONTAINER = CURRENT;
```

ALLOWNONVALIDATEDKEYS

It includes `NON VALIDATED` and `NOT VALID` primary keys in the supplemental logging. These keys override the normal key selection criteria that is used by Oracle GoldenGate. If the `GLOBALS` parameter `ALLOWNONVALIDATEDKEYS` is being used, `ADD SCHEMATRANDATA` runs with `ALLOWNONVALIDATEDKEYS` whether or not it is specified. By default `NON VALIDATED` and `NOT VALID` primary keys are not logged, see the `GLOBALS ALLOWNONVALIDATEDKEYS` parameter.

NOSCHEDULINGCOLS | ALLCOLS

These options control supplemental logging for an Oracle target database. You can use these options together though the latter option is used. For example, with the `ADD SCHEMATRANDATA oggadm_ext ALLCOL NOSCHEDULINGCOLS` command the `NOSCHEDULINGCOLS` option would be used.

NOSCHEDULINGCOLS

Disables the logging of scheduling columns. By default, `ADD SCHEMATRANDATA` enables the unconditional logging of the primary key and the conditional supplemental logging of all unique keys and foreign keys of all current and future tables in the given schema. Unconditional logging forces the primary key values to the log whether or not the key

was changed in the current operation. Conditional logging logs all of the column values of a foreign or unique key if at least one of them was changed in the current operation. The integrated Replicat primary key, unique keys, and foreign keys must all be available to the inbound server to compute dependencies. If you are enabling `auto_capture`, then do not use this option. This will allow tables in this schema to be auto captured unless the table is explicitly excluded/ disabled for replication (such as through `TABLEEXCLUDE`, `DELETE TRANDATA`, or `ALTER TABLE DISABLE LOGICAL REPLICATION DDL`).

ALLCOLS

Enables the unconditional supplemental logging of all supported key and non-key columns for all current and future tables in the given schema. This option enables the logging of the keys required to compute dependencies, plus columns that are required for filtering, conflict resolution, or other purposes. Columns like LOB, LONG, and ADT are not included.

NOVALIDATE

Valid for all databases supported by `ADD SCHEMATRANDATA`.

Suppresses additional information about the table being handled being processed by `ADD SCHEMATRANDATA`. By default, this option is enabled. The additional information processing creates a lapse time on command response so this option can be used to increase response time.

PARTIALJSON

Valid for Oracle.

Fetches partial JSON updates at schema level. If enabled, the redo will include partial JSON records.

Also see, `TRANLOGOPTIONS FETCHPARTIALJSON` parameter.

PREPARECSN {WAIT | LOCK | NOWAIT | NONE}

Valid for Oracle for both DML and DDL.

Automatically prepares the tables at the source so the Oracle data pump Export dump file will include Instantiation CSNs. Replicat uses the per table instantiation CSN set by the Oracle data pump (on import) to filter out trail records. On the target, the data pump import populates the system tables and views with instantiation SCNs using the `DBOPTIONS ENABLE_INSTANTIATION_FILTERING` parameter to enable table-level instantiation filtering.

WAIT

Wait for any in-flight transactions and prepare table instantiation.

LOCK

Put a lock on the table (to prepare for table instantiation).

NOWAIT

Default behavior, preparing for instantiation is done immediately.

NONE

No instantiation preparation occurs.

Example

The following enables supplemental logging for the schema `hr`.

```
ADD SCHEMATRANDATA hr
```

The following example logs all supported key and non-key columns for all current and future tables in the schema named `hr`.

```
ADD SCHEMATRANDATA hr ALLCOLS
```

The following example suppress additional table information processing.

```
ADD SCHEMATRANDATA hr NOVALIDATE
```

ADD TRACETABLE

Use `ADD TRACETABLE` to create a trace table in the Oracle Database. The trace table must reside in the schema of the Oracle GoldenGate Extract user, as configured with the `USERID` or `USERIDALIAS` parameter. The trace table prevents Replicat transactions from being extracted again in a bidirectional synchronization configuration.

Use the `DBLOGIN` command to establish a database connection before using this command.

Table 2-1 Description of trace table

Name	Null?	Type	Description
GROUP_ID	NOT NULL	VARCHAR2 (8)	The name of the Replicat group or special run process.
DB_USER		VARCHAR2 (30)	The user ID of the Replicat group or special run process.
LAST_UPDATE		DATE	The timestamp of the transaction.

Syntax

```
ADD TRACETABLE [[container.]owner.table]
```

container

The pluggable database, if the database is a multitenant container database (CDB).

owner.table

Optional, use only to specify a trace table with a name that is different from the default of `GGS_TRACE`. The owner must be the same owner that is specified with the `USERID` or `USERIDALIAS` parameter in the Extract parameter file.

To use the default name, omit this argument. Whenever possible, use the default table name. When using a trace table name other than the default of `GGS_TRACE`, specify it with the `TRACETABLE` parameter in the Extract and Replicat parameter files. Record the name,

because you will need it for the parameter files and to view statistics or delete the table, see `TRACETABLE | NOTRACETABLE`.

Examples

The following adds a trace table with the default name of `GGS_TRACE`.

```
ADD TRACETABLE
```

The following adds a trace table with a user-defined name of `ora_trace`.

```
ADD TRACETABLE ora_trace
```

ADD TRANDATA

Use `ADD TRANDATA` to enable Oracle GoldenGate to acquire the transaction information that it needs from the transaction records.

Before using this command, use the `DBLOGIN` command to establish a database connection.

`ADD TRANDATA` is valid for the databases that are listed here:

- Db2 for i
- Db2 LUW
- Db2 z/OS
- Oracle
- PostgreSQL
- SQL Server

For other supported databases, this functionality may exist already or must be configured through the database interface. See *Installing Oracle GoldenGate* for any special requirements that apply to making transaction information available.

Db2 for i

Use `ADD TRANDATA` to start the journaling of data. The `ADD TRANDATA` command calls `STRJRNPF` and is the recommended method to start journaling for tables, because it ensures that the required journal image attribute of Record Images (IMAGES): `*BOTH` is set on the `STRJRNPF` command.

Db2 LUW

Use `ADD TRANDATA` to enable `DATA CAPTURE CHANGES` on specified tables. By default, `ADD TRANDATA` issues the following command to the database:

```
ALTER TABLE name DATA CAPTURE CHANGES INCLUDE LONGVAR COLUMNS;
```

You can exclude the `LONGVAR` clause by using `ADD TRANDATA` with the `EXCLUDELONG` option.

Db2 z/OS

Use `ADD TRANDATA` to enable `DATA CAPTURE CHANGES` on specified tables. By default, `ADD TRANDATA` issues the following command to the database:

```
ALTER TABLE name DATA CAPTURE CHANGES;
```

Oracle Database

From the 21c release onward, this command would also enable a table for auto capture for Oracle database.

By default, `ADD TRANDATA` for Oracle enables the unconditional logging of the primary key and the conditional supplemental logging of all unique key(s) and foreign key(s) of the specified table, see *Ensuring Row Uniqueness in Source and Target Tables* for more information about how Oracle GoldenGate handles supplemental logging for Oracle Databases.

If possible, use the `ADD SCHEMATRANDATA` command rather than the `ADD TRANDATA` command. The `ADD SCHEMATRANDATA` command ensures replication continuity should DML occur on an object for which DDL has just been performed. You can exclude objects from the schema specification by using the exclusion parameters.

To use the Oracle GoldenGate DDL replication feature, you must use the `ADD SCHEMATRANDATA` command to log the required supplemental data.

When using `ADD SCHEMATRANDATA`, you can use `ADD TRANDATA` with the `COLS` option to log any non-key columns, such as those needed for `FILTER` statements and `KEYCOLS` clauses in the `TABLE` and `MAP` parameters.

Note:

It is possible to use `ADD TRANDATA` for Oracle when DDL support is enabled, but only if you can stop DML on all tables before DDL is performed on them or, if that is not possible, you can guarantee that no users or applications will issue DDL that adds new tables whose names satisfy an object specification in a `TABLE` or `MAP` statement. There must be no possibility that users or applications will issue DDL that changes the key definitions of any tables that are already in the Oracle GoldenGate configuration.

Oracle recommends putting the source database into forced logging mode and enabling minimal supplemental logging at the database level when using Oracle GoldenGate. This adds row chaining information, if any exists, to the redo log for update operations

Take the following into account when using `ADD TRANDATA` for an Oracle database:

- If any of the logging details change after Oracle GoldenGate starts extracting data, you must stop and then start the Extract process that is reading from the affected table before any data is changed.
- When creating a supplemental log group with `ADD TRANDATA`, Oracle GoldenGate appends the object ID to a prefix of `GGS_`, for example `GGS_18342`.

PostgreSQL

Using `ADD TRANDATA` command, the `REPLICA IDENTITY` setting of the table is altered. The `REPLICA IDENTITY` setting controls before images of columns of a table that should be logged to the transaction log for `UPDATE` and `DELETE` operations.

SQL Server

Use `ADD TRANDATA` to provide the extended logging information that Oracle GoldenGate needs to reconstruct SQL operations. The SQL Server transaction log does not provide enough information by default.

By enabling `TRANDATA`, Oracle GoldenGate enables the SQL Server Change Data Capture feature for the database and creates a Change Data Capture table for each instance enabled with `TRANDATA`.

Admin Client Syntax

```
ADD TRANDATA container.owner.table
[, FILEGROUP filegroup-name]
[, NOSCHEDULINGCOLS | ALLCOLS]
[, ALLOWNONVALIDATEKEYS]
[, PARTIALJSON]
[, PREPARECSN {WAIT | LOCK | NOWAIT | NONE}]
```

[container.]owner.table

Valid for Db2 LUW, Db2 z/OS, Oracle, PostgreSQL, and SQL Server.

The two-part or three-part name specification. Use a two-part name of *owner.table* for all supported databases except an Oracle multitenant container database.

Use a three-part name of *container.owner.table* for an Oracle multitenant container database. A wildcard can be used for any component. Used with a wildcard, `ADD TRANDATA` filters out names that match the names of system objects. To use `ADD TRANDATA` for objects that are not system objects but have names that match those of system objects in a wildcard pattern, issue `ADD TRANDATA` for those objects without using a wildcard.

If you run the command from `cdb$root`, make sure that you also set the following user privilege on the database side:

```
ALTER USER userID SET CONTAINER_DATA = ALL CONTAINER = CURRENT;
```

```
schema.table [JOURNAL library/journal] |
library/file [JOURNAL library/journal]
```

Valid for Db2 for i.

Specifies the SQL schema and name of a table or the native library and file name. If a default journal is set with the `DEFAULTJOURNAL` command, you can omit the `JOURNAL` option; otherwise it is required.

FILEGROUP *filegroup-name*

Valid for SQL Server.

(Optional) You can designate the filegroup in which the SQL Server Change Data Capture staging tables will be placed, by using the `FILEGROUP` option with an existing filegroup name.

```
ADD TRANDATA owner.table FILEGROUP cdctables
```

You can use the `FILEGROUP` option in the `GLOBALS` file also if you need to use the same `FILEGROUP` for each table when enabling `TRANDATA`.

The following example shows setting the `FILEGROUP myFileGroup` in `GLOBALS` file:

```
FILEGROUP myFileGroup
```

The output is:

```
Logging of supplemental log data is enabled for table dbo.test1 in filegroup myFileGroup
```

In this case, `ADD TRANDATA` command uses the `myFileGroup` for all the tables.

If you also use the `FILEGROUP` parameter with `ADD TRANDATA`, the command overrides the filegroup name defined in the `GLOBALS` file.

For example, if you set `FILEGROUP myFileGroup` in the `GLOBALS` file and then execute the following `ADD TRANDATA` command:

```
ADD TRANDATA dbo.* FILEGROUP yourFileGroup
```

Then the output is:

```
Logging of supplemental log data is enabled for table dbo.test1 in filegroup yourFileGroup
```

In this case, `ADD TRANDATA` uses the `yourFileGroup` instead of `myFileGroup` for all the tables.

If you don't specify the `FILEGROUP` either in `GLOBALS` or with `ADD TRANDATA`, then the command line considers the default `FILEGROUP` of the database while adding `TRANDATA` of the table. For example, if you run `ADD TRANDATA dbo.*`, the output is:

```
Logging of supplemental log data is enabled for table dbo.test1 in filegroup PRIMARY
```

In this case, the default `FILEGROUP` is `Primary`. If you run the `INFO TRANDATA` command, the `FILEGROUP` name shows as `PRIMARY`.

NOSCHEDULINGCOLS | ALLCOLS

Valid for Oracle and PostgreSQL.

From Oracle GoldenGate 21c onward, `NOSCHEDULINGCOLS` is deprecated for Oracle database 21c and higher if the running database supports auto capture capabilities.

These options satisfy the logging requirements of an integrated Replicat that will be processing the tables that you are specifying with `ADD TRANDATA`.

NOSCHEDULINGCOLS

Valid for Oracle only.

Disables the logging of scheduling columns. By default, `ADD TRANDATA` enables the unconditional logging of the primary key and the conditional supplemental logging of all unique keys and foreign keys of the specified table. Unconditional logging forces the primary key values to the log whether or not the key was changed in the current operation. Conditional logging logs all of the column values of a foreign or unique key if at least one of them was changed in the current operation. The primary key, unique keys, and foreign keys must all be available to the inbound server to compute dependencies.

ALLCOLS

Enables the unconditional supplemental logging of all of the key and non-key columns of the table. This option enables the logging of the keys required to compute dependencies, plus all other columns for use in filtering, conflict resolution, or other purposes.

For PostgreSQL, `ALLCOLS` sets `REPLICA IDENTITY` for the table to `FULL`. `ALLCOLS` is specified as part of the `ADD TRANDATA` command, to enable logging of all the columns for `UPDATE` and `DELETE` operations, even if those columns have not been modified.

For tables without a Primary Key or Unique Index, the `ALLCOLS` option is redundant. Here's the syntax:

```
ADD TRANDATA table_name ALLCOLS
```

COLS (columns)

Valid for Oracle.

Use the `COLS` option to log specific non-key columns. Can be used to log columns specified in a `KEYCOLS` clause and to log columns that will be needed for filtering or manipulation purposes, which might be more efficient than fetching those values with a `FETCHCOLS` clause in a `TABLE` statement. Separate multiple columns with commas, for example `NAME, ID, DOB`.

INCLUDELONG | EXCLUDELONG

Valid for Db2 LUW.

Controls whether or not the `ALTER TABLE` issued by `ADD TRANDATA` includes the `INCLUDE LONGVAR COLUMNS` attribute. `INCLUDELONG` is the default. When `ADD TRANDATA` is issued with this option, Oracle GoldenGate issues the following statement:

```
ALTER TABLE name DATA CAPTURE CHANGES INCLUDE LONGVAR COLUMNS;
```

When `EXCLUDELONG` is used, the following is the command:

```
ALTER TABLE name DATA CAPTURE CHANGES;
```

When `EXCLUDELONG` is used, Oracle GoldenGate does not support functionality that requires before images of tables that include `LONGVAR` columns. For example, the `GETUPDATEBEFORES` parameter. To support this functionality, changes to `LONGVAR` columns in the transaction logs must include both the before and after images of the column value.

NOKEY

Valid for Db2 for i, Db2 LUW, Db2 z/OS, Oracle.

From Oracle GoldenGate 21c onward, `NOKEY` is deprecated for Oracle database 21c and higher if the running database supports auto capture capabilities. Suppresses the supplemental logging of primary key columns. If using `NOKEY`, use the `COLS` option to log alternate columns that can serve as keys, and designate those columns as substitute keys by using the `KEYCOLS` option of the `TABLE` or `MAP` parameter.

NOVALIDATE

Valid for Db2 for i, Db2 LUW, Db2 z/OS, Oracle.

Suppresses additional information about the table being handled being processed by `ADD TRANDATA`. By default, this option is enabled. The additional information processing creates a lapse time on command response so this option can be used to increase response time.

ALLOWNONVALIDATEDKEYS

Valid for Db2 for i, Db2 LUW, Db2 z/OS, Oracle.

It includes `NON VALIDATED` and `NOT VALID` primary keys in the supplemental logging. These keys override the normal key selection criteria that is used by Oracle GoldenGate. If the `GLOBALS` parameter `ALLOWNONVALIDATEDKEYS` is being used, `ADD SCHEMATRANDATA` runs with `ALLOWNONVALIDATEDKEYS` whether or not it is specified. By default, `NON VALIDATED` and `NOT VALID` primary keys are not logged.

PARTIALJSON

Valid for Oracle.

Fetches partial JSON updates at the table level. If enabled, the redo will include partial JSON records.

Also see, `TRANLOGOPTIONS FETCHPARTIALJSON` parameter.

PREPARECSN {WAIT | LOCK | NOWAIT | NONE}

Valid for Oracle for both DML and DDL. Automatically prepares the tables at the source so the Oracle data pump Export dump file will include Instantiation CSNs. Replicat uses the per table instantiation CSN set by the Oracle data pump (on import) to filter out trail records. On the target, the data pump import populates the system tables and views with instantiation SCNs using the `DBOPTIONS ENABLE_INSTANTIATION_FILTERING` parameter to enable table-level instantiation filtering.

WAIT

Wait for any in-flight transactions and prepare table instantiation.

LOCK

Put a lock on the table (to prepare for table instantiation).

NOWAIT

Default behavior, preparing for instantiation is done immediately.

NONE

No instantiation preparation occurs.

Examples

The following example causes one of the following: the primary key to be logged for an Oracle table; supplemental data to be logged for a SQL Server or DB2 table. This would also enable the table for auto capture.

```
ADD TRANDATA hr.employees
```

The following example enables the unconditional supplemental logging of all of the key and non-key columns for the table named `acct`. This would also enable the table for auto capture.

```
ADD TRANDATA hr.employees ALLCOLS
```

The following Oracle Database example causes the primary key to be logged plus the non-key columns `name` and `address`. This would also enable the table for auto capture.

```
ADD TRANDATA hr.employees, COLS (name, address)
```

The following Oracle Database example prevents the primary key from being logged, but logs the non-key columns `name` and `pid` instead. This would also enable the table for auto capture.

```
ADD TRANDATA hr.employees, NOKEY, COLS (name, pid)
```

The following example adds logging although it does not prepare the table for instantiation. This would also enable the table for auto capture.

```
ADD TRANDATA hr.employees PREPARECSN NONE
```

The following example suppresses additional table information processing. This would also enable the table for auto capture.

```
ADD TRANDATA hr.employees.*name NOVALIDATE
```

ALTER AUTHORIZATIONPROFILE

Alters or enables an authorization profile in a specified deployment. If a non-`localCredentialStore` profile is enabled, a communication and configuration test is triggered. If the test passes, the profile is set, otherwise no change occurs. You need restart your Microservices deployment, before this profile gets loaded. Service Manager automatically loads the profile.

The `localCredentialStore` profile can be set, but its content cannot be changed.

Syntax:

```
ALTER AUTHORIZATIONPROFILE profile-name
    DEPLOYMENT deployment-name
    ( [ ENABLE ]
      [ ID client-id [ SECRET client-secret ] ]
      [ DISCOVERYURI tenant-discovery-uri ]
      [ GROUPS
        ( SECURITY security-group
          | [ ADMINISTRATOR administrator-group ]
          | [ OPERATOR operator-group ]
          | [ USER user-group ]
```

```

        ) ]
    [ TTLSECONDS ttn-number ]
    [ DESCRIPTION description ]
)

```

ENABLE

Use this option to enable the profile.

The other options used this command are the same as the [ADD AUTHORIZATIONPROFILE](#) command.

Example

The following example shows how to enable a profile using this command:

```
ALTER AUTHORIZATIONPROFILE apn DEPLOYMENT ServiceManager ENABLE
```

The following example shows how to clean the administrator group name.

```
ALTER AUTHORIZATIONPROFILE apn DEPLOYMENT ServiceManager GROUPS
ADMINISTRATOR ''
```

The following example shows how to update the client ID and secret.

```
ALTER AUTHORIZATIONPROFILE apn DEPLOYMENT ServiceManager
CLIENT ID 1234567890abcdefghijklmnopqrstuv SECRET 12345678-90ab-cdef-ghij-
klmnopqrstuv
```

ALTER DISTPATH

Use `ALTER DISTPATH` to change the attributes of a distribution path.

Syntax

```

ALTER DISTPATH path-name
    ( BEGIN ( NOW
        | SEQNO trail-sequence-number RBA relative-byte-address
        | begin-datetime ),
    | SOURCE source-uri),
    | TARGET target-uri),
        | FORMAT ( CANONICAL | TEXT | SQL | XML
        | SIZEMB megabytes-number
        | SEQLen sequence-length
        | PROXY URI proxy-uri
        TYPE ( SOCKS | HTTP
            [ CSALIAS credential-store-alias)
            [ CSDOMAIN credential-store-
domain ] ]
        | COMPRESSION ( ON | OFF | THRESHOLD compression-
threshold )
    | RULE ( PASSTHRU

```

```

|
|           | FILTER [ CHUNKIDS      chunk-ids ]
|           | [ OBJECTNAMES object-names-wildcard ]
|           | [ OBJECTTYPES [ DML ] [ DDL ]
[ PROCEDURE ] ]
|           | [ TAGS          binary-tags ]
|           | [ PROCEDUREFEATURENAMES feature-names-
wildcard ]
|           | [ COLUMNVALUES column-values ]
|           | [ PARTITIONNAMES partition-names-
wildcard ] )
|           | [ RELATION      ( AND | OR ) ]
|           | [ ACTION        ( INCLUDE | EXCLUDE ) ]
|           | OPTIONS [ AUTORESTART RETRIES retries [ DELAY delay ] ]
|           | [ CRITICAL ( YES | NO ) ]
|           | [ EOFDELAY      eofdelay          ]
|           | AUTHENTICATION ( OAUTH
|                               | ( CERTIFICATE certificate-name )
|                               | ( USERIDALIAS alias [DOMAIN
domain
|                               | ( ENCRYPTIONPROFILE encryption-
profile-name] ) ) )

```

path-name

The name of the distribution path you want to change.

BEGIN {NOW | SEQNO *sequence-number* RBA *relative-byte-address* | *begin-datetime*}

Specifies a timestamp in the data source at which to begin processing.

NOW

Specifies the time at which the ADD EXTRACT command is issued.

sequence-number relative-byte-address

The sequence number of an Oracle redo log and RBA within that log at which to begin capturing data.

begin-datetime

A date and time (timestamp) in the given form. For Extract, the timestamp value must be greater than the timestamp at which the Extract was registered with the database.

SOURCE URI *source_uri*

Specifies the source URI after the source keyword to indicate where the data is originated. The format of this URI contains the protocol (only supports trail), hostname, port number of the Distribution Service, and location of the source trail files.

TARGET URI *target_uri*

At least one TARGET option must be specified. It is treated as a complete object. If you need to specify something complicated, you need to use the REST API. Admin Client only supports a limited set of target settings and doesn't merge target setting with previous call.

URI

Specifies the URI of the target distribution path.

FORMAT

Specifies the format of the URI of the target distribution path.

SIZEMB

Specifies the size of the trail sequence.

SEQLEN

Specifies the sequence length of the trail file.

PROXY URI

Specifies the proxy URI of the target distribution path.

TYPE

Specifies the type of connection between the source and target distribution path. You can choose a SOCKS PROXY or HTTP PROXY.

CSALIAS

Credential store alias used by the encryption profile for the distribution path.

CSDOMAIN

Domain of the credential store used by the encryption profile for the distribution path.

COMPRESSION

Specifies if the trail sequence has to be compressed. If you set it to YES, then you need to specify the threshold for the compression.

RULE

At least one **RULE** option must be specified. For example:

```
ALTER DISTPATH dpe RULE FILTER CHUNKIDS (1, 2, 3)
```

PASSTHRU

See PASSTHRU | NOPASSTHRU in *Reference for Oracle GoldenGate*.

FILTER

At least one **FILTER** option must be specified. By default, the **RELATION** between the filters is **OR** and the action is **KEEP**.

CHUNKIDS *chunk_ids*

Specify a rule to filter records by their chunk ID (sharding). The list of chunk IDs must be parenthesized and comma separated.

OBJECTNAMES *object_names*

Specify a rule to filter records by their object name. The list of object names must be parenthesized and comma separated. An object name must follow the following grammar:

```
[cdb_name.]schema_name.table_name
```

For example:

```
ALTER DISTPATH dpe RULE FILTER OBJECTNAMES (hr.emp,  
pdbname.hr.department)
```

OBJECTTYPES [DML | DDL | PROCEDURE]

Specify a rule to filter records by their object type. At least one object type must be specified.

TAGS *binary_tags*

Specify a rule to filter records by their tag. The list of tags must be parenthesized and comma separated. A tag must be a hexadecimal or binary value string and prefixed by the keywords `HEXVALUE`, `HEXMASK`, `BINVALUE`, and `BINMASK`. In case the tag is a `BITMASK`, the filter performs a bitwise `AND` operation between the mask and the tag value of an LCR record. If the result is equal to the `MASK`, then the action is applied. For example:

```
ALTER DISTPATH dpe RULE FILTER TAGS (hexvalue A4, hexvalue 18,
hexmask F0, hexvalue F8F, binvalue 01001100, binmask 0110)
```

PROCEDUREFEATURENAMES *feature_names*

Specify a rule to filter records by procedure feature name. The list of procedure feature names must be parenthesized and comma separated. For example:

```
ALTER DISTPATH dpe RULE FILTER PROCEDUREFEATURENAMES (RAS,
AUTOCDR, AQ)
```

COLUMNVALUES *column_values*

Specify a rule to filter records by their column value. The filtering rules must follow this grammar and be comma separated:

```
[cdb_name.]schema_name.table_name.column_name ( EQ | NE | LT | GT
| LE | GE ) column_value [ BEFORE | AFTER ]
```

EQ = equal

NE = not equal

LT = less than

GT = greater than

LE = less or equal

GE = grater or equal

For example:

```
ALTER DISTPATH dpe RULE FILTER COLUMNVALUES
(pdbnorth.ggadmin.hr.emp.emp_id EQ 0 BEFORE,
cbsouth.c##ggadmin.hr.emp.emp_id GT 100)
```

OPTIONS

At least one option must be specified:

AUTORESTART {RETRIES *retries* | DELAY *delay*}

Specifies that the distribution path is automatically restarted, how many times to retry the start, and any delay.

CRITICAL [YES | NO]

Indicates that the distribution path is critical to the deployment. The default is `NO`.

EOFDELAY *eofdelay*

Specifies how often Extract, a data pump, or Replicat checks for new data after it has reached the end of the current data in its data source.

See Change the Path Filtering to know about the rules for filter settings for an existing path.

AUTHENTICATION OAUTH

Use this option if you are using external Identity Provider (IDCS) authorization profile. This will set up the flow from the Distribution Service to the Receiver Service.

 **Note:**

If your deployment is enabled for IDCS, you can still choose to authentication using other authentication options.

AUTHENTICATION CERTIFICATE *certificate-name*

Identifier of distribution path-specific client certificate uploaded and managed in Administration Service.

AUTHENTICATION USERIDALIAS

Alternative to certificate authentication, you can associate each distribution path with a target DBLOGIN USERIDALIAS.

ENCRYPTIONPROFILE

Specifies the name of the encryption profile for the distribution path.

Examples

```
ALTER DISTPATH dpe BEGIN NOW
```

```
ALTER DISTPATH dpe BEGIN SEQNO 1 RBA 10355
```

```
ALTER DISTPATH dpn OPTIONS AUTORESTART RETRIES 3
```

```
ALTER DISTPATH dpe RULE FILTER OBJECTNAMES (hr.*, sales.*) ACTION EXCLUDE
```

```
ALTER DISTPATH dpe RULE FILTER TAGS (AE00, MASK AB00, FF)
```

```
ALTER DISTPATH dpe RULE FILTER COLUMNVALUES (hr.employess.deptno NE nope,
hr.employees.employee_id
EQ 3 AFTER, hr.employees.deptno GE 5, hr.employees.employee_id GT 5
BEFORE)
```

```
ALTER DISTPATH dpe RULE FILTER OBJECTNAMES(hr.*,sales.*) RELATION AND
ACTION EXCLUDE
```

This example excludes all partitions matching `part1*` from all tables:

```
ALTER DISTPATH dpe RULE FILTER PARTITIONNAMES (part_2022*) ACTION
EXCLUDE
```

ALTER ENCRYPTIONPROFILE

Use `ALTER ENCRYPTIONPROFILE` to change the encryption profile name and default settings.

Syntax

```
ALTER ENCRYPTIONPROFILE encryption-profile-name
    DEFAULT [ YES | NO ]
    | OCIKMS [ USER user-ocid ]
      [ APIKEY api-key-file
        FINGERPRINT fingerprint ] )
```

`APIKEY` is supplied when using OCI KMS. Also see [ADD ENCRYPTIONPROFILE](#).

Example:

```
ALTER ENCRYPTIONPROFILE apn OCIKMS USER
ocidl.user.oc1..bbbbbbccccccccccccdddddxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
yzzzz
    APIKEY /home/dba/keys/oci_api_key.pem
    FINGERPRINT 11:22:33:aa:bb:cc:dd:ee:bb:11:22:33:44:ee:ff:ff
```

ALTER RECVPATH

Use `ALTER RECVPATH` to change the attributes of target-initiated distribution path in the Receiver Service.

Syntax

```
ALTER RECVPATH path-name
    |          ( BEGIN      ( NOW
    |          | SEQNO trail-sequence-number RBA relative-byte-
    |          | address
    |          | begin-datetime )
    |          | SOURCE ( URI          source-uri
    |          |          | PROXY URI   proxy-uri )
    |          | TARGET ( FORMAT      ( CANONICAL | TEXT | SQL | XML )
    |          |          | SIZEMB     megabytes-number
    |          |          | SEQLEN     sequence-length
    |          |          | TYPE       ( SOCKS | HTTP )
    |          |          | CSALIAS   credential-store-alias
```

```

|                                     [ CSDOMAIN credential-store-domain ] ]
|                                     | ENCRYPTION ALGORITHM encryption-algorithm
|                                     | COMPRESSION ( ON | OFF | THRESHOLD compression-
threshold ) )
|                                     | RULE      ( PASSTHRU
|                                     | FILTER [ CHUNKIDS   chunk-ids ]
|                                     |         [ OBJECTNAMES object-names-wildcard ]
|                                     |         [ OBJECTTYPES [ DML ] [ DDL ] [ PROCEDURE ] ]
|                                     |         [ TAGS           binary-tags ]
|                                     |         [ PROCEDUREFEATURENAMES feature-names-
wildcard ]
|                                     |         [ COLUMNVALUES column-values ]
|                                     |         [ PARTITIONNAMES partition-names-wildcard ] )
|                                     | RELATION   ( AND | OR ) ]
|                                     | ACTION     ( INCLUDE | EXCLUDE ) ]
|                                     | OPTIONS [ AUTORESTART RETRIES retries [ DELAY delay ] ]
|                                     |         [ CRITICAL ( YES | NO ) ]
|                                     |         [ EOFDELAY   eofdelay ] ]
|                                     | ENCRYPTIONPROFILE encryption-profile )

```

path_name

The name of the distribution path you want to change.

BEGIN {NOW | SEQNO *sequence_number* RBA *relative_byte_address* | *begin_datetime*}
Specifies a timestamp in the data source at which to begin processing.

NOW

Specifies the time at which the ADD EXTRACT command is issued.

sequence_number relative_byte_address

The sequence number of an Oracle redo log and RBA within that log at which to begin capturing data.

begin_datetime

A date and time (timestamp) in the given form. For an Extract in integrated mode, the timestamp value must be greater than the timestamp at which the Extract was registered with the database.

SOURCE URI *source_uri*

Specifies the source URI after the source keyword to indicate where the data is originated. The format of this URI contains the protocol (only supports trail), hostname, port number of the Receiver Service, and location of the source trail files.

PROXY URI *proxy_uri*

Specifies the proxy URI after the proxy keyword to indicate where the data is originated. The format of this URI contains the protocol (only supports trail), hostname, port number of the Receiver Service, and location of the source trail files.

TARGET

At least one TARGET option must be specified.

CANONICAL

Defines a single byte order, a single floating-point representation of data.

TEXT

Text data.

SQL

Valid SQL statements.

XML

XML formatted data.

SIZEMB *megabytes_number*

Sets the size of the distribution path in megabytes.

SEQLEN *sequence_length*

Sets the sequence length of the distribution path.

TYPE

Sets the proxy type that the distribution path uses, HTTP or SOCKS.

CSALIAS *credential_store_alias*

Specifies your credential store alias name.

CSALIAS *credential_store_domain*

Specifies your credential store domain name.

ENCRYPTION ALGORITHM *encryption_algorithm*

Specifies a valid encryption algorithm for your database. Value could be AES 256 and so on.

COMPRESSION {ON | OFF | THRESHOLD *compression_threshold*}

Specifies whether your data is compressed or not. If set to ON, then you can specify the threshold level.

RULE

At least one RULE option must be specified. For example:

```
ALTER RECVPATH rcvp RULE FILTER CHUNKIDS (1, 2, 3)
```

PASSTHRU

See PASSTHRU | NOPASSTHRU in *Reference for Oracle GoldenGate*.

FILTER

At least one FILTER option must be specified. By default the RELATION between the filters is OR and the action is KEEP.

CHUNKIDS *chunk_ids*

Specify a rule to filter records by their chunk ID (sharding). The list of chunk IDs must be parenthesized and comma separated.

OBJECTNAMES *object_names*

Specify a rule to filter records by their object name. The list of object names must be parenthesized and comma separated. An object name must follow the following grammar:

```
[cdb_name.]schema_name.table_name
```

For example:

```
ALTER RECVPATH rcvp RULE FILTER OBJECTNAMES (hr.emp,  
pdbhnorth.hr.department)
```

OBJECTTYPES [DML | DDL | PROCEDURE]

Specify a rule to filter records by their object type. At least one object type must be specified.

TAGS *binary_tags*

Specify a rule to filter records by their tag. The list of tags must be parenthesized and comma separated. A tag must be a hexadecimal or binary value string and prefixed by the keywords HEXVALUE, HEXMASK, BINVALUE, and BINMASK. In case the tag is a BITMASK, the filter performs a bitwise AND operation between the mask and the tag value of an LCR record. If the result is equal to the MASK, then the action is applied. For example:

```
ALTER RECVPATH rcvp RULE FILTER TAGS (hexvalue A4, hexvalue 18, hexmask  
F0, hexvalue F8F, binvalue 01001100, binmask 0110)
```

PROCEDUREFEATURENAMES *feature_names*

Specify a rule to filter records by procedure feature name. The list of procedure feature names must be parenthesized and comma separated. For example:

```
ALTER RECVPATH rcvp RULE FILTER PROCEDUREFEATURENAMES (RAS, AUTOCDR, AQ)
```

COLUMNVALUES *column_values*

Specify a rule to filter records by their column value. The filtering rules must follow this grammar and be comma separated:

```
[cdb_name.]schema_name.table_name.column_name ( EQ | NE | LT | GT | LE |  
GE ) column_value [ BEFORE | AFTER ]
```

EQ = equal

NE = not equal

LT = less than

GT = greater than

LE = less or equal

GE = greater or equal

For example:

```
ALTER RECVPATH rcvp RULE FILTER COLUMNVALUES
(pdbnorth.ggadmin.hr.emp.emp_id EQ 0 BEFORE,
cdbsouth.c##ggadmin.hr.emp.emp_id GT 100)
```

OPTIONS

At least one option must be specified:

AUTORESTART {**RETRIES** *retries* | **DELAY** *delay*}

Specifies that the distribution path is automatically restarted, how many times to retry the start, and any delay.

CRITICAL [YES | NO]

Indicates that the distribution path is critical to the deployment. The default is NO.

EOFDELAY *eofdelay*

Specifies how often Extract, a data pump, or Replicat checks for new data after it has reached the end of the current data in its data source.

ENCRYPTIONPROFILE

Specifies the name of the encryption profile for the Receiver path.

Examples

```
ALTER RECVPATH rcvp BEGIN NOW
```

```
ALTER RECVPATH rcvp BEGIN SEQNO 1 RBA 10355
```

```
ALTER RECVPATH rcvp OPTIONS AUTORESTART RETRIES 3
```

```
ALTER RECVPATH rcvp RULE FILTER OBJECTNAMES (hr.*, sales.*) ACTION
EXCLUDE
```

```
ALTER RECVPATH rcvp RULE FILTER TAGS (AE00, MASK AB00, FF)
```

```
ALTER RECVPATH rcvp RULE FILTER COLUMNVALUES (c##ggadmin.hr.employees
NE nope, c##ggadmin.hr.employees
EQ 3 AFTER, c##ggadmin.hr.employees GE 5, c##ggadmin.hr.employees
GT 5 BEFORE)
```

```
ALTER RECVPATH rcvp RULE FILTER OBJECTNAMES(hr.*,sales.*) RELATION AND  
ACTION EXCLUDE
```

ALLOWNESTED

Use the `ALLOWNESTED` and `NOALLOWNESTED` commands to enable or disable the use of nested OBEY files. A nested OBEY file is one that contains another OBEY file, see [OBEY](#).

Syntax

```
ALLOWNESTED | NOALLOWNESTED
```

ALLOWNESTED

Enables the use of nested OBEY files. There is no maximum of the number of nested files.

NOALLOWNESTED

This is the default setting. If you try to run a nested obey file, then it displays the following error

```
Nested OBEY scripts not allowed. Use ALLOWNESTED to allow nested scripts.
```

The following example illustrates a nested OBEY file. Assume an OBEY file named `addcmds.txt`. Inside this file, there is another OBEY command that calls the OBEY file named `startcmds.txt`, which executes another set of commands.

The following example creates an OBEY file (`addder.oby`) to add Extract, Replicat, and trail files and includes another obey file (`startcmds.oby`).

```
vi ADDER.oby  
DBLOGIN USERIDALIAS ggeast  
ADD EXTRACT exte, TRANLOG, BEGIN NOW  
ADD EXTTRAIL east/ea, EXTRACT exte  
ADD EXTRACT extw, TRANLOG, BEGIN NOW  
ADD REPLICAT repw, EXTTRAIL west/ew, BEGIN NOW  
OBEY startcmds.oby
```

The `startcmds.oby` file contains the following:

```
START EXTRACT *  
INFO EXTRACT *, DETAIL  
START REPLICAT *  
INFO REPLICAT *, DETAIL
```

To execute these obey commands from the command line, you need to use the `ALLOWNESTED` command:

```
ALLOWNESTED  
OBEY addder.oby
```

ALTER CREDENTIALSTORE

Use the `ALTER CREDENTIALSTORE` command to configure database credentials for Oracle GoldenGate. You can also use this command to manage user ID and password pairs in the credential store. This command enables you to add credentials to the credential store and to specify different aliases for connecting to the database.

See [Add and Alter Database Credentials](#) to configure the database connections from the MA web interface.

The use of a credential store is not supported for the NonStop platforms.

Syntax

Admin Client Syntax:

```
ALTER CREDENTIALSTORE {  
  ADD USER userid | REPLACE USER userid | DELETE USER userid }  
[NOPASSWORD | PASSWORD password]  
[ALIAS alias]  
[DOMAIN domain]
```

ADD USER *userid*



Note:

In MA, `ADD USER` with `ALIAS` as email id, will fail. However, it works in Classic Architecture.

Adds the specified user and its alias to the credential store. If the `ALIAS` option is not used, the alias defaults to the user name. A credential can only be entered once unless the `ALIAS` option is used to specify a different alias for each one. Unless the `PASSWORD` option is used, the command prompts for the password of the specified user. The user can be an actual user name or a SQL*Net connect string. For multitenant databases with different users for the CDB and the PDB, you need to specify `@TNS_Service_Name` when adding a user to the credential store.

REPLACE USER *userid*

Changes the password of the specified user. If the `ALIAS` option is not used, the alias defaults to the user name. You cannot change the alias or domain of a user with this option, but you can use the `ADD USER` option to add a new entry for the user under the desired `ALIAS` or `DOMAIN`. Unless the `PASSWORD` option is used, the command prompts for the new password for the specified user.

DELETE USER *userid*

Removes the credential for the specified user from the credential store. If the `ALIAS` option is not used, the alias defaults to the user name. If the user ID and alias are not the same, you must specify both user ID and alias. For example:

```
ALTER CREDENTIALSTORE DELETE USER c##ggadmin alias ggadmin
```

NOPASSWORD | PASSWORD*password*

Specify the user's password using the `PASSWORD` option. The password is echoed (not obfuscated) when this option is used. If this option is omitted, the command prompts for the password, which is obfuscated as it is typed (recommended as more secure).

Oracle GoldenGate 23c supports a maximum password length of 1024 bytes.

The `NOPASSWORD` option is the alternative to the `PASSWORD` option when using external authentication because password is not required for external authentication such as using Kerberos authentication or IDCS. After the `NOPASSWORD` option is set, the `DBLOGIN` command can be used to access the database without a password.

Also see `USERIDALIAS` parameter in the *Reference for Oracle GoldenGate*.

ALIAS *alias*

Specifies an alias for the user name. Use this option if you do not want the user name to be in a parameter file or command. If `ALIAS` is not used, the alias defaults to the `USER` name, which then must be used in parameter files and commands where a login is required. You can create multiple entries for a user, each with a different alias, by using the `ADD USER` option with `ALIAS`.

DOMAIN *domain*

Saves the credential user under the specified domain name. Enables the same alias to be used by multiple Oracle GoldenGate installations that use the same credential store. The default domain is `Oracle GoldenGate`. For example, the administrators of system 1 might not want system 2 to have access to the same credentials that are used on system 1. Those credentials can be stored as `ALIAS pdbeast`, for example, under `DOMAIN system1`, while a different set of credentials can be stored for `ALIAS pdbwest` under `DOMAIN system2`.

Examples

The following example (Admin Client) adds a user named `ggadmin` but with external authentication and therefore uses the `NOPASSWORD` option.

```
ALTER CREDENTIALSTORE ADD USER /@ggadmin nopassword alias pdbeast
```

The output shows:

```
2020-06-22T21:08:33Z INFO OGG-15102 Credential store created.
```

Running the `INFO CREDENTIALSTORE` command, you can check the add user to the credentialstore:

```
INFO CREDENTIALSTORE
Default domain: OracleGoldenGate
Alias: pdbeast
Userid: /@ggadmin
```

After you update the credentialstore to use the `NOPASSWORD` option, you can use the `DBLOGIN` command with Kerberos authentication for your database.

```
DBLOGIN USERIDALIAS pdbeast
```

Output:

Successfully logged into database pdbeast.

This example adds a user named `ggadmin` but omits the `PASSWORD` specification, so the command prompts for `pggeast`'s password.

```
ALTER CREDENTIALSTORE ADD USER ggadmin  
Password: *****
```

This example adds the user `ggadmin` with his password `tiger` and specifies the alias as `pdbeast`.

```
ALTER CREDENTIALSTORE ADD USER ggadmin PASSWORD tiger ALIAS pdbeast
```

This example adds the user `ggadmin` under the domain of `OracleGoldenGate`.

```
ALTER CREDENTIALSTORE ADD USER ggadmin ALIAS pdbeast DOMAIN  
OracleGoldenGate  
Password: *****
```

This example issues two `ALTER CREDENTIALSTORE` commands, each of which adds a `ggadmin` entry, but with a different alias.

```
ALTER CREDENTIALSTORE ADD USER ggadmin ALIAS pdbeast  
Password: *****  
ALTER CREDENTIALSTORE ADD USER ggadmin ALIAS pdbwest  
Password: *****
```

The following shows how the `DELETE USER` option works with and without the `ALIAS` option.

The following command deletes the `user1` entry for which the `ALIAS` is the same as the user name.

```
ALTER CREDENTIALSTORE DELETE USER ggadmin  
Alias: pdbeast  
Userid: ggadmin
```

The following command deletes the entry for user `ggadmin` that is associated with the alias `pdbeast`.

```
ALTER CREDENTIALSTORE DELETE USER ggadmin ALIAS pdbeast  
Alias: pdbeast  
Userid: ggadmin
```

This example uses a SQL*Net connect string as the user value. In this case, the `PASSWORD` option is omitted. The person issuing the command is prompted for the password, which is hidden.

```
ALTER CREDENTIALSTORE ADD USER ggadmin@pdbeast ALIAS pdbeast
```

This example creates a domain name Oracle GoldenGate with user ID `ggadmin` and alias as `pdbeast` in the Admin Client.

```
ALTER CREDENTIALSTORE ADD USER ggadmin alias pdbeast
Password:
```

This example connects using a connection qualifier if using a BEQ-Bequeath Protocol adapter:

```
ALTER CREDENTIALSTORE ADD USER ggadmin@inst1_beq
```

ALTER EXTRACT

Use `ALTER EXTRACT` for the following purposes:

- To change the attributes of an Extract group created with the `ADD EXTRACT` command.
- To increment a trail to the next file in the sequence.
- To upgrade to an integrated capture configuration.
- To downgrade from an integrated capture configuration.
- To position any given Db2 for i journal at a specific journal sequence number.

Before using this command, stop the Extract with the `STOP EXTRACT group_name` command.

Admin Client Syntax

```
ALTER EXTRACT group-name
[, BEGIN {NOW | yyyy-mm-dd[ hh:mi:[ss[.cccccc]]}] |
  [, EXTRBA archive-offset-number] [, ADD_EXTRACT_attribute] |
  SCN value]
[, DESC
[, THREAD number]
[, ETROLLOVER]
[, ENCRYPTIONPROFILE encryption-profile-name ]
  [CRITICAL [ YES | NO ]
  [PROFILE profile-name
| [AUTOSTART [ YES | NO ]
  [DELAY delay-number]
[AUTORESTART [ YES | NO ]]
  [RETRIES retries-number ]|
  [WAITSECONDS wait-number ]|
  [RESETSECONDS reset-number ]|
  [DISABLEONFAILURE [ YES | NO ] ] ]
]
```

```
[, LOGNUM lognum]  
[, LOGPOS logpos]
```

The following ALTER EXTRACT options are supported for Db2 for i to position Extract for a given journal:

```
ALTER EXTRACT {BEGIN {NOW | yyyy-mm-ddT[ hh:mi:[ss[.cccccc]]Z}}  
[JOURNAL journal_library/journal_name [JRNRCV receiver_library/  
receiver_name]] |  
, EOF [JOURNAL journal_library/journal_name  
[JRNRCV receiver_library/receiver_name]] |  
, SEQNO sequence_number [JOURNAL journal_library/journal_name  
[JRNRCV receiver_library/receiver_name]]}
```

```
BEGIN {NOW | yyyy-mm-ddT[ hh:mi:[ss[.cccccc]]Z}}  
[JOURNAL journal_library/journal_name  
[JRNRCV receiver_library/ receiver_name]] |  
, EOF [JOURNAL journal_library/journal_name  
[JRNRCV receiver_library/receiver_name]] |  
, SEQNO sequence_number [JOURNAL journal_library/journal_name  
[JRNRCV receiver_library/receiver_name]]
```

These IBM for i options allow journal-specific Extract positioning after the global start point is issued with ADD EXTRACT. A specific journal position set with ALTER EXTRACT does not affect any global position that was previously set with ADD EXTRACT or ALTER EXTRACT; however a global position set with ALTER EXTRACT overrides any specific journal positions that were previously set in the same Extract configuration.



Note:

SEQNO, when used with a journal in ALTER EXTRACT, is the journal sequence number that is relative to that specific journal, not the system sequence number that is global across journals.

group-name

The name of the Extract group that is to be altered.

```
{BEGIN {NOW | Tyyyy-mm-dd[ hh:mi:[ss[.cccccc]]Z}}
```

NOW

For all databases except Db2 LUW, NOW specifies the time at which the ALTER EXTRACT command is issued.

NOW specifies the time at which the ADD EXTRACT command is issued.

For Db2 LUW, only commit and end transaction records contain timestamps, so the Extract starting position can only be calculated relative to those timestamps. This is a limitation of the API that is used by Oracle GoldenGate. It must be noted that positioning by timestamp is not accurate and can also take a long time. It is recommended to use LRI or EOF options wherever possible.

YYYY-MM-DDThh:mm:ssZ

A date and time (timestamp) in the given form. For example, 2017-07-14T14:54:45Z.

`yyyy-mm-dd[hh:mi:[ss[.cccc]]]`

A date and time (timestamp) in the given form. For an Oracle Extract in integrated mode, the timestamp value must be greater than the timestamp at which the Extract was registered with the database.

Positioning by timestamp in a SQL Server transaction log is affected by the following characteristics of SQL Server:

- The timestamps recorded in the SQL Server transaction log use a 3.3333 microsecond (ms) granularity. This level of granularity may not allow positioning by time between two transactions, if the transactions began in the same 3.3333 ms time interval.
- Timestamps are not recorded in every SQL Server log record, but only in the records that begin and commit the transaction, as well as some others that do not contain data.
- SQL Server timestamps are not from the system clock, but instead are from an internal clock that is specific to the individual processors in use. This clock updates several times a second, but between updates it could get out of sync with the system clock. This further reduces the precision of positioning by time.
- Timestamps recorded for log backup files may not precisely correspond to times recorded inside the backup (however this imprecision is less than a second).

Positioning to an LSN is precise.

Positioning by timestamp in PostgreSQL includes the following scenarios:

- Scenario 1

If `track_commit_timestamp` is off, the following output will be displayed when the Extract process starts irrespective of what positioning method is used:

```
2020-04-29 02:15:54 INFO OGG-01517 Position of first record processed
LSN: 0/2222C20, Jan 1, 1970 12:00:00 PM.
```

- Scenario 2

If the `track_commit_timestamp` is enabled before Extract is registered then the correct timestamp will be displayed once the records are pushed in the source database as mentioned in the following example:

```
2020-04-29 02:19:07 INFO OGG-01515 Positioning to begin time Apr
29,2020 2:18:38 AM.
```

- Scenario 3

If `track_commit_timestamp` is enabled after the Extract is registered, then there may be chances that the older records are available in the log for which the commit timestamp is not built up with the associated transaction ID. In that case, if Extract does not get the timestamp then it will fallback using the default timestamp mentioned in scenario 1. The output will be similar to the following:

```
020-04-29 01:55:07 INFO OGG-01517 Position of first record processed
LSN: 0/221D028, Jan 1, 1970 12:00:00 PM.
```

- Past timestamp cannot be specified if the replication slot has moved away.

START

Valid for PostgreSQL.

Adds an Extract without mentioning `BEGIN NOW` or `LSN`. Extract will start from the replication slot restart position automatically.

ADD_EXTRACT_attribute

You can change any of the attributes specified with the `ADD EXTRACT` command, except for the following:

- Altering an Extract specified with the `EXTTRAILSOURCE` option.
- Altering the number of RAC threads specified with the `THREADS` option.

For these exceptions, delete the Extract group and then add it again.

If using the `BEGIN` option, do not combine other options in the statement. Issue separate statements, for example:

```
ALTER EXTRACT exte, BEGIN 2019-01-01
ALTER EXTRACT exte, ETROLLOVER
ALTER EXTRACT exte, SCN 789000
```

If using the `SCN` or `BEGIN` option for Integrated Extract, it requires a `DBLOGIN`, and the `SCN` or timestamp value specified cannot be below the outbound server's first `SCN` or timestamp. To find the outbound server's first `SCN`, issue the following command:

```
INFO EXTRACT group_name, SHOWCH DETAIL
```

The first `SCN` value is listed as shown in the following example:

```
Integrated Extract outbound server first scn: 0.665884 (665884)
```

EXTRBA_offset_number

Valid for Db2 z/OS.

Specifies the relative byte address within a transaction log at which to begin capturing data.

The required format is `0Xnnn`, where `nnn` is a 1 to 20 digit hexadecimal number (the first character is the digit zero, and the second character can be upper or lower case letter `x`).

EOF

Valid for Db2 for i, Db2 LUW, MySQL, PostgreSQL, and SQL Server.

Configures processing to start at the end of the log files (or journals) that the next record will be written to. Any active transactions will not be captured.

For Db2 LUW, it configures processing to start at the active `LRI` value in the log files.

The active `LRI` is the position at the end of the log files that the next record will be written to. Any active transactions will not be captured.

For PostgreSQL, `DBLOGIN` is required for position by `EOF`.

For MySQL, it finds the position corresponding to the end of the file and starts reading transactions from there. The `EOF` position is not exact, if data is continuously written to the binary log.

TRANLOG LRI LRI_number

(Db2 LUW) You can use this option for Db2 LUW systems to specify the LRI record value for the checkpoint transaction log.

For PostgreSQL, `DBLOGIN` is required for position by `EOF`.

REPORT file_name

Specifies the full path name of an Extract report file in a location other than the default of `dirrpt` within the Oracle GoldenGate directory.

SCN value

Valid for Oracle.

Starts Extract at the transaction in the redo log that has the specified Oracle system change number (SCN). For Extract, the SCN value must be greater than the SCN at which the Extract was registered with the database. For `SCN` or `BEGIN` option, `DBLOGIN` is required, and the SCN or timestamp value specified cannot be below the outbound server's first SCN or timestamp.

LSN value

Valid for SQL Server, Db2 z/OS, and PostgreSQL.

Specifies the transaction LSN at which to start capturing data. An alias for this option is `EXTLSN`. The specified LSN should exist as a valid `tran_begin_lsn` found in the `cdc.lsn_time_mapping` system table, otherwise the Extract will attempt to position after the LSN value provided.

For Db2 z/OS, the required format is `0Xnnn`, where `nnn` is a 1 to 20 digit hexadecimal number (the first character is the digit zero, and the second character can be upper or lower case letter `x`).

For PostgreSQL, LSN value can be `hi` or `lo`. Set the value as `hi` for the entry point of the log file. `lo` is the offset in the log file. The LSN position should lie between the replication slot restart position and write ahead log current location. If the position specified itself exists between the mentioned range then Extract will throw an error.

(SQL Server) specifies the transaction LSN at which to start capturing data. An alias for this option is `EXTLSN`.

The specified LSN should exist as a valid `tran_begin_lsn` found in the `cdc.lsn_time_mapping` system table, otherwise the Extract will attempt to position after the LSN value provided.

Valid LSN specification consists of the following:

- Colon separated hex string (8:8:4) padded with leading zeroes and `0x` prefix, as in `0X00000d7e:0000036b:0001`
- Colon separated decimal string (10:10:5) padded with leading zeroes, as in `000003454:000000875:00001`
- Colon separated hex string with `0x` prefix and without leading zeroes, as in `0Xd7e:36b:1`
- Colon separated decimal string without leading zeroes, as in `3454:875:1`
- Decimal string, as in `345400000087500001`

You can find the minimum LSN available by querying the following:

```
SELECT min([tran_begin_lsn]) FROM [cdc].[lsn_time_mapping] with (nolock)
where tran_id <> 0x00
```

Example:

```
ALTER EXTRACT extsql LSN 0X00000d7e:0000036b:0001
```

LOGNUM

Valid for MySQL.

This is the log file number. For example, if the required log file name is test.000034, the LOGNUM value is 34. Extract will search for this log file.



Note:

In Microservices Architecture, ADD EXTRACT will fail if the LOGNUM value contains zeroes preceding the value. For example, ADD EXTRACT ext1, TRANLOG, LOGNUM 000001, LOGPOS 0 will fail. Instead, set LOGNUM to 1 for this example to succeed.

LOGPOS

Valid for MySQL.

is an event offset value within the log file that identifies a specific transaction record. Event offset values are stored in the header section of a log record. To position at the beginning of a binlog file, set the LOGPOS as 0.

ETROLLOVER

Use for manual recovery situations that require repositioning and regenerating trail files for a primary Extract and when upgrading Oracle GoldenGate from a previous version.

Causes Extract to create a new incarnation of the trail file and increments to the next file in the trail sequence when restarting, requiring readers such as pump or Replicat, to be manually repositioned to the new trail sequence number.

From 19c onwards, during Distribution Service processing:

- If the primary Extract on the source deployment is upgraded with target trail file ETROLLOVER, then the Distribution Service automatically detects the source trail file ETROLLOVER and starts reading from the next input trail file. This is the same command as data pump `ALTER EXTRACT groupname EXTSEQNO seqno+1 EXTRBA 0`.
- After upgrading the Distribution Service, it automatically performs the ETROLLOVER for the output trail file upon restarting and writes the next trail file properly. This is the same as data pump `ALTER EXTRACT groupname ETROLLOVER`.

DESC '*description*'

Specifies a description of the group, such as 'Extracts account_tab on Serv1'. Enclose the description within single quotes. You may use the abbreviated keyword DESC or the full word DESCRIPTION.

ENCRYPTIONPROFILE

Specifies the name of the encryption profile for the Extract. This name is case sensitive so you must use the exact name that you entered with ADD EXTRACT.

CRITICAL

Indicates if the process is critical for the deployment.

PROFILE

Name of the auto start profile. This name is case sensitive so you must use the exact name that you entered with `ADD EXTRACT`.

AUTOSTART

Specifies whether the managed process has to be started automatically when the Administration Service starts. The default value is `YES`.

RETRIES

The maximum number of tries for restarting the task before canceling retry efforts. This is optional.

WAITSECONDS

The duration (in seconds) in which the retries are counted.

RESETSECONDS

Resets the duration in which the retries are counted.

DISABLEONFAILURE

If set to `TRUE`, then the task is disabled when the number of retries is exhausted.

INFO EXTRACT *group-name*, SHOWCH DETAIL

The first SCN value is listed as shown in the following example:

```
Integrated Extract outbound server first scn: 0.665884 (665884)
```

Examples

The following alters Extract to start processing data from January 1, 2019.

```
ALTER EXTRACT exte, BEGIN 2019-01-01
```

The following alters Extract to start processing at a specific location in the trail.

```
ALTER EXTRACT exte, EXTSEQNO 26, EXTRBA 338
```

The following alters Extract in a SQL Server environment to start at a specific LSN.

```
ALTER EXTRACT exte, LSN 3454:875:445
```

The following alters Extract to increment to the next file in the trail sequence.

```
ALTER EXTRACT exte, ETROLLOVER
```

The following alters Extract to upgrade to integrated capture.

```
ALTER EXTRACT exte, UPGRADE INTEGRATED TRANLOG
```

The following alters Extract in an Oracle environment to start processing data from source database SCN 778899.

```
ALTER EXTRACT exte, SCN 778899
```

The following shows ALTER EXTRACT for an IBM for i journal start point.

```
ALTER EXTRACT exte, SEQNO 1234 JOURNAL accts/acctsjrn
```

The following shows ALTER EXTRACT for an IBM for i journal and receiver start point.

```
ALTER EXTRACT exte, SEQNO 1234 JOURNAL accts/acctsjrn JRNRCV accts/  
jrnrcv0005
```

The following example alters an Extract on a Db2 LUW system.

```
ALTER EXTRACT exte, TRANLOG LRI 8066.322711
```

The following example shows the ALTER EXTRACT options used with PostgreSQL:

```
ALTER EXTRACT exte, EOF  
ALTER EXTRACT POSTEXT, LSN 0/156784  
ALTER EXTRACT POSTEXT, BEGIN 2022-02-18T14:50:43.4230Z
```

ALTER EXTTRAIL

Use ALTER EXTTRAIL to change the attributes of a trail that was created with the ADD EXTTRAIL command (a trail on the local system). The change takes effect the next time that Extract starts.

Before using this command, stop the Extract using the STOP EXTRACT *group_name* command.

Syntax

```
ALTER EXTTRAIL trail_name, EXTRACT group_name  
[, MEGABYTES n]
```

trail_name

The relative or fully qualified path name of the trail.

group_name

The name of the Extract group to which the trail is bound.

MEGABYTES *n*

The maximum size of a file, in megabytes. The default is 500. After using this option, issue the SEND EXTRACT command with the ROLLOVER option to close the current trail file and open a new one.

Examples

```
ALTER EXTTRAIL north/ea, EXTRACT exte, MEGABYTES 200
```

ALTER HEARTBEATABLE

Use `ALTER HEARTBEATABLE` to alter existing seed, heartbeat, and history table options that you set with `ADD HEARTBEATABLE`.

This command requires a `DBLOGIN`. On a CDB database, a PDB login is required.

Valid for Oracle, Db2 z/OS, Db2 LUW, Db2 for i, MySQL, PostgreSQL, SQL Server. This command is not valid for TimesTen and Teradata.

Syntax

```
ALTER HEARTBEATABLE  
[, FREQUENCY number_in_seconds]  
[, RETENTION_TIME number_in_days] |  
[, PURGE_FREQUENCY number_in_days]  
[, TARGETONLY | NOTARGETONLY]
```

FREQUENCY *number_in_seconds*

Specifies how frequently heartbeat records are generated. The default is 60 seconds. Consider the following limits:

- For Oracle Database, the minimum value is 0 and the maximum is 7999.
- For DB2 for i Series, the minimum value is 0 and the maximum is 7999.
- For DB2 LUW and DB2 z/OS, the minimum value is 60 and the maximum is 7999.
- The frequency for DB2 z/OS and DB2 LUW must be a multiple of 60 for values less than 3600 and multiples for 3600 for values greater or equal to 3600.
- For MySQL, the minimum value is 0 and the maximum is 7999.
- For SQL Server, the minimum value is 10 and the maximum is 7999. It supports 0, which disables the SQL Server Agent Heartbeat table `UPDATE` job, but can only be set with `ALTER HEARTBEATABLE`.
- For PostgreSQL, the minimum value is 60 and the maximum is 7999.
- Databases that support setting `FREQUENCY` to 0 will pause the heartbeat record scheduler.

RETENTION_TIME

Specifies that heartbeat entries older than the retention time in the heartbeat history table are purged. The default is 30 days.

The minimum value for all databases is 1 and the maximum is 2147483646.

PURGE_FREQUENCY

Specifies how often the purge scheduler is run to delete table entries that are older than the retention time from the heartbeat history table. The default is 1 day.

For DB2 LUW and DB2 z/OS, the minimum value is 1 and the maximum is 31.

For all other supported databases, the minimum value is 1 and the maximum value is 199.

TARGETONLY | NOTARGETONLY

Valid for Oracle Database, DB2 for i Series, DB2 LUW, DB2 z/OS, MySQL, PostgreSQL, and SQL Server.

TARGETONLY modifies existing heartbeat seed and heartbeat tables by disabling supplemental logging on both tables. It drops the existing scheduler job for updating the heartbeat table.

NOTARGETONLY modifies existing heartbeat seed and heartbeat tables by enabling supplemental logging on both tables. It creates a new scheduler job for updating the heartbeat table.

Examples

```
ALTER HEARTBEATTABLE FREQUENCY 60
```

```
ALTER HEARTBEATTABLE RETENTION_TIME 30
```

```
ALTER HEARTBEATTABLE PURGE_FREQUENCY 1
```

```
ALTER HEARTBEATTABLE NOTARGETONLY
```

ALTER REPLICAT

Use **ALTER REPLICAT** to change the attributes of a Replicat group that was created with the **ADD REPLICAT** command. Before using this command, stop Replicat by issuing the **STOP REPLICAT** command. If this is a coordinated Replicat group, the **ALTER** takes effect for all threads unless the *threadID* option is used.

 **Note:**

ALTER REPLICAT does not support switching from regular Replicat mode to coordinated mode. You must stop processes, make certain all of the en route data is applied to the target, roll the trail to a new trail, drop and recreate the Replicat group in coordinated mode, and then start the processes again.

Syntax

```
ALTER REPLICAT
    group-name|
    [, PARALLEL [, INTEGRATED] | INTEGRATED | COORDINATED
[MAXTHREADS number]
    ]|
    option [, . . .]
    {, SPECIALRUN
EXTFILE          file-name |
EXTTRAIL         trail-name }
[, PARAMS file_name]
[, REPORT file_name]
[, BEGIN          {NOW | yyyy-mm-dd[ hh:mi:
```

```

[ss[.cccccc]]}]
    [, EXTSEQNO          trail-sequence-number, EXTRBA trail-offset-
number ]
    [, DESC              description ]|
    [, ENCRYPTIONPROFILE encryption-profile-name ]|
    [, CRITICAL          [ YES | NO ] ]|
    [, PROFILE           profile-name|
    [, AUTOSTART         [ YES | NO ] ]|
    [, DELAY             delay-number ] ]|
    [, AUTORESTART       [ YES | NO ] ]|
    [, RETRIES           retries-number ]|
    [, WAITSECONDS       wait-number   ]|
    [, RESETSECONDS      reset-number  ]|
    [, DISABLEONFAILURE [ YES | NO ]   ] ] ]
}

```

group_name[threadID]

The name of the Replicat group or a thread of a coordinated Replicat that is to be altered. To specify a thread, use the full thread name, such as ALTER REPLICAT exte, EXTSEQNO 53. If a thread ID is not specified, the ALTER takes effect for all threads of the Replicat group.

option [, . . .]

Use this to change any description or service option that was configured with the ADD REPLICAT command, except for the CHECKPOINTTABLE and NODBCHECKPOINT options. There is no option to alter a Replicat with CHECKPOINTTABLE to replicate with or without CHECKPOINTTABLE. However, if you are switching from integrated to nonintegrated Replicat, you can use a nonintegrated Replicat without a checkpoint table, as shown in the following example:

```
ADD REPLICAT repe, INTEGRATED, EXTTRAIL ea, ggadmin.ggs_checkpoint
```

```
ALTER REPLICAT repe, NONINTEGRATED, CHECKPOINTTABLE ggadmin.ggs_checkpoint
```

PARALLEL

Oracle only.

Adds the Replicat in parallel mode. In this mode, Replicat applies transactions in parallel to improve the performance. It takes into account dependencies between transactions. PARALLEL INTEGRATED Replicat is valid for Oracle only. It adds the parallel Replicat in integrated mode, which like Integrated Replicat leverages the apply processing functionality that is available within the Oracle Database.

INTEGRATED

Switches Replicat from non-integrated mode to integrated mode. Transactions currently in process are applied before the switch is made, see Switching Replicat from Integrated Mode to Nonintegrated Mode.

NONINTEGRATED, CHECKPOINTTABLE owner.table

(Oracle) Switches Replicat from integrated mode to non-integrated mode.

For CHECKPOINTTABLE, specify the owner and name of a checkpoint table. This table must be created with the ADD CHECKPOINTTABLE command before issuing ALTER EXTRACT with NONINTEGRATED, see Deciding Which Apply Method to Use for more information about integrated Replicat.

SPECIALRUN

Creates a Replicat special run as a task. Either **SPECIALRUN**, **EXTFILE**, or **EXTTRAIL** is required. When Extract is in **SPECIALRUN** mode, do not start Replicat with the **START REPLICAT** command. Do not use this option with the **INTEGRATED** or **COORDINATED** option.

EXTFILE *file_name*

Specifies the relative or fully qualified name of an extract file that is specified with **RMTFILE** in the Extract parameter file. Do not use this option with the **INTEGRATED** option.

EXTTRAIL *trail_name*

Specifies the relative or fully qualified name of a trail that was created with the **ADD RMTTRAIL** or **ADD EXTTRAIL** command.

BEGIN {**NOW** | *yyyy-mm-dd[hh:mm[:ss[.cccccc]]]*}

Defines an initial checkpoint in the trail.

NOW

Begins replicating changes from the time when the group is created.

yyyy-mm-dd[hh:mm[:ss[.cccccc]]]

Begins extracting changes from a specific time.

EXTSEQNO *sequence_number*

Specifies the sequence number of the file in a trail in which to begin processing data. Specify the sequence number, but not any zeroes used for padding. For example, if the trail file is `\aa000000026`, you would specify **EXTSEQNO** 26. If not specified, the default value is zero.

By default, processing begins at the beginning of a trail unless this option is used. To use **EXTSEQNO**, you must also use **EXTRBA**. Contact Oracle Support before using this option.

EXTRBA *rba*

Specifies the relative byte address within the trail file that is specified by **EXTSEQNO**. Contact Oracle Support before using this option.

PARAMS *file_name*

Specifies a parameter file in a location other than the default of `dirprm` within the Oracle GoldenGate directory. Specify the fully qualified path name.

REPORT *file_name*

Specifies the full path name of a process report file in a location other than the default of `dirrpt` within the Oracle GoldenGate directory.

DESC '*description*'

Specifies a description of the group, such as 'Loads account_tab on Serv2'. Enclose the description within quotes. You can use either the abbreviated keyword **DESC** or the full word **DESCRIPTION**.

ENCRYPTIONPROFILE

Specifies the name of the encryption profile for the Replicat.

CRITICAL

Indicates if the process is critical for the deployment.

PROFILE

There are options to select the Default or Custom profiles, if you've created one using the Profile page in Distribution Service.

AUTOSTART

Select this option to start the process when starts.

DELAY

Time to wait in seconds before starting the process.

AUTORESTART

Controls how the process will be restarted if it terminates.

RETRIES

The maximum number of the task should be restarted before canceling retry efforts. This is optional.

WAITSECONDS

Specifies the time to wait before performing the retries.

RESETSECONDS

Resets the time for waiting for retries.

DISABLEONFAILURE

If this option is enabled, then the task is disabled when the number of retries is exhausted.

Examples

```
ALTER REPLICAT repe, EXTSEQNO 53
```

```
ALTER REPLICAT repe, EXTSEQNO 53, EXTRBA 0
```

```
ALTER REPLICAT repe, BEGIN 2011-01-07 08:00:00
```

```
ALTER REPLICAT repe, INTEGRATED
```

```
ALTER REPLICAT repe, NONINTEGRATED, CHECKPOINTTABLE ggadmin.ggs_checkpoint
```

```
ALTER REPLICAT repw, EXTSEQNO 53
```

ALTER RMTTRAIL

Use `ALTER RMTTRAIL` to change the attributes of a trail that was created with the `ADD RMTTRAIL` command (a trail on a remote system). The change takes effect the next time that Extract starts.

Syntax

```
ALTER RMTTRAIL trail_name, EXTRACT group_name  
[, MEGABYTES n]
```

trail_name

The relative or fully qualified path name of the trail. For example, `dirdat\ea`.

group_name

The name of the Extract group to which the trail is bound.

MEGABYTES *n*

The maximum size of a file, in megabytes. The default is 500. After using this option, issue the `SEND EXTRACT` command with the `ROLLOVER` option to close the current trail file and open a new one.

Example

```
ALTER RMTTRAIL north/ea, EXTRACT exte, MEGABYTES 200
```

CD

Use `CD` to change the Admin Client working directory.

Syntax

```
CD directory-name
```

directory-name

The name of the directory.

CLEAR INSTANTIATION CSN

Use `CLEAR INSTANTIATION CSN` on your target database to clear (reverse) the instantiation CSN manually. This command requires `DBLOGIN` where the user is the default Oracle GoldenGate schema.

Syntax

```
CLEAR INSTANTIATION CSN FOR [schema.] table FROM source-database-name
```

[*schema.*] *table*

The name of the table to clear the instantiation CSN on. If no schema is provided, the `DBLOGIN` user will be used.

source-database-name

The global name of the source database for which this is a target.

Example

```
CLEAR INSTANTIATION CSN FOR hr.employees FROM pdbeast.com
```

CLEANUP CHECKPOINTTABLE

Not valid for Replicat for Java, Oracle GoldenGate Applications Adapter, or Oracle GoldenGate Big Data.

Use `CLEANUP CHECKPOINTTABLE` to remove checkpoint records from the checkpoint table when there is no checkpoint file associated with it in the working Oracle GoldenGate directory. This command should only be used on Replicats that have been deleted. The purpose of this command is to remove checkpoint records that are not needed any more, either because groups were changed or files were moved.

Use the `DBLOGIN` command to establish a database connection before using this command.

Syntax

```
CLEANUP CHECKPOINTTABLE [[container. | catalog.]owner.table]
```

container. | *catalog.*

The Oracle pluggable database, if applicable. If this option is omitted, the catalog or pluggable database defaults to the one that is associated with the `SOURCEDB`, `USERID`, or `USERIDALIAS` portion of the `DBLOGIN` command (depending on the database).

owner.table

The owner and name of the checkpoint table to be cleaned up. If an owner and name are not specified, the table that is affected is the one specified with the `CHECKPOINTTABLE` parameter in the `GLOBALS` parameter file.

Example

```
CLEANUP CHECKPOINTTABLE ggadmin.ggs_checkpoint
```

CLEANUP EXTRACT

Use `CLEANUP EXTRACT` to delete run history for the specified Extract group. The cleanup keeps the last run record intact so that Extract can resume processing from where it left off. Before using this command, stop Extract by issuing the `STOP EXTRACT` command.

Syntax

```
CLEANUP EXTRACT group_name [, SAVE count]
```

group_name

The name of an Extract group or a wildcard (*) to specify multiple groups. For example, `T*` cleans up all Extract groups whose names start with T.

SAVE count

Excludes the specified number of the most recent records from the cleanup.

Examples**Example 1**

The following deletes all but the last record.

```
CLEANUP EXTRACT exte
```

Example 2

The following deletes all but the most recent five records.

```
CLEANUP EXTRACT *, SAVE 5
```

CLEANUP REPLICAT

Use `CLEANUP REPLICAT` to delete run history for a specified Replicat group. The cleanup keeps the last run record intact so that Replicat can resume processing from where it left off.

Before using this command, stop Replicat by issuing the `STOP REPLICAT` command.

Syntax

```
CLEANUP REPLICAT group_name[threadID] [, SAVE count]
```

***group_name*[*threadID*]**

One of the following:

- *group_name*: The name of a Replicat group or a wildcard (*) to specify multiple groups. For example, `T*` cleans up all Replicat groups whose names begin with T. If the specified group (or groups) is a coordinated Replicat, the cleanup applies to all threads.
- *group_namethreadID*: A thread of a coordinated Replicat, identified by its full name (group name plus *threadID*), such as `finance003`.

SAVE count

Excludes the specified number of the most recent records from the cleanup.

Examples

The following deletes all but the last record.

```
CLEANUP REPLICAT repe
```

The following deletes all but the most recent five records.

```
CLEANUP REPLICAT *, SAVE 5
```

The following deletes all but the most recent five records for thread three of coordinated Replicat group `fin`.

```
CLEANUP REPLICAT repe, SAVE 5
```

CONNECT

You can use this command to connect to a Service Manager as well as the Administration Service URI. You must connect to your Service Manager before you can execute most of the Admin Client commands.

Admin Client allows connections when the server uses a self-signed certificate though this is not the default. Admin Client does not allow connecting to a server through HTTPS when the self-signed certificate is invalid. To override this behavior, use the `!` modifier with the `CONNECT` command.

For example, when using the Admin Client to connect to the Oracle GoldenGate Microservices Architecture services that are secured with a self-signed SSL certificate, you must use a command with the `!` modifier:

```
CONNECT https://myserver.example.org as oggadmin !
```

Syntax

```
CONNECT server-url deployment-name proxy-uri user-name password
```

server-url

The URL of the Service Manager or Administration Service that you want to connect to.

deployment-name

The name of the deployment that you want to connect to on the specified Service Manager. If only one deployment (except for Service Manager) is defined, that deployment is the default. Otherwise, there is not a default deployment and the `DEPLOYMENT deployment-name` option must be used.

proxy-uri

The URI of your proxy server in the `schema://hostname[:port-number]` format.

user-name

The user name for the specified Service Manager.

password

The password for the specified user name. If you do not specify the password, you are prompted for it.

Example

```
CONNECT http://prodserver.mysite.com:9700 deployment Atlanta_1 as oggadmin  
password welcome1
```

DBLOGIN USERIDALIAS

Use `DBLOGIN` to establish a database connection through Admin Client in preparation to issue other Oracle GoldenGate commands that affect the database. The user who issues `DBLOGIN` should have the appropriate database privileges to perform the functions that are enacted by those commands. Any other special privileges that are required for a Admin Client command are listed with the reference documentation for that command.

Syntax

```
DBLOGIN USERIDALIAS alias
```

alias

Specifies the alias of a database user credential that is stored in the Oracle GoldenGate credential store. This alias is the TNS connection identifier used to connect to a database.

To log into a pluggable database in an Oracle multitenant container database, the user must be stored as a connect string, such as `ggadmin@orcl`. To log into the root container, the user must be stored as a common user, including the `c##` prefix, such as `c##ggadmin@cdb$root`.

DOMAIN *domain*

Specifies the credential store domain for the specified alias. A valid domain entry must exist in the credential store for the specified alias. The default domain is `OracleGoldenGate`.

Examples

```
DBLOGIN USERIDALIAS ggeast
```

```
DBLOGIN USERIDALIAS ggeast DOMAIN OracleGoldenGate
```

DELETE AUTHORIZATIONPROFILE

Use this command to delete an authorization profile. However, the `localCredentialStore` profile, or the profile that is currently set for the deployment, cannot be deleted. When a profile is successfully deleted, information stored in the configuration file and securely stored information is removed.

Syntax:

```
DELETE AUTHORIZATIONPROFILE profile-name  
DEPLOYMENT deployment-name
```

profile-name

Specify the name of the authorization profile that you need to delete.

deployment-name

Specify the name of the deployment associated with the authorization profile.

Example

The following shows how to delete a profile:

```
DELETE AUTHORIZATIONPROFILE testProfile DEPLOYMENT ServiceManager
```

DELETE CHECKPOINTTABLE

Not valid for Replicat for Java, Oracle GoldenGate Applications Adapter, or Oracle GoldenGate Big Data.

Use `DELETE CHECKPOINTTABLE` to drop a checkpoint table from the database. Use the `DBLOGIN` command to establish a database connection before using this command.

If the checkpoint table is deleted while Replicat is still running and transactions are occurring, Replicat will abend with an error that the checkpoint table could not be found. However, the checkpoints are still maintained on disk in the checkpoint file. To resume processing, add the checkpoint table back under the same name. Data in the trail resumes replicating. Then, you can delete the checkpoint table.

Syntax

```
DELETE CHECKPOINTTABLE [[container. | catalog.]owner.table] [!]
```

container.* | *catalog.

The Oracle pluggable database, if applicable. If this option is omitted, the catalog or pluggable database defaults to the one that is associated with the `SOURCEDB`, `USERID`, or `USERIDALIAS` portion (depending on the database) of the `DBLOGIN` command.

owner.table

The owner and name of the checkpoint table to be deleted. An owner and name are not required if they are the same as those specified with the `CHECKPOINTTABLE` parameter in the `GLOBALS` file.

!

Bypasses the prompt that confirms intent to delete the table.

Example

```
DELETE CHECKPOINTTABLE ggadmin.ggs_checkpoint
```

DELETE CREDENTIALS

To remove a credential from the local wallet, use the `DELETE CREDENTIALS` command.

Syntax:

```
DELETE CREDENTIALS credential-name
```

credential-name is the name of the credential being deleted.

Example:

```
OGG (not connected) 1> DELETE CREDENTIALS admin
2019-02-14T00:31:36Z INFO OGG-15114 Credential store altered.

OGG (not connected) 2>
```

In this example, the `admin` user credential is deleted.

DELETE CREDENTIALSTORE

Use the `DELETE CREDENTIALSTORE` command to remove a credential store from the system. The credential store wallet and its contents are permanently deleted.

The use of a credential store is not supported for the NonStop platforms.

Syntax

```
DELETE CREDENTIALSTORE
```

DELETE DISTPATH

Use `DELETE DISTPATH` to remove a distribution path.

Syntax

```
DELETE DISTPATH path-name
```

The name of the distribution path.

Example

```
DELETE DISTPATH dpe
```

DELETE ENCRYPTIONPROFILE

Use `DELETE ENCRYPTIONPROFILE` to remove an encryption profile.

Syntax

```
DELETE ENCRYPTIONPROFILE encryption-profile-name
```

DELETE PROFILE

This command removes a managed process profile.

Syntax:

```
DELETE PROFILE profile-name
```

profile-name is the name of the profile being removed.

Example:

```
OGG (https://localhost Local) 7> DELETE PROFILE Critical
```

DELETE RECVPATH

Use `DELETE RECVPATH` to remove target-initiated distribution path in the Distribution Service.

Syntax

```
DELETE RECVPATH path-name
```

The name of the distribution path.

Example

```
DELETE RECVPATH rpe
```

DISABLE SERVICE

Use `DISABLE SERVICE` to disable the specified Oracle GoldenGate services for any update operations by users without the Security role. You must have the Security role to use this command. Make sure that you stop the service before it can be disabled.

Syntax

```
DISABLE SERVICE service_name_wildcard
```

service_name_wildcard

The name of a service or a wildcard (*) to specify multiple services. Valid services are ADMIN SRVR, DIST SRVR, RECV SRVR, and PMSRVR.

Example

```
DISABLE SERVICE ADMIN*
```

DISCONNECT

Use to disconnect from the Service Manager. It is not necessary to disconnect from one Service Manager connection to connect to another Service Manager. Use the `CONNECT` command to establish a connection to a Service Manager.

Syntax

```
DISCONNECT
```

DELETE EXTRACT

Use `DELETE EXTRACT` to delete an Extract group. This command deletes the checkpoint file that belongs to the group, but leaves the parameter file intact. You can then re-create the group or delete the parameter file as needed.

Before using `DELETE EXTRACT`, stop Extract with the `STOP EXTRACT` command.

Syntax

```
DELETE EXTRACT group_name [!]
```

group_name

The name of an Extract group or a wildcard specification (*) to specify multiple groups. For example, `T*` deletes all Extract groups whose names start with T.

!

(Exclamation point) Deletes all Extract groups associated with a wildcard without prompting.

DELETE EXTTRAIL

Use `DELETE EXTTRAIL` to delete the record of checkpoints associated with a trail on a local system. Checkpoints are maintained in a file bearing the same name as the group in the `dirchk` sub-directory of the Oracle GoldenGate directory.

This command only deletes references to the specified trail from the checkpoint file. It does not delete the trail files.

Syntax

```
DELETE EXTTRAIL trail_name
```

trail_name

The relative or fully qualified path name of the trail, including the two-character trail prefix.

Example

```
DELETE EXTTRAIL north/ea
```

DELETE HEARTBEATENTRY

Use `DELETE HEARTBEATENTRY` to delete the records in the heartbeat table with the specified process name either in the incoming or outgoing path columns. This command required a `DBLOGIN`. On a CDB database, a PDB login is required.

Oracle GoldenGate for Oracle database simplifies the administration of the heartbeat table by eliminating the need for GGSHEMA or HEARTBEATABLE parameter. To implement this, Extracts and Replicat look in the schema of the ER processes connected user for the heartbeat tables, except for Oracle CDB root Extract. In case of CDB root Extract, GGSHEMA is used.

Syntax

```
DELETE HEARTBEATENTRY group_name
```

group_name

The name of the process to be cleaned.

!

(Exclamation point) Deletes all heartbeat table entries associated with a wildcard without prompting.

DELETE HEARTBEATABLE

Use `DELETE HEARTBEATABLE` to delete tables, procedures, schedulers, and views. This command requires a `DBLOGIN`. On a CDB database, a PDB login is required.

Oracle GoldenGate for Oracle database simplifies the administration of the heartbeat table by eliminating the need for GGSHEMA or HEARTBEATABLE parameter. To implement this, Extracts and Replicat look in the schema of the ER processes connected user for the heartbeat tables, except for Oracle CDB root Extract. In case of CDB root Extract, GGSHEMA is used.

Syntax

```
DELETE HEARTBEATABLE heartbeatable_name
```

group_name

The name of the process to be cleaned.

!

(Exclamation point) Deletes all heartbeat table entries associated with a wildcard without prompting.

DELETE MASTERKEY

Use the `DELETE MASTERKEY` command to mark a version of a master key for deletion. Routinely deleting older versions of a master key ensures that they cannot be used maliciously.

The `OPEN WALLET` command must be used before using this command or any of the commands that add or renew the master keys or purge the wallet.

To view the version of a master key, use the [INFO MASTERKEY](#) command.

This command marks a version for deletion, but does not physically remove it from the wallet, see [PURGE WALLET](#) to remove the master key version permanently.

 **Note:**

For Oracle GoldenGate deployments using a shared wallet, the older versions of the master key should be retained after the master key is renewed until all processes are using the newest version. The time to wait depends on the topology, latency, and data load of the deployment. A minimum wait of 24 hours is a conservative estimate, but you may need to perform testing to determine how long it takes for all processes to start using a new key. To determine whether all of the processes are using the newest version, view the report file of each Extract immediately after renewing the master key to confirm the last SCN that was mined with the old key. Then, monitor the Replicat report files to verify that this SCN was applied by all Replicat groups. At this point, you can delete the older versions of the master key.

See [UNDELETE MASTERKEY](#) to reverse a deletion made by `DELETE MASTERKEY`.

Once a version number is used, the wallet reserves it forever, and no other key of the same version can be generated. For example, you cannot mark version 2 of a key for deletion, then purge the wallet to remove it, and then issue `RENEW MASTERKEY` to add a version 2 again. Even though only version 1 of the key remains in the wallet after the purge, the renewal generates version 3, not version 2.

The use of a wallet and master key is not supported for the NonStop platforms.

Syntax

```
DELETE MASTERKEY  
{VERSION version | RANGE FROM begin_value TO end_value | ALL}
```

VERSION *version*

Specifies a single version to be marked for deletion.

RANGE FROM *begin_value* TO *end_value*

Specifies a range of versions to be marked for deletion. The versions must be contiguous. For example, specifying `RANGE FROM 3 TO 6` marks versions 3, 4, 5, and 6.

ALL

Marks all versions of the master key for deletion, including the currently active one. When this option is used, it should always be followed by a `RENEW MASTERKEY` command to create a new, current version of the master key.

Examples

This command marks one version of the master key for deletion and returns a message similar to the one shown.

```
DELETE MASTERKEY VERSION 10  
Version 10 of Masterkey 'OGG_DEFAULT_MASTERKEY' deleted from wallet at  
location './dirwlt'.
```

This command marks versions 3, 4, 5, and 6 for deletion and returns a message similar to the one shown.

```
DELETE MASTERKEY RANGE FROM 3 TO 6
```

Example: Admin Client

```
DELETE MASTERKEY ALL
2019-11-21T19:38:08Z INFO OGG-06148 Version 1 of master key
'OGG_DEFAULT_MASTERKEY' in Oracle Wallet was deleted.
```

DELETE PROCEDURETRANDATA

Valid for Oracle.

Use `DELETE PROCEDURETRANDATA` to remove supplemental logging for Procedural Replication.

Use the `DBLOGIN` command to establish a database connection before using this command.

Syntax

```
DELETE PROCEDURETRANDATA
```

DELETE REPLICAT

Use `DELETE REPLICAT` to delete a Replicat group. This command deletes the checkpoint file but leaves the parameter file intact. Then you can re-create the group or delete the parameter file as needed. This command frees up trail files for purging, because the checkpoints used by the deleted group are removed (assuming no other processes are reading the file).

Use the `DBLOGIN` command before deleting any Replicats so that the checkpoint data or any internal information stored in the database for that Replicat can also be cleaned up.

Before using `DELETE REPLICAT`, stop Replicat with the `STOP REPLICAT` command.

If this is an integrated Replicat (Oracle only) or a non-integrated Replicat that uses a checkpoint table, do the following after you stop Replicat:

1. Log into the database by using the `DBLOGIN` command. `DBLOGIN` enables `DELETE REPLICAT` to delete the checkpoints from the checkpoint table of a non-integrated Replicat or to delete the inbound server that an integrated Replicat uses.
2. Issue `DELETE REPLICAT`.

Syntax

```
DELETE REPLICAT group_name [!]
```

group_name

The name of a Replicat group or a wildcard (*) to specify multiple groups. For example, `T*` deletes all Replicat groups whose names begin with T.

!

Use this option to force the Replicat group to be deleted if the `DBLOGIN` command is not issued before the `DELETE REPLICAT` command is issued. If the group is a non-integrated Replicat, this option deletes the group's checkpoints from the checkpoint file on disk, but not from the checkpoint table in the database. If using this option to delete an integrated Replicat group, you must use the `UNREGISTER REPLICAT` command to delete the inbound server from the target database. This option can also be used to ignore the prompt that occurs when a wildcard specifies multiple groups.

 **Note:**

The basic `DELETE REPLICAT` command commits an existing Replicat transaction, but the `!` option prevents the commit.

Example

```
DELETE REPLICAT repe
```

DELETE RMTTRAIL

Use `DELETE RMTTRAIL` to delete the record of checkpoints associated with a trail on a remote system. Checkpoints are maintained in a file bearing the same name as the group in a sub-directory of the Oracle GoldenGate directory.

This command only deletes references to the specified trail from the checkpoint file. It does not delete the trail files.

Syntax

```
DELETE RMTTRAIL trail_name [,EXTRACT group_name]
```

trail_name

The relative or fully qualified path name of the trail, including the two-character trail prefix.

group_name

The name of the Extract group to which the trail is bound. If not specified, `DELETE RMTTRAIL` deletes the trail reference from all Extract groups that write to the specified trail.

Example

```
DELETE RMTTRAIL var/lib/data/et
```

```
DELETE RMTTRAIL north/ea
```

The following command is run from the Admin Client.

```
DELETE RMTTRAIL ea
2019-11-20T23:49:41Z INFO OGG-08100 Deleting extract trail ea for
Extract exte
```

DELETE SCHEMATRANDATA

Valid for Oracle.

Use `DELETE SCHEMATRANDATA` to remove the Oracle schema-level supplemental logging that was added with the `ADD SCHEMATRANDATA` command. Use the `DBLOGIN` command to establish a database connection before using this command. The user that is specified with this command must have the privilege to remove supplemental log groups.

By default, this command attempts to remove the supplemental logging of the key columns that are used by Oracle GoldenGate (can be the primary key, a unique key, `KEYCOLS` columns, or all columns) and also the scheduling columns. The scheduling columns are the primary key, all of the unique keys, and all of the foreign keys. To delete the logging of the Oracle GoldenGate key columns, but not the scheduling columns, include the `NOSCHEDULINGCOLS` option with `DELETE SCHEMATRANDATA`. If `ADD SCHEMATRANDATA` was issued with the `ALLCOLS` option, use `DELETE SCHEMATRANDATA` with the `ALLCOLS` option to remove the supplemental logging of all of the columns, including the Oracle GoldenGate key columns.

Syntax

```
DELETE SCHEMATRANDATA schema [NOSCHEDULINGCOLS | ALLCOLS]
```

schema

The schema for which you want supplemental logging to be removed. Do not use a wildcard. If the source is an Oracle multitenant container database, make certain to log into the pluggable database that contains the schema for which you want to remove the logging.

NOSCHEDULINGCOLS

Prevents the command from removing the supplemental logging of the scheduling columns of the tables in the specified schema. The scheduling columns are the primary key, all of the unique keys, and all of the foreign keys of a table.

ALLCOLS

Removes the supplemental logging of all of the columns of the tables in the specified schema.

Examples

```
DELETE SCHEMATRANDATA hr
```

```
DELETE SCHEMATRANDATA hr ALLCOLS
```

DELETE TRACETABLE

Use `DELETE TRACETABLE` to delete a trace table.

Use the `DBLOGIN` command to establish a database connection before using this command.

Syntax

```
DELETE TRACETABLE [[container.]owner.table]
```

container

The pluggable database, if the database is a multitenant container database (CDB).

owner.table

The owner and name of the trace table to be deleted. An owner and name are not required if the owner is the same as that specified with the `USERID` or `USERIDALIAS` parameter and the trace table has the default name of `GGS_TRACE`. The schema is required.

!

Deletes the trace table without prompting.

Example

```
DELETE TRACETABLE ora_trace
```

DELETE TRANDATA

Use `DELETE TRANDATA` to do one of the following:

- Db2 LUW and Db2 z/OS: Alters the table to `DATA CAPTURE NONE`.
- Oracle: Disable supplemental logging.
- SQL Server: Stops extended logging for a table.
- PostgreSQL: Alters the table's `REPLICA IDENTITY` to `NOTHING`.

By default, this command attempts to remove the supplemental logging of the key columns that are used by Oracle GoldenGate (can be the primary key, a unique key, `KEYCOLS` columns, or all columns) and also the scheduling columns. The scheduling columns are the primary key, all of the unique keys, and all of the foreign keys. To delete the logging of the Oracle GoldenGate key columns, but not the scheduling columns, include the `NOSCHEDULINGCOLS` option with `DELETE TRANDATA`. If `ADD TRANDATA` was issued with the `ALLCOLS` option, use `DELETE TRANDATA` with the `ALLCOLS` option to remove the supplemental logging of all of the columns, including the Oracle GoldenGate key columns. `DELETE TRANDATA` will disable logical replication for a table after all the table level supplemental logging has been disabled or removed. This behavior is supported from Oracle 19c and higher. Also, if a `DELETE TRANDATA` operation removes the last supplemental log group on a table then it will also perform an `ALTER TABLE owner.table DISABLE LOGICAL REPLICATION` too.

It is mandatory to run `ADD TRANDATA table_name` command to enable logical replication after running `DELETE TRANDATA`.

**Note:**

You cannot enable logical replication using `ADD SCHEMATRANDATA`.

Use the `DBLOGIN` command to establish a database connection before using this command. The user specified with this command must have the same privileges that are required for `ADD TRANDATA`.

Syntax

```
DELETE TRANDATA [container.]owner.table [NOSCHEDULINGCOLS | ALLCOLS]
```

[*container.*]owner.table

The pluggable database (if this is an Oracle multitenant container database), owner and name of the table or file. A wildcard can be used for any name component.

NOSCHEDULINGCOLS

Prevents the command from removing the supplemental logging of the scheduling columns of the specified table. The scheduling columns are the primary key, all of the unique keys, and all of the foreign keys of a table.

ALLCOLS

Removes the supplemental logging of all of the columns of the specified table.

Examples

```
DELETE TRANDATA hr.employees
```

```
DELETE TRANDATA hr.reg*
```

```
DELETE TRANDATA hr.jobs ALLCOLS
```

EDIT ENCKEYS

Use `EDIT ENCKEYS` to open the `ENCKEYS` file for editing in the default text editor.

Syntax

```
EDIT ENCKEYS
```

EDIT GLOBALS

Use this to open the GLOBALS parameter file for editing in the default text editor. The default text editor is set using the `SET EDITOR` command.

After the globals file has been modified, when you leave the editor, the globals parameter file is checked to ensure its valid.

Syntax

```
EDIT GLOBALS
```

Examples

The following examples show how Admin Client checks the validity of the parameter file.

When you run the `EDIT GLOBALS` command and the parameter file is valid, then the editor opens up to allow editing the GLOBALS parameters. If the file doesn't pass the validity check, then the following error is displayed:

The output displays:

```
2019-11-21T21:01:21Z ERROR OGG-10143 (GLOBALS) line 2: Parameter
[junkasdsad] is unrecognized. No parameter definition with that name
could be found.
```

```
2019-11-21T21:01:21Z ERROR OGG-10184 Parameter file GLOBALS:
Validity check: FAIL
```

EDIT PARAMS

Use `EDIT PARAMS` to create or change a parameter file. By default, the editor is set with your `EDITOR` environment variable. You can change the default editor with the `SET EDITOR` command.

Admin Client Syntax

```
EDIT PARAMS file_name
```

group_name

Opens a parameter file for the specified Extract or Replicat group.

file_name

Opens the specified file. When you create a parameter file with `EDIT PARAMS`, it is saved to a sub-directory of the Oracle GoldenGate directory. You can create a parameter file in a directory other than the default by specifying the full path name, but you must also specify the full path name with the `PARAMS` option of the `ADD EXTRACT` or `ADD REPLICAT` command when you create the process group.

▲ Caution:

Use this command to view or edit an existing parameter file that is in a character set of the local operating system. If you use the `CHARSET` option with non-local operating system character set, then contents may become corrupted.

Examples

```
EDIT PARAMS exte
```

```
EDIT PARAMS c:\lpparms\repe.prm
```

ENCRYPT PASSWORD

Use `ENCRYPT PASSWORD` to encrypt a password that is used in an Oracle GoldenGate parameter file or command.

Admin Client Syntax

```
ENCRYPT PASSWORD password  
ENCRYPTKEY key_name
```

password

The login password. Do *not* enclose the password within quotes. Do *not* use commas in passwords. If the password is case-sensitive, type it that way.

ENCRYPTKEY {*key_name*}

Specifies the encryption key.

key_name

Specifies the logical name of a user-created encryption key in a local `ENCKEYS` lookup file. The key name is used to look up the actual key in the `ENCKEYS` file. A user-created key and an associated `ENCKEYS` file is required when using AES encryption. To use *key_name*, generate the key with `KEYGEN` or another utility, then store it in an `ENCKEYS` file on the source and target systems. The AES ciphers have a 128-bit, 192-bit, and 256-bit block size.

Examples

```
ENCRYPT PASSWORD ny14072 ENCRYPTKEY superkey2
```

EXIT

Use `EXIT` to exit the Oracle GoldenGate command line interface.

Syntax

```
EXIT
```

ENABLE SERVICE

Use `ENABLE SERVICE` to enable the specified Oracle GoldenGate services. You must have the Security role to use this command.

Syntax

```
ENABLE SERVICE service_name_wildcard
```

service_name_wildcard

The name of a service or a wildcard (*) to specify multiple services. Valid services are ADMIN\$SRV, DIST\$SRV, RECV\$SRV, and PMS\$SRV.

Example

```
START SERVICE ADMIN*
```

FLUSH SEQUENCE

This command updates an Oracle sequence so that initial redo records are available at the time the Extract starts to capture transaction data. Normally, redo is not generated until the current cache is exhausted. The flush gives Replicat an initial start point with which to synchronize to the correct sequence value on the target system. From then on, Extract can use the redo that is associated with the usual cache reservation of sequence values.

Syntax

```
FLUSH SEQUENCE owner.sequence
```

owner.sequence

The owner and name of a sequence. The schema name cannot be null and is required. You can use an asterisk (*) wildcard for the sequence name, but not for the owner name.

Example

```
FLUSH SEQUENCE ggadmin.seq
```

HELP

Use `HELP` to obtain information about an Oracle GoldenGate command. The basic command returns a list of commands. The *command* option restricts the output to that of a specific command.

Syntax

```
HELP [command]
```

command

The command that you want help for. You can use a wildcard (*).

Example

To display all commands that begin with `ADD`.

```
HELP ADD
```

HEALTH DEPLOYMENT

Use to display the health of the specified Oracle GoldenGate deployments. Only enabled services will show up in the results, not the disabled services.

Syntax

```
HEALTH DEPLOYMENT deployment-name-wildcard
```

deployment-name-wildcard

The name of the deployment you are interested in. You can use an asterisk (*) wildcard for any portion of the deployment name.

Example

```
HEALTH DEPLOYMENT Phoenix
```

HISTORY

Use `HISTORY` to view a list of the most recently issued commands since the startup of the session. You can use the `!` command or the `FC` to re-execute a command in the list.

Syntax

```
HISTORY [n]
```

n

Returns a specific number of recent commands, where *n* is any positive number.

Example

```
HISTORY 7
```

The result of this command would be similar to:

```
1: ADD EXTRACT
2: ADD EXTTRAIL
3: INFO CHECKPOINTTABLE
4: EDIT PARAMS
5: START EXTRACT
6: HISTORY
```

INFO ALL

Use `INFO ALL` to display the status and lag (where relevant) for all Manager, Extract, and Replicat processes on a system. When Oracle Grid Infrastructure Agents (XAG) Clusterware components are in use, the relevant information is also displayed.

The basic command, without options, displays only online (continuous) processes and Microservices Architecture services. To display tasks, use either `INFO ALL TASKS` or `INFO ALL ALLPROCESSES`.

The `Status` and `Lag at Chkpt` (checkpoint) fields display the same process status and lag as the `INFO EXTRACT` and `INFO REPLICAT` commands.

If Replicat is in coordinated mode, `INFO ALL` shows only the coordinator thread. To view information about individual threads, use [INFO REPLICAT](#).

In Microservices Architecture, this command also returns the all the services that are running for the deployment.

Syntax

```
INFO ALL [TASKS | ALLPROCESSES]
```

TASKS

Displays information only for tasks.

ALLPROCESSES

Displays information for online processes and tasks.

Examples

```
INFO ALL TASKS
```

```
INFO ALL ALLPROCESSES
```

INFO AUTHORIZATIONPROFILE

Lists all the authorization profiles in a deployment or information on a specific authorization profile for a specific deployment.

Syntax:

```
INFO AUTHORIZATIONPROFILE ( profile-name | ALL )
DEPLOYMENT deployment-name
```

profile-name

Name of the authorization profile for which the details need to be displayed.

ALL

Lists all existing profiles in the deployment. It does not get detailed information about them nor list the currently enabled profile.

deployment-name

Name of the deployment for which the information is needed.

Examples

The following examples lists out all authorization profiles in Service Manager.

```
INFO AUTHORIZATIONPROFILE ALL DEPLOYMENT ServiceManager
```

The following example gets the information about the testProfile in Service Manager. In this deployment, there are two profiles: localCredentialStore and testProfile.

```
INFO AUTHORIZATIONPROFILE testProfile DEPLOYMENT ServiceManager
```

The output for this command is:

```

Type:                idcs
  Enabled:            true
  Client ID:          1234567890abcdefghijklmnopqrstuv
  Tenant Discovery URI: https://prodserver.idcs.com/.well-known/openid-
configuration
  Group To Role Mapping:
  Security:           Security-Group

```

INFO CHECKPOINTTABLE

Not valid for Replicat for Java, Oracle GoldenGate Applications Adapter, or Oracle GoldenGate Big Data.

Use `INFO CHECKPOINTTABLE` to confirm the existence of a checkpoint table and view the date and time that it was created. It returns a message similar to the following:

```
Checkpoint table ggadmin.ggs_checkpoint created 2017-01-06T11:51:53.
```

Use the `DBLOGIN` command to establish a database connection before using this command.

Syntax

```
INFO CHECKPOINTTABLE [[container. | catalog.]owner.table]
```

container. | *catalog.*

The Oracle pluggable database, if applicable. If this option is omitted, the catalog or pluggable database defaults to the one that is associated with the `SOURCEDB`, `USERID`, or `USERIDALIAS` portion of the `DBLOGIN` command (depending on the database).

owner.table

The owner and name of the checkpoint table. An owner and name are not required if they are the same as those specified with the `CHECKPOINTTABLE` parameter in the `GLOBALS` file. You can use a wildcard (*).

Example

```
INFO CHECKPOINTTABLE ggadmin.ggs_checkpoint
```

INFO CREDENTIALS

The `INFO CREDENTIALS` command retrieves a list of Oracle GoldenGate user credentials.

Example

```
OGG (not connected) 1> INFO CREDENTIALS *
```

Output:

Credentials Name	User Name
admin	oggadmin

When mixed wildcard is used:

```
OGG (not connected) 2> INFO CREDENTIALS a*
```

Output:

Credentials Name	User Name
admin	oggadmin

INFO CREDENTIALSTORE

Use the `INFO CREDENTIALSTORE` command to get information about an Oracle GoldenGate credential store. This information includes the aliases that a credential store contains and the user IDs that correspond to them. The encrypted passwords in the credential store are not returned.

The credential store location is identified by the `CREDENTIALSTORELOCATION` parameter in the `GLOBALS` file.

The use of a credential store is not supported for the NonStop platforms.

Syntax

```
INFO CREDENTIALSTORE [DOMAIN domain]
```

DOMAIN *domain*

Returns the aliases and user IDs for a specific domain. For security purposes, if the `DOMAIN` option is omitted, only the aliases and user IDs under the default domain of `OracleGoldenGate` are shown. It is not possible to see `DOMAIN` credentials unless the person issuing the `INFO CREDENTIALSTORE` command knows the name of the domain. See [ALTER CREDENTIALSTORE](#) for more information about domains.

Examples

```
INFO CREDENTIALSTORE
```

```
INFO CREDENTIALSTORE DOMAIN support
```

Example: Command run in the Admin Client

The following example shows credential store domain as `Oracle GoldenGate` with the alias set up as `ggeast` and the user ID as `ggadmin`.

```
INFO CREDENTIALSTORE DOMAIN OracleGoldenGate
Default domain: OracleGoldenGate
  Alias: ggeast
  Userid: ggadmin
```

INFO DISTPATH

Use `INFO DISTPATH` to return information about distribution paths. Before you run this command, ensure that the Distribution Server is running for that deployment.

Syntax

```
INFO DISTPATH ALL | DISTPATH-NAME DETAIL
```

ALL

Displays a list of all distribution paths with their status.

DISTPATH-NAME

The name of the distribution path.

DETAIL

Displays the following additional information for the requested distribution path:

- Process and thread information.
- Source database name where the data is originated.
- Last started timestamp and processing lag.
- Current and starting input and output checkpoint.

INFO ENCRYPTIONPROFILE

Use `INFO ENCRYPTIONPROFILE` to return information about the encryption profile.

Syntax

```
INFO ENCRYPTIONPROFILE encryption-profile-name-wildcard [DETAIL ]
```

encryption-profile-name-wildcard

Displays a list of all encryption profiles.

INFO ER

Use the `INFO ER` command to get information on multiple Extract and Replicat groups as a unit. Use it with wildcards to affect every Extract and Replicat group that satisfies the wildcard. This information is returned:

- The status of Extract (`STARTING`, `RUNNING`, `STOPPED` or `ABENDED`). `STARTING` means that the process has started but has not yet locked the checkpoint file for processing.
- Approximate Extract lag.
- Checkpoint information.
- Process run history.
- The trails to which Extract is writing.
- Status of upgrade to, or downgrade from, integrated capture. The process can be running or stopped when `INFO ER` is issued. With a running process, the status of `RUNNING` can mean one of the following:
- Active: Running and processing (or able to process) data. This is the normal state of a process after it is started.
- Suspended: The process is running, but suspended due to an `EVENTACTIONS SUSPEND` action. In a suspended state, the process is not active, and no data can be processed, but the state of the current run is preserved and can be continued by issuing the `SEND` command with the `RESUME` option. The RBA in the `INFO` command reflects the last checkpointed position before the suspend action. To

determine whether the state is active or suspended, issue the `SEND` command with the `STATUS` option.

Admin Client Syntax

```
INFO ER group_wildcard
[, SHOWCH checkpoints-number]
[, DETAIL]
[, TASKS]
[, ALLPROCESSES]
```

group_wildcard

The wildcard specification for the groups that you want to affect with the command. Oracle GoldenGate automatically increases internal storage to track up to 100,000 wildcard entries.

SHOWCH *checkpoint-number*

The basic command shows information about the current Extract checkpoints. Extract checkpoint positions are composed of read checkpoints in the data source and write checkpoints in the trail. The trail type (`RMTTRAIL` or `EXTTRAIL`) is also noted.

Optionally, specify a value for checkpoint number to include the specified number of previous checkpoints as well as the current one.



Note:

You might see irregular indents and spacing in the output. This is normal and does not affect the accuracy of the information.

DETAIL

Displays the Extract run history, including start and stop points in the data source expressed as a time and the trails to which Extract is writing.

TASKS

Displays Extract tasks only. Tasks that were specified by a wildcard argument are not displayed by `INFO EXTRACT`.

ALLPROCESSES

Displays all Extract groups, including tasks.

Example

```
INFO ER *
```

Output would be similar to the following:

```
Extract      EXTE      Last Started 2022-06-07 07:33   Status RUNNING
Description  east
Checkpoint Lag 00:00:00 (updated 00:00:05 ago)
Process ID    60782
Log Read Checkpoint Oracle Integrated Redo Logs
                2022-09-05 23:17:19
                SCN 0.89996333 (89996333)
Settings Profile Default
```

```

Encryption Profile   LocalWallet

Replicat   REPE      Last Started 2022-06-15 03:45   Status RUNNING
Description          east
INTEGRATED
Parallel
Checkpoint Lag       00:00:00 (updated 00:00:08 ago)
Process ID           96740
Log Read Checkpoint File east/ea000000009
                    2022-09-05 23:17:19.808198   RBA 9382
Settings Profile     Default
Encryption Profile   LocalWallet

```

INFO EXTRACT

Use `INFO EXTRACT` to view the following information.

- The status of Extract (`STARTING`, `RUNNING`, `STOPPED` or `ABENDED`). `STARTING` means that the process has started but has not yet locked the checkpoint file for processing.
- Approximate Extract lag.
- Checkpoint information.
- Process run history.
- The trails to which Extract is writing.
- Status of upgrade to, or downgrade from, Integrated Extract

Extract can be running or stopped when `INFO EXTRACT` is issued. In the case of a running process, the status of `RUNNING` can mean one of the following:

- **Active:** Running and processing (or able to process) data. This is the normal state of a process after it is started.
- **Suspended:** The process is running, but suspended due to an `EVENTACTIONS SUSPEND` action. In a suspended state, the process is not active, and no data can be processed, but the state of the current run is preserved and can be continued by issuing the `SEND EXTRACT` command with the `RESUME` option. The RBA in the `INFO` command reflects the last checkpointed position before the suspend action. To determine whether the state is active or suspended, issue the `SEND EXTRACT` command with the `STATUS` option.

The basic command displays information only for online (continuous) Extract processes. Tasks are excluded.

About Extract Lag

The `Checkpoint Lag` field of the `INFO EXTRACT` output reflects the lag, in seconds, at the time that the last checkpoint was written to the trail. For example, if the following is true:

- Current time = 15:00:00
- Last checkpoint = 14:59:00

- Timestamp of the last record processed = 14:58:00

Then the lag is reported as 00:01:00 (one minute, the difference between 14:58 and 14:59).

A lag value of UNKNOWN indicates that the process could be running but has not yet processed records, or that the source system's clock is ahead of the target system's clock (due to clock imperfections, not time zone differences), see [LAG EXTRACT](#). For a more precise calculation of the lag and for determining the overall lag, use the heartbeat table. See [ADD HEARTBEATTABLE](#).

Syntax

```
INFO EXTRACT group_name
[, SHOWCH [checkpoint_number]]
[, DETAIL]
[, TASKS | ALLPROCESSES]
[, UPGRADE | DOWNGRADE]
[, CONTAINERS]
```

group_name

The name of an Extract group or a wildcard (*) to specify multiple groups. For example, T* shows information for all Extract groups whose names start with T. You can list the PDBs registered with a specified Extract group name.

SHOWCH [*checkpoint_number*]

The basic command shows information about the current Extract checkpoints. Extract checkpoint positions are composed of read checkpoints in the data source and write checkpoints in the trail. The trail type RMTTRAIL or EXTTRAIL is also noted. Optionally, specify a value for *checkpoint_number* to include the specified number of previous checkpoints as well as the current one.



Note:

You might see irregular indents and spacing in the output. This is normal and does not affect the accuracy of the information.

See About Checkpoints, which includes descriptions of the types of checkpoints made by each process and the internal metadata entries that are included in the display.

DETAIL

Displays the following:

- Extract run history, including start and stop points in the data source, expressed as a time.
- Trails to which Extract is writing.

TASKS

Displays only Extract tasks. Tasks that were specified by a wildcard argument are not displayed by INFO EXTRACT.

ALLPROCESSES

Displays all Extract groups, including tasks.

UPGRADE | DOWNGRADE

Valid for an Oracle Database only.

- **UPGRADE** displays whether the Extract can be upgraded from classic capture mode to integrated capture mode.
- **DOWNGRADE** displays whether the Extract can be downgraded from integrated capture mode to classic capture mode.

If Extract cannot be upgraded or downgraded, the reason why is displayed.

A wildcarded Extract name is not allowed with this option.

Before using this command, issue the `DBLOGIN` command.

CONTAINERS

Lists the PDBs that are registered with the specified Extract group. However, the command errors if it is run in non-CDB mode or the Extract group doesn't exist. Issue the `DBLOGIN` command before using this option.

Examples

```
INFO EXTRACT ext*, SHOWCH
```

```
INFO EXTRACT *, TASKS
```

```
INFO EXTRACT exte UPGRADE
```

The following example shows the use of the `INFO EXTRACT` command from the Admin Client.

```
INFO EXTRACT exte
```

```
EXTRACT   exte  Initialized   2019-11-20 23:22   Status STOPPED
Checkpoint Lag      00:00:00 (updated 00:00:09 ago)
Log Read Checkpoint Oracle Redo Logs
                  2019-11-20 23:22:54   Seqno 0, RBA 0
                  SCN 0.0 (0)
Auto Start          Delay:    0
Encryption Profile  LocalWallet
```

The following example shows the command output with `DBLOGIN` for PostgreSQL:

```
EXTRACT extw
Last Started 2020-07-01 01:40 Status RUNNING
Checkpoint Lag 00:00:00 (updated 00:00:09 ago)
Process ID 101094
VAM Read Checkpoint 2020-07-01 01:40:15.170802

Replication Slot edf_tc1_2c59ae112747afa1 is active with PID 101120 in
```

```
database postgres
Slot Restart LSN 1/B982ED98
Slot Flush LSN 1/B982ED98
Current Log Position 1/B982EDD0
```

The following example shows the command output without `DBLOGIN` for PostgreSQL:

```
EXTRACT extw Last Started 2020-07-01 01:40 Status RUNNING
Checkpoint Lag 00:00:00 (updated 00:00:04 ago)
Process ID 101094
VAM Read Checkpoint 2020-07-01 01:44:16.045693
LSN: 1/B99B7E60
Replication Slot Unavailable(requires DBLOGIN)
Slot Restart LSN Unavailable(requires DBLOGIN)
Slot Flush LSN Unavailable(requires DBLOGIN)
Current Log Position Unavailable(requires DBLOGIN)
```

INFO EXTTRAIL

Use `INFO EXTTRAIL` to retrieve configuration information for a local trail. It shows the name of the trail, the Extract that writes to it, the position of the last data processed, and the assigned maximum file size.

Syntax

```
INFO EXTTRAIL trail_name
```

trail_name

The relative or fully qualified path name of the trail or a wildcard designating multiple trails. For example, `T*` shows information for all trail files whose names start with `T`.

Examples

```
INFO EXTTRAIL north\ea
```

```
INFO EXTTRAIL *
```

The following example shows the use of the `INFO EXTTRAIL` command from the Admin Client where the trail name is `aa`.

```
INFO EXTTRAIL ea
      Local Trail: EA
      Seqno Length: 6
      Flip Seqno Length: yes
      Extract: exte
      Seqno: 0
```

```
RBA: 0  
File Size: 1500M
```

INFO HEARTBEATTABLE

Use `INFO HEARTBEATTABLE` to display information about the heartbeat tables configured in the database.

This command requires a `DBLOGIN`. For an Oracle multitenant database, the `DBLOGIN` to a PDB is required.

Oracle GoldenGate for Oracle database simplifies the administration of the heartbeat table by eliminating the need for `GGSCHEMA` or `HEARTBEATTABLE` parameter. To implement this, Extracts and Replicat look in the schema of the ER processes connected user for the heartbeat tables, except for Oracle CDB root Extract. In case of CDB root Extract, `GGSCHEMA` is used. In case of Autonomous Database (ADB), the user must be `GGADMIN`.

Syntax

```
INFO HEARTBEATTABLE
```

INFO MASTERKEY

Use the `INFO MASTERKEY` command to view the contents of a currently open master-key wallet. If a wallet store does not exist, a new Wallet store file is created. This Wallet store file is then used to host different encrypted keys as they are created.

The default output shows the version history of the master key, with the creation date of a version and the status of the version. The status can be one of the following:

- **Current:** Indicates this is the current version of the master key, which is the latest version of the master key as well.

 **Note:**

Changing prior key versions to Current status is not allowed.

- **Available:** Indicates this version is not the current one but can be made active, if needed.
- **Deleted:** Indicates that this version is marked to be deleted when the `PURGE WALLET` command is issued.

The use of a wallet and master key is not supported for the NonStop platforms.

Syntax

```
INFO MASTERKEY [VERSION version]
```

VERSION *version*

Shows detailed information about a specific version of the master key. The output includes the original creation date, the latest renewal date, the status, and the hash of AES (Advanced Encryption Standard) Key.

Examples

```
INFO MASTERKEY
```

```
INFO MASTERKEY VERSION 7
```

Example: Admin Client

```
INFO MASTERKEY
```

```
Masterkey Name: OGG_DEFAULT_MASTERKEY
```

Version	Creation Date	Status
1	2019-11-21T19:37:23.000+00:00	Current

INFO PARAM

Use `INFO PARAM` to retrieve the parameter definition information. If a name matches multiple records, they are all displayed. If the query parameter has child options, they are not displayed in the output though their names are listed in the Options tab. To display the full record of an option, the full name in the form of *parameter.option* should be queried separately.

This parameter infrastructure allows unlimited levels of options. So, the full name of a parameter or option might have numbers of segments, such as A.B.C.D.

Syntax

```
INFO PARAM name
```

name

The name of a parameter, an option, or a full name that is part of the several names concatenated together using dot ('.') as the delimiter.

Example 1

The following example uses `GETINSERTS` with `INFO PARAM` along with the output.

```
INFO PARAM GETINSERTS
```

Output:

```
param name : getinserts
opposite   : ignoreinserts
description : Include insert records.
```

```
argument      : boolean
default       : true
component(s)  : EXTRACT - All
              : REPLICAT - All
platform(s)   : All
database(s)   : All
status        : current
mandatory     : false
dynamic       : false
relations     : none
```

Example 2

The following example uses the `DBOPTIONS.DEFERREFCONST` with `INFO PARAM` to show how to get specific details about a parameter option.

```
INFO PARAM DBOPTIONS.DEFERREFCONST
```

Output:

```
param name    : dboptions.deferrefconst
description   : Sets constraints to DEFERRABLE to delay the checking and
enforcement of cascade delete and cascade update referential integrity
constraints by the Oracle target database until the Replicat
transaction is committed.
component(s)  : REPLICAT - All
platform(s)   : All
database(s)   : Oracle 11g
              : Oracle 12c
              : Oracle 18c
              : Oracle 19c
              : Oracle 21c
status        : current
mandatory     : false
dynamic       : false
relations     : none
```

INFO PROFILE

This command returns information about managed process profiles.

Syntax:

```
INFO PROFILE profile-name-wildcard
```

Example

```
OGG (https://localhost Local) 4> INFO PROFILE *
```

Wait	Reset	Disable	Auto	Delay	Auto	
Name	Seconds	Seconds	Start	Seconds	Restart	Retries
	Seconds	on Failure				
-----	-----	-----	-----	-----	-----	-----
Default			No		No	

INFO PROCEDURETRANDATA

Use `INFO PROCEDURETRANDATA` to display information about procedure-level supplemental database logging (Procedural Replication).

Use the `DBLOGIN` command to establish a database connection before using this command.

Syntax

```
INFO PROCEDURETRANDATA
```

INFO REPLICAT

Use `INFO REPLICAT` to retrieve the processing history of a Replicat group. The output of this command includes:

- The status of Replicat (`STARTING`, `RUNNING`, `STOPPED` or `ABENDED`). `STARTING` means that the process has started but has not yet locked the checkpoint file for processing.
- (Oracle Database) The Replicat mode: non-integrated or integrated.
- Whether or not Replicat is in coordinated mode and, if so, how many threads it currently uses.
- Approximate Replicat lag.
- The trail from which Replicat is reading.
- Replicat run history, including checkpoints in the trail.
- Information about the Replicat environment.

The basic command displays information only for online (continuous) Replicat groups. Tasks are excluded.

Replicat can be stopped or running when `INFO REPLICAT` is issued. In the case of a running process, the status of `RUNNING` can mean one of the following:

- **Active:** Running and processing (or able to process) data. This is the normal state of a process after it is started.

- **Suspended:** The process is running, but suspended due to an `EVENTACTIONS SUSPEND` action. In a suspended state, the process is not active, and no data can be processed, but the state of the current run is preserved and can be continued by issuing the `RESUME` command. The RBA in the `INFO` command reflects the last checkpointed position before the suspend action. To determine whether the state is active or suspended, issue the `SEND REPLICAT` command with the `STATUS` option.

About Lag

Checkpoint Lag is the lag, in seconds, at the time the last checkpoint was written to the checkpoint file. For example, consider the following:

- Current time = 15:00:00
- Last checkpoint = 14:59:00
- Timestamp of the last record processed =14:58:00

Assuming these values, the lag is reported as 00:01:00 (one minute, the difference between 14:58 and 14:59).

A lag value of `UNKNOWN` indicates that Replicat could be running but has not yet processed records, or that the source system's clock is ahead of the target system's clock (due to clock imperfections, not time zone differences).

To learn more about lag information, see [LAG REPLICAT](#). For complete end to end lag, use the heartbeat table functionality. See [ADD HEARTBEATTABLE](#).

Admin Client Syntax

```
INFO REPLICAT group_name
[, SHOWCH [checkpoint_number]]
[, DETAIL]
[, TASKS | ALLPROCESSES]
```

group_name

The name of a Replicat group or a wildcard (*) to specify multiple groups. For example, `T*` shows information for all Replicat groups whose names begin with T.

SHOWCH [*checkpoint_number*]

Displays current checkpoint details, including those recorded to the checkpoint file and those recorded to the checkpoint table, if one is being used. The database checkpoint display includes the table name, the hash key (unique identifier), and the create timestamp. Specify a value for checkpoints-number to include the specified number of previous checkpoints as well as the current one.

DETAIL

Displays detail information. For an Oracle target, `DETAIL` displays the name of the inbound server when Replicat is in integrated mode.

If Replicat is in coordinated mode, `DETAIL` will display only the active threads. For example, if a Replicat named `CR` was created with a maximum of 15 threads, but only threads 7-9 are running, `INFO REPLICAT group_name with DETAIL` will show only the coordinator thread (`CR`), `CR007`, `CR008`, and `CR009`. Checkpoints exist for the other threads, but they are not shown in the command output.

To view `LOGBSN` information with the `DETAIL` output, issue the `DBLOGIN` command before you issue `INFO REPLICAT`. If the command is issued for a specific thread ID of

a coordinated Replicat, only the LOGBSN for that thread is displayed. Otherwise, the LOGBSNs for all threads are displayed. For more information about recovering Extract by using the LOGBSN, see [Restarting a Primary Extract after System Failure or Corruption](#).

TASKS

Displays only Replicat tasks. Tasks that were specified by a wildcard argument are not displayed by `INFO REPLICAT`.

ALLPROCESSES

Displays all Replicat groups, including tasks.

Examples

```
INFO REPLICAT *, DETAIL, ALLPROCESSES
```

```
INFO REPLICAT *, TASKS
```

```
INFO REPLICAT repe, SHOWCH
```

The following example run the command from the Admin Client.

```
INFO REPLICAT repe

REPLICAT  REPE  Initialized  2019-11-20 23:54  Status STOPPED
Description      demo replicat
Checkpoint Lag   00:00:00 (updated 00:00:14 ago)
Log Read Checkpoint File ea000000000
                  First Record RBA 0
Settings Profile default_security
Encryption Profile LocalWallet
```

INFO RECVPATH

Use `INFO RECVPATH` to return information about a target-initiated distribution path in the Receiver Service. Before you run this command, ensure that the Receiver Service is running.

Syntax

```
INFO RECVPATH ALL | PATH-NAME DETAIL
```

ALL

Displays a list of target-initiated paths with their status.

PATH-NAME

Specify the name of the path to view its details.

DETAIL

Displays this additional information for the requested receiver path:

- Process and thread information.
- Source database name where the data is originated.
- Last started timestamp and processing lag.
- Current and starting input and output checkpoint.

INFO RMTTRAIL

Use `INFO RMTTRAIL` to retrieve configuration information for a remote trail. It shows the name of the trail, the Extract that writes to it, the position of the last data processed, and the assigned maximum file size.

Syntax

```
INFO RMTTRAIL trail_name
```

trail_name

The relative or fully qualified path name of the trail or a wildcard (*) designating multiple trails.

Examples

```
INFO RMTTRAIL north\ea
```

```
INFO RMTTRAIL *
```

The following is a sample of `INFO RMTTRAIL` output.

```
Extract Trail: /ogg/var/lib/data/ea
Seqno Length: 9
Flip Seqno Length: no
Extract: exte
Seqno: 4
RBA: 78066
File Size: 500M
```

```
Extract Trail: /ogg/dirdat/ea
Seqno Length: 9
Flip Seqno Length: no
Extract: exte
Seqno: 4
RBA: 78066
File Size: 500M
```

INFO SCHEMATRANDATA

Use `INFO SCHEMATRANDATA` to determine whether Oracle schema-level supplemental logging is enabled for the specified schema or if any instantiation information is available. Use the `DBLOGIN` command to establish a database connection before using this command.

Syntax

```
INFO SCHEMATRANDATA schema
```

schema

The schema for which you want to confirm supplemental logging. Do not use a wildcard. To get information on the appropriate schema in an Oracle multitenant container database, make certain to log into the correct pluggable database with `DBLOGIN`.

Example

```
INFO SCHEMATRANDATA hr
```

INFO TRACETABLE

Use the `INFO TRACETABLE` command to verify the existence of the specified trace table in the local instance of the database. If the table exists, Oracle GoldenGate displays the name and the date and time that it was created; otherwise Oracle GoldenGate displays a message stating that the table does not exist. Use the `DBLOGIN` command to establish a database connection before using this command.

Syntax

```
INFO TRACETABLE [[container.]owner.table]
```

container

The pluggable database, if the database is a multitenant container database (CDB).

owner.table

The owner and name of the trace table to be verified. An owner and name are not required if the owner is the same as that specified with the `USERID` or `USERIDALIAS` parameter and the trace table has the default name of `GG$_TRACE`.

Example

```
INFO TRACETABLE pdbeast.ggadmin.ora_trace
```

In this example, `pdbeast` is the container name and `ggadmin` is the user id.

INFO TRANDATA

Use `INFO TRANDATA` to get the following information:

- Db2 LUW and Db2 z/OS: Determine whether `DATA CAPTURE` is enabled or not.
- Oracle: Determine whether supplemental logging is enabled, and to show the names of columns that are being logged supplementary. If all columns are being logged, the notation `ALL` is displayed instead of individual column names. Displays any SCN instantiation information.
- SQL Server: Determine whether or not extended logging is enabled for a table.
- PostgreSQL: Determine whether supplemental logging is enabled and to show the current `REPLICA IDENTITY` setting.

Use the `DBLOGIN` command to establish a database connection before using this command.

Admin Client Syntax

```
INFO TRANDATA [container.]owner.table
```

[*container.*]owner.table

The pluggable database (if this is an Oracle multitenant container database), owner and name of the table or file for which you want to view trandata information. The owner is not required if it is the same as the login name that was specified by the `DBLOGIN` command. A wildcard can be used for the table name but not the owner name.

Examples

```
INFO TRANDATA hr.employees
```

```
INFO TRANDATA hr.reg*
```

KILL ER

Use the `KILL ER` command to forcefully terminate multiple Extract and Replicat groups as a unit. Use it with wildcards to affect every Extract and Replicat group that satisfies the wildcard.

Terminating a process leaves the most recent checkpoint in place, and the current transaction is rolled back by the database, guaranteeing that no data is lost when the process is restarted. Use this command only if the process cannot be stopped gracefully with the `STOP REPLICAT` command.

Syntax

```
KILL ER group_name
```

group_name

The name of the group to close. A wildcard can be used for the group name. Oracle GoldenGate automatically increases internal storage to track up to 100,000 wildcard entries.

Example

```
KILL ER extegrp
```

KILL EXTRACT

Use `KILL EXTRACT` to end an Extract process. Use this command only if a process cannot be stopped gracefully with the `STOP EXTRACT` command. The Administration Service profile for managed processes will not attempt to restart an ended Extract process.

Syntax

```
KILL EXTRACT group_name
```

group_name

The name of an Extract group or a wildcard (*) to specify multiple groups. For example, `T*` ends all Extract processes whose group names start with T.

Example

```
KILL EXTRACT exte
```

KILL REPLICAT

Use `KILL REPLICAT` to terminate a Replicat process, which leaves the most recent checkpoint in place and the current transaction is rolled back by the database. This guarantees that no data is lost when the process is restarted.

The managed processes profile in Administration Service will not attempt to restart a terminated Replicat process. Use this command only if Replicat cannot be stopped gracefully with the `STOP REPLICAT` command.

Syntax

```
KILL REPLICAT group_name
```

group_name

The name of a Replicat group or a wildcard (*) to specify multiple groups. For example, `T*` terminates all Replicat processes whose group names begin with T.

Example

```
KILL REPLICAT repe
```

LAG ER

Use the `LAG ER` to get lag information on multiple Extract and Replicat groups as a unit. Use it with wildcards to affect every Extract and Replicat group that satisfies the wildcard. For descriptions and optional parameters for this command, see `LAG EXTRACT`.

Syntax

```
LAG ER group_name
```

group_name

The name of a group or a wildcard (*) to specify multiple groups. Oracle GoldenGate automatically increases internal storage to track up to 100,000 wildcard entries.

Example

```
LAG ER exte
```

The output is similar to the following:

```
Sending GETLAG request to Extract group EXTE ...
```

```
Last record lag 2 seconds.
```

```
At EOF, no more records to process
```

```
No Replicat groups found, but some coordinated threads may have been  
excluded.
```

LAG EXTRACT

Use `LAG EXTRACT` to determine a true lag time between Extract and the data source. `LAG EXTRACT` calculates the lag time more precisely than `INFO EXTRACT` because it communicates with Extract directly, rather than reading a checkpoint position in the trail.

For Extract, lag is the difference, in seconds, between the time that a record was processed by Extract (based on the system clock) and the timestamp of that record in the data source.

If the heartbeat functionality is enabled, you can view the associated lags.

Admin Client Syntax

```
LAG EXTRACT group_name
```

group_name

The name of an Extract group or a wildcard (*) to specify multiple groups. For example, `T*` determines lag time for all Extract groups whose names start with T.

Examples

```
LAG EXTRACT *
```

```
LAG EXTRACT *ext*
```

The following is sample output for LAG EXTRACT.

```
Sending GETLAG request to EXTRACT CAPTPCC...  
Last record lag: 2 seconds.  
At EOF, no more records to process.
```

LAG REPLICAT

Use LAG REPLICAT to determine a true lag time between Replicat and the trail. LAG REPLICAT estimates the lag time more precisely than INFO REPLICAT because it communicates with Replicat directly rather than reading a checkpoint position.

For Replicat, lag is the difference, in seconds, between the time that the last record was processed by Replicat (based on the system clock) and the timestamp of the record in the trail.

If the heartbeat functionality is enabled, you can view the associated lags. A DBLOGIN is required to view the heartbeat lag.

From 21c onward, the DB_UNIQUE_NAME is displayed if it exists for a remote database, otherwise the DB_NAME value is displayed.

Admin Client Syntax

```
LAG EXTRACT group_name
```

group_name

The name of a Replicat group or a wildcard (*) to specify multiple groups. For example, T* shows lag for all Replicat groups whose names begin with T.

Examples

```
LAG REPLICAT *
```

```
LAG REPLICAT *repe*
```

LIST TABLES

Use `LIST TABLES` to list all tables in the database that match the specification provided with the command argument. Use the `DBLOGIN` command to establish a database connection before using this command. If logging into an Oracle multitenant container database, log in to the pluggable database that contains the tables that you want to list.

If you want to list all the tables that are enabled for auto capture, then use the `auto_capture` option. This option is only valid for Oracle Database 21c or higher. You need to establish a database connection (using `DBLOGIN` command) before using this command. If you are unable to establish a connection or don't have the required privileges, the option will not work.

Syntax

```
LIST TABLES table
```

The following syntax applies when using the `auto_capture` option.

```
LIST TABLES [container.]owner.table [AUTO_CAPTURE]
```

table

The name of a table or a group of tables specified with a wildcard (*).

[*container.*]owner.*table*

The command accepts a two-part name in non-CDB mode and a three-part name in CDB mode. Supported wildcards are ? and * for single and zero or more character matching respectively. In Admin Client, both the `schema/owner` and `container` name cannot contain a wildcard character. Table name can have wildcards. When the command is successful, the output shows the list of tables enabled for auto capture matching the input criteria.

Example

The following shows a `LIST TABLES` command and sample output.

```
LIST TABLES empl*
```

Example

The following example shows a `LIST TABLES` command listing tables enabled for auto capture:

```
LIST TABLES hr.emp* AUTO_CAPTURE
```

The output is similar to the following:

```
2022-09-06T06:31:09Z INFO OGG-15189 Default catalog name DBEAST
will be used for table specification hr.emp*.
"DBEAST"."HR"."EMPLOYEES"
```

```
"DBEAST"."HR"."EMP_DETAILS_VIEW"
```

```
Found 2 tables matching list criteria.
```

MININGDBLOGIN

Use `MININGDBLOGIN` to establish a connection to a downstream Oracle database logmining server in preparation to issue other Oracle GoldenGate commands that affect this database, such as `REGISTER EXTRACT`.

To log into a source Oracle Database that serves as the database logmining server, use the `DBLOGIN` command. `MININGDBLOGIN` is reserved for login to a downstream mining database.

The user who issues `MININGDBLOGIN` must:

- have privileges granted through the Oracle `dbms_goldengate_auth.grant_admin_privilege` procedure.
- be the user that is specified with the `TRANLOGOPTIONS MININGUSER` parameter for the Extract group that is associated with this `MININGDBLOGIN`.

Admin Client Syntax

```
MININGDBLOGIN USERIDALIAS alias [DOMAIN domain]
```

USERIDALIAS *alias* [DOMAIN *domain*]

Supplies the alias of a database login credential. Can be used instead of the `USERID` option if there is a local Oracle GoldenGate credential store that contains a credential with the required privileges for this `MININGDBLOGIN` command.

To log into a pluggable database in an Oracle multitenant container database, the user must be stored as a connect string, such as `OGGUSER@FINANCE`. To log into the root container, the user must be stored as a common user, including the `c##` prefix, such as `c##ggadmin@ggnorth`.

alias

Specifies the alias of a database user credential that is stored in the Oracle GoldenGate credential store. The user that is specified with `USERIDALIAS` must be the common database user.

DOMAIN *domain*

Specifies the credential store domain for the specified alias. A valid domain entry must exist in the credential store for the specified alias.

SYSDBA

(Oracle) Specifies that the user logs in as `sysdba`. This option can be used for `USERID` and `USERIDALIAS`.

Examples

```
MININGDBLOGIN USERIDALIAS ggeast
```

```
MININGDBLOGIN USERID ggadmin@pdbeast.example.com, PASSWORD  
AACAAAAAAAAAAAAJAUEUGODSCVJGJEEIUGKJDJTFNDKEJFFFTC AES128, ENCRYPTKEY  
securekey1
```

NOALLOWNESTED

Use the `NOALLOWNESTED` command to disable the use of nested `OBEY` files. A nested `OBEY` file is one that references another `OBEY` file. This is the default setting for `OBEY` files.

Syntax:

```
NOALLOWNESTED
```

When you exit your Admin Client session, the next Admin Client session reverts to `NOALLOWNESTED`. This is the default. An attempt to run a nested `OBEY` file in the default mode of `NOALLOWNESTED` causes an error that is similar to the following:

```
ERROR: Nested OBEY scripts not allowed. Use ALLOWNESTED to allow  
nested scripts.
```

OBEY

Use `OBEY` to process a file that contains a list of Oracle GoldenGate commands. `OBEY` is useful for executing commands that are frequently used in sequence.

You can call one `OBEY` file from another one. This is called a nested `OBEY` file. You can nest up to 16 `OBEY` files. To use nested `OBEY` files, you must enable the functionality by first issuing the `ALLOWNESTED` command, see [ALLOWNESTED](#).

Syntax

```
OBEY file_name
```

file_name

The relative or fully qualified path name of the file that contains the list of commands.

Examples

```
OBEY ./mycommands.txt
```

```
ADD EXTRACT exte, TRANLOG, BEGIN NOW  
add exttrail east/ea, EXTRACT exte  
ADD EXTRACT extw, TRANLOG, BEGIN NOW  
ADD EXTRACT west/ew, EXTRACT extw
```

```
ADD REPLICAT repe, EXTTRAIL east/ea, BEGIN NOW
ADD REPLICAT repw, EXTTRAIL west/ew, BEGIN NOW
```

The preceding command executes the `mycommands.txt` file and displays its content with the `ADD` commands.

The following example displays the content of the `startcmds.txt` file.

```
OBEY ./startcmds.txt

START EXTRACT *
INFO EXTRACT *, DETAIL
START REPLICAT *
INFO REPLICAT *, DETAIL
```

PURGE WALLET

Use the `PURGE WALLET` command to permanently remove master key versions from the master-key wallet. Only the versions that are marked for deletion by the `DELETE MASTERKEY` command are removed. The purge is not reversible.

Note:

For Oracle GoldenGate deployments using a shared wallet, the older versions of the master key should be retained after the master key is renewed until all processes are using the newest version. The time to wait depends on the topology, latency, and data load of the deployment. A minimum wait of 24 hours is a conservative estimate, but you may need to perform testing to determine how long it takes for all processes to start using a new key. To determine whether all of the processes are using the newest version, view the report file of each Extract immediately after renewing the master key to confirm the last SCN that was mined with the old key. Then, monitor the Replicat report files to verify that this SCN was applied by all Replicat groups. At this point, you can delete the older versions of the master key.

The `OPEN WALLET` command must be used before using this command or any of the commands that add, renew, or delete the master keys in the wallet.

After purging a wallet that is not maintained centrally on shared storage, the updated wallet can be copied to all of the other systems in the Oracle GoldenGate configuration that use this wallet, so that no purged keys remain in the configuration. Before doing so, Extract must be stopped and then all of the downstream Oracle GoldenGate processes must be allowed to finish processing their trails and then be stopped. After the wallet is copied into place, the processes can be started again.

Syntax

```
PURGE WALLET
```

PURGE EXTTRAIL

Use `PURGE EXTTRAIL` to remove files related to a local trail from the file system. Partial files are not deleted.

Syntax

```
PURGE EXTTRAIL trail-name | !
```

trail-name

The relative or fully qualified path name of the trail.

!

(Exclamation point) Use to purge a trail that is in use by an Extract.

Example:

For example, if the trails files are:

```
a2000000001  
a2000000002  
a2000000003  
a2000000004
```

And Extract is using the `a2000000004` trail, the other three trail files are not purged. You can only purge these files after the Extract is deleted and no longer using any of the files.

REGISTER EXTRACT

This command applies to Oracle Database and PostgreSQL.

Oracle database

For Oracle database, use `REGISTER EXTRACT` to register a primary Extract group with an Oracle database to:

- Enable integrated capture mode
- Specify options for integrated Extract from a multitenant container database

`REGISTER EXTRACT` is not valid for a data pump Extract.

To unregister an Extract group from the database, use the [UNREGISTER EXTRACT](#) command.

PostgreSQL

Using this command, a replication slot is created in the connected source database. This command ensures that the PostgreSQL database does not purge the transaction log until the replication slot is moved or removed. The `REGISTER EXTRACT` command must be run before running the `ADD EXTRACT` command. A database connection using `DBLOGIN` is required before registering the Extract.

From Oracle GoldenGate 21.3 release onward, it's not mandatory to enter the `database_name`.

Syntax

Oracle:

```
REGISTER EXTRACT group-name
  ( | DATABASE
    ( [ CONTAINER container-list |
      ADD CONTAINER container-list |
      DROP CONTAINER container-list ]
      [ SCN scn ]
      [ SHARE ( AUTOMATIC | group-name | NONE ) ]
      [ [NO]OPTIMIZED ]
    )
```

Container-list is a comma separated list of PDB names, for example (pdbeast, pdbwest); or wildcarded PDB names, for example (pdb* or pdb?); or both, for example (cdbnorth, pdb*). Supported wildcards are ? and *.

The OPTIMIZED option improves Extract fast startup. The default value is NOOPTIMIZED. The OPTIMIZED option only impacts an upstream non multitenant configuration.

PostgreSQL:

```
REGISTER EXTRACT Extract
```

or

```
REGISTER EXTRACT Extract with DATABASE database_name
```

A replication slot is created in the database for the given Extract group name.

group_name

The name of the Extract group that is to be registered. Do not use a wildcard.

```
DATABASE [
CONTAINER (container[, ...]) |
ADD CONTAINER (container[, ...]) |
DROP CONTAINER (container[, ...])
]
```

Without options, DATABASE enables integrated capture from a non-CDB database for the Extract group. In this mode, Extract integrates with the database logmining server to receive change data in the form of logical change records (LCR). Extract does not read the redo logs. Extract performs capture processing, transformation, and other requirements. The DML filtering is performed by the logmining server.

Before using REGISTER EXTRACT with DATABASE, use the [DBLOGIN](#) command for all Extracts with the privileges granted using the `dbms_goldengate_auth.grant_admin_privilege` procedure. If you have a downstream configuration, then you must also issue the [MININGDBLOGIN](#) command. If the source database you are registering is a CDB database and Extract will fetch data, then `grant_admin_privilege` must be called with the `CONTAINER=>'ALL'` parameter.

After using REGISTER EXTRACT, use ADD EXTRACT with the INTEGRATED TRANLOG option to create an Extract group of the same name.

CONTAINER (*container*[, ...])

Applies the registration to a list of one or more pluggable databases (containers) of a multitenant container database (CDB). Specify one or more pluggable databases as a comma-delimited list within parentheses, for example: CONTAINER (pdbeast, pdbwest). If you list the pluggable databases, they must exist in the database. You can also specify the pluggable databases using the wildcards * and ?. For example, CONTAINER (pdb*).

ADD CONTAINER (*container*[, ...])

Adds the specified pluggable database to an existing Extract capture configuration. Specify one or more pluggable databases as a comma-delimited list within parentheses or using the wildcards * and ?. For example: ADD CONTAINER (pdbeast, pdbwest). Before issuing REGISTER EXTRACT with this option, stop the Extract group.

For Oracle, adding containers at particular SCN on an existing Extract is not supported.

DROP CONTAINER (*container*[, ...])

Drops the specified pluggable database from an existing Extract capture configuration. Specify one or more pluggable databases as a comma-delimited list within parentheses or using the wildcards * and ?. For example, DROP CONTAINER (pdbeast, pdbwest).

Registering the Extract after running the drop container option, does not fully happen until the Extract has been started and it reads a committed transaction from a dropped pluggable database, which is greater than the Extract checkpoint SCN. Extract then fully drops the containers and shuts down with a message.

Before running REGISTER EXTRACT with this option, stop the Extract group.

SCN system change number

Registers Extract to begin capture at a specific system change number (SCN) in the past. Without this option, capture begins from the time that REGISTER EXTRACT is issued. The specified SCN must correspond to the begin SCN of a dictionary build operation in a log file. You can issue the following query to find all valid SCN values:

```
SELECT first_change#
       FROM v$archived_log
      WHERE dictionary_begin = 'YES' AND
             standby_dest = 'NO' AND
             name IS NOT NULL AND
             status = 'A';
```

When used alone, the SCN value is the beginning SCN of the dictionary build operation in a log file.

When used in conjunction with SHARE AUTOMATIC or SHARE *extract_name*, then the specified SCN is the *start_scn* for the capture session and has the following restrictions:

- Should be lesser than or equal to the current SCN.
- Should be greater than the minimum (first SCN) of the existing captures.

```
{SHARE [
AUTOMATIC |
extract |
NONE]}
```

Registers the Extract to return to an existing LogMiner data dictionary build with a specified SCN creating a clone. This allows for faster creation of Extracts by leveraging existing dictionary builds.

SHARE cannot be used on a CDB.

The following commands are supported:

```
REGISTER EXTRACT extract database SCN ##### SHARE AUTOMATIC
REGISTER EXTRACT extract database SCN ##### SHARE extract
REGISTER EXTRACT extract database SHARE NONE
REGISTER EXTRACT extract database SCN ##### SHARE NONE
```

Or

```
REGISTER EXTRACT extract DATABASE SHARE NONE
REGISTER EXTRACT extract DATABASE SCN ##### SHARE NONE
```

In contrast, the following commands are *not* supported in a downstream configuration:

```
REGISTER EXTRACT extract DATABASE SHARE AUTOMATIC
REGISTER EXTRACT extract DATABASE SHARE extract
```

AUTOMATIC

Clone from the existing closest capture. If no suitable clone candidate is found, then a new build is created.

extract

Clone from the capture session associated for the specified Extract. If this is not possible, then an error occurs the register does not complete.

NONE

Does not clone or create a new build; this is the default.

In a downstream configuration, the SHARE clause *must* be used in conjunction with the SCN clause when registering for Extract.

Examples

```
REGISTER EXTRACT exte LOGRETENTION
```

```
REGISTER EXTRACT exte DATABASE
```

```
REGISTER EXTRACT exte DATABASE CONTAINER (pdbeast, pdbwest, pdbsouth)
```

```
REGISTER EXTRACT exte DATABASE ADD CONTAINER (pdbnorth)
```

```
REGISTER EXTRACT exte DATABASE DROP CONTAINER (pdbnorth)
```

```
REGISTER EXTRACT exte DATABASE SCN 136589
```

The beginning SCN of the dictionary build is 136589.

```
REGISTER EXTRACT exte DATABASE SCN 67000 SHARE extw
```

The valid start SCN, 67000 in this case; it is not necessarily the current SCN.

```
REGISTER EXTRACT exte DATABASE CONTAINER (pdbeast, pdbeast, pdbsouth)  
SCN 136589
```

For PostgreSQL:

```
REGISTER EXTRACT exte WITH DATABASE hr
```

RENEW MASTERKEY

Use the `RENEW MASTERKEY` command to create a new version of the master encryption key in the master-key wallet. The key name remains the same, but the bit ordering is different. All versions of a master key remain in the wallet until they are marked for deletion with the `DELETE MASTERKEY` command and then the wallet is purged with the `PURGE WALLET` command.

The `OPEN WALLET` command must be used before using this command or any of the commands that add or delete the master keys or purge the wallet.

After renewing a master key in a wallet that is not maintained centrally on shared storage, the updated wallet must be copied to all of the other systems in the Oracle GoldenGate configuration that use this wallet. Before doing so, Extract must be stopped and then all of the downstream Oracle GoldenGate processes must be allowed to finish processing their trails and then be stopped. After the wallet is copied into place, the processes can be started again..

Syntax

```
RENEW MASTERKEY
```

Example

```
RENEW MASTERKEY
```

RESTART DEPLOYMENT

Use `RESTART DEPLOYMENT` to restart the specified deployment.

Syntax

```
RESTART DEPLOYMENT deployment-name-wildcard
```

deployment-name-wildcard

The name of the deployment or a wildcard (*) to specify multiple deployments. For example, `P*` restarts all deployments whose names begin with P.

Example

```
RESTART DEPLOYMENT NORTH
```

RESTART ER

Use `RESTART ER` to stop then start the specified wildcarded groups. ER processes that are already stopped are started.

Syntax

```
RESTART ER group-name-wildcard
```

The name of the group or a wildcard (*) to specify multiple groups. For example, `T*` restarts all groups whose names start with T.

SEND ER

Use the `SEND ER` to get send information on multiple Extract and Replicat groups as a unit. Use it with wildcards to affect every Extract and Replicat group that satisfies the wildcard.

Syntax

```
SEND ER group_name
```

group_name

The wildcard specification for the groups that you want to affect with the command. The following example sends a status request for the Replicat `repe` and receives the response that it's not currently running.

Example

```
SEND ER rep* STATUS
Sending STATUS request to REPLICAT repe ...
2020-01-29 14:30:11
ERROR   OGG-15148  REPLICAT repe not currently running.
```

SEND EXTRACT

Use `SEND EXTRACT` to communicate with a running Extract process. The request is processed as soon as Extract is ready to accept commands from users.

Syntax

```
SEND EXTRACT group_name, {
BR {BRINTERVAL interval |
    BRSTART |
    BRSTOP |
    BRCHECKPOINT {IMMEDIATE | IN n{M|H} | AT yyyy-mm-dd hh:mm[:ss]}} |
BR BRFSOPTION { MS_SYNC | MS_ASYNC }
BR BRSTATS
BR BRSTATUS
CACHEMGR {CACHESTATS {CACHEALL | CACHEMINIMAL | CACHESUPERPOOL |
CACHECURRENTPOOL} | CACHEQUEUES | CACHEPOOL n} |
CACHEMGR CACHEFSOPTION { MS_SYNC | MS_ASYNC } |
FORCESTOP |
FORCETRANS transaction_ID [FORCE] |
GETLAG |
GETPARAMINFO [parameter_name] [FILE output_file] |
GETTCPSTATS |
LOGEND |
LOGSTATS |
REPORT |
RESUME |
ROLLOVER |
SHOWTRANS [transaction_ID] [COUNT n]
    [DURATION duration unit] [TABULAR]
    [FILE file_name [DETAIL]] [ALL]|
SKIPTRANS transaction_ID [FORCE] |
STATUS |
STOP |
TRACE[2] file_name |
TRACE[2] OFF |
TRACE OFF file_name |
TRACEINIT |
TRANLOGOPTIONS INTEGRATEDPARAMS(parameter_specification) |
TRANLOGOPTIONS {TRANLOGOPTIONS {PURGEORPHANEDTRANSACTIONS |
NOPURGEORPHANEDTRANSACTIONS} |
TRANLOGOPTIONS TRANCLEANUPFREQUENCY minutes |
VAMMESSAGE 'Teradata_command' |
VAMMESSAGE {'ARSTATS' | 'INCLUDELIST [filter]' | 'FILELIST [filter]' |
'EXCLUDELIST [filter']} |
VAMMESSAGE 'OPENTRANS'
}
```

group_name

The name of the Extract group or a wildcard (*) to specify multiple groups. For example, `T*` sends the command to all Extract processes whose group names start with T. If an Extract is not running, an error is returned.

BR {**BRINTERVAL** *interval* | **BRSTART** | **BRSTOP** | **BRCHECKPOINT** {**IMMEDIATE** | **IN** *n* {**H**|**M**} | **AT** *yyyy-mm-dd[hh:mm[:ss]]*}}

Sends commands that affect the Bounded Recovery mode of Extract.

BRINTERVAL *interval*

Sets the time between Bounded Recovery checkpoints. Valid values are from 20 minutes to 96 hours specified as **M** for minutes or **H** for hours, for example `20M` or `2H`. The default interval is 4 hours.

BRSTART

Starts Bounded Recovery. This command should only be used under direction of Oracle Support.

BRSTOP

Stops Bounded Recovery for the run and for recovery. Consult Oracle Support before using this option. In most circumstances, when there is a problem with Bounded Recovery, it turns itself off.

BRCHECKPOINT {**IMMEDIATE** | **IN** *n*{**H**|**M**} | **AT** *yyyy-mm-dd[hh:mm[:ss]]*}}

Sets the point at which a bounded recovery checkpoint is made. **IMMEDIATE** issues the checkpoint immediately when `SEND EXTRACT` is issued. **IN** issues the checkpoint in the specified number of hours or minutes from when `SEND EXTRACT` is issued. **AT** issues the checkpoint at exactly the specified time.

BR BRFSOPTION {**MS_SYNC** | **MS_ASYNC**}

Performs synchronous/asynchronous writes of the mapped data in Bounded Recovery.

MS_SYNC

Bounded Recovery writes of mapped data are synchronized for I/O data integrity completion.

MS_ASYNC

Bounded Recovery writes of mapped data are initiated or queued for servicing.

BR BRSTATS

Provides details on each of the object pools, which were persisted by BR. This includes the following details:

- Object sizes through life of the Extract group
- Object ages through the life of Extract group
- Extant object sizes as of the most recent BCP
- Extant object ages as of the most recent BCP

BR BRSTATUS

Returns status for the Bounded Recovery mode of Extract.

It shows the following:

- Current settings of the BR parameter.
- Current status of the Bounded Recovery, if one was performed, with current checkpoint interval, timestamps for the next and last checkpoints, and the total and outstanding number of objects and sizes when BR is in progress.
- Start and end sequence, RBA, SCN, and timestamp for the Bounded Recovery checkpoint positions (per redo thread).

CACHEMGR {CACHESTATS | CACHEQUEUES | CACHEPOOL *n*}

Returns statistics about the Oracle GoldenGate memory cache manager. **CACHESTATS** should only be used as explicitly directed by Oracle Support.

CACHESTATS {CACHEALL | CACHEMINIMAL | CACHESUPERPOOL | CACHECURRENTONLY}

CACHESTATS returns statistics for virtual memory usage and file caching.

CACHEALL

Returns all COM statistics and is the default option.

CACHESUPERPOOL

Super pool statistics. Returns statistics about all object pools.

CACHECURRENTONLY

Returns statistics only for the run time.

CACHEMINIMAL

Returns condensed (minimal) version of COM stats whereas **CACHEALL** returns all statistics.

CACHEQUEUES

Returns statistics for the free queues only.

CACHEPOOL *n*

Returns statistics for the specified object pool only.

CACHEMGR CACHEFSOPTION {MS_SYNC | MS_ASYNC}

Performs synchronous or asynchronous writes of the mapped data in the Oracle GoldenGate memory cache manager.

FORCESTOP

Forces Extract to stop, bypassing any notifications. This command will stop the process immediately.

FORCETRANS *transaction_ID*] [FORCE]

Valid for Db2 LUW, Db2 IBM, MySQL, Oracle, and SQL Server.

Forces Extract to write a transaction specified by its transaction ID number to the trail as a committed transaction. **FORCETRANS** does not commit the transaction to the source database. It only forces the existing data to the trail so that it is processed (with an implicit commit) by Replicat. You can repeat **FORCETRANS** for other transactions in order of their age. Note that forcing a transaction to commit to the trail (and therefore the target database) may cause data discrepancies if the transaction is rolled back by the source user applications.

After using **FORCETRANS**, wait at least five minutes if you intend to issue **SEND EXTRACT** with **FORCESTOP**. Otherwise, the transaction will still be present.

If **FORCETRANS** is used immediately after Extract starts, you might receive an error message that asks you to wait and then try the command again. This means that no other transactions have been processed yet by Extract. Once another transaction is processed, you will be able to force the transaction to trail.

transaction_ID

The ID of the transaction. Get the transaction ID number with **SHOWTRANS** or from an Extract runtime message. Extract ignores any data added to the transaction after this command is issued. A confirmation prompt must be answered unless

`FORCE` is used. To use `FORCETRANS`, the specified transaction must be the oldest one in the list of transactions shown with `SHOWTRANS`.

FORCE

Valid for Oracle and SQL Server. Not valid for MySQL.

Use `FORCE` to bypass the confirmation prompt.

GETLAG

Determines a true lag time between Extract and the data source. Returns the same results as [LAG EXTRACT](#).

GETPARAMINFO [*parameter_name*] [`FILE` *output_file*]

Use `GETPARAMINFO` to query runtime parameter values of a running instance, including Extract, Replicat, and Manager. You can query for a single parameter or all parameters and send the output to the console or a text file

parameter_name

The default behavior is to display all parameters in use, meaning those parameters that have ever been queried by the application, parameters, and their current values. If you specify a particular parameter, then the output is filtered by that name.

`FILE` *output_file*

The name of the text file that your output is redirected to.

GETTCPSTATS

Displays statistics about network activity between Extract and the target system. The statistics include:

- Local and remote IP addresses.
- Inbound and outbound messages, in bytes and bytes per second.
- Number of receives (inbound) and sends (outbound). There will be at least two receives per inbound message: one for the length and one or more for the data.
- Average bytes per send and receive.
- Send and receive wait time: Send wait time is how long it takes for the write to TCP to complete. The lower the send wait time, the better the performance over the network. Receive wait time is how long it takes for a read to complete. Together, the send and receive wait times provide a rough estimate of network round trip time. These are expressed in microseconds.
- Status of data compression (enabled or not).
- Uncompressed bytes and compressed bytes: When compared (uncompressed to compressed), these comprise the compression ratio, meaning how many bytes there were before and after compression. You can compare the compression ratio with the bytes that are being compressed per second to determine if the compression rate is worth the cost in terms of resource and network consumption.

The `TCPBUFSIZE` option of `RMTHOST` and `RMTHOSTOPTIONS` controls the size of the TCP buffer for uncompressed data. What actually enters the network will be less than this size if compression is enabled. `GETTCPSTATS` shows post-compression throughput.

LOGEND

Confirms whether or not Extract has processed all of the records in the data source.

LOGSTATS

Valid only for Oracle.

Instructs Extract to issue a report about the statistics that are related to the processing of data from the Oracle redo log files. Extract uses an asynchronous log reader that reads ahead of the current record that Extract is processing, so that the data is available without additional I/O on the log files. The processing is done through a series of read/write queues. Data is parsed by a producer thread at the same time that additional data is being read from the log file by a reader thread. Thus, the reason for the term "read-ahead" in the statistics.

The statistics are:

- **AsyncReader.Buffers*n***: There is a field like this for each buffer queue that contains captured redo data. It shows the size, the number of records in it, and how long the wait time is before the data is processed. These statistics are given for write operations and read operations on the queue.
- **REDO read ahead buffers**: The number of buffers that are being used to read ahead asynchronously.
- **REDO read ahead buffer size**: The size of each buffer.
- **REDO bytes read ahead for current redo**: Whether read-ahead mode is on or off for the current redo log file (value of **ON** or **OFF**).
- **REDO bytes read**: The number of bytes read from all redo log files that are associated with this instance of Extract.
- **REDO bytes read ahead**: The number of bytes that were processed by the read-ahead mechanism.
- **REDO bytes unused**: The number of read-ahead bytes that were subsequently dropped as the result of Extract position changes or stale reads.
- **REDO bytes parsed**: The number of bytes that were processed as valid log data.
- **REDO bytes output**: The number of bytes that were written to the trail file (not including internal Oracle GoldenGate overhead).

REPORT

Generates an interim statistical report to the Extract report file. The statistics that are displayed depend upon the configuration of the **STATOPTIONS** parameter when used with the **RESETREPORTSTATS** | **NORESETREPORTSTATS** option.

RESUME

Resumes (makes active) a process that was suspended by an **EVENTACTIONS SUSPEND** event. The process resumes normal processing from the point at which it was suspended.

ROLLOVER

Causes Extract to increment to the next file in the trail when restarting. For example, if the current file is **ET000002**, the current file will be **ET000003** after the command executes. A trail can be incremented from **000001** through **999999**, and then the sequence numbering starts over at **000000**.

SHOWTRANS [*transaction_ID*] [COUNT *n*]
[DURATION *duration unit*] [TABULAR] | [FILE *file_name* [DETAIL]] [ALL]

Valid for Db2 IBM, Db2 LUW, Db2 z/OS, MySQL, Oracle, and SQL Server.

Displays information about open transactions. **SHOWTRANS** shows any of the following, depending on the database type:

- Process checkpoint (indicating the oldest log needed to continue processing the transaction in case of an Extract restart).
- Transaction ID
- Extract group name
- Redo thread number
- Timestamp of the first operation that Oracle GoldenGate extracts from a transaction (not the actual start time of the transaction)
- System change number (SCN)
- Redo log number and RBA
- Status (Pending COMMIT or Running). Pending COMMIT is displayed while a transaction is being written after a FORCETRANS was issued.

Without options, `SHOWTRANS` displays all open transactions that will fit into the available buffer. However, it doesn't display the output user name sometimes for an open active transaction because the user name is not provided in the begin record from transaction log. See the examples for sample output of `SHOWTRANS`. To further control output, see the following options.

transaction_ID

Limits the command output to a specific transaction.

COUNT n

Constrains the output to the specified number of open transactions, starting with the oldest one. Valid values are 1 to 1000.

DURATION duration unit

Restricts the output to transactions that have been open longer than the specified time, where:

duration is the length of time expressed as a whole number.

unit is one of the following to express seconds, minutes, hours, or days:

S | SEC | SECS | SECOND | SECONDS
M | MIN | MINS | MINUTE | MINUTES
H | HOUR | HOURS
D | DAY | DAYS

TABULAR

Valid only for Oracle.

Generates output in tabular format similar to the default table printout from SQL*Plus. The default is field-per-row.

FILE file_name [DETAIL]

Valid only for Oracle and SQL Server. Not valid for MySQL.

Forces Extract to write the transaction information to the specified file. There is no output to the console.

For Oracle, you can write a hex and plain-character dump of the data by using `FILE` with `DETAIL`. This dumps the entire transaction from memory to the file. Viewing the data may help you decide whether to skip the transaction or force it to the trail.

 **Note:**

Basic detail information is automatically written to the report file at intervals specified by the `WARNLONGTRANS CHECKINTERVAL` parameter.

[ALL]

This option allows showing all the transaction in COM. It is useful when detecting potential issues with committed transactions that are remaining in COM.

SKIPTRANS *transaction_ID* [FORCE]

Valid for Db2 LUW, Db2 IBM, MySQL, Oracle, and SQL Server.

Forces Extract to skip the specified transaction, thereby removing any current data from memory and ignoring any subsequent data. A confirmation prompt must be answered unless `FORCE` is used. After using `SKIPTRANS`, wait at least five minutes if you intend to issue `SEND EXTRACT` with `FORCESTOP`. Otherwise, the transaction is still present. Note that skipping a transaction may cause data loss in the target database.

 **Note:**

To use `SKIPTRANS`, the specified transaction must be the oldest one in the list of transactions shown with `SHOWTRANS`. You can repeat the command for other transactions in order of their age.

transaction_ID

The transaction ID number. Get the ID number with `SHOWTRANS` or from an Extract runtime message.

FORCE

Valid for Oracle and SQL Server. Not valid for MySQL.

Use `FORCE` to bypass the prompt that confirms your intent to skip the transaction.

STATUS

Returns a detailed status of the processing state, including current position and activity. Possible processing status messages on the `Current status` line are:

- `Delaying` – waiting for more data
- `Suspended` – waiting to be resumed
- `Processing data` – processing data
- `Starting initial load` – starting an initial load task
- `Processing source tables` – processing data for initial load task
- `Reading from data source` – reading from the data source, such as a source table or transaction log
- `Adding record to transaction list` – adding a record to the file memory transaction list
- `At EOF (end of file)` – no more records to process

In addition to the preceding statuses, the following status notations appear during an Extract recovery after an abend event. You can follow the progress as Extract continually changes its log read position over the course of the recovery.

- In `recovery[1]` – Extract is recovering to its checkpoint in the transaction log.
- In `recovery[2]` – Extract is recovering from its checkpoint to the end of the trail.
- `Recovery complete` – The recovery is finished, and normal processing will resume.

STOP

Stops Extract. If there are any long-running transactions (based on the `WARNLONGTRANS` parameter), the following message will be displayed:

```
Sending STOP request to EXTRACT EXTE...
```

```
There are open, long-running transactions. Before you stop Extract, make the archives containing data for those transactions available for when Extract restarts. To force Extract to stop, use the SEND EXTRACT group, FORCESTOP command.
```

```
Oldest redo log file necessary to restart Extract is:
```

```
Redo Thread 1, Redo Log Sequence Number 150, SCN 31248005, RBA 2912272.
```

TRACE[2] {*file_name* | OFF}

Turns tracing on and off. Tracing captures information to the specified file to reveal processing bottlenecks. Contact Oracle Support for assistance if the trace reveals significant processing bottlenecks.

TRACE

Captures step-by-step processing information.

TRACE2

Identifies code segments rather than specific steps.

file_name

Specifies the name of the file to which the trace information is written. If a trace is already running when `SEND EXTRACT` is issued with `TRACE`, the existing trace file is closed and the trace is resumed to the new file specified with *file_name*.

OFF

Turns off tracing.

TRACE OFF *file_name*

Turns tracing off only for the specified trace file.

TRACEINIT

Resets tracing statistics back to 0 and then starts accumulating statistics again. Use this option to track the current behavior of processing, as opposed to historical.

TRANLOGOPTIONS INTEGRATEDPARAMS(*parameter_specification*)

(Oracle) Supports an integrated Extract. Sends a parameter specification to the database inbound server while Extract is running in integrated mode. Only one parameter specification can be sent at a time with this command. You can send multiple parameter changes, issue multiple `SEND EXTRACT` commands.

To preserve the continuity of processing, the parameter change is made at a transaction boundary.

TRANLOGOPTIONS {PURGEORPHANEDTRANSACTIONS | NOPURGEORPHANEDTRANSACTIONS}
Valid for Oracle RAC. Enables or disables purging of orphaned transactions that occur when a node fails and Extract cannot capture the rollback.

TRANLOGOPTIONS TRASCLEANUPFREQUENCY *minutes*
Valid for Oracle RAC. Specifies the interval, in minutes, after which Oracle GoldenGate scans for orphaned transactions and then re-scans to confirm and delete them. Valid values are from 1 to 43200 minutes. Default is 10 minutes.

VAMESSAGE 'Teradata *command*'
VAMESSAGE { 'ARSTATS' | 'INCLUDELIST [*filter*]' | 'EXCLUDELIST [*filter*]' }

Sends a command to the capture API that is used by Extract.
A Teradata command can be any of the following:

'control:terminate'

Stops a replication group. Required before dropping or altering a replication group in Teradata.

'control:suspend'

Suspends a replication group. Can be used when upgrading Oracle GoldenGate.

'control:resume'

Resumes a replication group after it has been suspended.

'control:copy *database.table*'

Copies a table from the source database to the target database.

'ARSTATS'

Displays TMF audit reading statistics.

'FILELIST [*filter*]'

Displays the list of tables for which Extract has encountered data records in the audit trail that match the selection criteria in the **TABLE** parameters. The *filter* option allows use of a wildcard pattern to filter the list of tables returned. **GETFILELIST** can also be used in the same manner.

'EXCLUDELIST [*filter*]'

Displays the list of tables for which Extract has encountered data records in the audit trail that do not match the selection criteria in the **TABLE** parameters. The *filter* option allows use of a wildcard pattern to filter the list of tables returned. Certain system tables that are implicitly excluded will always be present in the list of excluded tables.

A SQL Server command can be the following:

VAMESSAGE 'OPENTRANS'

Prints a list of open transactions with their transaction ID, start time, first LSN, and the number of operations they contain.

Examples

```
SEND EXTRACT exte, ROLLOVER
```

```
SEND EXTRACT exte, STOP
```

```
SEND EXTRACT exte, VAMMESSAGE 'control:suspend'
```

```
SEND EXTRACT exte, TRANLOGOPTIONS TRANCLEANUPFREQUENCY 20
```

This example explains SKIPTRANS. Start with the following SHOWCH output, which shows that thread 2 is at Read Checkpoint #3.

```
INFO exte SHOWCH
Read Checkpoint #3
Oracle RAC Redo Log
Startup Checkpoint (starting position in the data source):
Thread #: 2
Sequence #: 17560
RBA: 65070096
Timestamp: 2011-07-30 20:04:47.000000
SCN: 1461.3499051750 (6278446271206)
Redo File: RAC4REDO/sss11g/onlinelog/group_4.292.716481937
```

Therefore, SKIPTRANS should be: SKIPTRANS *xid* THREAD 3.

```
SEND EXTRACT exte, SHOWTRANS COUNT 2
```

The following shows the default output of SHOWTRANS.

```
Oldest redo log file necessary to restart Extract is:
Redo Thread 1, Redo Log Sequence Number 148, SCN 30816254, RBA 17319664
```

```
-----
XID                : 5.15.52582
Items              : 30000
Extract            : JC108XT
Redo Thread        : 1
Start Time         : 2011-01-18:12:51:27
SCN                : 20634955
Redo Seq           : 103
Redo RBA           : 18616848
Status             : Running
-----
```

```
-----
XID                : 7.14.48657
Items              : 30000
Extract            : JC108XT
Redo Thread        : 1
Start Time         : 2011-01-18:12:52:14
SCN                : 20635145
-----
```

```

Redo Seq          : 103
Redo RBA          : 26499088
Status            : Running

```

The following example shows SHOWTRANS output with TABULAR in effect (view is truncated on right).

```

XID           Items  Extract  Redo Thread  Start Time
5.15.52582   30000  JC108XT      1           2011-01-18:12:52:14

Dumping transaction memory at 2011-01-21 13:36:54.
Record #1:
Header (140 bytes):
  0: 0000 0A4A 0000 FFFF 0000 0000 0057
6C10      ...J.....Wl.
 16: 02FF 3F50 FF38 7C40 0303 4141 414E 5A77      ..?P.8|
@..AAANZw
 32: 4141 4641 4141 4B6F 4941 4144 0041 4141
AAFAAAKoIAAD.AAA
 48: 4E5A 7741 4146 4141 414B 6F49 4141 4400
NZwAAFAAAKoIAAD.
 64: 4141 414E 5A77 414A 2F41 4142 7A31 7741      AAANZwAJ/
AABzlwA
 80: 4141 0041 4141 4141 4141 4141 4141 4141
AA.AAAAAAAAAAAAAA
 96: 4141 4141 4100 0000 0140 FF08 0003 0000
AAAAA....@.....
112: 0000 0000 0000 70FF 0108 FFFF 0001
4A53      .....p.....JS
128: 554E 2E54 4355 5354 4D45 5200      UN.TCUSTMER.

Data (93 bytes):
  0: 2C00 0400 0400 0000 0100 0200 0300
0000      /.....
 16: 0000 0000 0800 0000 1800 0000 2000
0400      .....
 32: 1000 0600 0200 0000 284A 414E 456C 6C6F      .....
(JANEllO
 48: 6352 4F43 4B59 2046 4C59 4552 2049 4E43      cROCKY FLYER
INC
 64: 2E44 454E 5645 5220 6E43 4F20 7365 7400      .DENVER nCO
set.
 80: 0000 0000 0000 0C00 0000 0000 00      .....

```

When analyzing the summary output of SHOWTRANS, understand that it shows all currently running transactions on the database (as many as will fit into a predefined buffer). Extract must track every open transaction, not just those that contain operations on tables configured for Oracle GoldenGate.

The `Items` field of the SHOWTRANS output shows the number of operations in the transaction that have been captured by Oracle GoldenGate so far, not the total number of operations in the transaction. If none of the operations are for configured tables, or if only some of them are, then `Items` could be 0 or any value less than the total number of operations.

The `Start Time` field shows the timestamp of the first operation that Oracle GoldenGate extracts from a transaction, not the actual start time of the transaction itself.



Note:

Command output may vary somewhat from the examples shown due ongoing enhancements of Oracle GoldenGate.

The following example shows sending BR request to Extract `exte`

```
SEND exte BR BRSTATUS
```

Output displays the following:

```
Bounded Recovery Parameter:
Options      = _BRDEBUG _NOBRCLEANUP _BRFORCE_ASSERT
BRINTERVAL  = 40SECONDS
BRDIR       = /home/mpopeang/ogg_test/
Bounded Recovery Status: IN PROGRESS
Checkpoint interval = 40SECONDS
Next checkpoint = 2020-01-15 21:10:47
Last checkpoint# = 49
Last checkpoint = 2020-01-15 21:10:07
Total objects   = 65
Total size      = 426 MB
Outstanding objects = 58
Outstanding size  = 384 MB
Object pool 1: p12733_extr:RECOVERY: COMPLETE: start:SeqNo: 1580,
RBA: 793460, SCN: 0.664178312(664178312), Timestamp: 2020-01-15
20:35:45.000000,
Thread: 1, end=SeqNo:1580,
RBA: 793460, SCN: 0.664178312 (664178312), Timestamp: 2020-01-15
20:35:45.000000,
Thread: 1, complete=SeqNo: 1580, RBA: 793460,
SCN:0.664178312 (664178312), Timestamp: 2020-01-15 20:35:45.000000, Thread:
1 at 2020-01-15 20:38:52.435830
CHECKPOINT: start=SeqNo: 1637, RBA: 10182312, SCN: 0.669567539 (669567539),
Timestamp: 2020-01-15 21:09:59.000000, Thread: 1, end=SeqNo: 1637,
RBA:10182312, SCN: 0.669567539 (669567539), Timestamp: 2020-01-15
21:09:59.000000,
Thread: 1
```

The following example provides details on each of the object pools persisted by BR:

```
SEND exte BR BRSTATS
```

Output:

```
Object pool #0, instance: 1, id: p12733_extr
```

Object sizes through life of Extract group:

```
Sizes in bytes          :          POs
 512K      to      1M-1      :          13
   1M      to      2M-1      :          37
   4M      to      8M-1      :         398
   8M      to     16M-1      :           2
  16M      to     32M-1      :          10
```

Object ages through life of Extract group:

```
duration: BCP intervals in the life of the PO
duration          0:          230
duration      30 to      39:      230
```

Extant object sizes as of most recent BCP:

```
Sizes in bytes          :          POs
   512K      to      1M-1      :           8
   1M      to      2M-1      :          17
   4M      to      8M-1      :         200
  16M      to     32M-1      :           5
```

Extant object ages as of most recent BCP:

```
duration: BCP intervals in the life of the PO
duration      30 to      39:      230
```

SEND REPLICAT

Use `SEND REPLICAT` to communicate with a starting or running Replicat process. The request is processed as soon as Replicat is ready to accept commands from users.

Syntax

```
SEND REPLICAT group_name[threadID],
{
  CACHEDMGR {CACHESTATS | CACHEQUEUES | CACHEVMUSAGE} |
  FORCESTOP |
  GETLAG |
  GETPARAMINFO [parameter_name] [FILE output_file] |
  HANDLECOLLISIONS | NOHANDLECOLLISIONS [table_spec] |
  INTEGRATEDPARAMS(parameter_specification) |
  LOGEND |
  REPORT [HANDLECOLLISIONS [table_spec]] |
  RESUME |
```

```

STATUS |
STOP |
TRACE[2] [DDLINCLUDE | DDL[ONLY]] file_name |
TRACE[2] OFF |
TRACE OFF file_name |
TRACEINIT |
THREADS (threadID[, threadID][, ...][, thread_range[, thread_range][, ...])
}

```

***group_name* [*threadID*]**

The name of the Replicat group or the name of a specific thread of a coordinated Replicat, for example *fin003*. If the command is issued for a specific thread, then an option that is used applies only to that thread. As an alternative, you can issue `SEND REPLICAT` with the `THREADS` option instead of including *threadID* with the group name. If Replicat is not running, an error is returned.

CACHEMGR {CACHESTATS | CACHEQUEUES | CACHEVMUSAGE}

Returns statistics about the Oracle GoldenGate memory cache manager. `CACHEMGR` should only be used as explicitly directed by Oracle Support.

CACHESTATS

Returns statistics for file caching.

CACHEQUEUES

Returns statistics for the free queues only.

CACHEVMUSAGE

Returns statistics for the virtual memory usage.

FORCESTOP

Forces Replicat to stop, bypassing any notifications. This command will roll back any active transaction and stop the process immediately. This command applies to Replicat as a whole and cannot be used for a specific Replicat thread.

GETLAG

Shows a true lag time between Replicat and the trail. Lag time is the difference, in seconds, between the time that the last record was processed by Replicat and the timestamp of the record in the trail. The results are the same as `LAG REPLICAT`.

GETPARAMINFO [*parameter_name*] [FILE *output_file*]

Use `GETPARAMINFO` to query runtime parameter values of a running instance, including Extract, Replicat, and Manager. You can query for a single parameter or all parameters and send the output to the console or a text file

parameter_name

The default behavior is to display all parameters in use, meaning those parameters that have ever been queried by the application, parameters, and their current values. If you specify a particular parameter, then the output is filtered by that name.

FILE *output_file*

The name of the text file that your output is redirected to.

HANDLECOLLISIONS | NOHANDLECOLLISIONS [*table_spec*]

Control `HANDLECOLLISIONS` behavior. Instead of using this option, you can specify the `HANDLECOLLISIONS` or `NOHANDLECOLLISIONS` parameter in the Replicat parameter file. See

`HANDLECOLLISIONS` | `NOHANDLECOLLISIONS` in *Reference for Oracle GoldenGate*. This command can be sent directly to an individual thread by means of `SEND REPLICAT group_name[threadID]` or you can use the `THREADS` option to send the command through the coordinator thread to affect multiple threads.

HANDLECOLLISIONS

Use `HANDLECOLLISIONS` to enable automatic error handling when performing initial data loads while the source database is active. Make certain to disable `HANDLECOLLISIONS`, either by issuing `SEND REPLICAT` with the `NOHANDLECOLLISIONS` option or by removing the parameter from the parameter file, after the initial load is complete and online data changes have been applied to the target tables.

Note:

The message returned by `SEND REPLICAT` with `HANDLECOLLISIONS`, when issued for a specific Replicat thread, shows that the command set `HANDLECOLLISIONS` for all `MAP` statements, not only the one handled by the specified thread. This is a known issue. The command actually affects only the `MAP` statement that includes the specified thread.

NOHANDLECOLLISIONS

Turns off the `HANDLECOLLISIONS` parameter but does not remove it from the parameter file. To avoid enabling `HANDLECOLLISIONS` the next time Replicat starts, remove it from the parameter file.

table_spec

`table_spec` restricts `HANDLECOLLISIONS` or `NOHANDLECOLLISIONS` to a specific target table or a group of target tables specified with a standard wildcard (*).

INTEGRATEDPARAMS (parameter_specification)

(Oracle) Supports an integrated Replicat. Sends a parameter specification to the database inbound server while Replicat is running in integrated mode. Only one parameter specification can be sent at a time with this command. To send multiple parameter changes, issue multiple `SEND REPLICAT` commands as in the following example.

```
SEND REPLICAT repe INTEGRATEDPARAMS (parallelism 4)
SEND REPLICAT repe INTEGRATEDPARAMS (max_sga_size 250)
```

To preserve the continuity of processing, the parameter change is made at a transaction boundary.

LOGEND

Confirms whether or not Replicat has processed all of the records in the data source.

REPORT [HANDLECOLLISIONS [table_spec]]

Generates an interim statistical report to the Extract report file. The statistics that are displayed depend upon the configuration of the `STATOPTIONS` parameter when used with the `RESETREPORTSTATS` | `NORESETREPORTSTATS` option. See `STATOPTIONS`.

HANDLECOLLISIONS

Shows tables for which `HANDLECOLLISIONS` has been enabled.

table spec

Restricts the output to a specific target table or a group of target tables specified with a standard wildcard (*).

RESUME

Resumes (makes active) a process that was suspended by an `EVENTACTIONS SUSPEND` event. The process resumes normal processing from the point at which it was suspended.

STATUS

Returns the current location within the trail and information regarding the current transaction. Fields output are:

- Processing status (per thread, if Replicat is coordinated)
- Position in the trail file (per thread, if Replicat is coordinated)
- Trail sequence number (per thread, if Replicat is coordinated)
- RBA in trail
- Trail name

Possible processing status messages are:

- Delaying – waiting for more data
- Suspended – waiting to be resumed
- Waiting on deferred apply – delaying processing based on the `DEFERAPPLYINTERVAL` parameter.
- Processing data – processing data
- Skipping current transaction – `START REPLICAT with SKIPTRANSACTION` was used.
- Searching for `START ATCSN csn` – `START REPLICAT with ATCSN` was used.
- Searching for `START AFTERCSN csn` – `START REPLICAT with AFTERCSN` was used.
- Performing transaction timeout recovery – Canceling current incomplete transaction and repositioning to start new one (see the `TRANSACTIONTIMEOUT` parameter).
- Waiting for data at logical EOF after transaction timeout recovery – Waiting to receive remainder of incomplete source transaction after a `TRANSACTIONTIMEOUT` termination.
- At EOF (end of file) – no more records to process

Possible thread status messages when `THREADS` is used or the command is issued for a specific thread are:

- Waiting for consensus stop point: This indicates that the threads are attempting to synchronize for a barrier transaction.
- Waiting for Watermark: Indicates that all threads are attempting to stop at the same transaction boundary in the trail, known as the global watermark.
- Waiting on all threads to start up: Indicates that the thread is waiting for all of the threads to start after a successful barrier transaction or a Replicat startup.

Possible coordinator thread status messages are:

- **Waiting for all threads to register:** Indicates that the MAP statements are all being parsed to determine the thread IDs that are specified in them.
- **Processing data:** Indicates that data is being processed normally.
- **Suspended, waiting to be resumed:** Indicates that a SEND REPLICAT command with a SUSPEND request was sent to Replicat.
- **At EOF:** Indicates that there is no more data in the trail to process.
- **Waiting to register MAP statistics:** Indicates that Replicat is collecting processing statistics to send to the report file.

STOP

Stops Replicat gracefully. This command applies to Replicat as a whole and cannot be used for a specific Replicat thread.

THREADS (*threadID* [, *threadID*] [, ...] [, *thread_range* [, *thread_range*] [, ...])

Issues the command only for the specified thread or threads of a coordinated Replicat. You can use this option or you can use *groupname* with *threadID*. Without either of those options, the command applies to all active threads.

threadID [, *threadID*] [, ...]

Specifies a thread ID or a comma-delimited list of threads in the format of *threadID*, *threadID*, *threadID*.

thread_range [, *thread_range*] [, ...]

Specifies a range of threads in the form of *threadIDlow*-*threadIDhigh* or a comma-delimited list of ranges in the format of *threadIDlow*-*threadIDhigh*, *threadIDlow*-*threadIDhigh*.

A combination of these formats is permitted, such as *threadID*, *threadID*, *threadIDlow*-*threadIDhigh*.

TRACE[2] [**DDLINCLUDE** | **DDL[ONLY]**] *file_name*

Turns tracing on and off. Tracing captures information to the specified file to reveal processing bottlenecks. Tracing also can be enabled by means of the Replicat parameters TRACE and TRACE2.

If the Replicat is in coordinated mode and TRACE is used with a THREADS list or range, a trace file is created for each currently active thread. Each file name is appended with its associated thread ID. This method of identifying trace files by thread ID does not apply when SEND REPLICAT is issued by *groupname* with *threadID* (as in SEND REPLICAT *fin003* TRACE...) or when only one thread is specified with THREADS. Contact Oracle Support for assistance if the trace reveals significant processing bottlenecks.

TRACE

Captures step-by-step processing information.

TRACE2

Identifies code segments rather than specific steps.

DDLINCLUDE | **DDLONLY**

(Replicat only) Enables DDL tracing and specifies how DDL tracing is included in the trace report.

- **DDLINCLUDE** includes DDL tracing in addition to regular tracing of transactional data processing.
- **DDL[ONLY]** excludes the tracing of transactional data processing and only traces DDL. This option can be abbreviated to **DDL**.

file_name

file_name specifies the relative or fully qualified name of a file to which Oracle GoldenGate logs the trace information. If a trace is already in progress, the existing trace file is closed and the trace resumes to the file specified with *file_name*. For example:

```
SEND REPLICAT group_name TRACE file_name DDLINCLUDE
```

If no other options will follow the file name, the **FILE** keyword can be omitted, for example:

```
SEND REPLICAT group_name TRACE DDLINCLUDE file_name
```

TRACE[2] OFF

Turns off tracing.

TRACE OFF file_name

Turns tracing off only for the specified trace file. This option supports the **EVENTACTIONS** feature, where there can be multiple trace files due to multiple **EVENTACTIONS** statements.

TRACEINIT

Resets tracing statistics back to 0 and then starts accumulating statistics again. Use this option to track the current behavior of processing, as opposed to historical.

Examples

```
SEND REPLICAT repe, HANDLECOLLISIONS
```

```
SEND REPLICAT repe, REPORT HANDLECOLLISIONS rep_*
```

```
SEND REPLICAT repe, GETLAG
```

```
SEND REPLICAT repe, INTEGRATEDPARAMS(parallelism 10)
```

The following gets lag for thread 3 of a coordinated Replicat.

```
SEND REPLICAT repe, GETLAG
```

The following enables tracing for only thread 1 of a coordinated Replicat. In this case, because only one thread is being traced, the trace file will not have a *threadID* extension. The file name is `trace.trc`.

```
SEND REPLICAT repe, TRACE THREADS(1) FILE ./dirrpt/trace.trc
```

The following enables tracing for threads 1,2, and 3 of a coordinated Replicat. Assuming all threads are active, the tracing produces files `trace001`, `trace002`, and `trace003`.

```
SEND REPLICAT repe TRACE THREADS(1-3) FILE ./dirrpt/trace.trc
```

The following enables tracing only for thread 1 of a coordinated Replicat. Because the command was issued directly for thread 1 without the use of a `THREAD` clause, the trace file is named `trace` (without a thread ID suffix).

```
SEND REPLICAT repe TRACE FILE ./dirrpt/trace.trc
```

SET EDITOR

Use `SET EDITOR` to change the default text editor for the current session of Admin Client. The default editors are Notepad for Windows and vi for UNIX. CLI input, including to create parameter files, takes the character set of the local operating system.

Syntax

```
SET EDITOR program_name
```

program_name
Any text editor.

Example

The following example changes the default editor to Notepad++.

```
SET EDITOR notepad++
```

SET COLOR

This commands allows you to enable or disable colored text in the Admin Client.

Syntax

```
SET COLOR ( ON | OFF )
```

SET DEBUG

Use `SET DEBUG` to enable or disable debugging mode for the Admin Client. By default, this is set by the value of the environment variable, `ADMINCLIENT_DEBUG`. Use the `SHOW` command to see the value of the `SET DEBUG` variable.

Syntax

```
SET DEBUG ON | OFF
```

ON

Debugging mode is enabled.

OFF

Debugging mode is disabled.

SET INSTANTIATION CSN

Use `SET INSTANTIATION CSN` on your target database to set the instantiation CSN manually. This command requires `DBLOGIN`. It enables a Replicat with the `DBOPTIONS ENABLE_INSTANTIATION_FILTERING` option to filter out records below the specified CSN for any object without Oracle data pump import instantiation information. It is an alternative to specifying `@FILTER(@GETENV('TRANSACTION', 'CSN'))`.

To enable instantiation SCN filtering, you must do the following:

1. Your Replicat parameter file must contain `DBOPTIONS ENABLE_INSTANTIATION_FILTERING`.
2. The instantiation SCNs must be set at the target database for each table.

You can do this using one of the following two methods:

Automatically set the source SCN by the Oracle data pump upon import if the tables were prepared at the source database using `ADD TRANDATA PREPARECSN` or `ADD SCHEMATRANDATA PREPARECSN` prior to the Oracle data pump export.

or

Manually set the instantiation source SCN at the target database using this command.

Syntax

```
SET INSTANTIATION CSN csn FOR [schema.] table FROM source-database-name
```

csn

The CSN number that instantiation will begin.

[schema.] table

The name of the table to set the instantiation CSN on. If no schema is provided, the `DBLOGIN` user is used.

source-database-name

The global name of the source database for which this is a target.

Example

```
SET INSTANTIATION CSN 12345678 FOR hr.employees FROM orcl.com
```

SET PAGER

Use `SET PAGER` to set the default text viewer program for viewing parameter and report files. By default, this is set by the value of the environment variable, `PAGER`. On UNIX and Linux it defaults to `less` and to `more` on Windows.

Use the `SHOW` command to see the value of the `SET PAGER` variable.

Syntax

```
SET PAGER command
```

command

Any text viewer.

Example

```
SET PAGER wordpad
```

SET VERBOSE

This command allows you to enable or disable verbose command result output.

Syntax

```
SET VERBOSE (ON | OFF)
```

SHELL

Use `SHELL` to execute shell commands from within the CLI.

In Admin Client, this command is run on the local system and not on the system where the Administration Service or Service Manager is running.

Syntax

```
SHELL command
```

command

The system command to execute.

Examples

```
SHELL dir prod\*
```

SHOW

Use `SHOW` to display the Oracle GoldenGate environment.

Syntax

```
SHOW
```

Example

The following are samples of `SHOW` output. Additional entries may be displayed, depending on the database type.

```
Current directory: /scratch/ogg/sa/bin
DEBUG           : OFF
EDITOR          : vi
PAGER           : more
```

or

```
Parameter settings:
SET DEBUG      OFF
Current directory: C:\GG_81
Using subdirectories for all process files
Editor: notepad
Reports (.rpt)           C:\GG_81\dirrpt
Parameters (.prm)       C:\GG_81\dirprm
Replicat Checkpoints (.cpr) C:\GG_81\dirchk
Extract Checkpoints (.cpe) C:\GG_81\dirchk
Process Status (.pcs)    C:\GG_81\dirpcs
SQL Scripts (.sql)      C:\GG_81\dirsql
Database Definitions (.def) C:\GG_81\dirdef
```

START DEPLOYMENT

Use `START DEPLOYMENT` to start the specified deployment.

Syntax

```
START DEPLOYMENT deployment-name-wildcard
```

deployment-name-wildcard

The name of the deployment or a wildcard (*) to specify multiple deployments. For example, `T*` sends the command to all deployments whose group names begin with T.

Example

```
START DEPLOYMENT NORTH
```

START DISTPATH

Use `START DISTPATH` to start a distribution path. To confirm that the distribution path has started, use the `INFO DISTPATH` command. To change the distribution path start point, use the `ALTER DISTPATH` command.

Syntax

```
START DISTPATH path-name
```

path-name

The name of the distribution path.

START ER

Use the `START ER` to start multiple Extract and Replicat groups as a unit. Use it with wildcards to affect every Extract and Replicat group that satisfies the wildcard. For descriptions and optional parameters for this command, see `INFO EXTRACT`.

Syntax

```
START ER group_name
```

group_name

The wildcard specification for the groups that you want to affect with the command. Oracle GoldenGate automatically increases internal storage to track up to 100,000 wildcard entries.

Example

```
START ER *
```

START EXTRACT

Use `START EXTRACT` to start the Extract process. To confirm that Extract has started, use the `INFO EXTRACT` or `STATUS EXTRACT` command. Extract can be started at its normal start point (from initial or current checkpoints) or from an alternate, user-specified position in the data source.

Normal Start Point

Without options, `START EXTRACT` directs an Extract to start processing at one of the following locations in the data source to maintain data integrity:

- After graceful or abnormal termination: At the first unprocessed transaction in the data source from the previous run, as represented by the current read checkpoint.
- First-time startup after the group was created: At the start point specified with the `ADD EXTRACT` command.

Alternate Start Point

Before starting Extract with `ATCSN` or `AFTERCSN`, you must establish a physical starting location with one of the following commands:

- `ADD EXTRACT` with the `BEGIN` option set to a timestamp that is earlier than the CSN value specified with `ATCSN` or `AFTERCSN`. The transaction log that contains the timestamp and every log thereafter must be available on the system before Extract is started.
- `ALTER EXTRACT` to the sequence number of the log that contains the CSN specified with `ATCSN` or `AFTERCSN`.

Syntax

```
START EXTRACT group_name
              [ATCSN csn | AFTERCSN csn]
              [BROptions]
```

group_name

The name of an Extract group or a wildcard (*) to specify multiple groups. For example, `T*` starts all Extract groups whose names begin with T.

ATCSN csn | *AFTERCSN csn*

Specifies an alternate start point.

ATCSN

Directs Extract to position its start point at the first transaction that has the specified CSN. Any transactions in the data source that have CSN values less than the specified one are skipped.

AFTERCSN

Directs Extract to position its start point at the beginning of the first transaction after the one that has the specified CSN. Any transactions in the data source that have CSN values that are less than, or equal to, the specified one are skipped.

csn

Specifies a CSN value. Enter the CSN value in the format that is valid for the database. Extract abends if the format is invalid and writes a message to the report file. To determine the CSN to supply after an initial load is complete, use the serial identifier at which the load utility completed. Otherwise, follow the instructions in the initial load procedure for determining when to start Extract.

The following are additional guidelines to observe when using `ATCSN` and `AFTERCSN`:

- The CSN is stored in the file header so that it is available to downstream processes.
- When a record that is specified with a CSN is found, Extract issues a checkpoint. The checkpoint ensures that subsequent Extract startups begin from the requested location, and not from a point prior to the requested CSN.

- You must establish a physical start point in the transaction log or trail for Extract with `ADD EXTRACT` or `ALTER EXTRACT` before using `ATCSN` or `AFTERCSN`. These options are intended to be an additional filter after Extract is positioned to a physical location in the data source.

BRoptions

Extract can be started with BR options. Here are some examples of the BR options:

- `START EXTRACT BROFF`
- `START EXTRACT BRRESET`
- `START EXTRACT BRInterval # BRKEEPSTALEFILES`
- `START EXTRACT BRKEEPSTALEFILES`
- `START EXTRACT BRFSOPTION`

See `BR` in *Reference for Oracle GoldenGate* for details.

Examples

```
START EXTRACT exte
```

```
START EXTRACT exte ATCSN 684993
```

```
START EXTRACT exte AFTERCSN 684993
```

START REPLICAT

Use `START REPLICAT` to start Replicat. To confirm that Replicat has started, use the `INFO REPLICAT` or `STATUS REPLICAT` command.

When starting an integrated Replicat group for an Oracle target database, `START REPLICAT` automatically registers Replicat with the target database.

A coordinated Replicat can only be started as a whole. There is no option to start individual threads. If the prior shutdown of a coordinated Replicat was not clean, the threads may have stopped at different positions in the trail file. If this happens, `START REPLICAT` writes a warning if the parameter file was changed since the prior run and raises an error if the number of threads was changed.

Normal Start Point

Replicat can be started at its normal start point (from initial or current checkpoints) or from an alternate, user-specified position in the trail.

`START REPLICAT`, without any options, causes Replicat to start processing at one of the following points to maintain data integrity:

- After graceful or abnormal termination: At the first unprocessed transaction in the trail from the previous run, as represented by the current read checkpoint.

- First-time startup after the group was created: From the beginning of the active trail file (seqno 0, rba 0).

Alternate Start Point

The `SKIPTRANSACTION`, `ATCSN`, and `AFTERCSN` options of `START REPLICAT` cause Replicat as a whole, or specific threads of a coordinated Replicat, to begin processing at a transaction in the trail other than the normal start point. Use these options to:

- Specify a logical recovery position when an error prevents Replicat from moving forward in the trail. Replicat can be positioned to skip the offending transaction or transactions, with the understanding that the data will not be applied to the target.
- Skip replicated transactions that will cause duplicate-record and missing-record errors after a backup is applied to the target during an initial load. These options cause Replicat to discard transactions that occurred earlier than the most recent set of changes that were captured in the backup. You can map the value of the serial identifier that corresponds to the completion of the backup to a CSN value, and then start Replicat to begin applying transactions from the specified CSN onward.

Note:

Skipping a transaction, or starting at or after a CSN, might cause Replicat to start more slowly than normal, depending on how much data in the trail must be read before arriving at the appropriate transaction record. To view the startup progress, use the `SEND REPLICAT` command with the `STATUS` option. To omit the need for Replicat to read through transactions that ultimately will be skipped, you can use the `ATCSN` or `AFTERCSN` option when starting Extract, so that those transactions are omitted from the trail, see [START EXTRACT](#).

Syntax

```
START REPLICAT group_name
[SKIPTRANSACTION | {ATCSN csn | AFTERCSN csn}]
[FILTERDUPTRANSACTIONS | NOFILTERDUPTRANSACTIONS]
[THREADS (threadID[, threadID][, ...][, thread_range[, thread_range][, ...])
```

group_name

The name of a Replicat group or a wildcard (*) to specify multiple groups. For example, `T*` starts all Replicat groups whose names begin with T.

SKIPTRANSACTION

Causes Replicat to skip the first transaction after its expected startup position in the trail. All operations from that first transaction are excluded.

If the `MAXTRANSOPS` parameter is also being used for this Replicat, it is possible that the process will start to read the trail file from somewhere in the middle of a transaction. In that case, the remainder of the partial transaction is skipped, and Replicat resumes normal processing from the next begin-transaction record in the file. The skipped records are written

to the discard file if the `DISCARDFILE` parameter is being used; otherwise, a message is written to the report file that is similar to:

```
User requested START SKIPTRANSACTION. The current transaction will be
skipped. Transaction ID txid, position Seqno seqno, RBA rba
```

`SKIPTRANSACTION` is valid only when the trail that Replicat is reading is part of an online change synchronization configuration (with checkpoints). Not valid for task-type initial loads (where `SPECIALRUN` is used with `ADD REPLICAT`).

ATCSN *csn* | AFTERCSN *csn*

Sets a user-defined start point at a specific CSN. When `ATCSN` or `AFTERCSN` is used, a message similar to one of the following is written to the report file:

```
User requested start at commit sequence number (CSN) csn-string
```

```
User requested start after commit sequence number (CSN) csn-string
```

General information about these options:

- Valid only when the trail that Replicat is reading is part of an online change synchronization configuration (with checkpoints). Not valid for task-type initial loads (where `SPECIALRUN` is used with `ADD REPLICAT`).
- To support starting at, or after, a CSN, the CSN is stored in the first trail record of each transaction. If Replicat is started with `AFTERCSN` against an earlier trail version, Replicat will abend and write an error to the report stating that the trail format is not supported.

ATCSN

Causes Replicat to start processing at the transaction that has the specified CSN. Any transactions in the trail that have CSN values that are less than the specified one are skipped.

AFTERCSN

Causes Replicat to start processing at the transaction that occurred after the one with the specified CSN. Any transactions in the trail that have CSN values that are less than, or equal to, the specified one are skipped.

csn

Specifies a CSN value. Enter the CSN value in the format that is valid for the database. See *Administering Oracle GoldenGate* for CSN formats and descriptions. Replicat abends if the format is invalid and writes a message to the report file. To determine the CSN to supply after an initial load is complete, use the commit identifier at which the load utility completed the load. Otherwise, follow the instructions in the initial load procedure for determining when to start Replicat.

FILTERDUPTRANSACTIONS | NOFILTERDUPTRANSACTIONS

Causes Replicat to ignore transactions that it has already processed. Use when Extract is repositioned to a new start point (see the `ATCSN` or `AFTERCSN` option of "[START EXTRACT](#)") and you are confident that there are duplicate transactions in the trail that could cause Replicat to abend. This option requires the use of a checkpoint

table. The default is `FILTERDUPTRANSACTIONS`. However, if you use `NOFILTERDUPTRANSACTIONS`, the integrated Replicat default setting is overridden and causes it to not filter the duplicates. So it has the same effect on both classic and integrated Replicat.

THREADS (*threadID*[, *threadID*][, ...][, *thread_range*[, *thread_range*][, ...])

Valid for `SKIPTRANSACTION`, `ATCSN`, and `AFTERCSN` when Replicat is in coordinated mode. Not valid for `START REPLICAT` without those options. Starts the specified Replicat thread or threads at the specified location.

threadID[, *threadID*][, ...]

Specifies a thread ID or a comma-delimited list of threads in the format of `threadID`, `threadID`, `threadID`.

thread_range[, *thread_range*][, ...]

Specifies a range of threads in the form of `threadIDlow-threadIDhigh` or a comma-delimited list of ranges in the format of `threadIDlow-threadIDhigh`, `threadIDlow-threadIDhigh`.

A combination of these formats is permitted, such as `threadID`, `threadID`, `threadIDlow-threadIDhigh`.

Examples

```
START REPLICAT repe
```

The following starts Replicat at an Oracle-specific CSN.

```
START REPLICAT repe, ATCSN 6488359
```

The following starts Replicat at a SQL Server-specific CSN after the one with the specified CSN.

```
START REPLICAT repe, AFTERCSN 0X000004D2:0000162E:0009
```

The following causes threads 4 and 5 of a coordinated Replicat to skip the first transaction after their last checkpoint when Replicat is started. If this were a 10-thread coordinated Replicat, threads 0-3 and 6-10 would all start at the normal start point, that of their last checkpoint.

```
START REPLICAT repe SKIPTRANSACTION THREADS(4-5)
```

The following example causes threads 1-3 of a coordinated Replicat to start at CSN 6488359, threads 9-10 to start after CSN 6488360, and threads 7 and 8 to skip the first transaction after its last checkpoint.

```
START REPLICAT repe ATCSN 6488359 THREADS(1-3), AFTERCSN 6488360  
THREADS(9-10), SKIPTRANSACTION THREADS(7,8)
```

START RECVPATH

Use `START RECVPATH` to start a target-initiated distribution path in the Receiver Service. To confirm that the distribution path has started, use the `INFO RECVPATH` command. To change the distribution path start point, use the `ALTER RECVPATH` command.

Syntax

```
START RECVPATH path-name
```

path-name

The name of the distribution path.

START SERVICE

Use `START SERVICE` to start the specified Oracle GoldenGate services.

Syntax

```
START SERVICE service-name-wildcard
```

service-name-wildcard

The name of an service or a wildcard (*) to specify multiple services. Valid services are `ADMINSRV`, `DISTSRV`, `RECVSRV`, and `PMSRV`.

Example

```
START SERVICE ADMIN*
```

STATS DISTPATH

Use the `STATS DISTPATH` command to get the statistics for a distribution paths.

Syntax

```
STATS DISTPATH path-name
```

path-name

The name of the distribution path.

STATS ER

Use the `STATS ER` to get statistics on multiple Extract and Replicat groups as a unit. Use it with wildcards to affect every Extract and Replicat group that satisfies the wildcard. For descriptions and optional parameters for this command, see `INFO EXTRACT`.

Syntax

```
STATS ER group_name
```

group_name

The wildcard specification for the groups that you want to affect with the command. For example, `T*` starts all groups whose names begin with T. Oracle GoldenGate automatically increases internal storage to track up to 100,000 wildcard entries.

Example

```
STATS ER *T*
```

STATS EXTRACT

Use `STATS EXTRACT` to display statistics for one or more Extract groups. The output includes DML and DDL operations that are included in the Oracle GoldenGate configuration.

To get the most accurate number of operations per second that are being processed, do the following.

1. Issue the `STATS EXTRACT` command with the `RESET` option.
2. Issue the `STATS EXTRACT REPORTRATE` command. The `LATEST STATISTICS` field shows the operations per second.

Note:

The actual number of DML operations executed on a DB2 database might not match the number of extracted DML operations reported by Oracle GoldenGate. DB2 does not log update statements if they do not physically change a row, so Oracle GoldenGate cannot detect them or include them in statistics.

Note:

To get accurate statistics on a Teradata source system where Oracle GoldenGate is configured in maximum protection mode, issue `STATS EXTRACT` to the VAM-sort Extract, not the primary Extract. The primary Extract may contain statistics for uncommitted transactions that could be rolled back; whereas the VAM-sort Extract reports statistics only for committed transactions.

Syntax

```
STATS EXTRACT group_name
[, statistic]
[, DDLSONLY]
[, TABLE [container. | catalog.] schema.table]
[, TOTALSONLY [container. | catalog.] schema.table]
[, REPORTCDR]
```

```
[, REPORTCHARCONV]  
[, REPORTFETCH | NOREPORTFETCH]  
[, REPORTRATE time_units]
```

group_name

The name of an Extract group or a wildcard (*) to specify multiple groups. For example, T* returns statistics for all Extract groups whose names start with T.

statistic

The statistic to be displayed. More than one statistic can be specified by separating each with a comma, for example STATS EXTRACT finance, TOTAL, DAILY.

TOTAL

Displays totals since process startup.

DAILY

Displays totals since the start of the current day.

HOURLY

Displays totals since the start of the current hour.

LATEST

Displays totals since the last RESET command.

RESET

Resets the counters in the LATEST statistical field.

DDLONLY

Displays the statistics for DDL statements including number of DDL statements in a readable format.

TABLE [container. | catalog.]schema.table_name

Displays statistics only for the specified table or a group of tables specified with a wildcard (*). The table name or wildcard specification must be fully qualified with the two-part or three-part name, for example hr.emp or *.*.*.

TOTALONLY [container. | catalog.]schema.table_name

Summarizes the statistics for the specified table or a group of tables specified with a wildcard (*). The table name or wildcard specification must be fully qualified with the two-part or three-part name, for example hr.emp or *.*.*.

REPORTCDR

Shows statistics for Conflict Detection and Resolution. Statistics include:

- Total CDR conflicts
- CDR resolutions succeeded
- CDR resolutions failed
- CDR INSERTROWEXISTS conflicts
- CDR UPDATEROWEXISTS conflicts
- CDR DELROWEXISTS conflicts
- CDR DELROWMISSING conflicts

REPORTCHARCONV

Use only when `TABLE` parameters have a `TARGET` clause and character-set conversion is performed. The following statistics are added to the `STATS` output:

Total column character set conversion failure: the number of validation or conversion failures in the current Extract run.

Total column data truncation: the number of times that column data was truncated in the current Extract run as the result of character set conversion

REPORTFETCH | NOREPORTFETCH

Controls whether or not statistics about fetch operations are included in the output. The default is `NOREPORTFETCH`. The output of `REPORTFETCH` is as follows:

- `row fetch attempts`: The number of times Extract attempted to fetch a column value from the database when it could not obtain the value from the transaction log.
- `fetch failed`: The number of `row fetch attempts` that failed.
- `row fetch by key`: Valid for Oracle. The number of row fetch attempts that were made by using the primary key. The default is to fetch by row ID.

REPORTRATE *time_units*

Displays statistics in terms of processing rate rather than absolute values.

HR
MIN
SEC

Example

The following example displays total and hourly statistics per minute for a specific table, and it also resets the latest statistics and outputs fetch statistics.

```
STATS EXTRACT exte, TOTAL, HOURLY, TABLE hr.emp, REPORTRATE MIN, RESET,  
REPORTFETCH
```

```
STATS EXTRACT exte, LATEST, REPORTFETCH
```

STATS RECVPATH

Use the `STATS RECVPATH` command to get the statistics for a target-initiated distribution path in the Receiver Server.

Syntax

```
STATS RECVPATH path-name
```

path-name

The name of the target-initiated distribution path.

STATS REPLICAT

Use `STATS REPLICAT` to display statistics for one or more Replicat groups. Thread statistics for a coordinated Replicat group are provided as follows.

Thread Lag Gap

The difference between the maximum lag and the minimum lag among all threads.

Coordinated Total DDLs

The total number of coordinated DDL transactions.

Coordinated Total PK-Update Transactions

The total number of coordinated transactions that involved an update to a primary key.

Coordinated Total EMI Transactions

The total number of coordinated `EVENTACTIONS` events.

Total Transactions with User-Requested Coordination

The total number of coordination's that were explicitly requested in the configuration by means of the `COORDINATED` option of the `MAP` parameter.

Average Coordination Time

The average time (in seconds) spent in coordination among all threads.

Syntax

```
STATS REPLICAT group_name
[, statistic]
[, DDLONLY]
[, TABLE [container. | catalog.] schema.table]
[, TOTALONLY [container. | catalog.] schema.table]
[, REPORTCDR]
[, REPORTCHARCONV]
[, REPORTDETAIL | NOREPORTDETAIL]
[, REPORTRATE {HR | MIN | SEC}]
```

group_name

The name of a Replicat group or a wildcard (*) to specify multiple groups. For example, `T*` shows statistics for all Replicat groups whose names begin with T.

statistic

The statistic to be displayed. More than one statistic can be specified by separating each with a comma, for example `STATS REPLICAT finance, TOTAL, DAILY`.

TOTAL

Displays totals since process startup.

DAILY

Displays totals since the start of the current day.

HOURLY

Displays totals since the start of the current hour.

LATEST

Displays totals since the last `RESET` command.

RESET

Resets the counters in the `LATEST` statistical field.

DDLONLY

Displays the statistics for DDL statements including number of DDL statements in a readable format.

TABLE [*container.* | *catalog.*] *schema.table_name*]

Displays statistics only for the specified table or a group of tables specified with a wildcard (*). The table name or wildcard specification must be fully qualified with the two-part or three-part name, for example `hr.emp` or `*.*.*`.

TOTALSONLY [*container.* | *catalog.*] *schema.table_name*]

Summarizes the statistics for the specified table or a group of tables specified with a wildcard (*). The table name or wildcard specification must be fully qualified with the two-part or three-part name, for example `hr.emp` or `*.*.*`.

REPORTCDR

Shows statistics for Conflict Detection and Resolution. Statistics include:

- Total CDR conflicts
- CDR resolutions succeeded
- CDR resolutions failed
- CDR `INSERTROWEXISTS` conflicts
- CDR `UPDATEROWEXISTS` conflicts
- CDR `UPDATEROWMISSING` conflicts
- CDR `DELETEROWEXISTS` conflicts
- CDR `DELETEROWMISSING` conflicts

REPORTCHARCONV

Reports statistics for character validation when character-set conversion is performed. The following statistics are added to the `STATS` output:

Total column character set conversion failure: the number of validation or conversion failures in the current Replicat run.

Total column data truncation: the number of times that column data was truncated in the current Replicat run as the result of character set conversion

REPORTDETAIL | **NOREPORTDETAIL**

Controls whether or not the output includes operations that were not replicated as the result of collision errors. These operations are reported in the regular statistics (inserts, updates, and deletes performed) plus as statistics in the detail display, if enabled. For example, if 10 records were insert operations and they were all ignored due to duplicate keys, the report would indicate that there were 10 inserts and also 10 discards due to collisions. The default is `REPORTDETAIL`.

REPORTRATE {**HR** | **MIN** | **SEC**}

Displays statistics in terms of processing rate rather than absolute values.

HR

Sets the processing rate in terms of hours.

MIN

Sets the processing rate in terms of minutes.

SEC

Sets the processing rate in terms of seconds.

Examples

The following example displays total and hourly statistics per minute for a specific table, and it also resets the latest statistics. Statistics for discarded operations are not reported.

```
STATS REPLICAT finance, TOTAL, HOURLY, TABLE sales.acct, REPORTRATE  
MIN, RESET, NOREPORTDETAIL
```

The following example displays the same statistics as the previous example, but for thread 3 of a coordinated Replicat group.

```
STATS REPLICAT fin003, TOTAL, HOURLY, TABLE sales.acct, REPORTRATE  
MIN, RESET, NOREPORTDETAIL
```

STATUS DEPLOYMENT

Use `STATUS DEPLOYMENT` to see the status of the specified deployment.

Syntax

```
STATUS DEPLOYMENT deployment-name-wildcard
```

deployment-name-wildcard

The name of the deployment or a wildcard (*) to specify multiple deployments. For example, `T*` sends the command to all deployments whose group names begin with T.

Example

```
STATUS DEPLOYMENT production
```

STATUS ER

Use the `STATUS ER` to check the status of multiple Extract and Replicat groups as a unit. Use it with wildcards to affect every Extract and Replicat group that satisfies the wildcard. For descriptions and optional parameters for this command, see `STATUS EXTRACT`.

Syntax

```
STATUS ER group_name
```

group_name

The wildcard specification for the groups that you want to affect with the command. For example, `T*` shows statistics for all groups whose names begin with T. Oracle GoldenGate automatically increases internal storage to track up to 100,000 wildcard entries.

Example

```
STATUS ER *
```

STATUS EXTRACT

Use `STATUS EXTRACT` to determine whether or not Extract is running. A status of `RUNNING` can mean one of the following:

- **Active:** Running and processing (or able to process) data. This is the normal state of a process after it is started.
- **Suspended:** The process is running, but suspended due to an `EVENTACTIONS SUSPEND` action. In a suspended state, the process is not active, and no data can be processed, but the state of the current run is preserved and can be continued by issuing the `RESUME` command. The RBA in the `INFO` command reflects the last checkpointed position before the suspend action. To determine whether the state is active or suspended, issue the `SEND EXTRACT` command with the `STATUS` option.

Admin Client Syntax

```
STATUS EXTRACT group_name [, TASKS | ALLPROCESSES]
```

group_name

The name of an Extract group or a wildcard (*) to specify multiple groups. For example, `T*` returns status for all Extract groups whose names begin with T.

TASKS

Displays status only for Extract tasks. By default, tasks are not displayed unless you specify a single Extract group (without wildcards).

ALLPROCESSES

Displays status for all Extract groups, including tasks.

Examples

```
STATUS EXTRACT exte
```

```
STATUS EXTRACT ext*
```

STATUS REPLICAT

Use `STATUS REPLICAT` to determine whether or not Replicat is running. There are the following four possible statuses:

Abended

The process abnormally ended.

Running

Means one of the following:

- **Active:** Running and processing (or able to process) data. This is the normal state of a process after it is started.
- **Suspended:** The process is running though suspended due to an `EVENTACTIONS SUSPEND` action. In a suspended state, the process is not active, and no data can be processed, but the state of the current run is preserved and can be continued by issuing the `RESUME` command in GGSCI. The RBA in the `INFO` command reflects the last checkpointed position before the suspend action. To determine whether the state is active or suspended, issue a `SEND EXTRACT|REPLICAT group_name STATUS` command. For more information, see [SEND EXTRACT](#) or [SEND REPLICAT](#).

Starting

The process is starting.

Stopped

The process was stopped.

Syntax

```
STATUS REPLICAT group_name  
[, TASKS]  
[, ALLPROCESSES]
```

group_name

The name of a Replicat group or a wildcard (*) to specify multiple groups. For example, `T*` shows status for all Replicat groups whose names begin with T.

TASKS

Displays status only for Replicat tasks. By default, tasks are not displayed unless you specify a single Replicat group (without wildcards).

ALLPROCESSES

Displays status for all Replicat groups, including tasks.

Examples

```
STATUS REPLICAT repe
```

```
STATUS REPLICAT rep*
```

STATUS SERVICE

Use `STATUS SERVICE` to display status of the specified Oracle GoldenGate services.

Syntax

```
STATUS SERVICE service-name-wildcard
```

service-name-wildcard

The name of an service or a wildcard (*) to specify multiple services. For example, `T*` statuses all services whose names begin with T.

STOP DEPLOYMENT

Use `STOP DEPLOYMENT` to stop one or more deployments.

Syntax

```
STOP DEPLOYMENT deployment_name_wildcard [!]
```

deployment_name_wildcard

The name of the deployment or a wildcard (*) to specify multiple deployments. For example, `P*` sends the command to all deployments whose group names begin with P.

!

(Exclamation point) Stops the deployment immediately. The transaction is ended and the process terminates.

Example

```
STOP DEPLOYMENT production
```

STOP ER

Use the `STOP ER` to stop multiple Extract and Replicat groups as a unit. Use it with wildcards to affect every Extract and Replicat group that satisfies the wildcard. For descriptions and optional parameters for this command, see `STOP EXTRACT`.

Syntax

```
STOP ER group_name [!]
```

group_name

The wildcard specification for the groups that you want to affect with the command. Oracle GoldenGate automatically increases internal storage to track up to 100,000 wildcard entries.

!

(Exclamation point) Stops the Extracts and Replicats immediately. The transaction is ended and the process terminates.

Examples

```
STOP ER * !
```

STOP EXTRACT

Use `STOP EXTRACT` to stop Extract gracefully. The command preserves the state of synchronization for the next time Extract starts, and it ensures that Manager does not automatically start Extract.

If there are open, long-running transactions when you issue `STOP EXTRACT`, you might be advised of the oldest transaction log file that will be needed for that transaction when Extract is restarted. You can use the `SEND EXTRACT` option of `SHOWTRANS` to view details and data of those transactions and then, if desired, use the `SKIPTRANS` or `FORCETRANS` options to skip the transaction or force it to be written as a committed transaction to the trail, see [SEND EXTRACT](#).

Syntax

```
STOP EXTRACT group_name [!]
```

group_name

The name of an Extract group or a wildcard (*) to specify multiple groups. For example, `T*` stops all Extract processes for groups whose names begin with T.

!
(Exclamation point) Stops Extract immediately. The transaction is ended and the process terminates.

Examples

```
STOP EXTRACT exte
```

```
STOP EXTRACT * !
```

STOP DISTPATH

Use `STOP DISTPATH` to stop a distribution path and attempt to cleanup the resource. To confirm that the distribution path has stopped, use the `INFO DISTPATH` command. To change the distribution path start point, use the `ALTER DISTPATH` command.

Syntax

```
STOP DISTPATH path_name [ALL | !]
```

path_name

The name of the distribution path.

ALL

Use to stop all distribution paths.

!
(Exclamation point) Stops a distribution path immediately. The transaction is terminated and the path is stopped forcefully.

STOP RECVPATH

Use `STOP RECVPATH` to stop a target-initiated distribution path in the Receiver Service. To confirm that the distribution path has stopped, use the `INFO RECVPATH` command. To change the distribution path start point, use the `ALTER RECVPATH` command.

Syntax

```
STOP RECVPATH path_name [ALL | !]
```

path_name

The name of the deployment to specify multiple deployments. For example, `P*` sends the command to all deployments whose group names begin with P.

ALL

Use to stop all target-initiated distribution paths.

!
(Exclamation point) Stops a target-initiated distribution path immediately. The transaction is ended and the process terminates.

STOP REPLICAT

Use `STOP REPLICAT` to stop Replicat cleanly. This command preserves the state of synchronization for the next time Replicat starts, and it ensures that Manager does not automatically start Replicat.

In a clean shutdown of a coordinated Replicat, the coordinator thread attempts to stop all of the threads on the same transaction boundary. If the shutdown of a coordinated Replicat is not clean, the threads may stop at different positions in the trail file. If this happens, `START REPLICAT` writes a warning if the parameter file was changed since the prior run and raises an error if the number of threads was changed. To resolve these problems and start Replicat again, see [Administering a Coordinated Replicat Configuration](#).

Syntax

```
STOP REPLICAT group_name [!]
```

group_name

The name of a Replicat group or a wildcard (*) to specify multiple groups. For example, `T*` stops all Replicat groups whose names begin with T.

!
(Exclamation point) Stops Replicat immediately. The transaction is ended and the process terminates.

Example

```
STOP REPLICAT repe
```

```
STOP REPLICAT * !
```

STOP SERVICE

Use `STOP SERVICE` to stop the specified Oracle GoldenGate services.

Syntax

```
STOP SERVICE service_name_wildcard service_name_wildcard
```

The name of a service or a wildcard (*) to specify multiple services. For example, `T*` stops all services whose names begin with T.

SYNCHRONIZE REPLICAT

Valid for coordinated, integrated, and parallel Replicat. Use `SYNCHRONIZE REPLICAT` to return all of the threads of a Replicat to the same position in the trail file after an unclean shutdown. This position is the maximum checkpoint position of all of the threads, in other words, the most recent trail record processed among all of the threads. When `SYNCHRONIZE REPLICAT` is issued, all threads are started and allowed to process transactions until they reach the maximum checkpoint position, and then Replicat stops.

For more information about how to use `SYNCHRONIZE REPLICAT` to recover a coordinated Replicat after an unclean shutdown, or to enable repartitioning of data among different threads, see [Administering a Coordinated Replicat Configuration](#).

Syntax

```
SYNCHRONIZE REPLICAT group_name
```

group_name

The name of a Replicat group or a wildcard (*) to specify multiple groups. For example, `T*` synchronizes the threads of all Replicat groups whose names begin with T. The threads synchronize to the same position within their group, not to the same position across all Replicat groups being synchronized with this command.

Example

```
SYNCHRONIZE REPLICAT repe
```

UNDELETE MASTERKEY

Use the `UNDELETE MASTERKEY` command to remove the deletion mark from a master key version, thus retaining that version if the `PURGE WALLET` command is used. Only one version can be unmarked per `UNDELETE MASTERKEY` command. See [DELETE MASTERKEY](#) to mark a version of a master key for deletion.

The `OPEN WALLET` command must be used before using this command or any of the commands that add, renew, or delete the master keys in the wallet.

Syntax

```
UNDELETE MASTERKEY VERSION version
```

VERSION *version*

The version that is to be unmarked for deletion.

Example

This command unmarks version 3 of the master key and returns a message similar to the one shown.

```
UNDELETE MASTERKEY VERSION 3
Version 3 of Masterkey 'OGG_DEFAULT_MASTERKEY' undeleted from wallet
at location './wallet'.
```

Or

```
UNDELETE MASTERKEY VERSION 3
Version 3 of Masterkey 'OGG_DEFAULT_MASTERKEY' undeleted from wallet at
location './dirwlt'.
```

VIEW ENCKEYS

Use `VIEW ENCKEYS` to display the contents of the `ENCKEYS` file in read-only mode on-screen.

Syntax

```
VIEW ENCKEYS
```

UNREGISTER EXTRACT

Valid for Oracle and PostgreSQL.

Use `UNREGISTER EXTRACT` to remove the registration of an Extract group from an Oracle database. `UNREGISTER EXTRACT` is valid only for a primary Extract group. Do not use it for a data pump Extract.

To register an Extract group with the database, use the `REGISTER EXTRACT` command.

To upgrade an Extract from classic capture mode to integrated capture mode, use the `ALTER EXTRACT` command.

For PostgreSQL, a replication slot is dropped in the connected database for PostgreSQL. This command ensures that the PostgreSQL database overwrites the existing transaction log or may archive the log . After deleting the Extract, the command must be run.

Syntax

```
UNREGISTER EXTRACT group_name
```

group_name

The name of the Extract group that is to be unregistered from the database. Do not use a wildcard. This group must currently be registered with the database.

DATABASE

(Oracle only) Disables integrated capture mode for the Extract group.

(Oracle only) This command removes the database capture (mining) server that has the same name as the Extract group. For additional information about support for, and configuration of, the Extract capture modes.

Before using `UNREGISTER EXTRACT` with `DATABASE`, do the following:

1. Stop Extract with the `STOP EXTRACT` command.
2. Log in to the mining database with the `DBLOGIN` or `MININGDBLOGIN` command with the privileges granted in the `dbms_goldengate_auth.grant_admin_privilege` procedure. For local capture, `DBLOGIN` is required. For downstream capture, `DBLOGIN` and `MININGDBLOGIN` are both required.
3. Delete the Extract group with `DELETE EXTRACT`.

Examples

```
UNREGISTER EXTRACT exte
```

```
UNREGISTER EXTRACT exte DATABASE
```

```
UNREGISTER EXTRACT exte with DATABASE PostgresDB
```

UPGRADE CHECKPOINTTABLE

Not valid for Replicat for Java, Oracle GoldenGate Applications Adapter, or Oracle GoldenGate Big Data.

Use the `UPGRADE CHECKPOINTTABLE` command to add a supplemental checkpoint table when upgrading Oracle GoldenGate.

Syntax

```
UPGRADE CHECKPOINTTABLE [[container. | catalog.]owner.table]
```

container. | *catalog.*

The Oracle pluggable database. If this option is omitted, the catalog or pluggable database defaults to the one that is associated with the `SOURCEDB`, `USERID`, or `USERIDALIAS` portion of the `DBLOGIN` command (depending on the database).

owner.table

The owner and name of the checkpoint table. An owner and name are not required if they are the same as those specified with the `CHECKPOINTTABLE` parameter in the `GLOBALS` file.

Example

```
UPGRADE CHECKPOINTTABLE ggadmin.ggs_checkpoint
```

UPGRADE HEARTBEATTABLE

Valid for Oracle, Db2 z/OS, Db2 for i, Db2 LUW, MySQL, PostgreSQL, SQL Server, Teradata, and TimesTen.

Use `UPGRADE HEARTBEATTABLE` when upgrading Oracle GoldenGate from a prior release, to enable any new heartbeat functionality available in the current release.

This command requires a `DBLOGIN`. On a CDB database for Oracle, a PDB login is required.

Oracle GoldenGate for Oracle database simplifies the administration of the heartbeat table by eliminating the need for `GGSCHEMA` or `HEARTBEATTABLE` parameter. In case of CDB root Extract, `GGSCHEMA` is used.

Syntax

```
UPGRADE HEARTBEATTABLE
```

VALIDATE AUTHORIZATIONPROFILE

Use this command to validate the authorization profile. Validating an authorization profile carries out a connection and configuration test. This test checks that the services can establish a secure communication with the described IDP tenant and that the IDP application, with the exception of redirect URIs, is configured correctly.

If validation fails, information on what failed in the test gets printed.

Syntax

```
VALIDATE AUTHORIZATIONPROFILE profile-name  
DEPLOYMENT deployment-name
```

profile-name

Name of profile to be validated.

deployment-name

Name of the deployment where the profile resides.

Example

The following example validates the profile (`testProfile`) in Service Manager.

```
Validate testProfile in ServiceManager  
VALIDATE AUTHORIZATIONPROFILE testProfile DEPLOYMENT ServiceManager
```

VERSIONS

Use `VERSIONS` to display operating system and database version information. For ODBC connections, the driver version is also displayed. To include database information in the output, issue a `DBLOGIN` command before issuing `VERSIONS` to establish a database connection.

Syntax

```
VERSIONS
```

VIEW DISCARD

Use `VIEW DISCARD` to display the discard file that is generated by Extract or Replicat. The `SET PAGER` value is used to determine pagination of the output.

Syntax

```
VIEW DISCARD report-name
```

report-name

The name of the report to display the discard file. For `EXTRACT "EXX"`, these report names are valid:

- EXX
- EXX0
- EXX1
- ...
- EXX9

No other values are valid.

VIEW GLOBALS

Use `VIEW GLOBALS` to display the contents of the `GLOBALS` parameter file in read-only mode on-screen. The `SET PAGER` value is used to determine pagination of the output.

Syntax

```
VIEW GLOBALS
```

VIEW MESSAGES

Use `VIEW MESSAGES` to display the message log file, `ggseerr.log`. The `SET PAGER` value is used to determine pagination of the output.

Syntax

```
VIEW MESSAGES
```

VIEW PARAMS

Use `VIEW PARAMS` to view the contents of a parameter file.

▲ Caution:

Do not use this command to view a parameter file that is in a character set other than that of the local operating system (such as one where the `CHARSET` option was used to specify a different character set). The contents may become corrupted. View the parameter file from outside the command line interface

Admin Client Syntax

```
VIEW PARAMS {group_name | file_name}
```

group_name

Shows the parameter file for the specified Extract or Replicat group.

file_name

Shows the specified file. The default sub-directory is used if no path is specified. If the parameter file resides in a directory other than the default, specify the full path name.

Examples

```
VIEW PARAMS exte
```

```
VIEW PARAMS c:\lpparms\repe.prm
```

VIEW REPORT

Use `VIEW REPORT` to view the process report or the discard file that is generated by Extract or Replicat. Each process generates a new report and discard file upon startup.

Reports and discard files are aged whenever a process starts. Old files are appended with a sequence number, for example `exte.rpt`, `exte1.rpt`, and so forth, or `discard0.dsc`, `discard1.dsc`, and so forth.

Syntax

```
VIEW REPORT group_name[version]
```

group_name

The name of the Extract or Replicat group. The command assumes the report file named `group.rpt` or the discard file named `group.dsc` in the Oracle GoldenGate default subdirectory. Use the relative file name if stored in the default location, or the full path name if not stored in the default location

version

To view the current report or discard file, use the command without this option. Specify the report you want to see by number.

Examples

View the most recent (active) report for the `exte` group.

```
VIEW REPORT exte
```

View the second most recent report.

```
VIEW REPORT exte2
```

View the eleventh most recent report.

```
VIEW REPORT exte11
```

3

GGSCI Command Line Interface Commands

Learn how to use the Oracle GoldenGate Classic Architecture GoldenGate Software Command Interface (GGSCI) commands, options, and review examples.

Topics:

- [Oracle GoldenGate GGSCI Command Groups](#)
- [!](#)
- [ADD CHECKPOINTTABLE](#)
- [ADD CREDENTIALSTORE](#)
- [ADD EXTRACT](#)
- [ADD EXTTRAIL](#)
- [ADD HEARTBEATABLE](#)
- [ADD MASTERKEY](#)
- [ADD PROCEDURETRANDATA](#)
- [ADD REPLICAT](#)
- [ADD RMTTRAIL](#)
- [ADD SCHEMATRANDATA](#)
- [ADD TRACETABLE](#)
- [ADD TRANDATA](#)
- [ALLOWNESTED](#)
- [ALTER CREDENTIALSTORE](#)
- [ALTER DATASTORE](#)
- [ALTER EXTRACT](#)
- [ALTER EXTTRAIL](#)
- [ALTER HEARTBEATABLE](#)
- [ALTER REPLICAT](#)
- [ALTER RMTTRAIL](#)
- [CLEANUP CHECKPOINTTABLE](#)
- [CLEANUP REPLICAT](#)
- [CLEANUP EXTRACT](#)
- [CLEAR INSTANTIATION CSN](#)
- [CREATE DATASTORE](#)
- [CREATE SUBDIRS](#)
- [CREATE WALLET](#)

- DBLOGIN
- DEFAULTJOURNAL
- DELETE CHECKPOINTTABLE
- DELETE CREDENTIALSTORE
- DELETE EXTRACT
- DELETE EXTTRAIL
- DELETE TRANDATA
- DELETE TRACETABLE
- DELETE SCHEMATRANDATA
- DELETE RMTTRAIL
- DELETE REPLICAT
- DELETE PROCEDURETRANDATA
- DELETE MASTERKEY
- DELETE HEARTBEATTABLE
- DELETE HEARTBEATENTRY
- EDIT PARAMS
- INFO ALL
- HISTORY
- HELP
- FLUSH SEQUENCE
- EXIT
- ENCRYPT PASSWORD
- FC
- FORCEAPPEND
- GETPARAMINFO
- INFO JAGENT
- INFO MANAGER
- INFO MARKER
- INFO PMSRVR
- INFO CHECKPOINTTABLE
- INFO TRANDATA
- INFO TRACETABLE
- INFO SCHEMATRANDATA
- INFO RMTTRAIL
- INFO REPLICAT
- INFO PROCEDURETRANDATA
- INFO PARAM

- INFO MASTERKEY
- INFO HEARTBEATABLE
- INFO EXTTRAIL
- INFO EXTRACT
- INFO ER
- INFO CREDENTIALSTORE
- KILL ER
- KILL EXTRACT
- KILL REPLICAT
- LAG ER
- LAG EXTRACT
- LAG REPLICAT
- LIST TABLES
- MININGDBLOGIN
- OBEY
- OPEN WALLET
- PURGE WALLET
- RENEW MASTERKEY
- REGISTER EXTRACT
- RENEW MASTERKEY
- REPAIR DATASTORE
- SEND EXTRACT
- SEND MANAGER
- SET EDITOR
- SET NAMECCSID
- SEND REPLICAT
- SET INSTANTIATION CSN
- SHELL
- SHOW
- START ER
- STATS REPLICAT
- STATS EXTRACT
- STATS ER
- START EXTRACT
- START REPLICAT
- START JAGENT
- START MANAGER

- [START PMSRVR](#)
- [STATUS JAGENT](#)
- [STATUS MANAGER](#)
- [STATUS PMSRVR](#)
- [STOP JAGENT](#)
- [STOP MANAGER](#)
- [STOP PMSRVR](#)
- [SYNCHRONIZE REPLICAT](#)
- [UNDELETE MASTERKEY](#)
- [UNREGISTER EXTRACT](#)
- [UPGRADE CHECKPOINTTABLE](#)
- [UPGRADE HEARTBEATABLE](#)
- [VIEW ENCKEYS](#)
- [VIEW GGSEVT](#)

Oracle GoldenGate GGSCI Command Groups

This section describes the GGSCI commands and their respective command groups.

- [Summary of Manager Commands](#)
- [Summary of Extract Commands](#)
- [Summary of Replicat Commands](#)
- [Summary of the ER Command](#)
- [Summary of Wallet Commands](#)
- [Summary of Credential Store Commands](#)
- [Summary of Trail Commands](#)
- [Summary of Database Commands](#)
- [Summary of Trandata Commands](#)
- [Summary of Checkpoint Table Commands](#)
- [Summary of Oracle Trace Table Commands](#)
- [Summary of Oracle GoldenGate Data Store Commands](#)
- [Summary of Oracle GoldenGate Monitor JAgent Commands](#)
- [Summary of Oracle GoldenGate Automatic Heartbeat Commands](#)
- [Summary of PMSRVR Commands](#)
- [Summary of Procedure Replication Commands](#)
- [Summary of Miscellaneous Oracle GoldenGate Commands](#)

Summary of Manager Commands

Use the Manager commands to control the Manager process. Manager is the parent process of Oracle GoldenGate Classic Architecture and is responsible for the management of its processes and files, resources, user interface, and the reporting of thresholds and errors.

Table 3-1 Manager Commands

Command	Description
INFO MANAGER	Returns information about the Manager port and child processes.
SEND MANAGER	Returns information about a running Manager process.
START MANAGER	Starts the Manager process.
STATUS MANAGER	Returns the state of the Manager process.
STOP MANAGER	Stops the Manager process.

Summary of Extract Commands

Use the Extract commands to create and manage Extract groups. The Extract process captures either full data records or transactional data changes, depending on configuration parameters, and then sends the data to a trail for further processing by a downstream process, such as a data-pump Extract or the Replicat process.

Table 3-2 Extract Commands

Command	Description
ADD EXTRACT	Creates an Extract group.
ALTER EXTRACT	Changes attributes of an Extract group
CLEANUP EXTRACT	Deletes run history for an Extract group
DELETE EXTRACT	Deletes an Extract group.
INFO EXTRACT	Returns information about an Extract group.
KILL EXTRACT	Forcibly terminates the run of an Extract group.
LAG EXTRACT	Returns information about Extract lag.
REGISTER EXTRACT	Registers an Extract group with an Oracle database.
SEND EXTRACT	Sends instructions to, or returns information about, a running Extract group.
STRAT EXTRACT	Starts an Extract group.
STATS EXTRACT	Returns processing statistics for an Extract group.
STATUS EXTRACT	Returns the state of an Extract group.
STOP EXTRACT	Stops an Extract group.
UNREGISTER EXTRACT	Unregisters an Extract group from an Oracle database.

Summary of Replicat Commands

Use the Replicat commands to create and manage Replicat groups. The Replicat process reads data extracted by the Extract process and applies it to target tables or prepares it for use by another application, such as a load application.

Table 3-3 Replicat Commands

Command	Description
ADD REPLICAT	Adds a Replicat group.
ALTER REPLICAT	Changes attributes of a Replicat group.
CLEANUP REPLICAT	Deletes run history of a Replicat group.
DELETE REPLICAT	Deletes a Replicat group.
INFO REPLICAT	Returns information about a Replicat group.
KILL REPLICAT	Forcibly terminates a Replicat group.
LAG REPLICAT	Returns information about Replicat lag.
REGISTER REPLICAT	Registers a Replicat group with an Oracle database.
SEND REPLICAT	Sends instructions to, or returns information about, a running Replicat group.
START REPLICAT	Starts a Replicat group.
STATS REPLICAT	Returns processing statistics for a Replicat group.
STATUS REPLICAT	Returns the state of a Replicat group.
STOP REPLICAT	Stops a Replicat group.
SYNCHRONIZE REPLICAT	Returns all threads of a coordinated Replicat to a uniform start point after an unclean shutdown of the Replicat process.
UNREGISTER REPLICAT	Unregisters a Replicat group from an Oracle database.

Summary of the ER Command

Use the ER command to issue standard Extract and Replicat commands to multiple Extract and Replicat groups as a unit.

Table 3-4 ER Commands

Command	Description
INFO ER *	Returns information about the specified wildcarded groups.
KILL ER *	Forcibly terminates the specified wildcarded groups.
LAG ER *	Returns lag information about the specified wildcarded groups.
SEND ER *	Sends instructions to, or returns information about, the specified wildcarded groups.
START ER *	Starts the specified wildcarded groups.
STATS ER *	Returns processing statistics for the specified wildcarded groups.

Table 3-4 (Cont.) ER Commands

Command	Description
STATUS ER *	Returns the state of the specified wildcarded groups.
STOP ER *	Stops the specified wildcarded groups.

Summary of Wallet Commands

Use the wallet commands to manage the master-key wallet that stores Oracle GoldenGate master encryption keys, and to add master keys to this wallet.

Table 3-5 Wallet Commands

Command	Description
CREATE WALLET	Creates a wallet that stores master encryption keys.
OPEN WALLET	Opens a master-key wallet.
PURGE WALLET	Permanently removes from a wallet the master keys that are marked as deleted.
ADD MASTERKEY	Adds a master key to a master-key wallet.
INFO MASTERKEY	Returns information about master keys.
RENEW MASTERKEY	Adds a new version of a master key.
DELETE MASTERKEY	Marks a master key for deletion.
UNDELETE MASTERKEY	Changes the state of a master key from being marked as deleted to marked as available.

Summary of Credential Store Commands

Use the credential store commands to manage an Oracle GoldenGate credential store and to add credentials to the credential store.

Table 3-6 Credential Store Commands

Command	Description
ADD CREDENTIALSTORE	Creates a credentials store (wallet) that stores encrypted database user credentials.
ALTER CREDENTIALSTORE	Changes the contents of a credentials store.
INFO CREDENTIALSTORE	Returns information about a credentials store.
DELETE CREDENTIALSTORE	Deletes the wallet that serves as a credentials store.

Summary of Trail Commands

Use the trail commands to create and manage Oracle GoldenGate trails. A trail is a series of files in which Oracle GoldenGate temporarily stores extracted data on disk until it has been applied to the target location.

Table 3-7 Trail Commands

Command	Description
ADD EXTTRAIL	Adds a local trail to the Oracle GoldenGate configuration.
ADD RMTTRAIL	Adds a remote trail to the Oracle GoldenGate configuration.
ALTER EXTTRAIL	Changes attributes of a local trail.
ALTER RMTTRAIL	Changes attributes of a remote trail.
DELETE EXTTRAIL	Removes a local trail from the Oracle GoldenGate configuration.
DELETE RMTTRAIL	Removes a remote trail from the Oracle GoldenGate configuration.
INFO EXTTRAIL	Returns information about a local trail.
INFO RMTTRAIL	Returns information about a remote trail.

Summary of Database Commands

Use the database commands to interact with the database from GGSCI.

Table 3-8 Database Commands

Command	Description
DELOGIN	Logs the GGSCI session into a database so that other commands that affect the database can be issued.
DUMPDDL	Shows the data in the Oracle GoldenGate DDL history table.
ENCRYPT PASSWORD	Encrypts a database login password.
FLUSH SEQUENCE	Updates an Oracle sequence so that initial redo records are available at the time that Extract starts capturing transaction data after the instantiation of the replication environment.
LIST TABLES	Lists the tables in the database with names that match the input specification.
MININGDBLOGIN	Specifies the credentials of the user that an Oracle GoldenGate process uses to log into an Oracle mining database.
SET NAMECCSID	Sets the CCSID of the GGSCI session in a DB2 for i environment.

Summary of Trandata Commands

Use trandata commands to configure the appropriate database components to provide the transaction information that Oracle GoldenGate needs to replicate source data operations.

Table 3-9 Trandata Commands

Command	Description
ADD SCHEMATRANDATA	Enables schema-level supplemental logging.

Table 3-9 (Cont.) Trandata Commands

Command	Description
ADD TRANDATA	Enables table-level supplemental logging.
DELETE SCHEMATRANDATA	Disables schema-level supplemental logging.
DELETE TRANDATA	Disables table-level supplemental logging.
INFO SCHEMATRANDATA	Returns information about the state of schema-level supplemental logging.
INFO TRANDATA	Returns information about the state of table-level supplemental logging.
SET INSTANTIATION CSN	Sets whether and how table instantiation CSN filtering is used.
CLEAR INSTANTIATION CSN	Clears table instantiation CSN filtering.

Summary of Checkpoint Table Commands

Use the checkpoint table commands to manage the checkpoint table that is used by Oracle GoldenGate to track the current position of Replicat in the trail.

Table 3-10 Checkpoint Table Commands

Command	Description
ADD CHECKPOINTTABLE	Creates a checkpoint table in a database.
CLEANUP CHECKPOINTTABLE	Removes checkpoint records that are no longer needed.
DELETE CHECKPOINTTABLE	Removes a checkpoint table from a database.
INFO CHECKPOINTTABLE	Returns information about a checkpoint table.
UPGRADE CHECKPOINTTABLE	Use the <code>UPGRADE CHECKPOINTTABLE</code> command to add a supplemental checkpoint table when upgrading Oracle GoldenGate.

Summary of Oracle Trace Table Commands

Use the trace table commands to manage the Oracle GoldenGate trace table that is used with bidirectional synchronization of Oracle databases. Replicat generates an operation in the trace table at the start of each transaction. Extract ignores all transactions that begin with an operation to the trace table. Ignoring Replicat's operations prevents data from looping back and forth between the source and target tables.

Table 3-11 Oracle Trace Table Commands

Command	Description
ADD TRACETABLE	Creates a trace table.
DELETE TRACETABLE	Removes a trace table.
INFO TRACETABLE	Returns information about a trace table.

Summary of Oracle GoldenGate Data Store Commands

Use the data store commands to control the data store that Oracle GoldenGate uses to store monitoring information for use by Oracle GoldenGate Monitor.

Table 3-12 Oracle GoldenGate Data Store Commands

Command	Description
ALTER DATASTORE	Changes the memory model that is used for interprocess communication by the data store.
CREATE DATASTORE	Creates the data store.
DELETE DATASTORE	Removes the data store.
INFO DATASTORE	Returns information about the data store.
REPAIR DATASTORE	Repairs the data store after an upgrade or if it is corrupt.

Summary of Oracle GoldenGate Monitor JAgent Commands

Use the JAgent commands to control the Oracle GoldenGate Monitor JAgent.

Table 3-13 JAgent Commands

Command	Description
INFO JAGENT	Returns information about the JAgent.
START JAGENT	Starts the JAgent.
STATUS JAGENT	Returns the state of the JAgent.
STOP JAGENT	Stops the JAgent.

Summary of Oracle GoldenGate Automatic Heartbeat Commands

Use the heartbeat table commands to control the Oracle GoldenGate automatic heartbeat functionality.

Table 3-14 Heartbeat Table Commands

Command	Description
ADD HEARTBEATTABLE	Creates the objects required for automatic heartbeat functionality.
ALTER HEARTBEATTABLE	Alters existing heartbeat objects.
DELETE HEARTBEATTABLE	Deletes existing heartbeat objects.
DELETE HEARTBEATENTRY	Deletes entries in the heartbeat table.
INFO HEARTBEATTABLE	Displays heartbeat table information.

Summary of PMSRVR Commands

Use the `PMSRVR` commands to control the Performance Metrics Service process. The Performance Metrics Service uses the metrics service to collect and store instance deployment performance results.

Table 3-15 PMSRVR Commands

Command	Description
<code>INFO PMSRVR</code>	Returns information about the Oracle GoldenGate Performance Metrics Service.
<code>START PMSRVR</code>	Starts the Oracle GoldenGate Performance Metrics Service process.
<code>STATUS PMSRVR</code>	Returns information about a running Oracle GoldenGate Performance Metrics Service process.
<code>STOP PMSRVR</code>	Stops the Oracle GoldenGate Performance Metrics Service process.

Summary of Procedure Replication Commands

Use the Procedure Replication commands to enable or disable procedural supplemental logging with Oracle GoldenGate. To execute these commands, the Oracle GoldenGate administrator must be connected to the Oracle Database with `dblogin`.

Table 3-16 Procedure Replication Commands

Command	Description
<code>ADD PROCEDURETRANDATA</code>	Adds supplemental logging for procedural replication.
<code>DELETE PROCEDURETRANDATA</code>	Removes supplemental logging for procedural replication.
<code>INFO PROCEDURETRANDATA</code>	Displays information about procedural replication.

Summary of Miscellaneous Oracle GoldenGate Commands

Use the following commands to control various other aspects of Oracle GoldenGate.

Table 3-17 Miscellaneous Commands

Command	Description
<code>!</code>	Executes a previous GGSCI command without modifications.
<code>ALLOWNESTED</code>	Enables or disables the use of nested <code>OBEY</code> files.
<code>DEFAULTJOURNAL</code>	Sets a default journal for multiple tables or files for the <code>ADD TRANDATA</code> command when used for a DB2 for i database.
<code>FC</code>	Allows the modification and re-execution of a previously issued GGSCI command.
<code>HELP</code>	Provides assistance with syntax and usage of GGSCI commands.

Table 3-17 (Cont.) Miscellaneous Commands

Command	Description
HISTORY	Shows a list of the most recently issued commands since the startup of the GGSCI session.
INFO ALL	Displays status and lag for all Oracle GoldenGate processes on a system.
OBEY	Processes a file that contains a list of Oracle GoldenGate commands.
SHELL	Executes shell commands from within the GGSCI interface.
SHOW	Displays the attributes of the Oracle GoldenGate environment.
VERSIONS	Displays information about the operating system and database.
VIEW GGSEVT	Displays the Oracle GoldenGate error log (<code>ggsevt.log</code> file).
VIEW REPORT	Displays the process report or the discard file that is generated by Extract or Replicat.

!

Use the ! command to execute a previous GGSCI command without modifications. To modify a command before executing it again, use the FC command. To display a list of previous commands, use the HISTORY command. The ! command without arguments executes the most recent command. Options enable you to execute any previous command by specifying its line number or a text substring. Previous commands can be executed again only if they were issued during the current session, because command history is not maintained from session to session.

GGSCI Syntax

```
! [n | -n | string]
```

n

Executes the command from the specified line. Each command line is sequenced, beginning with 1 at the start of the session.

-n

Executes the command issued n lines before the current line.

string

Executes the last command that starts with the specified text string.

Examples

```
! 9
```

```
! -3
```

```
! sta
```

ADD CHECKPOINTTABLE

Not valid for Replicat for Java, Oracle GoldenGate Applications Adapter, or Oracle GoldenGate for Big Data.

Use `ADD CHECKPOINTTABLE` to create a checkpoint table in the target database. Replicat uses the table to maintain a record of its read position in the trail for recovery purposes.

The use of a checkpoint table is strongly recommended, because it causes checkpoints to be part of the Replicat transaction. This allows Replicat to recover more easily in certain circumstances than when a checkpoint file alone is used. Parallel and coordinated Replicats require checkpoint tables.

One table can serve as the default checkpoint table for all Replicat groups in an Oracle GoldenGate instance if you specify it with the `CHECKPOINTTABLE` parameter in a `GLOBALS` file. More than one instance of Oracle GoldenGate (multiple installations) can use the same checkpoint table. Oracle GoldenGate keeps track of the checkpoints even when the same Replicat group name exists in different instances.

Use the `DBLOGIN` command to establish a database connection before using this command. Do not change the names or attributes of the columns in this table. You may, however, change table storage attributes.

See About Checkpoints.

GGSCI Syntax

```
ADD CHECKPOINTTABLE [[container. | catalog.]owner.table]
```

container. | *catalog.*

The Oracle pluggable database, if applicable. If this option is omitted, the pluggable database defaults to the one that is associated with the `SOURCEDB`, `USERID`, or `USERIDALIAS` portion of the `DBLOGIN` command (depending on the database).

owner.table

The owner and name of the checkpoint table to be created. The name cannot contain any special characters, such as quotes, backslash, dollar sign, and percent symbol.

The name of a MySQL checkpoint table can contain no more than 30 characters.

The owner and name can be omitted if you are using this table as the default checkpoint table and it is listed with `CHECKPOINTTABLE` in the `GLOBALS` file.

It is recommended, but not required, that the table be created in a schema dedicated to Oracle GoldenGate. If an owner and name are not specified, a default table is created based on the `CHECKPOINTTABLE` parameter in the `GLOBALS` parameter file.

Record the name of the table, because you will need it to view statistics or delete the table if needed.

Record the name of the checkpoint table as that will be used when you add a Replicat, or delete a Replicat and need to drop the checkpoint table using the `DELETE CHECKPOINTTABLE` command.

Examples

The following adds a checkpoint table with the default name specified in the GLOBALS file.

```
ADD CHECKPOINTTABLE
```

The following adds a checkpoint table with a user-defined name.

```
ADD CHECKPOINTTABLE ggadmin.ggs_checkpoint
```

ADD EXTRACT

Use `ADD EXTRACT` to create an Extract group. Unless a `SOURCEISTABLE` task or an alias Extract is specified, `ADD EXTRACT` creates an online group that uses checkpoints so that processing continuity is maintained from run to run.

For Db2 for i, this command establishes a global start point for all journals and is a required first step. After issuing the `ADD EXTRACT` command, you can then optionally position any given journal at a specific journal sequence number by using the `ALTER EXTRACT` command with an appropriate journal option.

Oracle GoldenGate supports a large number of concurrent Extract and Replicat groups per instance of Oracle GoldenGate deployment, depending on the resources available with the operating system. At the supported level, all groups can be controlled and viewed in full with commands such as the `INFO` and `STATUS` commands.

Oracle GoldenGate recommends keeping the combined number of Extract and Replicat groups at the default level of 300 or below in order to manage your environment effectively.

This command cannot exceed 500 bytes in size for all keywords and input, including any text that you enter for the `DESC` option.

GGSCI Syntax

```
ADD EXTRACT group_name
{, SOURCEISTABLE |
  , TRANLOG [bsds_name |
  , INTEGRATED TRANLOG |
  , EXTFILESOURCE file_name |
  , EXTTRAILSOURCE trail_name |
[, BEGIN {NOW | yyyy-mm-ddT[ hh:mi:[ss[.cccc]]Z}}]
[, DESC 'description']
[, EXTSEQNO sequence_number
[, EXTRBA offset_number |
[, EXTRBA relative_byte_address |
[, EOF
[, LOGNUM lognum]
[, LOGPOS logpos
[, LRI value |
[, LSN value |
[, PAGE data_page, ROW row_ID |
```

```
[, PASSIVE]
[, PARAMS file_name]
[, REPORT file_name]
[, RMTNAME passive_Extract_name]
[, SEQNO sequence_number]
[, SCN value]
[, SOCKSPROXY {host_name | IP_address][:port] [PROXYCSALIAS
credential_store_alias [PROXYCSDOMAIN credential_store_domain]]]
```

group_name

The name of the Extract group. The name of an Extract group can contain up to eight characters, see Choosing Names for Processes and Files.

SOURCEISTABLE

Creates an Extract task that extracts entire records from the specified tables for an initial load using Oracle GoldenGate. If SOURCEISTABLE is not specified, ADD EXTRACT creates an online change-synchronization process, and one of the other data source options must be specified. When using SOURCEISTABLE, do not specify any service options. Task parameters must be specified in the parameter file, see Instantiating Oracle GoldenGate with an Initial Load.

TRANLOG [*bsds_name*]

Use this option for all databases. TRANLOG requires the BEGIN option.

(Db2 z/OS) You can use the *bsds_name* option for Db2 z/OS system to specify the Bootstrap Data Set file name of the transaction log, though it is not required and is not used. You do not need to change existing TRANLOG parameters.

(Oracle) Extract reads the Oracle redo logs directly. See INTEGRATED TRANLOG for an alternate configuration.

INTEGRATED TRANLOG

(Oracle) Adds Extract in integrated capture mode. In this mode, Extract integrates with the database logmining server, which passes logical change records (LCRs) directly to Extract. Extract does not read the redo log. Before using INTEGRATED TRANLOG, use the REGISTER EXTRACT command.

EXTFILESOURCE *file_name*

Specifies an initial load Extract file as the data source. Use this option with an Extract Pump that sends initial load file data to a remote, target system.

For *file_name*, specify the relative or fully qualified path name of the file. For example ./dirdat/initfile.

EXTTRAILSOURCE *trail_name*

Specifies a CDC Extract trail as the data source. Use this option with an Extract Pump that sends change data capture trails to a remote, target system.

For *trail_name*, specify the relative or fully qualified path name of the trail, for example \aa.

BEGIN {NOW | *yyyy-mm-ddT[hh:mi:[ss[.cccccc]]Z*}

Specifies a timestamp in the data source at which to begin processing.

NOW

NOW specifies the time at which the ADD EXTRACT command is issued.

For Db2 LUW, only commit and end transaction records contain timestamps, so the Extract starting position can only be calculated relative to those timestamps. This is a limitation of the API that is used by Oracle GoldenGate. It must be noted that positioning by timestamp is not accurate and can also take a long time. It is recommended to use LRI or EOF options wherever possible.

Do not use `NOW` for a data pump Extract except to bypass data that was captured to the trail prior to the `ADD EXTRACT` statement.

`yyyy-mm-ddthh:mm:ssZ`

A date and time (timestamp) in the given form. For example, 2017-07-14T14:54:45Z.

`yyyy-mm-dd[hh:mi:[ss[.cccc]]]`

A date and time (timestamp) in the given form. For an Oracle Extract in integrated mode, the timestamp value must be greater than the timestamp at which the Extract was registered with the database.

Positioning by timestamp in PostgreSQL includes the following scenarios:

- Scenario 1

If `track_commit_timestamp` is off, the following output will be displayed when the Extract process starts irrespective of what positioning method is used:

```
2020-04-29 02:15:54
```

- Scenario 2

If the `track_commit_timestamp` is enabled before Extract is registered then the correct timestamp will be displayed once the records are pushed in the source database as mentioned in the following example:

```
2020-04-29 02:19:07 INFO OGG-01515 Positioning to begin time
Apr 29,2020 2:18:38 AM.
```

- Scenario 3

If `track_commit_timestamp` is enabled after the Extract is registered, then there may be chances that the older records are available in the log for which the commit timestamp is not built up with the associated `transaction ID`. In that case, if Extract does not get the timestamp then it will fallback using the default timestamp mentioned in scenario 1. The output will be similar to the following:

```
020-04-29 01:55:07 INFO OGG-01517 Position of first record
processed LSN: 0/221D028, Jan 1, 1970 12:00:00 PM.
```

- Past timestamp cannot be specified if the replication slot has moved away.

`EXTRBA archive-offset_number`

Valid for Db2 z/OS. Specifies the relative byte address within a transaction log at which to begin capturing data.

The required format is `0Xnnn`, where `nnn` is a 1 to 20 digit hexadecimal number (the first character is the digit zero, and the second character can be upper or lower case letter `x`).

EOF

Valid for Db2 for i, Db2 LUW, MySQL, PostgreSQL, and SQL Server.

Configures processing to start at the end of the log files (or journals) that the next record will be written to. Any active transactions will not be captured.

For Db2 LUW, it configures processing to start at the active `LRI` value in the log files. The active `LRI` is the position at the end of the log files that the next record will be written to. Any active transactions will not be captured.

For PostgreSQL, `DBLOGIN` is required for position by `EOF`.

For MySQL, it finds the position corresponding to the end of the file and starts reading transactions from there. The `EOF` position is not exact, if data is continuously written to the binary log.

LSN value

Valid for SQL Server, Db2 z/OS, and PostgreSQL.

Specifies the transaction `LSN` at which to start capturing data. An alias for this option is `EXTLSN`.

Positioning to an LSN is precise.

For PostgreSQL, `LSN value` can be `hi` or `lo`. Set the value as `hi` for the entry point of the log file. `lo` is the offset in the log file. The `LSN` position should lie between the replication slot restart position and write ahead log current location. If the position specified itself exists between the mentioned range then Extract will throw an error.

(SQL Server) specifies the transaction `LSN` at which to start capturing data. An alias for this option is `EXTLSN`.

The specified `LSN` should exist as a valid `tran_begin_lsn` found in the `cdc.lsn_time_mapping` system table, otherwise the Extract will attempt to position after the `LSN value` provided.

Valid `LSN` specification consists of the following:

- Colon separated hex string (8:8:4) padded with leading zeroes and `0X` prefix, as in `0X00000d7e:0000036b:0001`
- Colon separated decimal string (10:10:5) padded with leading zeroes, as in `0000003454:0000000875:00001`
- Colon separated hex string with `0X` prefix and without leading zeroes, as in `0Xd7e:36b:1`
- Colon separated decimal string without leading zeroes, as in `3454:875:1`
- Decimal string, as in `3454000000087500001`

You can find the minimum LSN available by querying the following:

```
SELECT min([tran_begin_lsn]) FROM [cdc].[lsn_time_mapping] with (nolock)
where tran_id <>
      0x00
```

Example:

```
ADD EXTRACT extn TRANLOG, LSN 0X00000d7e:0000036b:0001
```

LRI value

Valid for DB2 LUW. Specifies a start position in the transaction logs when Extract starts.

You can use the `LRI` option for DB2 LUW systems to specify the `LRI` at which extract can start capturing records from the transaction log. You can use the DB2 utility `db2logsForRfwd` to obtain the `LRI`. This utility provides `LRI` ranges present in the DB2 logs.

Note that, although Extract might position to a given `LRI`, that `LRI` might not necessarily be the first one that Extract will process. There are numerous record types in the log files that Extract ignores, such as DB2 internal log records. Extract will report the actual starting `LRI` to the Extract report file.

LOGNUM *lognum*

Valid for MySQL.

This is the log file number. `ADD EXTRACT` will fail if the `LOGNUM` value contains zeroes preceding the value. For example, `ADD EXTRACT ext1, TRANLOG, LOGNUM 000001, LOGPOS 0` will fail. Instead, set `LOGNUM` to 1 for this example to succeed.

LOGPOS *logpos*

This is an event offset value within the log file that identifies a specific transaction record. Event offset values are stored in the header section of a log record. To position at the beginning of a binlog file, set the `LOGPOS` as 0.

SEQNO *sequence number*

Valid for DB2 for i. Starts capture at, or just after, a system sequence number, which is a decimal number up to 20 digits in length.

SCN *value*

Valid for Oracle.

Starts Extract at the transaction in the redo log that has the specified Oracle system change number (SCN). For Extract in integrated mode, the `SCN` value must be greater than the `SCN` at which the Extract was registered with the database. For more information, see [REGISTER EXTRACT](#).

PARAMS *file_name*

Specifies the full path name of an Extract parameter file in a location other than the default of `dirprm` within the Oracle GoldenGate directory.

REPORT *file_name*

Specifies the full path name of an Extract report file in a location other than the default of `dirrpt` within the Oracle GoldenGate directory.

PASSIVE

(Classic Architecture only) Specifies that this Extract group runs in passive mode and can only be started and stopped by starting or stopping an alias Extract group on the target system. Source-target connections will be established not by this group, but by the alias Extract from the target.

This option can be used for a regular Extract group or a data pump Extract group. It should only be used by whichever Extract on the source system is the one that will be sending the data across the network to a remote trail on the target.

DESC *'description'*

Specifies a description of the group, such as `'Extracts account_tab on Serv1'`. Enclose the description within single quotes. You may use the abbreviated keyword `DESC` or the full word `DESCRIPTION`.

ENCRYPTIONPROFILE

Specifies the name of the Oracle GoldenGate encryption profile associated with the specific client.

CRITICAL

Indicates if the process is critical for the deployment.

PROFILE

Name of the auto start profile.

AUTOSTART

Specifies whether the managed process has to be started automatically when the Administration Service starts. The default value is `YES`.

RETRIES

The maximum number of tries for restarting the task before canceling retry efforts. This is optional.

WAITSECONDS

The duration (in seconds) in which the retries are counted.

RESETSECONDS

Resets the duration in which the retries are counted.

DISABLEONFAILURE

If set to `TRUE`, then the task is disabled when the number of retries is exhausted.

SOCKSPROXY {*host_name* | *IP_address*][:*port*] [*PROXYCSALIAS* *credential_store_alias* [*PROXYCSDOMAIN* *credential_store_domain*]

Use for an alias Extract. Specifies the DNS host name or IP address of the proxy server. You can use either one to define the host though you must use the IP address if your DNS server is unreachable. If you are using an IP address, use either an IPv6 or IPv4 mapped address, depending on the stack of the destination system. You must specify the `PROXYCSALIAS`. In addition, you can specify the port to use, and the credential store domain.

RMTNAME *passive_extract_name*

(Classic Architecture only) Use for an alias Extract. Specifies the passive Extract name, if different from that of the alias Extract.

Examples

The following example creates an Extract group named `exte` that captures database changes from the transaction logs. Extraction starts with records generated at the time when the Extract group was created and started with `ADD EXTRACT`.

```
ADD EXTRACT extn, TRANLOG, BEGIN NOW
```

In the following example, from the Admin Client, an Extract group name `extw` is created to get the database changes from the transaction logs beginning from the specified time.

```
ADD EXTRACT extn, TRANLOG, BEGIN 2020-08-02T06:05:30.000Z
```

The following creates an integrated Extract group.

```
ADD EXTRACT extn, INTEGRATED TRANLOG, BEGIN NOW
```

The following creates a data pump Extract group named `extn` that reads data from the source trail `north\ea`.

```
ADD EXTRACT extn, EXTTRAILSOURCE north\ea
```

The following creates an initial-load Extract named `extei`.

```
ADD EXTRACT extn, SOURCEISTABLE
```

In Classic Architecture, the following creates a passive Extract group named `extsc` that extracts database changes from the transaction logs.

```
GGSCI> ADD EXTRACT extn, TRANLOG, BEGIN NOW, PASSIVE
```

The following creates an alias Extract group named `extw`. The alias Extract is associated with a passive Extract named `extw` on source system `sys`. The Manager on that system is using port 7800.

```
ADD EXTRACT extn, RMTHOST sys, MGRPORT 7800, RMTNAME extw
```

The following examples create and position Extract at a specific Oracle system change number (SCN) in the redo log.

```
ADD EXTRACT extn TRANLOG SCN 123456
```

```
ADD EXTRACT extn INTEGRATED TRANLOG SCN 123456
```

The following example creates an alias Extract specifying the host to use.

```
ADD EXTRACT extn DESC 'alias extract'  
RMTHOST server1.dcl.north.example.com  
MGRPORT 7813  
RMTNAME pmp  
SOCKSPROXY server2.dcl.north.example.com PROXYCSALIAS ggnorthproxy
```

The following example creates an Extract on a Db2 LUW system.

```
ADD EXTRACT extn, TRANLOG LRI 8066.322711
```

ADD EXTTRAIL

Use `ADD EXTTRAIL` to create a trail for online processing on the local system and:

- Associate it with an Extract group.
- Assign a maximum file size.

See `EXTTRAIL` in the *Reference for Oracle GoldenGate*

Syntax

```
ADD EXTTRAIL trail_name, EXTRACT group_name
[, MEGABYTES n]
[SEQNO n]
```

trail_name

Oracle GoldenGate appends this name with a nine-digit sequence number whenever a new file is created. For example, a trail named `ea` would have trail files named `ea000000000`, `ea000000001`.

(For Classic Architecture) The relative or fully qualified path name of the trail, including a two character (alpha-numeric) maximum trail name. For example `dirdat/ea`.



Note:

The trail file name and path (for Classic Architecture) must exactly match the `EXTTRAIL` parameter used in the Extract.

group_name

The name of the Extract group to which the trail is bound. A trail can only be assigned to one Extract. Multiple Extracts cannot write to the same trail. However, one Extract can write to multiple distinct trails if needed, but this is not normally required.

MEGABYTES n

Valid for Extract. The maximum size, in megabytes, of each trail file in the sequence. The default is 2000.

SEQNO n

Specifies that the first file in the trail will start with the specified trail sequence number. Do not include any zero padding. For example, to start at sequence 3 of a trail named `tr`, specify `SEQNO 3`. The actual file would be named `/ea000000003`. This option can be used during troubleshooting when Replicat needs to be repositioned to a certain trail sequence number. It eliminates the need to alter Replicat to read the required sequence number. The default value is 1.

Examples

GGSCI

```
ADD EXTTRAIL north/ea, EXTRACT exte
```

ADD HEARTBEATABLE

Valid for Oracle, Db2 z/OS, Db2 LUW, Db2 for i, MySQL, PostgreSQL, SQL Server, Teradata and TimesTen.

This command requires a database login using `DBLOGIN`.

Use `ADD HEARTBEATTABLE` to create the objects necessary to use the automatic heartbeat functionality. This command performs the following tasks

- Creates a heartbeat seed table, heartbeat table, and heartbeat history table.
- Creates the `GG_LAG` and `GG_LAG_HISTORY` views.
- Creates the `GG_UPDATE_HB_TAB` and `GG_PURGE_HB_TAB` procedures that are called by the scheduler jobs.
- Creates the scheduler jobs that periodically update the heartbeat and seed table, and purge the history table. However, it does not create these jobs for PostgreSQL, Teradata, and TimesTen.
- Populates the seed table.
- For Oracle multitenant databases:
 - The heartbeat objects and jobs are created in the user's schema that is connected to the database using the `DBLOGIN` command. Oracle GoldenGate Extract and Replicat look for the heartbeat objects in the `USERID` or `USERIDALIAS` schema. When making the connection using `DBLOGIN`, make sure that it is set to the appropriate `USERID` or `USERIDALIAS` schema that your Extract and Replicat processes will use.
 - Extract: Use the schema name in each PDB. Each PDB with which the Extract is registered should have its own heartbeat table. To instruct Extract which schema to find the heartbeat tables in, use the syntax `GGSCHEMA pdb.schemaname` within the `GLOBALS` file.
 - Replicat: Each Replicat must have its own heartbeat table for its PDB.
 - For bidirectional, active/active replication, the heartbeat table should be in the same schema for the outgoing Extracts and incoming Replicats at each site. For example, see the following use case:

Site A Site B

EAB -----> RAB

RBA -----> EBA

In this example, `EAB` and `RBA` heartbeat tables must use the same schema. However, `EAB` and `RAB` can use different schemas.

- Oracle GoldenGate for Oracle heartbeat table administration has been simplified by eliminating the need for `GGSCHEMA` (or `HEARTBEATTABLE` parameter) except for limited circumstances. Heartbeat table administration operations are only done in the schema of the `DBLOGIN` user. Except for Oracle CDB root Extract, the Extract and Replicat processes look in the schema of the ER connected user for heartbeat tables. The following table shows the Extract and Replicat behavior for Oracle database:

Extract/Replicat Processes	Behavior
Non-root Extract (non-CDB, and PDB)	If it is the first Extract user, then <code>GGSCHEMA</code> is used or in case of Autonomous Database (ADB), user must be <code>ggadmin</code> . If heartbeat is created after Extract starts, then look only in Extract user.
CDB Root Extract	<code>GGSCHEMA</code> is used.

Extract/Replicat Processes	Behavior
Replicat	If it is the first Replicat user, then GGSHEMA is used. For ADB, user must be ggadmin. If heartbeat is created after Replicat starts, then look only in the Replicat user.
DELETE EXTRACT/REPLICAT	If it is the first Extract or Replicat user, then GGSHEMA is used. For ADB, user must be ggadmin.

This feature allows the usage of heartbeat tables in Oracle GoldenGate Hub deployments, where multiple databases are managed with differing Oracle GoldenGate administrator schemas.

 **Note:**

The heartbeat table objects should never be created in the root CDB of an Oracle Multitenant Database.

- For heterogeneous or non-Oracle databases, the heartbeat objects and jobs are created in the GGSHEMA value listed in the GLOBALS file.

The default seed, heartbeat, and history table names are `GG_HEARTBEAT_SEED`, `GG_HEARTBEAT`, and `GG_HEARTBEAT_HISTORY` respectively.

In Microservices Architecture, the schema is configured using step 12 provided in the How to Create Deployments section of the *Step by Step Data Replication Using Oracle GoldenGate Microservices* guide.

- The default names can be overridden by specifying `HEARTBEATTABLE hbschemaname.hbtablename` in the GLOBALS file.
- The tables, procedures, and jobs are created in the schema, `hbschemaname`.
- The seed and history table are created by appending a `_SEED` and `_HISTORY` to the table, `hbtablename`.

For Db2 LUW, you must set the `DB2_ATS_ENABLE` property with the `db2set DB2_ATS_ENABLE=yes` command.

For Db2 for i, to handle upgrade or misconfiguration of heartbeat table functionality, you can run the `ADD HEARTBEATTABLE` command again, which will repair the functionality of an existing heartbeatable setup without deleting the existing heartbeat data.

For Amazon Aurora MySQL, the global variable `event_scheduler` must be enabled in the parameter group because Amazon RDS doesn't allow setting global variables. When the database is restarted, the `event_scheduler` returns to being disabled. To avoid this, you need to enable the `event_scheduler` in the `my.cnf/ini` file.

For PostgreSQL, a system job must manually be created to periodically call the heartbeat record update and history record purge function, `gg_hb_job_run`. For example, a cron job could be created that runs every minute. The function will check the actual heartbeat record

update and purge frequency settings of the heartbeat configuration and only process operations within those boundaries:

```
PGPASSWORD="$passwd" psql -U gguser -d dbname -h dbhostname -p dbport#  
-c "select <ggschema.gg_hb_job_run();" >/dev/null 2>&1
```

GGSCI Syntax

```
ADD HEARTBEATTABLE  
[, FREQUENCY number_in_seconds]  
[, RETENTION_TIME number_in_days] |  
[, PURGE_FREQUENCY number_in_days]  
[, PARTITIONED]  
[, TARGETONLY]
```

FREQUENCY *number_in_seconds*

Specifies how frequently the heartbeat records are generated. The default is 60 seconds.

Consider the following limits:

- For Oracle Database, the minimum value is 0 and the maximum is 7999.
- For Db2 for i Series, the minimum value is 0 and the maximum is 7999.
- For Db2 LUW and Db2 z/OS, the minimum value is 60 and the maximum is 7999.
- The frequency for Db2 /zOS and Db2 LUW must be a multiple of 60 for values less than 3600 and multiples for 3600 for values greater or equal to 3600.
- For MySQL, the minimum value is 0 and the maximum is 7999.
- For SQL Server, the minimum value is 10 and the maximum is 7999.
- For PostgreSQL, the minimum value is 60 and the maximum is 7999.
- Databases that support setting `FREQUENCY` to 0 will pause the heartbeat record scheduler.

RETENTION_TIME *number_in_days*

Specifies that heartbeat entries older than the retention time in the heartbeat history table are purged. The default is 30 days.

The minimum value for all databases is 1 and the maximum is 2147483646.

PURGE_FREQUENCY *number_in_days*

Specifies how often the purge scheduler is run to delete table entries that are older than the retention time from the heartbeat history table. The default is 1 day.

For Db2 LUW and Db2 z/OS, the minimum value is 1 and the maximum is 31.

For all other supported databases, the minimum value is 1 and the maximum value is 199.

PARTITIONED

Valid for Oracle.

Enables partitioning on the heartbeat history table. The column for the heartbeat time stamp received is used to partition the table with an interval of one day. By default the heartbeat history table is not partitioned.

TARGETONLY

Valid for Oracle Database, Db2 i Series, Db2 LUW, Db2 z/OS, MySQL, PostgreSQL, and SQL Server.

Does not enable supplemental logging on both the heartbeat seed and heartbeat tables and it does not create a scheduler job for updating the heartbeat table.

Examples

The following command creates default heartbeat tables, procedures and jobs.

```
ADD HEARTBEATTABLE
```

The following command creates the heartbeat tables, procedures and jobs with custom frequency, retention time, and purge frequency.

```
ADD HEARTBEATTABLE, FREQUENCY 120, RETENTION_TIME 10, PURGE_FREQUENCY 2
```

The following command creates the heartbeat tables, procedures and jobs with partitioning enabled in the heartbeat history table, and supplemental logging is not enabled in the heartbeat and heartbeat seed tables.

```
ADD HEARTBEATTABLE, partitioned, TARGETONLY
```

ADD MASTERKEY

Use the `ADD MASTERKEY` command to add a master key to a master-key wallet. The master key is used by Extract and Replicat to encrypt the encryption keys that secure data being sent across the network and in the trail files, so that those keys can be sent to, and used, by downstream processes. The master key omits the need to use wallet storage for the keys that actually encrypt the data.

The master-key wallet must be open to add a key. Use the `GGSCI CREATE WALLET` or the `OPEN WALLET` command to open a wallet. The wallet remains open throughout the same session in which the command was issued.

The master key is generated as a random sequence of bits. The length is 256 bits by default. The key name is `OGG_DEFAULT_MASTERKEY`.

After adding a master key to a wallet that is not maintained centrally on shared storage, the updated wallet must be copied to all of the other systems in the Oracle GoldenGate configuration that use this wallet. Before doing so, Extract must be stopped and then all of the downstream Oracle GoldenGate processes must be allowed to finish processing their trails and then be stopped. After the wallet is copied into place, the processes can be started again. For detailed instructions, see *Encrypting Data with the Master Key and Wallet Method*.

Syntax

```
ADD MASTERKEY
```

Example

```
ADD MASTERKEY
2019-11-21T19:37:23Z ERROR OGG-06137 Master key
'OGG_DEFAULT_MASTERKEY' does not exist in Oracle Wallet.
2019-11-21T19:37:23Z INFO OGG-06142 Created version 1 of master
key 'OGG_DEFAULT_MASTERKEY' in Oracle Wallet.
```

ADD PROCEDURETRANDATA

Valid for Oracle.

Use `ADD PROCEDURETRANDATA` to add supplemental logging for Procedural Replication.

Syntax

```
ADD PROCEDURETRANDATA
```

ADD REPLICAT

Use `ADD REPLICAT` to create a Replicat group. Unless `SPECIALRUN` is specified, `ADD REPLICAT` creates an online process group that creates checkpoints so that processing continuity is maintained from run to run.

This command cannot exceed 500 bytes in size for all keywords and input, including any text that you enter for the `DESC` option.

Oracle GoldenGate supports up to 5,000 concurrent Extract and Replicat groups per instance of Oracle GoldenGate Manager. At the supported level, all groups can be controlled and viewed in full with GGSCI commands such as the `INFO` and `STATUS` commands. Oracle GoldenGate recommends keeping the number of Extract and Replicat groups (combined) at the default level of 300 or below in order to manage your environment effectively.

(Oracle) Unless the `INTEGRATED` option is used, this command creates a Replicat group in non-integrated mode.

GGSCI Syntax

```
ADD REPLICAT group_name
ADD REPLICAT group_name
[, PARALLEL [, INTEGRATED] | INTEGRATED | COORDINATED [MAXTHREADS
number]]
{, SPECIALRUN |
  , EXTFILE file_name |
  , EXTTRAIL trail_name}
[, BEGIN {NOW | yyyy-mm-ddT[ hh:mi:[ss[.cccccc]]Z}]
[, EXTSEQNO sequence_number, EXTRBA rba]
{, CHECKPOINTTABLE owner.table | NODBCHECKPOINT}
[, PARAMS file_name]
[, REPORT file_name]
```

group_name

The name of the Replicat group. If you don't specify any option, then it creates a classic Replicat. The name of a coordinated and parallel Replicat group can contain a maximum of five characters. The name of a regular Replicat group can contain up to eight characters, see [Choosing Names for Processes and Files](#).

INTEGRATED

(Oracle) Creates the Replicat in integrated mode. Without this option, `ADD REPLICAT` creates the Replicat in non-integrated (classic) mode. This option works for parallel Replicat too. In this mode, the Replicat process leverages the apply processing functionality that is available within the Oracle Database. In this mode, Replicat operates as follows:

- Reads the Oracle GoldenGate trail.
- Performs data filtering, mapping, and conversion.
- Constructs logical change records (LCR) that represent source database DML or DDL transactions (in committed order).
- Attaches to a background process in the target database known as a database inbound server by means of a lightweight streaming interface.
- Transmits the LCRs to the inbound server, which applies the data to the target database.
- A Replicat in integrated mode (either normal integrated or parallel integrated) must be used if any of the following features are used:
 - Automatic conflict detection and resolution
 - Procedural replication
 - DML or DDL Handlers

Do not use `INTEGRATED` with the `SPECIALRUN` or `EXTFILE` options. `INTEGRATED` must be used for an online change-synchronization Replicat that reads from a local `EXTTRAIL`-specified trail.

Both integrated Replicat and parallel Replicat in integrated mode maintain the checkpoint table if it exists. Also see [ADD CHECKPOINTTABLE](#).

`TRACETABLE` is not maintained by integrated Replicat or parallel Replicat in integrated mode. When in integrated mode, Replicat does not support the following parameters:

- `BULKLOAD` (Do not use integrated Replicat as an initial-load Replicat.)
- `SPECIALRUN`
- `GENLOADFILES`
- `SHOWSYNTAX`
- `MAXTRANSOPS` (is ignored)

PARALLEL

Valid for Oracle, SQL Server, MySQL, Db2, TimesTen, PostgreSQL, and Teradata. Adds the Replicat in parallel mode. In this mode, Replicat applies transactions in parallel to improve the performance. It takes into account dependencies between transactions.

`PARALLEL INTEGRATED` Replicat is valid for Oracle only. It adds the parallel Replicat in integrated mode, which like Integrated Replicat leverages the apply processing functionality that is available within the Oracle Database.

COORDINATED [**MAXTHREADS** *number*]

Creates the Replicat in coordinated mode. A coordinated Replicat is multithreaded to enable parallel processing. This option adds the coordinator (identified by the group name) and the maximum number of processing threads that are specified by default or with **MAXTHREADS**. Dependencies are computed and coordinated by the coordinator, and the SQL processing is performed by the threads.

To create a **COORDINATED** Replicat, a checkpoint table is required.

Do not use **COORDINATED** with the **SPECIALRUN** or **EXTFILE** options. **COORDINATED** must be used for an online change-synchronization Replicat that reads from a local **EXTTRAIL**-specified trail.

 **Note:**

The group name of a coordinated Replicat can contain only five characters.

MAXTHREADS *number*

Specifies the maximum number of processing threads that this Replicat group can spawn. These threads are all created on startup, but depending on what is specified in the **MAP** statements in the parameter file, some or all of these threads will process the workload at any given time. As a general rule, specify twice the number of threads that you specify in the **MAP** statements when you partition the workload. This allows you to add threads in the event that the workload increases, without having to drop and recreate the Replicat group, see **TABLE | MAP** for more information about how to partition the workload across threads.

The default number of threads is 25 if **MAXTHREADS** is omitted. The maximum number of threads is 500.

MAXTHREADS has a relationship to the **MAXGROUPS** parameter. **MAXGROUPS** controls the maximum number of process groups (Extract and Replicat) allowed per instance of Oracle GoldenGate. Each Replicat thread is considered a Replicat group in the context of **MAXGROUPS**. Therefore, the number of Extract and Replicat groups in the Oracle GoldenGate instance, plus the value of **MAXTHREADS**, cannot exceed the value of **MAXGROUPS**, see **MAXGROUPS**

SPECIALRUN

Creates a Replicat special run as a task. Either **SPECIALRUN**, **EXTFILE**, or **EXTTRAIL** is required. When Extract is in **SPECIALRUN** mode, do not start Replicat with the **START REPLICAT** command. Do not use this option with the **INTEGRATED** or **COORDINATED** option.

EXTFILE *file_name*

Specifies the relative or fully qualified name of an extract file that is specified with **RMTFILE** in the Extract parameter file. Do not use this option with the **INTEGRATED** option.

EXTTRAIL *trail_name*

Specifies the relative or fully qualified name of a trail that was created with the **ADD RMTTRAIL** or **ADD EXTTRAIL** command.

BEGIN {**NOW** | **yyyy-mm-ddT[hh:mm[:ss[.cccc]]Z**}

Defines an initial checkpoint in the trail.

NOW

Begins replicating changes from the time when the group is created.

Tyyyymm-dd[hh:mm[:ss[.cccc]]]Z

Begins extracting changes from a specific time.

EXTSEQNO *sequence_number*

Specifies the sequence number of the file in a trail in which to begin processing data. Specify the sequence number, but not any zeroes used for padding. For example, if the trail file is \aa000000026, you would specify **EXTSEQNO 26**. If not specified, the default value is zero. By default, processing begins at the beginning of a trail unless this option is used. To use **EXTSEQNO**, you must also use **EXTRBA**. Contact Oracle Support before using this option.

EXTRBA *rba*

Specifies the relative byte address within the trail file that is specified by **EXTSEQNO**. Contact Oracle Support before using this option.

CHECKPOINTTABLE *owner.table*

Not valid for Oracle GoldenGate Applications Adapter or Oracle GoldenGate Big Data. Oracle strongly recommends using a checkpoint table. Parallel and coordinated Replicat in integrated and non-integrated mode require a checkpoint table. Specifies that this Replicat group will write checkpoints to the specified table in the database. Include the owner and table name, as in `ggadmin.ggs_checkpoint`. This argument overrides any default **CHECKPOINTTABLE** specification in the **GLOBALS** file. The table must first be added with the **ADD CHECKPOINTTABLE** command. When **NODBCHECKPOINT** is specified, this Replicat group will not write checkpoints to a checkpoint table. This argument overrides any default **CHECKPOINTTABLE** specification in the **GLOBALS** file. This argument is required if you do not want to use a checkpoint table with the Replicat group that is being created.

PARAMS *file_name*

(Classic Architecture only) Specifies a parameter file in a location other than the default of `dirprm` within the Oracle GoldenGate directory. Specify the fully qualified path name.

REPORT *file_name*

Specifies the full path name of a process report file in a location other than the default of `dirrpt` within the Oracle GoldenGate directory.

DESC '*description*'

Specifies a description of the group, such as `'Loads account_tab on Serv2'`. Enclose the description within quotes. You can use either the abbreviated keyword **DESC** or the full word **DESCRIPTION**.

ENCRYPTIONPROFILE

Specifies the name of the encryption profile for the Replicat.

Examples: GGSCI

```
ADD REPLICAT repe, INTEGRATED, EXTTRAIL north/ea
```

The following example creates Replicat in coordinated mode. It indicates that up to 100 threads can be employed in parallel at any given point in processing.

```
ADD REPLICAT repe, COORDINATED MAXTHREADS 100, EXTTRAIL north/ea
```

ADD RMTTRAIL

Use `ADD RMTTRAIL` to create a trail for online processing by a Replicat on a remote, target system. The command:

- Assigns a maximum file size.
- Associates the trail with an Extract group.
- Uses remote trails in a Pump Extract.

Syntax

```
ADD RMTTRAIL trail_name, EXTRACT group_name  
[, FORMAT RELEASE major.minor]  
[, MEGABYTES n]  
[, SEQNO n]
```

trail_name

(For Classic Architecture), The relative or fully qualified path name of the remote trail, including a two character (alpha-numeric) maximum trail name. For example:

`dirdat/ea.`

For Microservices Architecture, a two character (alpha-numeric) maximum trail name, with no path listed, and the first character must not be a number. For example `ea.`

Oracle GoldenGate appends this name with a nine-digit sequence number whenever a new file is created. For example, a trail named `ea` would have trail files named `ea000000000`, `ea000000001`.

Note:

Note: The trail file name and path (for Classic Architecture) must exactly match the `RMTTRAIL` parameter used in the Extract.

group_name

The name of the Extract group to which the trail is bound. A remote trail can only be assigned to one Extract. Multiple Extracts cannot write to the same trail. However, one Extract can write to multiple distinct remote trails.

MEGABYTES *n*

The maximum size, in megabytes, of a file in the trail. The default is 500, however, the value can be between 1 MB and 2000 MB (maximum).

SEQNO *n*

Specifies that the first file in the trail will start with the specified trail sequence number. Do not include any zero padding. For example, to start at sequence 3 of a trail named `ea`, specify `SEQNO 3`. The actual file would be named `ea000000003`. This option can be used during troubleshooting when Replicat needs to be repositioned to a certain trail sequence number. It eliminates the need to alter Replicat to read the required sequence number.

Example

Admin Client

```
ADD RMTTRAIL north/ea, EXTRACT exte, MEGABYTES 200
```

GGSCI

```
ADD RMTTRAIL north/ea, EXTRACT exte, MEGABYTES 200
```

ADD SCHEMATRANDATA

Valid for Oracle. Use `ADD SCHEMATRANDATA` to enable schema-level supplemental logging for a table. `ADD SCHEMATRANDATA` acts on all of the current and future tables in a given schema to automatically log a superset of available keys that Oracle GoldenGate needs for row identification.

To perform `ADD SCHEMATRANDATA` against a schema in the PDB of a multitenant database, you need to login to PDB to issue the command.

`ADD SCHEMATRANDATA` is valid for both integrated and classic Extract and does the following:

- Enables Oracle supplemental logging for new tables created with a `CREATE TABLE`.
- Updates supplemental logging for tables affected by an `ALTER TABLE` to add or drop columns.
- Updates supplemental logging for tables that are renamed.
- Updates supplemental logging for tables for which unique or primary keys are added or dropped.
- Enables a table for auto-capture. The command add schema-level PK, UI, FK, ALLKEYS supplemental logging data.

By default, `ADD SCHEMATRANDATA` logs the key columns of a table in the following order of priority:

1. Primary key
2. In the absence of a primary key, all of the unique keys of the table, including those that are disabled, unusable or invisible. Unique keys that contain ADT member columns are also logged. Only unique keys on virtual columns (function-based indexes) are not logged.
3. If none of the preceding exists, all scalar columns of the table are logged. (System-generated row-OIDs are always logged.)

`ADD SCHEMATRANDATA` also supports the conditional or unconditional logging requirements for using integrated Replicat.

Use `ADD SCHEMATRANDATA` in the following cases:

- For all tables that are part of an Extract group that is to be configured for integrated capture. `ADD SCHEMATRANDATA` ensures that the correct key is logged by logging all of the keys.

- For all source tables that will be processed in an integrated Replicat group. Options are provided that enable the logging of the primary, unique, and foreign keys to support the computation of dependencies among relational tables being processed through different apply servers.
- When DDL replication is active and DML is concurrent with DDL that creates new tables or alters key columns. It best handles scenarios where DML can be applied to objects very shortly after DDL is issued on them. `ADD SCHEMATRANDATA` causes the appropriate key values to be logged in the redo log atomically with each DDL operation, thus ensuring metadata continuity for the DML when it is captured from the log, despite any lag in Extract processing.

Database-level Logging Requirements for Using `ADD SCHEMATRANDATA`

Oracle strongly encourages putting the source database into forced logging mode and enabling minimal supplemental logging at the database level when using Oracle GoldenGate. This adds row chaining information, if any exists, to the redo log for update operations.

Additional Considerations for Using `ADD SCHEMATRANDATA`

- Before using `ADD SCHEMATRANDATA`, issue the `DBLOGIN` command. The user who issues the command must be granted the Oracle Streams administrator privilege.

```
exec dbms_streams_auth.grant_admin_privilege('GG-AdminUser')
```

- `ADD SCHEMATRANDATA` can be used instead of the `ADD TRANDATA` command when DDL replication is not enabled. Note, however, that if a table has no primary key but has multiple unique keys, `ADD SCHEMATRANDATA` causes the database to log all of the unique keys. In such cases, `ADD SCHEMATRANDATA` causes the database to log more redo data than does `ADD TRANDATA`. To avoid the extra logging, designate one of the unique keys as a primary key, if possible.
- For tables with a primary key, with a single unique key, or without a key, `ADD SCHEMATRANDATA` adds no additional logging overhead, as compared to `ADD TRANDATA`.
- If adding `SCHEMATRANDATA` on a schema in a PDB, you need to be logged into that PDB in `DBLOGIN`. For example, for `PDBEAST` and schema `HR`, use the following command:

```
ADD SCHEMATRANDATA pdbeast.hr
```
- If you must log additional, non-key columns of a specific table (or tables) for use by Oracle GoldenGate, such as those needed for `FILTER` statements and `KEYCOLS` clauses in the `TABLE` and `MAP` parameters, issue an `ADD TRANDATA` command for those columns. That command has a `COLS` option to issue table-level supplemental logging for the columns, and it can be used in conjunction with `ADD SCHEMATRANDATA`.

GGSCI Syntax

```
ADD SCHEMATRANDATA schema {  
  [ALLOWNONVALIDATEDKEYS]  
  [NOSCHEDULINGCOLS | ALLCOLS]}
```

```
[NOVALIDATE]  
[PREPARECSN {WAIT | LOCK | NOWAIT | NONE}]
```

schema

The schema for which you want the supplementary key information to be logged. Do not use a wildcard. To issue `ADD SCHEMATRANDATA` for schemas in more than one pluggable database of a multitenant container database, log in to each pluggable database separately with `DBLOGIN` and then issue `ADD SCHEMATRANDATA`. From the root container, you may add `schematrandata` with the container prefix `ADD SCHEMATRANDATA [pdb_name].schema`

ALLOWNONVALIDATEDKEYS

This option is not valid for Oracle 11.2.0.3 or 12.1.0.1. It includes `NON VALIDATED` and `NOT VALID` primary keys in the supplemental logging. These keys override the normal key selection criteria that is used by Oracle GoldenGate. If the `GLOBALS` parameter `ALLOWNONVALIDATEDKEYS` is being used, `ADD SCHEMATRANDATA` runs with `ALLOWNONVALIDATEDKEYS` whether or not it is specified. By default `NON VALIDATED` and `NOT VALID` primary keys are not logged, see the `GLOBALS ALLOWNONVALIDATEDKEYS` parameter.

NOSCHEDULINGCOLS | ALLCOLS

These options control supplemental logging for an Oracle target database. You can use these options together though the latter option is used. For example, with the `ADD SCHEMATRANDATA oggadm_ext ALLCOL NOSCHEDULINGCOLS` command the `NOSCHEDULINGCOLS` option would be used.

NOSCHEDULINGCOLS

Disables the logging of scheduling columns. By default, `ADD SCHEMATRANDATA` enables the unconditional logging of the primary key and the conditional supplemental logging of all unique keys and foreign keys of all current and future tables in the given schema. Unconditional logging forces the primary key values to the log whether or not the key was changed in the current operation. Conditional logging logs all of the column values of a foreign or unique key if at least one of them was changed in the current operation. The integrated Replicat primary key, unique keys, and foreign keys must all be available to the inbound server to compute dependencies.

If you are enabling `auto_capture`, then do not use this option. This will allow tables in this schema to be auto captured unless the table is explicitly excluded/disabled for replication (such as through `TABLEEXCLUDE`, `DELETE TRANDATA`, or alter table disable logical replication DDL).

ALLCOLS

Enables the unconditional supplemental logging of all supported key and non-key columns for all current and future tables in the given schema. This option enables the logging of the keys required to compute dependencies, plus columns that are required for filtering, conflict resolution, or other purposes. Columns like `LOB`, `LONG`, and `ADT` are not included.

NOVALIDATE

Valid for all databases supported by `ADD SCHEMATRANDATA`.

Suppresses additional information about the table being handled being processed by `ADD SCHEMATRANDATA`. By default, this option is enabled. The additional information processing creates a lapse time on command response so this option can be used to increase response time.

PREPARECSN {WAIT | LOCK | NOWAIT | NONE}

Valid for Oracle for both DML and DDL. Automatically prepares the tables at the source so the Oracle data pump Export dump file will include Instantiation CSNs. Replicat uses the per table instantiation CSN set by the Oracle data pump (on import) to filter out trail records. On the target, the data pump import populates the system tables and views with instantiation SCNs using the `DBOPTIONS ENABLE_INSTANTIATION_FILTERING` parameter to enable table-level instantiation filtering.

WAIT

Wait for any in-flight transactions and prepare table instantiation.

LOCK

Put a lock on the table (to prepare for table instantiation).

NOWAIT

Default behavior, preparing for instantiation is done immediately.

NONE

No instantiation preparation occurs.

Example

The following enables supplemental logging for the schema `hr`.

```
ADD SCHEMATRANDATA hr
```

The following example logs all supported key and non-key columns for all current and future tables in the schema named `hr`.

```
ADD SCHEMATRANDATA hr ALLCOLS
```

The following example suppress additional table information processing.

```
ADD SCHEMATRANDATA hr NOVALIDATE
```

ADD TRACETABLE

Use `ADD TRACETABLE` to create a trace table in the Oracle Database. The trace table must reside in the schema of the Oracle GoldenGate Extract user, as configured with the `USERID` or `USERIDALIAS` parameter. The trace table prevents Replicat transactions from being extracted again in a bidirectional synchronization configuration.

Use the `DBLOGIN` command to establish a database connection before using this command.

Table 3-18 Description of trace table

Name	Null?	Type	Description
GROUP_ID	NOT NULL	VARCHAR2 (8)	The name of the Replicat group or special run process.

Table 3-18 (Cont.) Description of trace table

Name	Null?	Type	Description
DB_USER		VARCHAR2 (30)	The user ID of the Replicat group or special run process.
LAST_UPDATE		DATE	The timestamp of the transaction.

Syntax

```
ADD TRACETABLE [[container.]owner.table]
```

container

The pluggable database, if the database is a multitenant container database (CDB).

owner.table

Optional, use only to specify a trace table with a name that is different from the default of GGS_TRACE. The owner must be the same owner that is specified with the USERID or USERIDALIAS parameter in the Extract parameter file.

To use the default name, omit this argument. Whenever possible, use the default table name. When using a trace table name other than the default of GGS_TRACE, specify it with the TRACETABLE parameter in the Extract and Replicat parameter files. Record the name, because you will need it for the parameter files and to view statistics or delete the table, see TRACETABLE | NOTRACETABLE.

Examples

The following adds a trace table with the default name of GGS_TRACE.

```
ADD TRACETABLE
```

The following adds a trace table with a user-defined name of ora_trace.

```
ADD TRACETABLE ora_trace
```

ADD TRANDATA

Use ADD TRANDATA to enable Oracle GoldenGate to acquire the transaction information that it needs from the transaction records.

Before using this command, use the DBLOGIN command to establish a database connection.

ADD TRANDATA is valid for the databases that are listed here:

- Db2 for i
- Db2 LUW
- Db2 z/OS
- Oracle

- PostgreSQL
- SQL Server

For other supported databases, this functionality may exist already or must be configured through the database interface. See *Installing Oracle GoldenGate* for any special requirements that apply to making transaction information available.

Db2 for i

Use `ADD TRANDATA` to start the journaling of data. The `ADD TRANDATA` command calls `STRJRNPF` and is the recommended method to start journaling for tables, because it ensures that the required journal image attribute of `Record Images (IMAGES): *BOTH` is set on the `STRJRNPF` command.

Db2 LUW

Use `ADD TRANDATA` to enable `DATA CAPTURE CHANGES` on specified tables. By default, `ADD TRANDATA` issues the following command to the database:

```
ALTER TABLE name DATA CAPTURE CHANGES INCLUDE LONGVAR COLUMNS;
```

You can exclude the `LONGVAR` clause by using `ADD TRANDATA` with the `EXCLUDELONG` option.

Db2 z/OS

Use `ADD TRANDATA` to enable `DATA CAPTURE CHANGES` on specified tables. By default, `ADD TRANDATA` issues the following command to the database:

```
ALTER TABLE name DATA CAPTURE CHANGES;
```

Oracle Database

From the 21c release onward, this command would also enable a table for auto capture for Oracle database.

By default, `ADD TRANDATA` for Oracle enables the unconditional logging of the primary key and the conditional supplemental logging of all unique key(s) and foreign key(s) of the specified table, see *Ensuring Row Uniqueness in Source and Target Tables* for more information about how Oracle GoldenGate handles supplemental logging for Oracle Databases.

If possible, use the `ADD SCHEMATRANDATA` command rather than the `ADD TRANDATA` command. The `ADD SCHEMATRANDATA` command ensures replication continuity should DML occur on an object for which DDL has just been performed. You can exclude objects from the schema specification by using the exclusion parameters.

To use the Oracle GoldenGate DDL replication feature, you must use the `ADD SCHEMATRANDATA` command to log the required supplemental data.

When using `ADD SCHEMATRANDATA`, you can use `ADD TRANDATA` with the `COLS` option to log any non-key columns, such as those needed for `FILTER` statements and `KEYCOLS` clauses in the `TABLE` and `MAP` parameters.

 **Note:**

It is possible to use `ADD TRANDATA` for Oracle when DDL support is enabled, but only if you can stop DML on all tables before DDL is performed on them or, if that is not possible, you can guarantee that no users or applications will issue DDL that adds new tables whose names satisfy an object specification in a `TABLE` or `MAP` statement. There must be no possibility that users or applications will issue DDL that changes the key definitions of any tables that are already in the Oracle GoldenGate configuration.

Oracle recommends putting the source database into forced logging mode and enabling minimal supplemental logging at the database level when using Oracle GoldenGate. This adds row chaining information, if any exists, to the redo log for update operations

Take the following into account when using `ADD TRANDATA` for an Oracle database:

- If any of the logging details change after Oracle GoldenGate starts extracting data, you must stop and then start the Extract process that is reading from the affected table before any data is changed.
- When creating a supplemental log group with `ADD TRANDATA`, Oracle GoldenGate appends the object ID to a prefix of `GGS_`, for example `GGS_18342`.

PostgreSQL

Using `ADD TRANDATA` command, the `REPLICA IDENTITY` setting of the table is altered. The `REPLICA IDENTITY` setting controls before images of columns of a table that should be logged to the transaction log for `UPDATE` and `DELETE` operations.

SQL Server

Use `ADD TRANDATA` to provide the extended logging information that Oracle GoldenGate needs to reconstruct SQL operations. The SQL Server transaction log does not provide enough information by default.

By enabling `TRANDATA`, Oracle GoldenGate enables the SQL Server Change Data Capture feature for the database and creates a Change Data Capture table for each instance enabled with `TRANDATA`.

GGSCI Syntax

```
ADD TRANDATA {[container.]owner.table | schema.table [JOURNAL
library/journal] |
  library/file [JOURNAL library/journal]}
[, FILEGROUP filegroup-name]
[, NOSCHEDULINGCOLS | ALLCOLS]
[, COLS (columns)]
[, INCLUDELONG | EXCLUDELONG]
[, NOKEY]
[, NOVALIDATE]
[, PREPARECSN {WAIT | LOCK | NOWAIT | NONE}]
```

[*container.*]owner.table

Valid for Db2 LUW, Db2 z/OS, Oracle, PostgreSQL, and SQL Server.

The two-part or three-part name specification. Use a two-part name of *owner.table* for all supported databases except an Oracle multitenant container database. Use a three-part name of *container.owner.table* for an Oracle multitenant container database. A wildcard can be used for any component. Used with a wildcard, **ADD TRANDATA** filters out names that match the names of system objects. To use **ADD TRANDATA** for objects that are not system objects but have names that match those of system objects in a wildcard pattern, issue **ADD TRANDATA** for those objects without using a wildcard.

```
schema.table [JOURNAL library/journal] |  
library/file [JOURNAL library/journal]
```

Valid for Db2 for i.

Specifies the SQL schema and name of a table or the native library and file name. If a default journal is set with the **DEFAULTJOURNAL** command, you can omit the **JOURNAL** option; otherwise it is required.

FILEGROUP *filegroup-name*

Valid for SQL Server.

(Optional) You can designate the filegroup in which the SQL Server Change Data Capture staging tables will be placed, by using the **FILEGROUP** option with an existing filegroup name.

```
ADD TRANDATA owner.table FILEGROUP cdctables
```

You can use the **FILEGROUP** option in the **GLOBALS** file also if you need to use the same **FILEGROUP** for each table when enabling **TRANDATA**.

The following example shows setting the **FILEGROUP myFileGroup** in **GLOBALS** file:

```
FILEGROUP myFileGroup
```

The **GGSCI** command is:

```
ADD TRANDATA dbo.*
```

The output is:

```
Logging of supplemental log data is enabled for table dbo.test1 in  
filegroup  
myFileGroup
```

In this case, **ADD TRANDATA** command uses the **myFileGroup** for all the tables.

If you also use the **FILEGROUP** parameter with **ADD TRANDATA**, the command overrides the filegroup name defined in the **GLOBALS** file.

For example, if you set **FILEGROUP myFileGroup** in the **GLOBALS** file and then execute the following **ADD TRANDATA** command:

```
ADD TRANDATA dbo.* FILEGROUP yourFileGroup
```

Then the output is:

```
Logging of supplemental log data is enabled for table dbo.test1 in filegroup  
yourFileGroup
```

In this case, `ADD TRANDATA` uses the `yourFileGroup` instead of `myFileGroup` for all the tables. If you don't specify the `FILEGROUP` either in `GLOBALS` or with `ADD TRANDATA`, then GGSCI considers the default `FILEGROUP` of the database while adding `TRANDATA` of the table. For example, if you run `ADD TRANDATA dbo.*`, the output is:

```
Logging of supplemental log data is enabled for table dbo.test1 in filegroup  
PRIMARY
```

In this case, the default `FILEGROUP` is `Primary`. If you run the `INFO TRANDATA` command, the `FILEGROUP` name shows as `PRIMARY`.

NOSCHEDULINGCOLS | ALLCOLS

Valid for Oracle and PostgreSQL.

From Oracle GoldenGate 21c onward, `NOSCHEDULINGCOLS` is deprecated for Oracle database 21c and higher if the running database supports auto capture capabilities.

These options satisfy the logging requirements of an integrated Replicat that will be processing the tables that you are specifying with `ADD TRANDATA`.

NOSCHEDULINGCOLS

Valid for Oracle only.

Disables the logging of scheduling columns. By default, `ADD TRANDATA` enables the unconditional logging of the primary key and the conditional supplemental logging of all unique keys and foreign keys of the specified table. Unconditional logging forces the primary key values to the log whether or not the key was changed in the current operation. Conditional logging logs all of the column values of a foreign or unique key if at least one of them was changed in the current operation. The primary key, unique keys, and foreign keys must all be available to the inbound server to compute dependencies.

ALLCOLS

Enables the unconditional supplemental logging of all of the key and non-key columns of the table. This option enables the logging of the keys required to compute dependencies, plus all other columns for use in filtering, conflict resolution, or other purposes.

For PostgreSQL, `ALLCOLS` sets `REPLICA IDENTITY` for the table to `FULL`. `ALLCOLS` is specified as part of the `ADD TRANDATA` command, to enable logging of all the columns for `UPDATE` and `DELETE` operations, even if those columns have not been modified.

For tables without a Primary Key or Unique Index, the `ALLCOLS` option is redundant. Here's the syntax:

```
ADD TRANDATA table_name ALLCOLS
```

COLS (columns)

Valid for Oracle.

Use the `COLS` option to log specific non-key columns. Can be used to log columns specified in a `KEYCOLS` clause and to log columns that will be needed for filtering or manipulation purposes, which might be more efficient than fetching those values with a `FETCHCOLS` clause in a `TABLE` statement. Separate multiple columns with commas, for example `NAME, ID, DOB`.

INCLUDELONG | EXCLUDELONG

Valid for Db2 LUW.

Controls whether or not the `ALTER TABLE` issued by `ADD TRANDATA` includes the `INCLUDE LONGVAR COLUMNS` attribute. `INCLUDELONG` is the default. When `ADD TRANDATA` is issued with this option, Oracle GoldenGate issues the following statement:

```
ALTER TABLE name DATA CAPTURE CHANGES INCLUDE LONGVAR COLUMNS;
```

When `EXCLUDELONG` is used, the following is the command:

```
ALTER TABLE name DATA CAPTURE CHANGES;
```

When `EXCLUDELONG` is used, Oracle GoldenGate does not support functionality that requires before images of tables that include `LONGVAR` columns. For example, the `GETUPDATEBEFORES` parameter. To support this functionality, changes to `LONGVAR` columns in the transaction logs must include both the before and after images of the column value.

NOKEY

Valid for Db2 for i, Db2 LUW, Db2 z/OS, Oracle.

From Oracle GoldenGate 21c onward, `NOKEY` is deprecated for Oracle database 21c and higher if the running database supports auto capture capabilities.

Suppresses the supplemental logging of primary key columns. If using `NOKEY`, use the `COLS` option to log alternate columns that can serve as keys, and designate those columns as substitute keys by using the `KEYCOLS` option of the `TABLE` or `MAP` parameter.

NOVALIDATE

Valid for Db2 for i, Db2 LUW, Db2 z/OS, Oracle.

Suppresses additional information about the table being handled being processed by `ADD TRANDATA`. By default, this option is enabled. The additional information processing creates a lapse time on command response so this option can be used to increase response time.

ALLOWNONVALIDATEDKEYS

Valid for Db2 for i, Db2 LUW, Db2 z/OS, Oracle.

It includes `NON VALIDATED` and `NOT VALID` primary keys in the supplemental logging. These keys override the normal key selection criteria that is used by Oracle GoldenGate. If the `GLOBALS` parameter `ALLOWNONVALIDATEDKEYS` is being used, `ADD SCHEMATRANDATA` runs with `ALLOWNONVALIDATEDKEYS` whether or not it is specified. By default, `NON VALIDATED` and `NOT VALID` primary keys are not logged.

PREPARECSN {WAIT | LOCK | NOWAIT | NONE}

Valid for Oracle for both DML and DDL. Automatically prepares the tables at the source so the Oracle data pump Export dump file will include Instantiation CSNs. Replicat uses the per table instantiation CSN set by the Oracle data pump (on import)

to filter out trail records. On the target, the data pump import populates the system tables and views with instantiation SCNs using the `DBOPTIONS ENABLE_INSTANTIATION_FILTERING` parameter to enable table-level instantiation filtering.

WAIT

Wait for any in-flight transactions and prepare table instantiation.

LOCK

Put a lock on the table (to prepare for table instantiation).

NOWAIT

Default behavior, preparing for instantiation is done immediately.

NONE

No instantiation preparation occurs.

Examples

The following example causes one of the following: the primary key to be logged for an Oracle table; supplemental data to be logged for a SQL Server or DB2 table. This would also enable the table for auto capture.

```
ADD TRANDATA hr.employees
```

The following example enables the unconditional supplemental logging of all of the key and non-key columns for the table named `acct`. This would also enable the table for auto capture.

```
ADD TRANDATA hr.employees ALLCOLS
```

The following Oracle Database example causes the primary key to be logged plus the non-key columns `name` and `address`. This would also enable the table for auto capture.

```
ADD TRANDATA hr.employees, COLS (name, address)
```

The following Oracle Database example prevents the primary key from being logged, but logs the non-key columns `name` and `pid` instead. This would also enable the table for auto capture.

```
ADD TRANDATA hr.employees, NOKEY, COLS (name, pid)
```

The following example adds logging although it does not prepare the table for instantiation. This would also enable the table for auto capture.

```
ADD TRANDATA hr.employees PREPARECSN NONE
```

The following example suppresses additional table information processing. This would also enable the table for auto capture.

```
ADD TRANDATA hr.employees.*name NOVALIDATE
```

ALLOWNESTED

Use the `ALLOWNESTED` and `NOALLOWNESTED` commands to enable or disable the use of nested `OBEY` files. A nested `OBEY` file is one that contains another `OBEY` file, see [OBEY](#).

Syntax

```
ALLOWNESTED | NOALLOWNESTED
```

ALLOWNESTED

Enables the use of nested `OBEY` files. There is no maximum of the number of nested files.

NOALLOWNESTED

This is the default setting. If you try to run a nested obey file, then it displays the following error

```
Nested OBEY scripts not allowed. Use ALLOWNESTED to allow nested scripts.
```

The following example illustrates a nested `OBEY` file. Assume an `OBEY` file named `addcmds.txt`. Inside this file, there is another `OBEY` command that calls the `OBEY` file named `startcmds.txt`, which executes another set of commands.

The following example creates an `OBEY` file (`adder.oby`) to add Extract, Replicat, and trail files and includes another obey file (`startcmds.oby`).

```
vi ADDER.oby
DBLOGIN USERIDALIAS ggeast
ADD EXTRACT exte, TRANLOG, BEGIN NOW
ADD EXTTRAIL east/ea, EXTRACT exte
ADD REPLICAT repe, EXTTRAIL east/ea, BEGIN NOW
OBEY startcmds.oby
```

The `startcmds.oby` file contains the following:

```
START EXTRACT *
INFO EXTRACT *, DETAIL
START REPLICAT *
INFO REPLICAT *, DETAIL
```

To execute these obey commands from the command line, you need to use the `ALLOWNESTED` command:

```
ALLOWNESTED
OBEY adder.oby
```

ALTER CREDENTIALSTORE

Use the `ALTER CREDENTIALSTORE` command to configure database credentials for Oracle GoldenGate. You can also use this command to manage user ID and password pairs in the credential store. This command enables you to add credentials to the credential store and to specify different aliases for connecting to the database.

The use of a credential store is not supported for the NonStop platforms.

GGSCI Syntax

```
ALTER CREDENTIALSTORE {
  ADD USER userid [@tns_alias] | REPLACE USER userid | DELETE USER userid }
[NOPASSWORD | PASSWORD password]
[ALIAS alias]
[DOMAIN domain]
```

ADD USER *userid*

Adds the specified user and its alias to the credential store. If the `ALIAS` option is not used, the alias defaults to the user name. A credential can only be entered once unless the `ALIAS` option is used to specify a different alias for each one. Unless the `PASSWORD` option is used, the command prompts for the password of the specified user. The user can be an actual user name or a SQL*Net connect string.

In GGSCI, for multitenant databases with different users for the CDB and the PDB, you need to specify `@TNS_Service_Name` when adding a user to the credential store.

REPLACE USER *userid*

Changes the password of the specified user. If the `ALIAS` option is not used, the alias defaults to the user name. You cannot change the alias or domain of a user with this option, but you can use the `ADD USER` option to add a new entry for the user under the desired `ALIAS` or `DOMAIN`. Unless the `PASSWORD` option is used, the command prompts for the new password for the specified user.

DELETE USER *userid*

Removes the credential for the specified user from the credential store. If the `ALIAS` option is not used, the alias defaults to the user name. If the user ID and alias are not the same, you must specify both user ID and alias. For example:

```
ALTER CREDENTIALSTORE DELETE USER c##ggadmin alias ggadmin
```

NOPASSWORD | PASSWORD *password*

The `NOPASSWORD` option is the alternative to the `PASSWORD` option when using external authentication because password is not required for external authentication such as using Kerberos authentication. After the `NOPASSWORD` option is set, the `DBLOGIN` command can be used to access the database without a password.

Also see `USERIDALIAS` and `USERID | NOUSERID` parameters in the *Reference for Oracle GoldenGate*.

Specify the user's password using the `PASSWORD` option. The password is echoed (not obfuscated) when this option is used. If this option is omitted, the command prompts for the password, which is obfuscated as it is typed (recommended as more secure).

ALIAS *alias*

Specifies an alias for the user name. Use this option if you do not want the user name to be in a parameter file or command. If `ALIAS` is not used, the alias defaults to the `USER` name, which then must be used in parameter files and commands where a login is required. You can create multiple entries for a user, each with a different alias, by using the `ADD USER` option with `ALIAS`.

DOMAIN *domain*

Saves the credential user under the specified domain name. Enables the same alias to be used by multiple Oracle GoldenGate installations that use the same credential store. The default domain is `Oracle GoldenGate`. For example, the administrators of system 1 might not want system 2 to have access to the same credentials that are used on system 1. Those credentials can be stored as `ALIAS pdbeast`, for example, under `DOMAIN system1`, while a different set of credentials can be stored for `ALIAS pdbwest` under `DOMAIN system2`.

Examples

The following example (Admin Client) adds a user named `ggadmin` but with external authentication and therefore uses the `NOPASSWORD` option.

```
ALTER CREDENTIALSTORE ADD USER /@ggadmin nopassword alias pdbeast
```

The output shows:

```
2020-06-22T21:08:33Z INFO OGG-15102 Credential store created.
```

Running the `INFO CREDENTIALSTORE` command, you can check the add user to the credentialstore:

```
INFO CREDENTIALSTORE
Default domain: OracleGoldenGate
  Alias: pdbeast
  Userid: /@ggadmin
```

After you update the credentialstore to use the `NOPASSWORD` option, you can use the `DBLOGIN` command with Kerberos authentication for your database.

```
DBLOGIN USERIDALIAS pdbeast
Successfully logged into database pdbeast.
```

This example adds a user named `ggadmin` but omits the `PASSWORD` specification, so the command prompts for `pggeast`'s password.

```
ALTER CREDENTIALSTORE ADD USER ggadmin
Password: *****
```

This example adds the user `ggadmin` with his password `tiger` and specifies the alias as `pdbeast`.

```
ALTER CREDENTIALSTORE ADD USER ggadmin PASSWORD tiger ALIAS pdbeast
```

This example adds the user `ggadmin` under the domain of `OracleGoldenGate`.

```
ALTER CREDENTIALSTORE ADD USER ggadmin ALIAS pdbeast DOMAIN OracleGoldenGate
Password: *****
```

This example issues two `ALTER CREDENTIALSTORE` commands, each of which adds a `ggadmin` entry, but with a different alias.

```
ALTER CREDENTIALSTORE ADD USER ggadmin ALIAS pdbeast
Password: *****
ALTER CREDENTIALSTORE ADD USER ggadmin ALIAS pdbwest
Password: *****
```

The following shows how the `DELETE USER` option works with and without the `ALIAS` option. The following command deletes the `user1` entry for which the `ALIAS` is the same as the user name.

```
ALTER CREDENTIALSTORE DELETE USER ggadmin
Alias: pdbeast
Userid: ggadmin
```

The following command deletes the entry for user `ggadmin` that is associated with the alias `pdbeast`.

```
ALTER CREDENTIALSTORE DELETE USER ggadmin ALIAS pdbeast
Alias: pdbeast
Userid: ggadmin
```

This example uses a `SQL*Net` connect string as the user value. In this case, the `PASSWORD` option is omitted. The person issuing the command is prompted for the password, which is hidden.

```
ALTER CREDENTIALSTORE ADD USER ggadmin@pdbeast ALIAS pdbeast
```

This example creates a domain name Oracle GoldenGate with user ID `ggadmin` and alias as `pdbeast` in the Admin Client.

```
ALTER CREDENTIALSTORE ADD USER ggadmin alias pdbeast
Password:
```

This example connects using a connection qualifier if using a BEQ-Bequeath Protocol adapter:

```
ALTER CREDENTIALSTORE ADD USER ggadmin@inst1_beq
```

ALTER EXTRACT

Use `ALTER EXTRACT` for the following purposes:

- To change the attributes of an Extract group created with the `ADD EXTRACT` command.
- To increment a trail to the next file in the sequence.
- To upgrade to an integrated capture configuration.
- To downgrade from an integrated capture configuration.
- To position any given Db2 for i journal at a specific journal sequence number.

Before using this command, stop the Extract with the `STOP EXTRACT group_name` command.

GGSCI Syntax

```
ALTER EXTRACT group-name
[, BEGIN {NOW | yyyy-mm-ddT[ hh:mi:[ss[.cccccc]]]Z}]
[, START]
[, EXTSEQNO sequence-number]
[, EXTRBA offset-number]
[, TRANLOG LRI LRI_number]
[, THREAD number]
[, LSN value]
[, SCN value]
[, ETROLLOVER]
[, INFO EXTRACT group-name]
```

The following `ALTER EXTRACT` options are supported for Db2 for i to position Extract for a given journal:

```
ALTER EXTRACT {BEGIN {NOW | yyyy-mm-ddT[ hh:mi:[ss[.cccccc]]]Z}
[JOURNAL journal_library/journal_name [JRNRCV receiver_library/
receiver_name]] |
, EOF [JOURNAL journal_library/journal_name
[JRNRCV receiver_library/receiver_name]] |
, SEQNO sequence_number [JOURNAL journal_library/journal_name
[JRNRCV receiver_library/receiver_name]]}
```

```
BEGIN {NOW | yyyy-mm-ddT[ hh:mi:[ss[.cccccc]]]Z
[JOURNAL journal_library/journal_name
[JRNRCV receiver_library/ receiver_name]] |
, EOF [JOURNAL journal_library/journal_name
[JRNRCV receiver_library/receiver_name]] |
, SEQNO sequence_number [JOURNAL journal_library/journal_name
[JRNRCV receiver_library/receiver_name]]
```

These IBM for i options allow journal-specific Extract positioning after the global start point is issued with `ADD EXTRACT`. A specific journal position set with `ALTER EXTRACT` does not affect any global position that was previously set with `ADD EXTRACT` or `ALTER EXTRACT`; however a global position set with `ALTER EXTRACT` overrides any specific journal positions that were previously set in the same Extract configuration.



Note:

`SEQNO`, when used with a journal in `ALTER EXTRACT`, is the journal sequence number that is relative to that specific journal, not the system sequence number that is global across journals.

group-name

The name of the Extract group that is to be altered.

```
{BEGIN {NOW | yyyy-mm-ddT[ hh:mi:[ss[.cccccc]]]Z}
```

NOW

For all databases except Db2 LUW, `NOW` specifies the time at which the `ALTER EXTRACT` command is issued.

`NOW` specifies the time at which the `ADD EXTRACT` command is issued.

For Db2 LUW, only commit and end transaction records contain timestamps, so the Extract starting position can only be calculated relative to those timestamps. This is a limitation of the API that is used by Oracle GoldenGate. It must be noted that positioning by timestamp is not accurate and can also take a long time. It is recommended to use `LRI` or `EOF` options wherever possible.

Do not use `NOW` for a data pump Extract except to bypass data that was captured to the trail prior to the `ADD EXTRACT` statement.

YYYY-MM-DDThh:mm:ssZ

A date and time (timestamp) in the given form. For example, 2017-07-14T14:54:45Z.

yyyy-mm-dd[hh:mi:[ss[.cccccc]]]

A date and time (timestamp) in the given form. For an Oracle Extract in integrated mode, the timestamp value must be greater than the timestamp at which the Extract was registered with the database.

Positioning by timestamp in a SQL Server transaction log is affected by the following characteristics of SQL Server:

- The timestamps recorded in the SQL Server transaction log use a 3.3333 microsecond (ms) granularity. This level of granularity may not allow positioning by time between two transactions, if the transactions began in the same 3.3333 ms time interval.

- Timestamps are not recorded in every SQL Server log record, but only in the records that begin and commit the transaction, as well as some others that do not contain data.
- SQL Server timestamps are not from the system clock, but instead are from an internal clock that is specific to the individual processors in use. This clock updates several times a second, but between updates it could get out of sync with the system clock. This further reduces the precision of positioning by time.
- Timestamps recorded for log backup files may not precisely correspond to times recorded inside the backup (however this imprecision is less than a second).

Positioning to an LSN is precise.

Positioning by timestamp in PostgreSQL includes the following scenarios:

- Scenario 1

If `track_commit_timestamp` is off, the following output will be displayed when the Extract process starts irrespective of what positioning method is used:

```
2020-04-29 02:15:54 INFO OGG-01517 Position of first record
processed LSN: 0/2222C20, Jan 1, 1970 12:00:00 PM.
```

- Scenario 2

If the `track_commit_timestamp` is enabled before Extract is registered then the correct timestamp will be displayed once the records are pushed in the source database as mentioned in the following example:

```
2020-04-29 02:19:07 INFO OGG-01515 Positioning to begin time
Apr 29,2020 2:18:38 AM.
```

- Scenario 3

If `track_commit_timestamp` is enabled after the Extract is registered, then there may be chances that the older records are available in the log for which the commit timestamp is not built up with the associated `transaction ID`. In that case, if Extract does not get the timestamp then it will fallback using the default timestamp mentioned in scenario 1. The output will be similar to the following:

```
020-04-29 01:55:07 INFO OGG-01517 Position of first record
processed LSN: 0/221D028, Jan 1, 1970 12:00:00 PM.
```

- Past timestamp cannot be specified if the replication slot has moved away.

START

Valid for PostgreSQL.

Adds an Extract without mentioning `BEGIN NOW` or `LSN`. Extract will start from the replication slot restart position automatically.

ADD_EXTRACT_attribute

You can change any of the attributes specified with the `ADD EXTRACT` command, except for the following:

- Altering an Extract specified with the `EXTTRAILSOURCE` option.
- Altering the number of RAC threads specified with the `THREADS` option.

For these exceptions, delete the Extract group and then add it again.

If using the `BEGIN` option, do not combine other options in the statement. Issue separate statements, for example:

```
ALTER EXTRACT exte, BEGIN 2019-01-01
ALTER EXTRACT exte, ETROLLOVER
ALTER EXTRACT exte, SCN 789000
```

If using the `SCN` or `BEGIN` option for Integrated Extract, it requires a `DBLOGIN`, and the `SCN` or timestamp value specified cannot be below the outbound server's first `SCN` or timestamp. To find the outbound server's first `SCN`, issue the following command:

```
INFO EXTRACT group_name, SHOWCH DETAIL
```

The first `SCN` value is listed as shown in the following example:

```
Integrated Extract outbound server first scn: 0.665884 (665884)
```

EXTSEQNO *sequence_number*

Valid for a primary Extract in classic capture mode for Oracle, and a data pump Extract. Not supported for an Extract in integrated mode.

Specifies either of the following:

- sequence number of an Oracle redo log and RBA within that log at which to begin capturing data.
- the relative byte address within that file at which to begin capturing data. Together these specify the location in the TMF Master Audit Trail (MAT).
- the file in a trail in which to begin capturing data (for a data pump). Specify the sequence number, but not any zeroes used for padding. For example, if the trail file is `\aa000026`, you would specify `EXTSEQNO 26`. By default, processing begins at the beginning of a trail unless this option is used.

Contact Oracle Support before using this option. For more information, go to <http://support.oracle.com>.

EXTRBA *offset_number*

Valid for Oracle Database. Specifies the relative byte address within a transaction log at which to begin capturing data.

The required format is `0Xnnn`, where `nnn` is a 1 to 20 digit hexadecimal number (the first character is the digit zero, and the second character can be upper or lower case letter `x`).

EOF

Valid for Db2 for i, Db2 LUW, MySQL, PostgreSQL, and SQL Server.

Configures processing to start at the end of the log files (or journals) that the next record will be written to. Any active transactions will not be captured.

For Db2 LUW, it configures processing to start at the active `LRI` value in the log files. The active `LRI` is the position at the end of the log files that the next record will be written to. Any active transactions will not be captured.

For PostgreSQL, `DBLOGIN` is required for position by `EOF`.

For MySQL, it finds the position corresponding to the end of the file and starts reading transactions from there. The EOF position is not exact, if data is continuously written to the binary log.

TRANLOG LRI *LRI_number*

(Db2 LUW) You can use this option for Db2 LUW systems to specify the LRI record value for the checkpoint transaction log.

For PostgreSQL, `DBLOGIN` is required for position by `EOF`.

REPORT *file_name*

Specifies the full path name of an Extract report file in a location other than the default of `dirrpt` within the Oracle GoldenGate directory.

SCN *value*

Valid for Oracle.

Starts Extract at the transaction in the redo log that has the specified Oracle system change number (SCN). This option is valid for Extract both in classic capture and integrated modes. For Extract in integrated mode, the SCN value must be greater than the SCN at which the Extract was registered with the database. If using the `SCN` or `BEGIN` option for Integrated Extract, it requires a `DBLOGIN`, and the `SCN` or timestamp value specified cannot be below the outbound server's first SCN or timestamp.

LSN *value*

Valid for SQL Server, Db2 z/OS, and PostgreSQL.

Specifies the transaction `LSN` at which to start capturing data. An alias for this option is `EXTLSN`. The specified `LSN` should exist as a valid `tran_begin_lsn` found in the `cdc.lsn_time_mapping` system table, otherwise the Extract will attempt to position after the `LSN` value provided.

For Db2 z/OS, the required format is `0Xnnn`, where `nnn` is a 1 to 20 digit hexadecimal number (the first character is the digit zero, and the second character can be upper or lower case letter `x`).

For PostgreSQL, `LSN` value can be `hi` or `lo`. Set the value as `hi` for the entry point of the log file. `lo` is the offset in the log file. The `LSN` position should lie between the replication slot restart position and write ahead log current location. If the position specified itself exists between the mentioned range then Extract will throw an error. (SQL Server) specifies the transaction `LSN` at which to start capturing data. An alias for this option is `EXTLSN`.

The specified `LSN` should exist as a valid `tran_begin_lsn` found in the `cdc.lsn_time_mapping` system table, otherwise the Extract will attempt to position after the `LSN` value provided.

Valid `LSN` specification consists of the following:

- Colon separated hex string (8:8:4) padded with leading zeroes and `0X` prefix, as in `0X00000d7e:0000036b:0001`
- Colon separated decimal string (10:10:5) padded with leading zeroes, as in `0000003454:0000000875:00001`
- Colon separated hex string with `0X` prefix and without leading zeroes, as in `0Xd7e:36b:1`
- Colon separated decimal string without leading zeroes, as in `3454:875:1`

- Decimal string, as in 345400000087500001

You can find the minimum LSN available by querying the following:

```
SELECT min([tran_begin_lsn]) FROM [cdc].[lsn_time_mapping] with (nolock)
where tran_id <> 0x00
```

Example:

```
ALTER EXTRACT extsql LSN 0X00000d7e:0000036b:0001
```

LOGNUM

Valid for MySQL.

This is the log file number. For example, if the required log file name is test.000034, the LOGNUM value is 34. Extract will search for this log file.



Note:

In Microservices Architecture, ADD EXTRACT will fail if the LOGNUM value contains zeroes preceding the value. For example, ADD EXTRACT ext1, TRANLOG, LOGNUM 000001, LOGPOS 0 will fail. Instead, set LOGNUM to 1 for this example to succeed.

LOGPOS

Valid for MySQL.

is an event offset value within the log file that identifies a specific transaction record. Event offset values are stored in the header section of a log record. To position at the beginning of a binlog file, set the LOGPOS as 0.

ETROLLOVER

Use for manual recovery situations that require repositioning and regenerating trail files for a primary Extract and when upgrading Oracle GoldenGate from a previous version.

Causes Extract to create a new incarnation of the trail file and increments to the next file in the trail sequence when restarting, requiring readers such as pump or Replicat, to be manually repositioned to the new trail sequence number.

From 19c onwards, during Distribution Service processing:

- If the source primary Extract is upgraded with target trail file ETROLLOVER, then the Distribution Service automatically detects the source trail file ETROLLOVER and starts reading from the next input trail file. This is the same command as data pump ALTER EXTRACT *groupname* EXTSEQNO *seqno+1* EXTRBA 0.
- After upgrading the Distribution Service, it automatically performs the ETROLLOVER for the output trail file upon restarting and writes the next trail file properly. This is the same as data pump ALTER EXTRACT *groupname* ETROLLOVER.

DESC '*description*'

Specifies a description of the group, such as 'Extracts account_tab on Serv1'. Enclose the description within single quotes. You may use the abbreviated keyword DESC or the full word DESCRIPTION.

ENCRYPTIONPROFILE

Specifies the name of the encryption profile for the Extract. This name is case sensitive so you must use the exact name that you entered with `ADD EXTRACT`.

CRITICAL

Indicates if the process is critical for the deployment.

PROFILE

Name of the auto start profile. This name is case sensitive so you must use the exact name that you entered with `ADD EXTRACT`.

AUTOSTART

Specifies whether the managed process has to be started automatically when the Administration Service starts. The default value is `YES`.

RETRIES

The maximum number of tries for restarting the task before canceling retry efforts. This is optional.

WAITSECONDS

The duration (in seconds) in which the retries are counted.

RESETSECONDS

Resets the duration in which the retries are counted.

DISABLEONFAILURE

If set to `TRUE`, then the task is disabled when the number of retries is exhausted.

INFO EXTRACT *group-name*, SHOWCH DETAIL

The first SCN value is listed as shown in the following example:

```
Integrated Extract outbound server first scn: 0.665884 (665884)
```

Examples

The following alters Extract to start processing data from January 1, 2011.

```
ALTER EXTRACT exte, BEGIN 2019-01-01
```

The following alters Extract to start processing at a specific location in the trail.

```
ALTER EXTRACT exte, EXTSEQNO 26, EXTRBA 338
```

The following alters Extract in a SQL Server environment to start at a specific LSN.

```
ALTER EXTRACT exte, LSN 3454:875:445
```

The following alters Extract to increment to the next file in the trail sequence.

```
ALTER EXTRACT exte, ETROLLOVER
```

The following alters Extract to upgrade to integrated capture.

```
ALTER EXTRACT exte, UPGRADE INTEGRATED TRANLOG
```

The following alters Extract in an Oracle environment to start processing data from source database SCN 778899.

```
ALTER EXTRACT exte, SCN 778899
```

The following shows ALTER EXTRACT for an IBM for i journal start point.

```
ALTER EXTRACT exte, SEQNO 1234 JOURNAL accts/acctsjrn
```

The following shows ALTER EXTRACT for an IBM for i journal and receiver start point.

```
ALTER EXTRACT exte, SEQNO 1234 JOURNAL accts/acctsjrn JRNRCV accts/jrnrcv0005
```

The following example alters an Extract on a Db2 LUW system.

```
ALTER EXTRACT exte, TRANLOG LRI 8066.322711
```

The following example shows the ALTER EXTRACT options used with PostgreSQL:

```
ALTER EXTRACT exte, EOF  
ALTER EXTRACT POSTEXT, LSN 0/156784  
ALTER EXTRACT POSTEXT, BEGIN 2020-02-18T14:50:43.4230Z
```

ALTER EXTTRAIL

Use ALTER EXTTRAIL to change the attributes of a trail that was created with the ADD EXTTRAIL command (a trail on the local system). The change takes effect the next time that Extract starts.

Before using this command, stop the Extract using the STOP EXTRACT *group_name* command.

Syntax

```
ALTER EXTTRAIL trail_name, EXTRACT group_name  
[, MEGABYTES n]
```

trail_name

The relative or fully qualified path name of the trail.

group_name

The name of the Extract group to which the trail is bound.

MEGABYTES *n*

The maximum size of a file, in megabytes. The default is 500. After using this option, issue the `SEND EXTRACT` command with the `ROLLOVER` option to close the current trail file and open a new one.

Examples

```
ALTER EXTTRAIL north/ea, EXTRACT exte, MEGABYTES 200
```

ALTER HEARTBEATTABLE

Use `ALTER HEARTBEATTABLE` to alter existing seed, heartbeat, and history table options that you set with `ADD HEARTBEATTABLE`.

This command requires a `DBLOGIN`. On a CDB database, a PDB login is required.

Valid for Oracle, Db2 z/OS, Db2 LUW, Db2 for i, MySQL, PostgreSQL, SQL Server. This command is not valid for TimesTen and Teradata.

Syntax

```
ALTER HEARTBEATTABLE
[, FREQUENCY number_in_seconds]
[, RETENTION_TIME number_in_days] |
[, PURGE_FREQUENCY number_in_days]
[, TARGETONLY | NOTARGETONLY]
```

FREQUENCY *number_in_seconds*

Specifies how frequently heartbeat records are generated. The default is 60 seconds. Consider the following limits:

- For Oracle Database, the minimum value is 0 and the maximum is 7999.
- For DB2 for i Series, the minimum value is 0 and the maximum is 7999.
- For DB2 LUW and DB2 z/OS, the minimum value is 60 and the maximum is 7999.
- The frequency for DB2 z/OS and DB2 LUW must be a multiple of 60 for values less than 3600 and multiples for 3600 for values greater or equal to 3600.
- For MySQL, the minimum value is 0 and the maximum is 7999.
- For SQL Server, the minimum value is 10 and the maximum is 7999. It supports 0, which disables the SQL Server Agent Heartbeat table `UPDATE` job, but can only be set with `ALTER HEARTBEATTABLE`.
- For PostgreSQL, the minimum value is 60 and the maximum is 7999.
- Databases that support setting `FREQUENCY` to 0 will pause the heartbeat record scheduler.

RETENTION_TIME

Specifies that heartbeat entries older than the retention time in the heartbeat history table are purged. The default is 30 days.

The minimum value for all databases is 1 and the maximum is 2147483646.

PURGE_FREQUENCY

Specifies how often the purge scheduler is run to delete table entries that are older than the retention time from the heartbeat history table. The default is 1 day.

For DB2 LUW and DB2 z/OS, the minimum value is 1 and the maximum is 31.

For all other supported databases, the minimum value is 1 and the maximum value is 199.

TARGETONLY | NOTARGETONLY

Valid for Oracle Database, DB2 for i Series, DB2 LUW, DB2 z/OS, MySQL, PostgreSQL, and SQL Server.

TARGETONLY modifies existing heartbeat seed and heartbeat tables by disabling supplemental logging on both tables. It drops the existing scheduler job for updating the heartbeat table.

NOTARGETONLY modifies existing heartbeat seed and heartbeat tables by enabling supplemental logging on both tables. It creates a new scheduler job for updating the heartbeat table.

Examples

```
ALTER HEARTBEATTABLE FREQUENCY 60
```

```
ALTER HEARTBEATTABLE RETENTION_TIME 30
```

```
ALTER HEARTBEATTABLE PURGE_FREQUENCY 1
```

```
ALTER HEARTBEATTABLE NOTARGETONLY
```

ALTER REPLICAT

Use `ALTER REPLICAT` to change the attributes of a Replicat group that was created with the `ADD REPLICAT` command. Before using this command, stop Replicat by issuing the `STOP REPLICAT` command. If this is a coordinated Replicat group, the `ALTER` takes effect for all threads unless the `threadID` option is used.

**Note:**

`ALTER REPLICAT` does not support switching from regular Replicat mode to coordinated mode. You must stop processes, make certain all of the en route data is applied to the target, roll the trail to a new trail, drop and recreate the Replicat group in coordinated mode, and then start the processes again.

Syntax

```
ALTER REPLICAT
    group-name|
    [, PARALLEL [, INTEGRATED] | INTEGRATED | COORDINATED [MAXTHREADS
number]]
    ]|
    option [, . . .]
    {, SPECIALRUN |
```

```

        EXTFILE          file-name |
        EXTTRAIL         trail-name }
    [, PARAMS file_name]
    [, REPORT file_name]
    [, BEGIN            {NOW | yyyy-mm-dd[ hh:mi:
[ss[.cccccc]]}]}]
    [, EXTSEQNO         trail-sequence-number, EXTRBA trail-offset-
number ]
    [, DESC             description ]|
    [, ENCRYPTIONPROFILE encryption-profile-name ]|
    [, CRITICAL         [ YES | NO ] ]|
    [, PROFILE          profile-name|
    [, AUTOSTART        [ YES | NO ] ]|
    [, DELAY            delay-number ] ]|
    [, AUTORESTART      [ YES | NO ] ]|
    [, RETRIES          retries-number ]|
    [, WAITSECONDS      wait-number ]|
    [, RESETSECONDS     reset-number ]|
    [, DISABLEONFAILURE [ YES | NO ] ] ] ]
}

```

group_name[threadID]

The name of the Replicat group or a thread of a coordinated Replicat that is to be altered. To specify a thread, use the full thread name, such as ALTER REPLICAT exte, EXTSEQNO 53.

If a thread ID is not specified, the ALTER takes effect for all threads of the Replicat group.

option [, . . .]

Use this to change any description or service option that was configured with the ADD REPLICAT command, except for the CHECKPOINTTABLE and NODBCHECKPOINT options. There is no option to alter a Replicat with CHECKPOINTTABLE to replicate with or without CHECKPOINTTABLE. However, if you are switching from integrated to nonintegrated Replicat, you can use a nonintegrated Replicat without a checkpoint table, as shown in the following example:

```
ADD REPLICAT repe, INTEGRATED, EXTTRAIL ea, ggadmin.ggs_checkpoint
```

```
ALTER REPLICAT repe, NONINTEGRATED, CHECKPOINTTABLE
ggadmin.ggs_checkpoint
```

PARALLEL

Oracle only.

Adds the Replicat in parallel mode. In this mode, Replicat applies transactions in parallel to improve the performance. It takes into account dependencies between transactions. PARALLEL INTEGRATED Replicat is valid for Oracle only. It adds the parallel Replicat in integrated mode, which like Integrated Replicat leverages the apply processing functionality that is available within the Oracle Database.

INTEGRATED

Switches Replicat from non-integrated mode to integrated mode. Transactions currently in process are applied before the switch is made, see Switching Replicat from Integrated Mode to Nonintegrated Mode.

NONINTEGRATED, CHECKPOINTTABLE *owner.table*

(Oracle) Switches Replicat from integrated mode to non-integrated mode.

For CHECKPOINTTABLE, specify the owner and name of a checkpoint table. This table must be created with the ADD CHECKPOINTTABLE command before issuing ALTER EXTRACT with NONINTEGRATED, see Deciding Which Apply Method to Use for more information about integrated Replicat.

SPECIALRUN

Creates a Replicat special run as a task. Either SPECIALRUN, EXTFILE, or EXTTRAIL is required. When Extract is in SPECIALRUN mode, do not start Replicat with the START REPLICAT command. Do not use this option with the INTEGRATED or COORDINATED option.

EXTFILE *file_name*

Specifies the relative or fully qualified name of an extract file that is specified with RMTFILE in the Extract parameter file. Do not use this option with the INTEGRATED option.

EXTTRAIL *trail_name*

Specifies the relative or fully qualified name of a trail that was created with the ADD RMTTRAIL or ADD EXTTRAIL command.

BEGIN {NOW | *yyyy-mm-dd[hh:mm[:ss[.cccccc]]* }

Defines an initial checkpoint in the trail.

NOW

Begins replicating changes from the time when the group is created.

yyyy-mm-dd[hh:mm[:ss[.cccccc]]

Begins extracting changes from a specific time.

EXTSEQNO *sequence_number*

Specifies the sequence number of the file in a trail in which to begin processing data. Specify the sequence number, but not any zeroes used for padding. For example, if the trail file is \aa000000026, you would specify EXTSEQNO 26. If not specified, the default value is zero. By default, processing begins at the beginning of a trail unless this option is used. To use EXTSEQNO, you must also use EXTRBA. Contact Oracle Support before using this option.

EXTRBA *rba*

Specifies the relative byte address within the trail file that is specified by EXTSEQNO. Contact Oracle Support before using this option.

PARAMS *file_name*

Specifies a parameter file in a location other than the default of dirprm within the Oracle GoldenGate directory. Specify the fully qualified path name.

REPORT *file_name*

Specifies the full path name of a process report file in a location other than the default of dirrpt within the Oracle GoldenGate directory.

DESC 'description'

Specifies a description of the group, such as 'Loads account_tab on Serv2'.
Enclose the description within quotes. You can use either the abbreviated keyword `DESC` or the full word `DESCRIPTION`.

ENCRYPTIONPROFILE

Specifies the name of the encryption profile for the Replicat.

CRITICAL

Indicates if the process is critical for the deployment.

PROFILE

There are options to select the Default or Custom profiles, if you've created one using the Profile page in Distribution Service.

AUTOSTART

Select this option to start the process when starts.

DELAY

Time to wait in seconds before starting the process.

AUTORESTART

Controls how the process will be restarted if it terminates.

RETRIES

The maximum number of the task should be restarted before canceling retry efforts.
This is optional.

WAITSECONDS

Specifies the time to wait before performing the retries.

RESETSECONDS

Resets the time for waiting for retries.

DISABLEONFAILURE

If this option is enabled, then the task is disabled when the number of retries is exhausted.

Examples

```
ALTER REPLICAT repe, EXTSEQNO 53
```

```
ALTER REPLICAT repe, EXTRBA 0
```

```
ALTER REPLICAT repe, BEGIN 2011-01-07 08:00:00
```

```
ALTER REPLICAT repe, INTEGRATED
```

```
ALTER REPLICAT repe, NONINTEGRATED, CHECKPOINTTABLE ggadmin.ggs_checkpoint
```

```
ALTER REPLICAT repw, EXTSEQNO 53
```

ALTER RMTTRAIL

Use `ALTER RMTTRAIL` to change the attributes of a trail that was created with the `ADD RMTTRAIL` command (a trail on a remote system). The change takes effect the next time that Extract starts.

Syntax

```
ALTER RMTTRAIL trail_name, EXTRACT group_name  
[, MEGABYTES n]
```

trail_name

The relative or fully qualified path name of the trail. For example, `dirdat\ea`.

group_name

The name of the Extract group to which the trail is bound.

MEGABYTES *n*

The maximum size of a file, in megabytes. The default is 500. After using this option, issue the `SEND EXTRACT` command with the `ROLLOVER` option to close the current trail file and open a new one.

Example

```
ALTER RMTTRAIL north/ea, EXTRACT exte, MEGABYTES 200
```

CLEANUP CHECKPOINTTABLE

Not valid for Replicat for Java, Oracle GoldenGate Applications Adapter, or Oracle GoldenGate Big Data.

Use `CLEANUP CHECKPOINTTABLE` to remove checkpoint records from the checkpoint table when there is no checkpoint file associated with it in the working Oracle GoldenGate directory (from which GGSCI was started). This command should only be used on Replicats that have been deleted. The purpose of this command is to remove checkpoint records that are not needed any more, either because groups were changed or files were moved.

Use the `DBLOGIN` command to establish a database connection before using this command.

Syntax

```
CLEANUP CHECKPOINTTABLE [[container. | catalog.]owner.table]
```

container.* | *catalog.

The Oracle pluggable database, if applicable. If this option is omitted, the catalog or pluggable database defaults to the one that is associated with the `SOURCEDB`, `USERID`, or `USERIDALIAS` portion of the `DBLOGIN` command (depending on the database).

owner.table

The owner and name of the checkpoint table to be cleaned up. If an owner and name are not specified, the table that is affected is the one specified with the `CHECKPOINTTABLE` parameter in the `GLOBALS` parameter file.

Example

```
CLEANUP CHECKPOINTTABLE ggadmin.ggs_checkpoint
```

CLEANUP REPLICAT

Use `CLEANUP REPLICAT` to delete run history for a specified Replicat group. The cleanup keeps the last run record intact so that Replicat can resume processing from where it left off.

Before using this command, stop Replicat by issuing the `STOP REPLICAT` command.

Syntax

```
CLEANUP REPLICAT group_name[threadID] [, SAVE count]
```

***group_name*[*threadID*]**

One of the following:

- *group_name*: The name of a Replicat group or a wildcard (*) to specify multiple groups. For example, `T*` cleans up all Replicat groups whose names begin with `T`. If the specified group (or groups) is a coordinated Replicat, the cleanup applies to all threads.
- *group_namethreadID*: A thread of a coordinated Replicat, identified by its full name (group name plus *threadID*), such as `finance003`.

SAVE count

Excludes the specified number of the most recent records from the cleanup.

Examples

The following deletes all but the last record.

```
CLEANUP REPLICAT reps
```

The following deletes all but the most recent five records.

```
CLEANUP REPLICAT *, SAVE 5
```

The following deletes all but the most recent five records for thread three of coordinated Replicat group `fin`.

```
CLEANUP REPLICAT repe, SAVE 5
```

CLEANUP EXTRACT

Use `CLEANUP EXTRACT` to delete run history for the specified Extract group. The cleanup keeps the last run record intact so that Extract can resume processing from where it left off. Before using this command, stop Extract by issuing the `STOP EXTRACT` command.

Syntax

```
CLEANUP EXTRACT group_name [, SAVE count]
```

group_name

The name of an Extract group or a wildcard (*) to specify multiple groups. For example, `T*` cleans up all Extract groups whose names start with T.

SAVE *count*

Excludes the specified number of the most recent records from the cleanup.

Examples

Example 1

The following deletes all but the last record.

```
CLEANUP EXTRACT exte
```

Example 2

The following deletes all but the most recent five records.

```
CLEANUP EXTRACT *, SAVE 5
```

DELETE CHECKPOINTTABLE

Not valid for Replicat for Java, Oracle GoldenGate Applications Adapter, or Oracle GoldenGate Big Data.

Use `DELETE CHECKPOINTTABLE` to drop a checkpoint table from the database. Use the `DBLOGIN` command to establish a database connection before using this command.

If the checkpoint table is deleted while Replicat is still running and transactions are occurring, Replicat will abend with an error that the checkpoint table could not be found. However, the checkpoints are still maintained on disk in the checkpoint file. To resume processing, add the checkpoint table back under the same name. Data in the trail resumes replicating. Then, you can delete the checkpoint table.

Syntax

```
DELETE CHECKPOINTTABLE [[container. | catalog.]owner.table] [!]
```

container.* | *catalog.

The Oracle pluggable database, if applicable. If this option is omitted, the catalog or pluggable database defaults to the one that is associated with the `SOURCEDB`, `USERID`, or `USERIDALIAS` portion (depending on the database) of the `DBLOGIN` command.

owner.table

The owner and name of the checkpoint table to be deleted. An owner and name are not required if they are the same as those specified with the `CHECKPOINTTABLE` parameter in the `GLOBALS` file.

!

Bypasses the prompt that confirms intent to delete the table.

Example

```
DELETE CHECKPOINTTABLE ggadmin.ggs_checkpoint
```

DELETE CREDENTIALSTORE

Use the `DELETE CREDENTIALSTORE` command to remove a credential store from the system. The credential store and its contents are permanently deleted.

The use of a credential store is not supported for the NonStop platforms.

Syntax

```
DELETE CREDENTIALSTORE
```

DELETE EXTRACT

Use `DELETE EXTRACT` to delete an Extract group. This command deletes the checkpoint file that belongs to the group, but leaves the parameter file intact. You can then re-create the group or delete the parameter file as needed.

Before using `DELETE EXTRACT`, stop Extract with the `STOP EXTRACT` command.

Syntax

```
DELETE EXTRACT group_name [!]
```

group_name

The name of an Extract group or a wildcard specification (*) to specify multiple groups. For example, `T*` deletes all Extract groups whose names start with `T`.

!

(Exclamation point) Deletes all Extract groups associated with a wildcard without prompting.

DELETE EXTTRAIL

Use `DELETE EXTTRAIL` to delete the record of checkpoints associated with a trail on a local system. Checkpoints are maintained in a file bearing the same name as the group in the `dirchk` sub-directory of the Oracle GoldenGate directory.

This command only deletes references to the specified trail from the checkpoint file. It does not delete the trail files.

Syntax

```
DELETE EXTTRAIL trail_name
```

trail_name

The relative or fully qualified path name of the trail, including the two-character trail prefix.

Example

```
DELETE EXTTRAIL north/ea
```

DELETE TRANDATA

Use `DELETE TRANDATA` to do one of the following:

- Db2 LUW and Db2 z/OS: Alters the table to `DATA CAPTURE NONE`.
- Oracle: Disable supplemental logging.
- SQL Server: Stops extended logging for a table.
- PostgreSQL: Alters the table's `REPLICA IDENTITY` to `NOTHING`.

By default, this command attempts to remove the supplemental logging of the key columns that are used by Oracle GoldenGate (can be the primary key, a unique key, `KEYCOLS` columns, or all columns) and also the scheduling columns. The scheduling columns are the primary key, all of the unique keys, and all of the foreign keys. To delete the logging of the Oracle GoldenGate key columns, but not the scheduling columns, include the `NOSCHEDULINGCOLS` option with `DELETE TRANDATA`. If `ADD TRANDATA` was issued with the `ALLCOLS` option, use `DELETE TRANDATA` with the `ALLCOLS` option to remove the supplemental logging of all of the columns, including the Oracle GoldenGate key columns. `DELETE TRANDATA` will disable logical replication for a table after all the table level supplemental logging has been disabled or removed. This behavior is supported from Oracle 19c and higher. Also, if a the `DELETE TRANDATA` operation removes the last supplemental log group on a table then it will also perform an `ALTER TABLE owner.table DISABLE LOGICAL REPLICATION` too.

It is mandatory to run `ADD TRANDATA table_name` command to enable logical replication after running `DELETE TRANDATA`.

Note:

You cannot enable logical replication using `ADD SCHEMATRANDATA`.

Use the `DBLOGIN` command to establish a database connection before using this command. The user specified with this command must have the same privileges that are required for `ADD TRANDATA`.

Syntax

```
DELETE TRANDATA [container.]owner.table [NOSCHEDULINGCOLS | ALLCOLS]
```

[*container.*]*owner.table*

The pluggable database (if this is an Oracle multitenant container database), owner and name of the table or file. A wildcard can be used for any name component.

NOSCHEDULINGCOLS

Prevents the command from removing the supplemental logging of the scheduling columns of the specified table. The scheduling columns are the primary key, all of the unique keys, and all of the foreign keys of a table.

ALLCOLS

Removes the supplemental logging of all of the columns of the specified table.

Examples

```
DELETE TRANDATA hr.employees
```

```
DELETE TRANDATA hr.reg*
```

```
DELETE TRANDATA hr.jobs ALLCOLS
```

DELETE TRACETABLE

Use `DELETE TRACETABLE` to delete a trace table.

Use the `DBLOGIN` command to establish a database connection before using this command.

Syntax

```
DELETE TRACETABLE [[container.]owner.table]
```

container

The pluggable database, if the database is a multitenant container database (CDB).

owner.table

The owner and name of the trace table to be deleted. An owner and name are not required if the owner is the same as that specified with the `USERID` or `USERIDALIAS` parameter and the trace table has the default name of `GG$TRACE`. The schema is required.

!
Deletes the trace table without prompting.

Example

```
DELETE TRACETABLE ora_trace
```

DELETE SCHEMATRANDATA

Valid for Oracle.

Use `DELETE SCHEMATRANDATA` to remove the Oracle schema-level supplemental logging that was added with the `ADD SCHEMATRANDATA` command. Use the `DBLOGIN` command to establish a database connection before using this command. The user that is specified with this command must have the privilege to remove supplemental log groups.

By default, this command attempts to remove the supplemental logging of the key columns that are used by Oracle GoldenGate (can be the primary key, a unique key, `KEYCOLS` columns, or all columns) and also the scheduling columns. The scheduling columns are the primary key, all of the unique keys, and all of the foreign keys. To delete the logging of the Oracle GoldenGate key columns, but not the scheduling columns, include the `NOSCHEDULINGCOLS` option with `DELETE SCHEMATRANDATA`. If `ADD SCHEMATRANDATA` was issued with the `ALLCOLS` option, use `DELETE SCHEMATRANDATA` with the `ALLCOLS` option to remove the supplemental logging of all of the columns, including the Oracle GoldenGate key columns.

Syntax

```
DELETE SCHEMATRANDATA schema [NOSCHEDULINGCOLS | ALLCOLS]
```

schema

The schema for which you want supplemental logging to be removed. Do not use a wildcard. If the source is an Oracle multitenant container database, make certain to log into the pluggable database that contains the schema for which you want to remove the logging.

NOSCHEDULINGCOLS

Prevents the command from removing the supplemental logging of the scheduling columns of the tables in the specified schema. The scheduling columns are the primary key, all of the unique keys, and all of the foreign keys of a table.

ALLCOLS

Removes the supplemental logging of all of the columns of the tables in the specified schema.

Examples

```
DELETE SCHEMATRANDATA hr
```

```
DELETE SCHEMATRANDATA hr ALLCOLS
```

DELETE RMTTRAIL

Use `DELETE RMTTRAIL` to delete the record of checkpoints associated with a trail on a remote system. Checkpoints are maintained in a file bearing the same name as the group in a sub-directory of the Oracle GoldenGate directory.

This command only deletes references to the specified trail from the checkpoint file. It does not delete the trail files.

Syntax

```
DELETE RMTTRAIL trail_name[,EXTRACT group_name]
```

trail_name

The relative or fully qualified path name of the trail, including the two-character trail prefix.

group_name

The name of the Extract group to which the trail is bound. If not specified, `DELETE RMTTRAIL` deletes the trail reference from all Extract groups that write to the specified trail.

Example

```
DELETE RMTTRAIL /u02/deployments/depl_compass/var/lib/data/et
```

```
DELETE RMTTRAIL north/ea
```

The following command is run from the Admin Client.

```
DELETE RMTTRAIL ea
```

Output:

```
2019-11-20T23:49:41Z INFO OGG-08100 Deleting extract trail ea for  
Extract exte
```

DELETE REPLICAT

Use `DELETE REPLICAT` to delete a Replicat group. This command deletes the checkpoint file but leaves the parameter file intact. Then you can re-create the group or delete the parameter file as needed. This command frees up trail files for purging, because the checkpoints used by the deleted group are removed (assuming no other processes are reading the file).

Use the `DBLOGIN` command before deleting any Replicats so that the checkpoint data or any internal information stored in the database for that Replicat can also be cleaned up.

Before using `DELETE REPLICAT`, stop Replicat with the `STOP REPLICAT` command.

If this is an integrated Replicat (Oracle only) or a non-integrated Replicat that uses a checkpoint table, do the following after you stop Replicat:

1. Log into the database by using the `DBLOGIN` command. `DBLOGIN` enables `DELETE REPLICAT` to delete the checkpoints from the checkpoint table of a non-integrated Replicat or to delete the inbound server that an integrated Replicat uses.
2. Issue `DELETE REPLICAT`.

Syntax

```
DELETE REPLICAT group_name [!]
```

group_name

The name of a Replicat group or a wildcard (*) to specify multiple groups. For example, `T*` deletes all Replicat groups whose names begin with T.

!

Use this option to force the Replicat group to be deleted if the `DBLOGIN` command is not issued before the `DELETE REPLICAT` command is issued. If the group is a non-integrated Replicat, this option deletes the group's checkpoints from the checkpoint file on disk, but not from the checkpoint table in the database. If using this option to delete an integrated Replicat group, you must use the `UNREGISTER REPLICAT` command to delete the inbound server from the target database. This option can also be used to ignore the prompt that occurs when a wildcard specifies multiple groups.



Note:

The basic `DELETE REPLICAT` command commits an existing Replicat transaction, but the `!` option prevents the commit.

Example

```
DELETE REPLICAT reps
```

DELETE PROCEDURETRANDATA

Valid for Oracle.

Use `DELETE PROCEDURETRANDATA` to remove supplemental logging for Procedural Replication.

Use the `DBLOGIN` command to establish a database connection before using this command.

Syntax

```
DELETE PROCEDURETRANDATA
```

DELETE MASTERKEY

Use the `DELETE MASTERKEY` command to mark a version of a master key for deletion. Routinely deleting older versions of a master key ensures that they cannot be used maliciously.

The `OPEN WALLET` command must be used before using this command or any of the commands that add or renew the master keys or purge the wallet.

To view the version of a master key, use the `INFO MASTERKEY` command.

This command marks a version for deletion, but does not physically remove it from the wallet, see `PURGE WALLET` to remove the master key version permanently.

Note:

For Oracle GoldenGate deployments using a shared wallet, the older versions of the master key should be retained after the master key is renewed until all processes are using the newest version. The time to wait depends on the topology, latency, and data load of the deployment. A minimum wait of 24 hours is a conservative estimate, but you may need to perform testing to determine how long it takes for all processes to start using a new key. To determine whether all of the processes are using the newest version, view the report file of each Extract immediately after renewing the master key to confirm the last SCN that was mined with the old key. Then, monitor the Replicat report files to verify that this SCN was applied by all Replicat groups. At this point, you can delete the older versions of the master key.

See `UNDELETE MASTERKEY` to reverse a deletion made by `DELETE MASTERKEY`.

Once a version number is used, the wallet reserves it forever, and no other key of the same version can be generated. For example, you cannot mark version 2 of a key for deletion, then purge the wallet to remove it, and then issue `RENEW MASTERKEY` to add a version 2 again. Even though only version 1 of the key remains in the wallet after the purge, the renewal generates version 3, not version 2.

The use of a wallet and master key is not supported for the NonStop platforms.

Syntax

```
DELETE MASTERKEY  
{VERSION version | RANGE FROM begin_value TO end_value | ALL}
```

VERSION *version*

Specifies a single version to be marked for deletion.

RANGE FROM *begin_value* TO *end_value*

Specifies a range of versions to be marked for deletion. The versions must be contiguous. For example, specifying `RANGE FROM 3 TO 6` marks versions 3, 4, 5, and 6.

ALL

Marks all versions of the master key for deletion, including the currently active one. When this option is used, it should always be followed by a `RENEW MASTERKEY` command to create a new, current version of the master key.

Examples

This command marks one version of the master key for deletion and returns a message similar to the one shown.

```
DELETE MASTERKEY VERSION 10
```

Output:

```
Version 10 of Masterkey 'OGG_DEFAULT_MASTERKEY' deleted from wallet at  
location './dirwlt'.
```

This command marks versions 3, 4, 5, and 6 for deletion and returns a message similar to the one shown.

```
DELETE MASTERKEY RANGE FROM 3 TO 6
```

Example:

```
DELETE MASTERKEY ALL
```

Output:

```
2019-11-21T19:38:08Z INFO OGG-06148 Version 1 of master key  
'OGG_DEFAULT_MASTERKEY' in Oracle Wallet was deleted.
```

DELETE HEARTBEATTABLE

Use `DELETE HEARTBEATTABLE` to delete tables, procedures, schedulers, and views. This command requires a `DBLOGIN`. On a CDB database, a PDB login is required.

For Oracle database, the administration of the heartbeat table is simplified by eliminating the need for `GGSCHEMA` or `HEARTBEATTABLE` parameter. To implement this, Extracts and Replicat look in the schema of the ER processes connected user for the heartbeat tables, except for Oracle CDB root Extract. In case of CDB root Extract, `GGSCHEMA` is used.

Syntax

```
DELETE HEARTBEATTABLE group_name
```

group_name

The name of the process to be cleaned.

!
(Exclamation point) Deletes all heartbeat table entries associated with a wildcard without prompting.

DELETE HEARTBEATENTRY

Use `DELETE HEARTBEATENTRY` to delete the records in the heartbeat table with the specified process name either in the incoming or outgoing path columns. This command required a `DBLOGIN`. On a CDB database, a PDB login is required.

Oracle GoldenGate for Oracle database simplifies the administration of the heartbeat table by eliminating the need for `GGSCHEMA` or `HEARTBEATTABLE` parameter. To implement this, Extracts and Replicat look in the schema of the ER processes connected user for the heartbeat tables, except for Oracle CDB root Extract. In case of CDB root Extract, `GGSCHEMA` is used.

Syntax

```
DELETE HEARTBEATENTRY group_name
```

group_name

The name of the process to be cleaned.

!
(Exclamation point) Deletes all heartbeat table entries associated with a wildcard without prompting.

EDIT PARAMS

Use `EDIT PARAMS` to create or change a parameter file. By default, the editor is set with your `EDITOR` environment variable. You can change the default editor with the `SET EDITOR` command.

GGSCI Syntax

```
EDIT PARAMS {MGR | group_name | file_name}
```

MGR

Opens a parameter file for the Manager process.

group_name

Opens a parameter file for the specified Extract or Replicat group.

file_name

Opens the specified file. When you create a parameter file with `EDIT PARAMS`, it is saved to a sub-directory of the Oracle GoldenGate directory. You can create a parameter file in a directory other than the default by specifying the full path name, but you must also specify the full path name with the `PARAMS` option of the `ADD EXTRACT` or `ADD REPLICAT` command when you create the process group.

▲ Caution:

Use this command to view or edit an existing parameter file that is in a character set of the local operating system. If you use the `CHARSET` option with non-local operating system character set, then contents may become corrupted.

Examples

```
EDIT PARAMS exte
```

```
EDIT PARAMS c:\lpparms\repe.prm
```

INFO ALL

Use `INFO ALL` to display the status and lag (where relevant) for all Manager, Extract, and Replicat processes on a system. When Oracle Grid Infrastructure Agents (XAG) Clusterware components are in use, the relevant information is also displayed.

The basic command, without options, displays only online (continuous) processes and Microservices Architecture services. To display tasks, use either `INFO ALL TASKS` or `INFO ALL ALLPROCESSES`.

The `Status` and `Lag at Chkpt` (checkpoint) fields display the same process status and lag as the `INFO EXTRACT` and `INFO REPLICAT` commands.

If Replicat is in coordinated mode, `INFO ALL` shows only the coordinator thread. To view information about individual threads, use [INFO REPLICAT](#).

Syntax

```
INFO ALL [TASKS | ALLPROCESSES]
```

TASKS

Displays information only for tasks.

ALLPROCESSES

Displays information for online processes and tasks.

Examples

```
INFO ALL TASKS
```

```
INFO ALL ALLPROCESSES
```

HISTORY

Use `HISTORY` to view a list of the most recently issued commands since the startup of the session. You can use the `!` command or the `FC` to re-execute a command in the list.

Syntax

```
HISTORY [n]
```

n

Returns a specific number of recent commands, where *n* is any positive number.

Example

```
HISTORY 7
```

The result of this command would be similar to:

```
1: ADD EXTRACT
2: ADD EXTTRAIL
3: INFO CHECKPOINTTABLE
4: EDIT PARAMS
5: START EXTRACT
6: HISTORY
```

HELP

Use `HELP` to obtain information about an Oracle GoldenGate command in both GGSCI and Admin Client. The basic command returns a list of commands. The *command* option restricts the output to that of a specific command.

Syntax

```
HELP [command]
```

command

The command that you want help for. You can use a wildcard (*).

Example

To display all commands that begin with `ADD`.

```
HELP ADD
```

FLUSH SEQUENCE

This command updates an Oracle sequence so that initial redo records are available at the time that Extract starts to capture transaction data. Normally, redo is not

generated until the current cache is exhausted. The flush gives Replicat an initial start point with which to synchronize to the correct sequence value on the target system. From then on, Extract can use the redo that is associated with the usual cache reservation of sequence values.

Syntax

```
FLUSH SEQUENCE owner.sequence
```

owner.sequence

The owner and name of a sequence. The schema name cannot be null and is required. You can use an asterisk (*) wildcard for the sequence name, but not for the owner name.

Example

```
FLUSH SEQUENCE ggadmin.seq
```

EXIT

Use `EXIT` to exit the Oracle GoldenGate command line interface.

Syntax

```
EXIT
```

ENCRYPT PASSWORD

Use `ENCRYPT PASSWORD` to encrypt a password that is used in an Oracle GoldenGate parameter file or command.

GGSCI Syntax

```
ENCRYPT PASSWORD password  
[AES128 | AES192 | AES256]  
ENCRYPTKEY {key_name | DEFAULT}
```

password

The login password. Do *not* enclose the password within quotes. Do *not* use commas in passwords. If the password is case-sensitive, type it that way.

AES128 | AES192 | AES256

Specifies the encryption algorithm to use.

- `AES128` uses the AES-128 cipher, which has a key size of 128 bits.
- `AES192` uses the AES-192 cipher, which has a key size of 192 bits.
- `AES256` uses the AES-256 cipher, which has a key size of 256 bits.

If no algorithm is specified, `AES128` is the default for all database types where `BLOWFISH` is the default. AES is not supported for those platforms.

All of the AES ciphers have a 128-bit block size.

To use AES encryption for any database other than Oracle, the path of the `lib` sub-directory of the Oracle GoldenGate installation directory must be specified as an environment variable before starting any processes:

- UNIX: Specify the path as an entry to the `LD_LIBRARY_PATH` or `SHLIB_PATH` variable. For example:

```
SETENV LD_LIBRARY_PATH ./lib:$LD_LIBRARY_PATH
```

- Windows: Add the path to the `PATH` variable.

You can use the `SETENV` parameter to set it as a session variable for the process.

ENCRYPTKEY {*key_name* | **DEFAULT**}

Specifies the encryption key.

key_name

Specifies the logical name of a user-created encryption key in a local `ENCKEYS` lookup file. The key name is used to look up the actual key in the `ENCKEYS` file. A user-created key and an associated `ENCKEYS` file is required when using AES encryption. To use *key_name*, generate the key with `KEYGEN` or another utility, then store it in an `ENCKEYS` file on the source and target systems. The AES ciphers have a 128-bit block size.

DEFAULT

(GGSCI) Directs Oracle GoldenGate to generate a random key that is stored in the trail so that decryption can be performed by the downstream process. This type of key is insecure and should not be used in a production environment.

`ENCRYPT PASSWORD` returns an error if `DEFAULT` is used with any AES algorithm.

Examples

```
ENCRYPT PASSWORD ny14072 AES192 ENCRYPTKEY superkey2
```

INFO CHECKPOINTTABLE

Not valid for Replicat for Java, Oracle GoldenGate Applications Adapter, or Oracle GoldenGate Big Data.

Use `INFO CHECKPOINTTABLE` to confirm the existence of a checkpoint table and view the date and time that it was created. It returns a message similar to the following:

```
Checkpoint table ggadmin.ggs_checkpoint created 2017-01-06T11:51:53.
```

Use the `DBLOGIN` command to establish a database connection before using this command.

Syntax

```
INFO CHECKPOINTTABLE [[container. | catalog.]owner.table]
```

container.* | *catalog.

The Oracle pluggable database, if applicable. If this option is omitted, the catalog or pluggable database defaults to the one that is associated with the `SOURCEDB`, `USERID`, or `USERIDALIAS` portion of the `DBLOGIN` command (depending on the database).

owner.table

The owner and name of the checkpoint table. An owner and name are not required if they are the same as those specified with the `CHECKPOINTTABLE` parameter in the `GLOBALS` file. You can use a wildcard (*).

Example

```
INFO CHECKPOINTTABLE ggadmin.ggs_checkpointtable
```

INFO TRANDATA

Use `INFO TRANDATA` to get the following information:

- Db2 LUW and Db2 z/OS: Determine whether `DATA CAPTURE` is enabled or not.
- Oracle: Determine whether supplemental logging is enabled, and to show the names of columns that are being logged supplementary. If all columns are being logged, the notation `ALL` is displayed instead of individual column names. Displays any SCN instantiation information.
- SQL Server: Determine whether or not extended logging is enabled for a table.
- PostgreSQL: Determine whether supplemental logging is enabled and to show the current `REPLICA IDENTITY` setting.

Use the `DBLOGIN` command to establish a database connection before using this command.

GGSCI Syntax

```
INFO TRANDATA [container.]owner.table [NOVALIDATE]
```

[container.]owner.table

The pluggable database (if this is an Oracle multitenant container database), owner and name of the table or file for which you want to view trandata information. The owner is not required if it is the same as the login name that was specified by the `DBLOGIN` command. A wildcard can be used for the table name but not the owner name.

NOVALIDATE

Suppresses additional information about the table being handled being processed by `ADD TRANDATA`. By default, this option is enabled. The additional information processing creates a lapse time on command response so this option can be used to increase response time.

Examples

```
INFO TRANDATA hr.employees
```

```
INFO TRANDATA hr.reg*
```

```
INFO TRANDATA hr.coun* NOVALIDATE
```

INFO TRACETABLE

Use the `INFO TRACETABLE` command to verify the existence of the specified trace table in the local instance of the database. If the table exists, Oracle GoldenGate displays the name and the date and time that it was created; otherwise Oracle GoldenGate displays a message stating that the table does not exist. Use the `DBLOGIN` command to establish a database connection before using this command.

Syntax

```
INFO TRACETABLE [[container.]owner.table]
```

container

The pluggable database, if the database is a multitenant container database (CDB).

owner.table

The owner and name of the trace table to be verified. An owner and name are not required if the owner is the same as that specified with the `USERID` or `USERIDALIAS` parameter and the trace table has the default name of `GG$_TRACE`.

Example

```
INFO TRACETABLE pdbeast.ggadmin.ora_trace
```

In this example, `pdbeast` is the container name and `ggadmin` is the user id.

INFO SCHEMATRANDATA

Use `INFO SCHEMATRANDATA` to determine whether Oracle schema-level supplemental logging is enabled for the specified schema or if any instantiation information is available. Use the `DBLOGIN` command to establish a database connection before using this command.

Syntax

```
INFO SCHEMATRANDATA schema
```

schema

The schema for which you want to confirm supplemental logging. Do not use a wildcard. To get information on the appropriate schema in an Oracle multitenant container database, make certain to log into the correct pluggable database with `DBLOGIN`.

Example

```
INFO SCHEMATRANDATA hr
```

INFO RMTTRAIL

Use `INFO RMTTRAIL` to retrieve configuration information for a remote trail. It shows the name of the trail, the Extract that writes to it, the position of the last data processed, and the assigned maximum file size.

Syntax

```
INFO RMTTRAIL trail_name
```

trail_name

The relative or fully qualified path name of the trail or a wildcard (*) designating multiple trails.

Examples

```
INFO RMTTRAIL north\ea
```

```
INFO RMTTRAIL *
```

The following is a sample of `INFO RMTTRAIL` output.

```
Extract Trail: /ogg/var/lib/data/ea
  Seqno Length: 9
  Flip Seqno Length: no
  Extract: exte
  Seqno: 4
  RBA: 78066
  File Size: 500M
```

```
Extract Trail: /ogg/dirdat/ea
  Seqno Length: 9
  Flip Seqno Length: no
  Extract: exte
  Seqno: 4
  RBA: 78066
  File Size: 500M
```

INFO REPLICAT

Use `INFO REPLICAT` to retrieve the processing history of a Replicat group. The output of this command includes:

- The status of Replicat (`STARTING`, `RUNNING`, `STOPPED` or `ABENDED`). `STARTING` means that the process has started but has not yet locked the checkpoint file for processing.
- (Oracle Database) The Replicat mode: non-integrated or integrated.
- Whether or not Replicat is in coordinated mode and, if so, how many threads it currently uses.
- Approximate Replicat lag.
- The trail from which Replicat is reading.
- Replicat run history, including checkpoints in the trail.
- Information about the Replicat environment.

The basic command displays information only for online (continuous) Replicat groups. Tasks are excluded.

Replicat can be stopped or running when `INFO REPLICAT` is issued. In the case of a running process, the status of `RUNNING` can mean one of the following:

- **Active:** Running and processing (or able to process) data. This is the normal state of a process after it is started.
- **Suspended:** The process is running, but suspended due to an `EVENTACTIONS SUSPEND` action. In a suspended state, the process is not active, and no data can be processed, but the state of the current run is preserved and can be continued by issuing the `RESUME` command. The RBA in the `INFO` command reflects the last checkpointed position before the suspend action. To determine whether the state is active or suspended, issue the `SEND REPLICAT` command with the `STATUS` option.

About Lag

`Checkpoint Lag` is the lag, in seconds, at the time the last checkpoint was written to the checkpoint file. For example, consider the following:

- Current time = 15:00:00
- Last checkpoint = 14:59:00
- Timestamp of the last record processed =14:58:00

Assuming these values, the lag is reported as 00:01:00 (one minute, the difference between 14:58 and 14:59).

A lag value of `UNKNOWN` indicates that Replicat could be running but has not yet processed records, or that the source system's clock is ahead of the target system's clock (due to clock imperfections, not time zone differences). For more precise lag information, use `LAG REPLICAT` (see "[LAG REPLICAT](#)"). For complete end to end lag, use the heartbeat table functionality. See [ADD HEARTBEATTABLE](#).

GGSCI Syntax

```
INFO REPLICAT group_name[threadID]
[, SHOWCH [checkpoint_number]]
[, DETAIL]
[, TASKS | ALLPROCESSES]
```

group_name[*threadID*]

The name of:

- A Replicat group or a wildcard (*) to specify multiple groups. For example, T* shows information for all Replicat groups whose names begin with T.
- A thread of a coordinated Replicat, identified by its full name. For example, fin003 shows information only for thread 3 of the fin group.

SHOWCH [*checkpoint_number*]

Displays current checkpoint details, including those recorded to the checkpoint file and those recorded to the checkpoint table, if one is being used. The database checkpoint display includes the table name, the hash key (unique identifier), and the create timestamp. Specify a value for checkpoints-number to include the specified number of previous checkpoints as well as the current one.

DETAIL

Displays detail information. For an Oracle target, DETAIL displays the name of the inbound server when Replicat is in integrated mode.

If Replicat is in coordinated mode, DETAIL will display only the active threads. For example, if a Replicat named CR was created with a maximum of 15 threads, but only threads 7-9 are running, INFO REPLICAT *group_name* with DETAIL will show only the coordinator thread (CR), CR007, CR008, and CR009. Checkpoints exist for the other threads, but they are not shown in the command output.

To view LOGBSN information with the DETAIL output, issue the DBLOGIN command before you issue INFO REPLICAT. If the command is issued for a specific thread ID of a coordinated Replicat, only the LOGBSN for that thread is displayed. Otherwise, the LOGBSNs for all threads are displayed. For more information about recovering Extract by using the LOGBSN, see [Restarting a Primary Extract after System Failure or Corruption](#).

TASKS

Displays only Replicat tasks. Tasks that were specified by a wildcard argument are not displayed by INFO REPLICAT.

ALLPROCESSES

Displays all Replicat groups, including tasks.

Examples

```
INFO REPLICAT *, DETAIL, ALLPROCESSES
```

```
INFO REPLICAT *, TASKS
```

```
INFO REPLICAT repe, SHOWCH
```

The following example run the command from the Admin Client.

```
INFO REPLICAT repe
```

Output:

```
REPLICAT  REPE  Initialized  2019-11-20 23:54  Status STOPPED
Description          demo replicat
Checkpoint Lag       00:00:00 (updated 00:00:14 ago)
Log Read Checkpoint File ea000000000
                   First Record  RBA 0
Settings Profile     default_security
Encryption Profile   LocalWallet
```

INFO PROCEDURETRANDATA

Use `INFO PROCEDURETRANDATA` to display information about procedure-level supplemental database logging (Procedural Replication).

Use the `DBLOGIN` command to establish a database connection before using this command.

Syntax

```
INFO PROCEDURETRANDATA
```

INFO PARAM

Use `INFO PARAM` to retrieve the parameter definition information. If a name matches multiple records, they are all displayed. If the query parameter has child options, they are not displayed in the output though their names are listed in the Options tab. To display the full record of an option, the full name in the form of *parameter.option* should be queried separately.

This parameter infrastructure allows unlimited levels of options. So, the full name of a parameter or option might have numbers of segments, such as A.B.C.D.

Syntax

```
INFO PARAM name
```

name

The name of a parameter, an option, or a full name that is part of the several names concatenated together using dot ('.') as the delimiter.

Example 1

The following example uses `GETINSERTS` with `INFO PARAM` along with the output.

```
INFO PARAM GETINSERTS
```

Output:

```
param name  : getinserts
opposite    : ignoreinserts
description : Include insert records.
argument    : boolean
default     : true
component(s): EXTRACT - All
            : REPLICAT - All
platform(s) : All
database(s) : All
status      : current
mandatory   : false
dynamic     : false
relations   : none
```

Example 2

The following example uses the `DBOPTIONS.DEFERREFCONST` with `INFO PARAM` to show how to get specific details about a parameter option.

```
INFO PARAM DBOPTIONS.DEFERREFCONST
```

Output:

```
param name  : dboptions.deferrefconst
description : Sets constraints to DEFERRABLE to delay the checking and
enforcement of cascade delete and cascade update referential integrity
constraints by the Oracle target database until the Replicat transaction is
committed.
component(s): REPLICAT - All
platform(s) : All
database(s) : Oracle 11g
            : Oracle 12c
            : Oracle 18c
            : Oracle 19c
            : Oracle 21c
status      : current
mandatory   : false
dynamic     : false
relations   : none
```

INFO MASTERKEY

Use the `INFO MASTERKEY` command to view the contents of a currently open master-key wallet. If a wallet store does not exist, a new Wallet store file is created. This Wallet store file is then used to host different encrypted keys as they are created.

The default output shows the version history of the master key, with the creation date of a version and the status of the version. The status can be one of the following:

- **Current:** Indicates this is the current version of the master key, which is the latest version of the master key as well.

 **Note:**

Changing prior key versions to Current status is not allowed.

- **Available:** Indicates this version is not the current one but can be made active, if needed.
- **Deleted:** Indicates that this version is marked to be deleted when the `PURGE WALLET` command is issued.

The use of a wallet and master key is not supported for the NonStop platforms.

Syntax

```
INFO MASTERKEY [VERSION version]
```

VERSION *version*

Shows detailed information about a specific version of the master key. The output includes the original creation date, the latest renewal date, the status, and the hash of AES (Advanced Encryption Standard) Key.

Examples

```
INFO MASTERKEY
```

```
INFO MASTERKEY VERSION 7
```

Example: Admin Client

```
INFO MASTERKEY
```

Output:

```
Masterkey Name: OGG_DEFAULT_MASTERKEY
```

Version	Creation Date	Status
1	2019-11-21T19:37:23.000+00:00	Current

INFO HEARTBEATABLE

Use `INFO HEARTBEATABLE` to display information about the heartbeat tables configured in the database.

This command requires a `DBLOGIN`. For an Oracle multitenant database, the `DBLOGIN` to a PDB is required.

Oracle GoldenGate for Oracle database simplifies the administration of the heartbeat table by eliminating the need for `GGSCHEMA` or `HEARTBEATABLE` parameter. To implement this, Extracts and Replicat look in the schema of the ER processes connected user for the heartbeat tables, except for Oracle CDB root Extract. In case of CDB root Extract, `GGSCHEMA` is used.

Syntax

```
INFO HEARTBEATABLE
```

INFO EXTTRAIL

Use `INFO EXTTRAIL` to retrieve configuration information for a local trail. It shows the name of the trail, the Extract that writes to it, the position of the last data processed, and the assigned maximum file size.

Syntax

```
INFO EXTTRAIL trail_name
```

trail_name

The relative or fully qualified path name of the trail or a wildcard designating multiple trails. For example, `T*` shows information for all trail files whose names start with `T`.

Examples

```
INFO EXTTRAIL north\ea
```

```
INFO EXTTRAIL *
```

The following example shows the use of the `INFO EXTTRAIL` command from the Admin Client where the trail name is `aa`.

```
INFO EXTTRAIL ea
      Local Trail: EA
      Seqno Length: 6
      Flip Seqno Length: yes
```

```
Extract: exte
Seqno: 0
RBA: 0
File Size: 1500M
```

INFO EXTRACT

Use `INFO EXTRACT` to view the following information.

- The status of Extract (`STARTING`, `RUNNING`, `STOPPED` or `ABENDED`). `STARTING` means that the process has started but has not yet locked the checkpoint file for processing.
- Approximate Extract lag.
- Checkpoint information.
- Process run history.
- The trails to which Extract is writing.
- Status of upgrade to, or downgrade from, Integrated Extract

Extract can be running or stopped when `INFO EXTRACT` is issued. In the case of a running process, the status of `RUNNING` can mean one of the following:

- **Active:** Running and processing (or able to process) data. This is the normal state of a process after it is started.
- **Suspended:** The process is running, but suspended due to an `EVENTACTIONS SUSPEND` action. In a suspended state, the process is not active, and no data can be processed, but the state of the current run is preserved and can be continued by issuing the `SEND EXTRACT` command with the `RESUME` option. The RBA in the `INFO` command reflects the last checkpointed position before the suspend action. To determine whether the state is active or suspended, issue the `SEND EXTRACT` command with the `STATUS` option.

The basic command displays information only for online (continuous) Extract processes. Tasks are excluded.

About Extract Lag

The `Checkpoint Lag` field of the `INFO EXTRACT` output reflects the lag, in seconds, at the time that the last checkpoint was written to the trail. For example, if the following is true:

- Current time = 15:00:00
- Last checkpoint = 14:59:00
- Timestamp of the last record processed = 14:58:00

Then the lag is reported as 00:01:00 (one minute, the difference between 14:58 and 14:59).

A lag value of `UNKNOWN` indicates that the process could be running but has not yet processed records, or that the source system's clock is ahead of the target system's clock (due to clock imperfections, not time zone differences), see [LAG EXTRACT](#). For a more precise calculation of the lag and for determining the overall lag, use the heartbeat table. See [ADD HEARTBEATTABLE](#).

Syntax

```
INFO EXTRACT group_name  
[, SHOWCH [checkpoint_number]]  
[, DETAIL]  
[, TASKS | ALLPROCESSES]  
[, UPGRADE | DOWNGRADE]  
[, CONTAINERS]
```

group_name

The name of an Extract group or a wildcard (*) to specify multiple groups. For example, `T*` shows information for all Extract groups whose names start with T. You can list the PDBs registered with a specified Extract group name.

SHOWCH [*checkpoint_number*]

The basic command shows information about the current Extract checkpoints. Extract checkpoint positions are composed of read checkpoints in the data source and write checkpoints in the trail. The trail type `RMTTRAIL` or `EXTTRAIL` is also noted.

Optionally, specify a value for *checkpoint_number* to include the specified number of previous checkpoints as well as the current one.



Note:

You might see irregular indents and spacing in the output. This is normal and does not affect the accuracy of the information.

See [About Checkpoints](#), which includes descriptions of the types of checkpoints made by each process and the internal metadata entries that are included in the display.

DETAIL

Displays the following:

- Extract run history, including start and stop points in the data source, expressed as a time.
- Trails to which Extract is writing.

TASKS

Displays only Extract tasks. Tasks that were specified by a wildcard argument are not displayed by `INFO EXTRACT`.

ALLPROCESSES

Displays all Extract groups, including tasks.

UPGRADE | DOWNGRADE

Valid for an Oracle Database only.

- `UPGRADE` displays whether the Extract can be upgraded from classic capture mode to integrated capture mode.
- `DOWNGRADE` displays whether the Extract can be downgraded from integrated capture mode to classic capture mode.

If Extract cannot be upgraded or downgraded, the reason why is displayed.

A wildcarded Extract name is not allowed with this option.
Before using this command, issue the `DBLOGIN` command.

CONTAINERS

Lists the PDBs that are registered with the specified Extract group. However, the command errors if it is run in non-CDB mode or the Extract group doesn't exist. Issue the `DBLOGIN` command before using this option.

Examples

```
INFO EXTRACT ext*, SHOWCH
```

```
INFO EXTRACT *, TASKS
```

```
INFO EXTRACT exte UPGRADE
```

The following example shows the use of the `INFO EXTRACT` command from the Admin Client.

```
INFO EXTRACT exte
```

```
EXTRACT   exte  Initialized   2019-11-20 23:22   Status STOPPED
Checkpoint Lag      00:00:00 (updated 00:00:09 ago)
Log Read Checkpoint Oracle Redo Logs
                  2019-11-20 23:22:54   Seqno 0, RBA 0
                  SCN 0.0 (0)
Auto Start          Delay:    0
Encryption Profile  LocalWallet
```

The following example shows the command output with `DBLOGIN` for PostgreSQL:

```
EXTRACT extw
Last Started 2020-07-01 01:40 Status RUNNING
Checkpoint Lag 00:00:00 (updated 00:00:09 ago)
Process ID 101094
VAM Read Checkpoint 2020-07-01 01:40:15.170802

Replication Slot edf_tc1_2c59ae112747afaf1 is active with PID 101120 in
database postgres
Slot Restart LSN 1/B982ED98
Slot Flush LSN 1/B982ED98
Current Log Position 1/B982EDD0
```

The following example shows the command output without `DBLOGIN` for PostgreSQL:

```
EXTRACT extw Last Started 2020-07-01 01:40 Status RUNNING
Checkpoint Lag 00:00:00 (updated 00:00:04 ago)
Process ID 101094
VAM Read Checkpoint 2020-07-01 01:44:16.045693
LSN: 1/B99B7E60
Replication Slot Unavailable(requires DBLOGIN)
Slot Restart LSN Unavailable(requires DBLOGIN)
Slot Flush LSN Unavailable(requires DBLOGIN)
Current Log Position Unavailable(requires DBLOGIN)
```

INFO ER

Use the `INFO ER` command to get information on multiple Extract and Replicat groups as a unit. Use it with wildcards to affect every Extract and Replicat group that satisfies the wildcard. This information is returned:

- The status of Extract (`STARTING`, `RUNNING`, `STOPPED` or `ABENDED`). `STARTING` means that the process has started but has not yet locked the checkpoint file for processing.
- Approximate Extract lag.
- Checkpoint information.
- Process run history.
- The trails to which Extract is writing.
- Status of upgrade to, or downgrade from, integrated capture. The process can be running or stopped when `INFO ER` is issued. With a running process, the status of `RUNNING` can mean one of the following:
 - Active: Running and processing (or able to process) data. This is the normal state of a process after it is started.
 - Suspended: The process is running, but suspended due to an `EVENTACTIONS SUSPEND` action. In a suspended state, the process is not active, and no data can be processed, but the state of the current run is preserved and can be continued by issuing the `SEND` command with the `RESUME` option. The RBA in the `INFO` command reflects the last checkpointed position before the suspend action. To determine whether the state is active or suspended, issue the `SEND` command with the `STATUS` option.

GGSCI Syntax

```
INFO ER group_wildcard
```

group_wildcard

The wildcard specification for the groups that you want to affect with the command. Oracle GoldenGate automatically increases internal storage to track up to 100,000 wildcard entries.

`SHOWCH checkpoints-number`

The basic command shows information about the current Extract checkpoints. Extract checkpoint positions are composed of read checkpoints in the data source and write checkpoints in the trail. The trail type (`RMTTRAIL` or `EXTTRAIL`) is also noted.

Optionally, specify a value for checkpoints-number to include the specified number of previous checkpoints as well as the current one.



Note:

You might see irregular indents and spacing in the output. This is normal and does not affect the accuracy of the information.

DETAIL

Displays the Extract run history, including start and stop points in the data source expressed as a time and the trails to which Extract is writing.

TASKS

Displays Extract tasks only. Tasks that were specified by a wildcard argument are not displayed by `INFO EXTRACT`.

ALLPROCESSES

Displays all Extract groups, including tasks.

Example

```
INFO ER *
```

The output for this command is similar to the following:

```
Extract      EXTE      Last Started 2022-06-07 07:33   Status RUNNING
Description          east
Checkpoint Lag      00:00:00 (updated 00:00:05 ago)
Process ID          60782
Log Read Checkpoint Oracle Integrated Redo Logs
                    2022-09-05 23:17:19
                    SCN 0.89996333 (89996333)
Settings Profile    Default
Encryption Profile LocalWallet

Replicat      REPE      Last Started 2022-06-15 03:45   Status RUNNING
Description          east
INTEGRATED
Parallel
Checkpoint Lag      00:00:00 (updated 00:00:08 ago)
Process ID          96740
Log Read Checkpoint File east/ea000000009
                    2022-09-05 23:17:19.808198   RBA 9382
Settings Profile    Default
Encryption Profile LocalWallet
```

INFO CREDENTIALSTORE

Use the `INFO CREDENTIALSTORE` command to get information about an Oracle GoldenGate credential store. This information includes the aliases that a credential

store contains and the user IDs that correspond to them. The encrypted passwords in the credential store are not returned.

The credential store location is identified by the `CREDENTIALSTORELOCATION` parameter in the `GLOBALS` file.

The use of a credential store is not supported for the NonStop platforms.

Syntax

```
INFO CREDENTIALSTORE [DOMAIN domain]
```

DOMAIN *domain*

Returns the aliases and user IDs for a specific domain. For security purposes, if the `DOMAIN` option is omitted, only the aliases and user IDs under the default domain of `OracleGoldenGate` are shown. It is not possible to see `DOMAIN` credentials unless the person issuing the `INFO CREDENTIALSTORE` command knows the name of the domain. See [ALTER CREDENTIALSTORE](#) for more information about domains.

Examples

```
INFO CREDENTIALSTORE
```

```
INFO CREDENTIALSTORE DOMAIN support
```

Example:

The following example shows credential store domain as `Oracle GoldenGate` with the alias set up as `ggeast` and the user ID as `ggadmin`.

```
INFO CREDENTIALSTORE DOMAIN OracleGoldenGate
Default domain: OracleGoldenGate
  Alias: ggeast
  Userid: ggadmin
```

KILL ER

Use the `KILL ER` command to forcefully terminate multiple Extract and Replicat groups as a unit. Use it with wildcards to affect every Extract and Replicat group that satisfies the wildcard.

Terminating a process leaves the most recent checkpoint in place, and the current transaction is rolled back by the database, guaranteeing that no data is lost when the process is restarted. Use this command only if the process cannot be stopped gracefully with the `STOP REPLICAT` command.

Syntax

```
KILL ER group_name
```

group_name

The name of the group to close. A wildcard can be used for the group name. Oracle GoldenGate automatically increases internal storage to track up to 100,000 wildcard entries.

Example

```
KILL ER extegrp
```

KILL EXTRACT

Use `KILL EXTRACT` to end an Extract process running in regular or `PASSIVE` mode. Use this command only if a process cannot be stopped gracefully with the `STOP EXTRACT` command. The Manager process will not attempt to restart an ended Extract process.

Syntax

```
KILL EXTRACT group_name
```

group_name

The name of an Extract group or a wildcard (*) to specify multiple groups. For example, `T*` ends all Extract processes whose group names start with T.

Example

```
KILL EXTRACT exte
```

KILL REPLICAT

Use `KILL REPLICAT` to terminate a Replicat process, which leaves the most recent checkpoint in place and the current transaction is rolled back by the database. This guarantees that no data is lost when the process is restarted.

The Manager process will not attempt to restart a terminated Replicat process. Use this command only if Replicat cannot be stopped gracefully with the `STOP REPLICAT` command.

Syntax

```
KILL REPLICAT group_name
```

group_name

The name of a Replicat group or a wildcard (*) to specify multiple groups. For example, `T*` terminates all Replicat processes whose group names begin with T.

Example

```
KILL REPLICAT repe
```

LAG ER

Use the `LAG ER` to get lag information on multiple Extract and Replicat groups as a unit. Use it with wildcards to affect every Extract and Replicat group that satisfies the wildcard. For descriptions and optional parameters for this command, see `LAG EXTRACT`.

Syntax

```
LAG ER group_name
```

group_name

The name of a group or a wildcard (*) to specify multiple groups. Oracle GoldenGate automatically increases internal storage to track up to 100,000 wildcard entries.

Example

```
LAG ER exte
```

The output is similar to the following:

```
Sending GETLAG request to Extract group EXTE ...
```

```
Last record lag 2 seconds.
```

```
At EOF, no more records to process
```

```
No Replicat groups found, but some coordinated threads may have been  
excluded.
```

LAG EXTRACT

Use `LAG EXTRACT` to determine a true lag time between Extract and the data source. `LAG EXTRACT` calculates the lag time more precisely than `INFO EXTRACT` because it communicates with Extract directly, rather than reading a checkpoint position in the trail.

For Extract, lag is the difference, in seconds, between the time that a record was processed by Extract (based on the system clock) and the timestamp of that record in the data source.

If the heartbeat functionality is enabled, you can view the associated lags.

GGSCI Syntax

```
LAG EXTRACT  
[, group_name]  
[, GLOBAL]
```

group_name

The name of an Extract group or a wildcard (*) to specify multiple groups. For example, `T*` determines lag time for all Extract groups whose names start with T.

GLOBAL

Displays the lags in the `GG_LAGS` view.

Examples

```
LAG EXTRACT *
```

```
LAG EXTRACT *ext*
```

The following is sample output for LAG EXTRACT.

```
Sending GETLAG request to EXTRACT CAPTPCC...  
Last record lag: 2 seconds.  
At EOF, no more records to process.
```

LAG REPLICAT

Use LAG REPLICAT to determine a true lag time between Replicat and the trail. LAG REPLICAT estimates the lag time more precisely than INFO REPLICAT because it communicates with Replicat directly rather than reading a checkpoint position.

For Replicat, lag is the difference, in seconds, between the time that the last record was processed by Replicat (based on the system clock) and the timestamp of the record in the trail.

If the heartbeat functionality is enabled, you can view the associated lags. A DBLOGIN is required to view the heartbeat lag.

From 21c onward, the DB_UNIQUE_NAME is displayed if it exists for a remote database, otherwise the DB_NAME value is displayed.

GGSCI Syntax

```
LAG EXTRACT [, group_name[threadID]name]  
[, GLOBAL]
```

group_name[threadID]

The name of:

- A Replicat group or a wildcard (*) to specify multiple groups. For example, T* shows lag for all Replicat groups whose names begin with T.
- A thread of a coordinated Replicat, identified by its full name. For example, repe003 shows lag for thread 3 of coordinated Replicat repe.

GLOBAL

Displays the lags in the GG_LAGS view.

Examples

```
LAG REPLICAT *
```

```
LAG REPLICAT *repe*
```

LIST TABLES

Use `LIST TABLES` to list all tables in the database that match the specification provided with the command argument. Use the `DBLOGIN` command to establish a database connection before using this command. If logging into an Oracle multitenant container database, log in to the pluggable database that contains the tables that you want to list.

If you want to list all the tables that are enabled for auto capture, then use the `auto_capture` option. This option is only valid for Oracle Database 21c or higher. You need to establish a database connection (using `DBLOGIN` command) before using this command. If you are unable to establish a connection or don't have the required privileges, the option will not work.

Syntax

```
LIST TABLES table
```

The following syntax applies when using the `auto_capture` option.

```
LIST TABLES [container.]owner.table [AUTO_CAPTURE]
```

table

The name of a table or a group of tables specified with a wildcard (*).

[*container.*]owner.*table*

The command accepts a two-part name in non-CDB mode and a three-part name in CDB mode. Supported wildcards are ? and * for single and zero or more character matching respectively. In GGSCI, `container/schema/table` can have a wildcard specified. Table name can have wildcards. When the command is successful, the output shows the list of tables enabled for auto capture matching the input criteria.

Example

The following shows a `LIST TABLES` command and sample output.

```
LIST TABLES empl*  
hr.employees
```

Example

The following example shows a `LIST TABLES` command listing tables enabled for auto capture:

```
LIST TABLES hr.emp* AUTO_CAPTURE
```

The output is similar to the following:

```
2022-09-06T06:31:09Z INFO OGG-15189 Default catalog name DBEAST
will be used for table specification hr.emp*.
"DBEAST"."HR"."EMPLOYEES"
"DBEAST"."HR"."EMP_DETAILS_VIEW"

Found 2 tables matching list criteria.
```

MININGDBLOGIN

Use `MININGDBLOGIN` to establish a connection to a downstream Oracle database logmining server in preparation to issue other Oracle GoldenGate commands that affect this database, such as `REGISTER EXTRACT`.

To log into a source Oracle Database that serves as the database logmining server, use the `DBLOGIN` command. `MININGDBLOGIN` is reserved for login to a downstream mining database.

The user who issues `MININGDBLOGIN` must:

- have privileges granted through the Oracle `dbms_goldengate_auth.grant_admin_privilege` procedure.
- be the user that is specified with the `TRANLOGOPTIONS MININGUSER` parameter for the Extract group that is associated with this `MININGDBLOGIN`.

GGSCI Syntax

```
MININGDBLOGIN {
USERID {/ | userid}[, PASSWORD password]
  [algorithm ENCRYPTKEY {keyname | DEFAULT}] |
USERIDALIAS alias [DOMAIN domain] |
[SYSDBA]
}
```

USERID

Supplies a database login credential. Can be used if an Oracle GoldenGate credential store is not in use. (See the `USERIDALIAS` option.) Input varies, depending on the database, as follows:

userid

Specifies the name of a database user or a SQL*Net connect string. To log into a pluggable database in an Oracle multitenant container database, specify *userid* as a connect string, such as `oggadmin@orcl`. To log into the root container, specify *userid* as a common user, including the `c##` prefix, such as `c##ggadmin@ggnorth`.

/

The `NOPASSWORD` option is the alternative to the `PASSWORD` option when using external authentication because password is not required for external authentication such as using Kerberos authentication. After the `NOPASSWORD` option is set, the `MININGDBLOGIN` command can be used to access the database without a password.

(Oracle) Directs Oracle GoldenGate to use an operating-system login for Oracle, not a database user login. Use this argument only if the database allows authentication at the operating-system level. To use this option, the correct user name must exist in the database, in relation to the value of the Oracle `OS_AUTHENT_PREFIX` initialization parameter, see the `USERID` | `NOUSERID` parameter.

NOPASSWORD | **PASSWORD** *password*

The `NOPASSWORD` option is the alternative to the `PASSWORD` option when using external authentication because password is not required for external authentication such as using Kerberos authentication. After the `NOPASSWORD` option is set, the `DBLOGIN` command can be used to access the database without a password.

Use when authentication is required to specify the password for the database user. If the password was encrypted by means of the `ENCRYPT PASSWORD` command, supply the encrypted password; otherwise, supply the clear-text password. If the password is case-sensitive, type it that way.

If the `PASSWORD` clause is omitted, you are prompted for a password, and the password is not echoed.

algorithm

If the password was encrypted with the `ENCRYPT PASSWORD` command, specify the encryption algorithm that was used:

AES128

AES192

AES256

ENCRYPTKEY {*keyname* | **DEFAULT**}

Specifies the encryption key that was specified with the `ENCRYPT PASSWORD` command.

Use one of the following:

ENCRYPTKEY *keyname*

Specifies the logical name of a user-created encryption key in the `ENCKEYS` lookup file. Use if `ENCRYPT PASSWORD` was used with the `KEYNAME` *keyname* option.

ENCRYPTKEY **DEFAULT**

Directs Oracle GoldenGate to generate a Blowfish key. Use if the `ENCRYPT PASSWORD` command was used with the `KEYNAME` **DEFAULT** option.

USERIDALIAS *alias* [**DOMAIN** *domain*]

Supplies the alias of a database login credential. Can be used instead of the `USERID` option if there is a local Oracle GoldenGate credential store that contains a credential with the required privileges for this `MININGDBLOGIN` command.

To log into a pluggable database in an Oracle multitenant container database, the user must be stored as a connect string, such as `OGGUSER@FINANCE`. To log into the root container, the user must be stored as a common user, including the `c##` prefix, such as `c##ggadmin@eggnorth`.

alias

Specifies the alias of a database user credential that is stored in the Oracle GoldenGate credential store. The user that is specified with `USERIDALIAS` must be the common database user.

DOMAIN domain

Specifies the credential store domain for the specified alias. A valid domain entry must exist in the credential store for the specified alias.

SYSDBA

(Oracle) Specifies that the user logs in as `sysdba`. This option can be used for `USERID` and `USERIDALIAS`.

Examples

```
MININGDBLOGIN USERIDALIAS ggeast
```

```
MININGDBLOGIN USERID ggadmin@pdbeast.example.com, PASSWORD
AACAAAAAAAAAAAAJAUEUGODSCVJEEIUGKJDJTFNDKEJFFFTC AES128, ENCRYPTKEY
securekey1
```

OBEY

Use `OBEY` to process a file that contains a list of Oracle GoldenGate commands. `OBEY` is useful for executing commands that are frequently used in sequence.

You can call one `OBEY` file from another one. This is called a nested `OBEY` file. You can nest up to 16 `OBEY` files. To use nested `OBEY` files, you must enable the functionality by first issuing the `ALLOWNESTED` command, see [ALLOWNESTED](#).

Syntax

```
OBEY file_name
```

file_name

The relative or fully qualified path name of the file that contains the list of commands.

Examples

```
OBEY ./mycommands.txt
```

```
ADD EXTRACT exte, TRANLOG, BEGIN NOW
add exttrail east/ea, EXTRACT exte
ADD EXTRACT extw, TRANLOG, BEGIN NOW
ADD EXTRACT west/ew, EXTRACT extw
```

```
ADD REPLICAT repe, EXTTRAIL east/ea, BEGIN NOW
ADD REPLICAT repw, EXTTRAIL west/ew, BEGIN NOW
```

The preceding command executes the `mycommands.txt` file and displays its content with the `ADD` commands.

The following example displays the content of the `startcmds.txt` file.

```
OBEY ./startcmds.txt

START EXTRACT *
INFO EXTRACT *, DETAIL
START REPLICAT *
INFO REPLICAT *, DETAIL
```

PURGE WALLET

Use the `PURGE WALLET` command to permanently remove master key versions from the master-key wallet. Only the versions that are marked for deletion by the `DELETE MASTERKEY` command are removed. The purge is not reversible.

Note:

For Oracle GoldenGate deployments using a shared wallet, the older versions of the master key should be retained after the master key is renewed until all processes are using the newest version. The time to wait depends on the topology, latency, and data load of the deployment. A minimum wait of 24 hours is a conservative estimate, but you may need to perform testing to determine how long it takes for all processes to start using a new key. To determine whether all of the processes are using the newest version, view the report file of each Extract immediately after renewing the master key to confirm the last SCN that was mined with the old key. Then, monitor the Replicat report files to verify that this SCN was applied by all Replicat groups. At this point, you can delete the older versions of the master key.

The `OPEN WALLET` command must be used before using this command or any of the commands that add, renew, or delete the master keys in the wallet.

After purging a wallet that is not maintained centrally on shared storage, the updated wallet can be copied to all of the other systems in the Oracle GoldenGate configuration that use this wallet, so that no purged keys remain in the configuration. Before doing so, Extract must be stopped and then all of the downstream Oracle GoldenGate processes must be allowed to finish processing their trails and then be stopped. After the wallet is copied into place, the processes can be started again.

Syntax

```
PURGE WALLET
```

RENEW MASTERKEY

Use the `RENEW MASTERKEY` command to create a new version of the master encryption key in the master-key wallet. The key name remains the same, but the bit ordering is different. All versions of a master key remain in the wallet until they are marked for deletion with the `DELETE MASTERKEY` command and then the wallet is purged with the `PURGE WALLET` command.

The `OPEN WALLET` command must be used before using this command or any of the commands that add or delete the master keys or purge the wallet.

After renewing a master key in a wallet that is not maintained centrally on shared storage, the updated wallet must be copied to all of the other systems in the Oracle GoldenGate configuration that use this wallet. Before doing so, Extract must be stopped and then all of the downstream Oracle GoldenGate processes must be allowed to finish processing their trails and then be stopped. After the wallet is copied into place, the processes can be started again..

Syntax

```
RENEW MASTERKEY
```

Example

```
RENEW MASTERKEY
```

REGISTER EXTRACT

This command applies to Oracle Database and PostgreSQL.

Oracle database

For Oracle database, use `REGISTER EXTRACT` to register a primary Extract group with an Oracle database to:

- Enable integrated capture mode
- Specify options for integrated Extract from a multitenant container database

`REGISTER EXTRACT` is not valid for a data pump Extract.

To unregister an Extract group from the database, use the [UNREGISTER EXTRACT](#) command.

PostgreSQL

Using this command, a replication slot is created in the connected source database for PostgreSQL. This command ensures that the PostgreSQL database does not purge the transaction log until the replication slot is moved or removed. The `REGISTER EXTRACT` command must be run before running the `ADD EXTRACT` command. A database connection using `DBLOGIN` is required before registering the Extract.

Syntax

From Oracle GoldenGate 21.3 release onward, it's not mandatory to enter the *database_name*.

Syntax

Oracle:

```
REGISTER EXTRACT group-name
  ( | DATABASE
    ( [ CONTAINER container-list |
      ADD CONTAINER container-list |
      DROP CONTAINER container-list ]
      [ SCN scn ]
      [ SHARE ( AUTOMATIC | group-name | NONE ) ]
      [ [NO]OPTIMIZED ]
    )
  )
```

Container-list is a comma separated list of PDB names, for example (pdbeast, pdbwest); or wildcarded PDB names, for example (pdb* or pdb?); or both, for example (cdbnorth, pdb*). Supported wildcards are ? and *.

The OPTIMIZED option improves Extract fast startup. The default value is NOOPTIMIZED. The OPTIMIZED option only impacts an upstream non multitenant configuration.

PostgreSQL:

```
REGISTER EXTRACT Extract
```

or:

```
REGISTER EXTRACT Extract with DATABASE database_name
```

A replication slot is created in the database for the given Extract group name.

group_name

The name of the Extract group that is to be registered. Do not use a wildcard.

```
DATABASE [
CONTAINER (container[, ...]) |
ADD CONTAINER (container[, ...]) |
DROP CONTAINER (container[, ...])
]
```

Without options, DATABASE enables integrated capture from a non-CDB database for the Extract group. In this mode, Extract integrates with the database logmining server to receive change data in the form of logical change records (LCR). Extract does not read the redo logs. Extract performs capture processing, transformation, and other requirements. The DML filtering is performed by the logmining server.

Before using REGISTER EXTRACT with DATABASE, use the [DBLOGIN](#) command for all Extracts with the privileges granted using the `dbms_goldengate_auth.grant_admin_privilege` procedure. If you have a downstream configuration, then you must also issue the [MININGDBLOGIN](#) command. If the source database you are registering is a CDB database

and Extract will fetch data, then `grant_admin_privilege` must be called with the `CONTAINER=>'ALL'` parameter.

After using `REGISTER EXTRACT`, use `ADD EXTRACT` with the `INTEGRATED TRANLOG` option to create an Extract group of the same name.

CONTAINER (*container*[, ...])

Applies the registration to a list of one or more pluggable databases (containers) of a multitenant container database (CDB). Specify one or more pluggable databases as a comma-delimited list within parentheses, for example: `CONTAINER (pdbeast, pdbwest)`. If you list the pluggable databases, they must exist in the database. You can also specify the pluggable databases using the wildcards `*` and `?`. For example, `CONTAINER (pdb*)`.

ADD CONTAINER (*container*[, ...])

Adds the specified pluggable database to an existing Extract capture configuration. Specify one or more pluggable databases as a comma-delimited list within parentheses or using the wildcards `*` and `?`. For example: `ADD CONTAINER (pdbeast, pdbwest)`. Before issuing `REGISTER EXTRACT` with this option, stop the Extract group.

For Oracle, adding containers at particular SCN on an existing Extract is not supported.

DROP CONTAINER (*container*[, ...])

Drops the specified pluggable database from an existing Extract capture configuration. Specify one or more pluggable databases as a comma-delimited list within parentheses or using the wildcards `*` and `?`. For example, `DROP CONTAINER (pdbeast, pdbwest)`.

Registering the Extract after running the `drop container` option, does not fully happen until the Extract has been started and it reads a committed transaction from a dropped pluggable database, which is greater than the Extract checkpoint SCN. Extract then fully drops the containers and shuts down with a message.

Before running `REGISTER EXTRACT` with this option, stop the Extract group.

SCN system change number

Registers Extract to begin capture at a specific system change number (SCN) in the past. Without this option, capture begins from the time that `REGISTER EXTRACT` is issued. The specified SCN must correspond to the begin SCN of a dictionary build operation in a log file. You can issue the following query to find all valid SCN values:

```
SELECT first_change#
   FROM v$archived_log
  WHERE dictionary_begin = 'YES' AND
        standby_dest = 'NO' AND
        name IS NOT NULL AND
        status = 'A';
```

When used alone, the SCN value is the beginning SCN of the dictionary build operation in a log file.

When used in conjunction with `SHARE AUTOMATIC` or `SHARE extract_name`, then the specified SCN is the `start_scn` for the capture session and has the following restrictions:

- Should be lesser than or equal to the current SCN.

- Should be greater than the minimum (first SCN) of the existing captures.

```
{SHARE [
AUTOMATIC |
extract |
NONE]}
```

Registers the Extract to return to an existing LogMiner data dictionary build with a specified SCN creating a clone. This allows for faster creation of Extracts by leveraging existing dictionary builds.

SHARE cannot be used on a CDB.

The following commands are supported:

```
REGISTER EXTRACT extract database SCN ##### SHARE AUTOMATIC
REGISTER EXTRACT extract database SCN ##### SHARE extract
REGISTER EXTRACT extract database SHARE NONE
REGISTER EXTRACT extract database SCN ##### SHARE NONE
```

Or

```
REGISTER EXTRACT extract DATABASE SHARE NONE
REGISTER EXTRACT extract DATABASE SCN ##### SHARE NONE
```

In contrast, the following commands are *not* supported in a downstream configuration:

```
REGISTER EXTRACT extract DATABASE SHARE AUTOMATIC
REGISTER EXTRACT extract DATABASE SHARE extract
```

AUTOMATIC

Clone from the existing closest capture. If no suitable clone candidate is found, then a new build is created.

extract

Clone from the capture session associated for the specified Extract. If this is not possible, then an error occurs the register does not complete.

NONE

Does not clone or create a new build; this is the default.

In a downstream configuration, the SHARE clause *must* be used in conjunction with the SCN clause when registering for Extract.

Examples

```
REGISTER EXTRACT exte LOGRETENTION
```

```
REGISTER EXTRACT exte DATABASE
```

```
REGISTER EXTRACT exte DATABASE CONTAINER (pdbeast, pdbwest, pdbsouth)
```

```
REGISTER EXTRACT exte DATABASE ADD CONTAINER (pdbname)
```

```
REGISTER EXTRACT exte DATABASE DROP CONTAINER (pdbname)
```

```
REGISTER EXTRACT exte DATABASE SCN 136589
```

The beginning SCN of the dictionary build is 136589.

```
REGISTER EXTRACT exte DATABASE SCN 67000 SHARE extw
```

The valid start SCN, 67000 in this case; it is not necessarily the current SCN.

```
REGISTER EXTRACT exte DATABASE CONTAINER (pdbeast, pdbeast, pdbsouth)  
SCN 136589
```

Examples

For PostgreSQL:

```
REGISTER EXTRACT exte WITH DATABASE hr
```

RENEW MASTERKEY

Use the `RENEW MASTERKEY` command to create a new version of the master encryption key in the master-key wallet. The key name remains the same, but the bit ordering is different. All versions of a master key remain in the wallet until they are marked for deletion with the `DELETE MASTERKEY` command and then the wallet is purged with the `PURGE WALLET` command.

The `OPEN WALLET` command must be used before using this command or any of the commands that add or delete the master keys or purge the wallet.

After renewing a master key in a wallet that is not maintained centrally on shared storage, the updated wallet must be copied to all of the other systems in the Oracle GoldenGate configuration that use this wallet. Before doing so, Extract must be stopped and then all of the downstream Oracle GoldenGate processes must be allowed to finish processing their trails and then be stopped. After the wallet is copied into place, the processes can be started again..

Syntax

```
RENEW MASTERKEY
```

Example

```
RENEW MASTERKEY
```

SEND EXTRACT

Use `SEND EXTRACT` to communicate with a running Extract process. The request is processed as soon as Extract is ready to accept commands from users.

Syntax

```
SEND EXTRACT group_name, {
BR {BRINTERVAL interval |
    BRSTART |
    BRSTOP |
    BRCHECKPOINT {IMMEDIATE | IN n{M|H} | AT yyyy-mm-dd hh:mm[:ss]}} |
BR BRFSOPTION { MS_SYNC | MS_ASYNC }
BR BRSTATS
BR BRSTATUS
CACHEMGR {CACHESTATS {CACHEALL | CACHEMINIMAL | CACHESUPERPOOL |
    CACHECURRENTPOOL} | CACHEQUEUEUES | CACHEPOOL n} |
CACHEMGR CACHEFSOPTION { MS_SYNC | MS_ASYNC } |
FORCESTOP |
FORCETRANS transaction_ID [FORCE] |
GETLAG |
GETPARAMINFO [parameter_name] [FILE output_file] |
GETTCPSTATS |
LOGEND |
LOGSTATS |
REPORT |
RESUME |
ROLLOVER |
SHOWTRANS [transaction_ID] [COUNT n]
    [DURATION duration_unit] [TABULAR]
    [FILE file_name [DETAIL]] [ALL]|
SKIPTRANS transaction_ID [FORCE] |
STATUS |
STOP |
TRACE[2] file_name |
TRACE[2] OFF |
TRACE OFF file_name |
TRACEINIT |
TRANLOGOPTIONS INTEGRATEDPARAMS(parameter_specification) |
TRANLOGOPTIONS {TRANLOGOPTIONS {PURGEORPHANEDTRANSACTIONS |
    NOPURGEORPHANEDTRANSACTIONS} |
TRANLOGOPTIONS TRANCLEANUPFREQUENCY minutes |
VAMMESSAGE 'Teradata_command' |
VAMMESSAGE {'ARSTATS' | 'INCLUDELIST [filter]' | 'FILELIST [filter]' |
    'EXCLUDELIST [filter']}' |
VAMMESSAGE 'OPENTRANS'
}
```

group_name

The name of the Extract group or a wildcard (*) to specify multiple groups. For example, T* sends the command to all Extract processes whose group names start with T. If an Extract is not running, an error is returned.

BR {**BRINTERVAL** *interval* | **BRSTART** | **BRSTOP** | **BRCHECKPOINT** {**IMMEDIATE** | **IN** *n*{**H**|**M**} | **AT** *yyyy-mm-dd[hh:mm[:ss]]*}}

Sends commands that affect the Bounded Recovery mode of Extract.

BRINTERVAL *interval*

Sets the time between Bounded Recovery checkpoints. Valid values are from 20 minutes to 96 hours specified as **M** for minutes or **H** for hours, for example 20**M** or 2**H**. The default interval is 4 hours.

BRSTART

Starts Bounded Recovery. This command should only be used under direction of Oracle Support.

BRSTOP

Stops Bounded Recovery for the run and for recovery. Consult Oracle Support before using this option. In most circumstances, when there is a problem with Bounded Recovery, it turns itself off.

BRCHECKPOINT {**IMMEDIATE** | **IN** *n*{**H**|**M**} | **AT** *yyyy-mm-dd[hh:mm[:ss]]*}}

Sets the point at which a bounded recovery checkpoint is made. **IMMEDIATE** issues the checkpoint immediately when **SEND EXTRACT** is issued. **IN** issues the checkpoint in the specified number of hours or minutes from when **SEND EXTRACT** is issued. **AT** issues the checkpoint at exactly the specified time.

BR BRFSOPTION {**MS_SYNC** | **MS_ASYNC**}

Performs synchronous/asynchronous writes of the mapped data in Bounded Recovery.

MS_SYNC

Bounded Recovery writes of mapped data are synchronized for I/O data integrity completion.

MS_ASYNC

Bounded Recovery writes of mapped data are initiated or queued for servicing.

BR BRSTATS

Provides details on each of the object pools, which were persisted by BR. This includes the following details:

- Object sizes through life of the Extract group
- Object ages through the life of Extract group
- Extant object sizes as of the most recent BCP
- Extant object ages as of the most recent BCP

BR BRSTATUS

Returns status for the Bounded Recovery mode of Extract. It shows the following:

- Current settings of the BR parameter.

- Current status of the Bounded Recovery, if one was performed, with current checkpoint interval, timestamps for the next and last checkpoints, and the total and outstanding number of objects and sizes when BR is in progress.
- Start and end sequence, RBA, SCN, and timestamp for the Bounded Recovery checkpoint positions (per redo thread).

CACHEMGR {CACHESTATS | CACHEQUEUES | CACHEPOOL *n*}

Returns statistics about the Oracle GoldenGate memory cache manager. **CACHESTATS** should only be used as explicitly directed by Oracle Support.

CACHESTATS {CACHEALL | CACHEMINIMAL | CACHESUPERPOOL | CACHEDCURRENTONLY}
CACHESTATS returns statistics for virtual memory usage and file caching.

CACHEALL

Returns all COM statistics and is the default option.

CACHESUPERPOOL

Super pool statistics. Returns statistics about all object pools.

CACHEDCURRENTONLY

Returns statistics only for the run time.

CACHEMINIMAL

Returns condensed (minimal) version of COM stats whereas **CACHEALL** returns all statistics.

CACHEQUEUES

Returns statistics for the free queues only.

CACHEPOOL *n*

Returns statistics for the specified object pool only.

CACHEMGR CACHEFSOPTION {MS_SYNC | MS_ASYNC}

Performs synchronous or asynchronous writes of the mapped data in the Oracle GoldenGate memory cache manager.

FORCESTOP

Forces Extract to stop, bypassing any notifications. This command will stop the process immediately.

FORCETRANS *transaction_ID* [THREAD *n*] [FORCE]

Valid for DbLUW, Db2 IBM, MySQL, Oracle, and SQL Server.

Forces Extract to write a transaction specified by its transaction ID number to the trail as a committed transaction. **FORCETRANS** does not commit the transaction to the source database. It only forces the existing data to the trail so that it is processed (with an implicit commit) by Replicat. You can repeat **FORCETRANS** for other transactions in order of their age. Note that forcing a transaction to commit to the trail (and therefore the target database) may cause data discrepancies if the transaction is rolled back by the source user applications.

After using **FORCETRANS**, wait at least five minutes if you intend to issue **SEND EXTRACT** with **FORCESTOP**. Otherwise, the transaction will still be present.

If **FORCETRANS** is used immediately after Extract starts, you might receive an error message that asks you to wait and then try the command again. This means that no other transactions have been processed yet by Extract. Once another transaction is processed, you will be able to force the transaction to trail.

transaction_ID

The ID of the transaction. Get the transaction ID number with `SHOWTRANS` or from an Extract runtime message. Extract ignores any data added to the transaction after this command is issued. A confirmation prompt must be answered unless `FORCE` is used. To use `FORCETRANS`, the specified transaction must be the oldest one in the list of transactions shown with `SHOWTRANS`.

FORCE

Valid for Oracle and SQL Server. Not valid for MySQL.
Use `FORCE` to bypass the confirmation prompt.

GETLAG

Determines a true lag time between Extract and the data source. Returns the same results as [LAG EXTRACT](#).

GETPARAMINFO [parameter_name] [FILE output_file]

Use `GETPARAMINFO` to query runtime parameter values of a running instance, including Extract, Replicat, and Manager. You can query for a single parameter or all parameters and send the output to the console or a text file

parameter_name

The default behavior is to display all parameters in use, meaning those parameters that have ever been queried by the application, parameters, and their current values. If you specify a particular parameter, then the output is filtered by that name.

FILE output_file

The name of the text file that your output is redirected to.

GETTCPSTATS

Displays statistics about network activity between Extract and the target system. The statistics include:

- Local and remote IP addresses.
- Inbound and outbound messages, in bytes and bytes per second.
- Number of receives (inbound) and sends (outbound). There will be at least two receives per inbound message: one for the length and one or more for the data.
- Average bytes per send and receive.
- Send and receive wait time: Send wait time is how long it takes for the write to TCP to complete. The lower the send wait time, the better the performance over the network. Receive wait time is how long it takes for a read to complete. Together, the send and receive wait times provide a rough estimate of network round trip time. These are expressed in microseconds.
- Status of data compression (enabled or not).
- Uncompressed bytes and compressed bytes: When compared (uncompressed to compressed), these comprise the compression ratio, meaning how many bytes there were before and after compression. You can compare the compression ratio with the bytes that are being compressed per second to determine if the compression rate is worth the cost in terms of resource and network consumption.

The `TCPBUFSIZE` option of `RMTHOST` and `RMTHOSTOPTIONS` controls the size of the TCP buffer for uncompressed data. What actually enters the network will be less than this size if compression is enabled. `GETTCPSTATS` shows post-compression throughput.

LOGEND

Confirms whether or not Extract has processed all of the records in the data source.

LOGSTATS

Valid only for Oracle.

Instructs Extract to issue a report about the statistics that are related to the processing of data from the Oracle redo log files. Extract uses an asynchronous log reader that reads ahead of the current record that Extract is processing, so that the data is available without additional I/O on the log files. The processing is done through a series of read/write queues. Data is parsed by a producer thread at the same time that additional data is being read from the log file by a reader thread. Thus, the reason for the term "read-ahead" in the statistics. The statistics are:

- **AsyncReader.Buffers n** : There is a field like this for each buffer queue that contains captured redo data. It shows the size, the number of records in it, and how long the wait time is before the data is processed. These statistics are given for write operations and read operations on the queue.
- **REDO read ahead buffers**: The number of buffers that are being used to read ahead asynchronously.
- **REDO read ahead buffer size**: The size of each buffer.
- **REDO bytes read ahead for current redo**: Whether read-ahead mode is on or off for the current redo log file (value of `ON` or `OFF`).
- **REDO bytes read**: The number of bytes read from all redo log files that are associated with this instance of Extract.
- **REDO bytes read ahead**: The number of bytes that were processed by the read-ahead mechanism.
- **REDO bytes unused**: The number of read-ahead bytes that were subsequently dropped as the result of Extract position changes or stale reads.
- **REDO bytes parsed**: The number of bytes that were processed as valid log data.
- **REDO bytes output**: The number of bytes that were written to the trail file (not including internal Oracle GoldenGate overhead).

REPORT

Generates an interim statistical report to the Extract report file. The statistics that are displayed depend upon the configuration of the `STATOPTIONS` parameter when used with the `RESETREPORTSTATS` | `NORESETREPORTSTATS` option.

RESUME

Resumes (makes active) a process that was suspended by an `EVENTACTIONS SUSPEND` event. The process resumes normal processing from the point at which it was suspended.

ROLLOVER

Causes Extract to increment to the next file in the trail when restarting. For example, if the current file is `ET000002`, the current file will be `ET000003` after the command executes. A trail can be incremented from `000001` through `999999`, and then the sequence numbering starts over at `000000`.

```
SHOWTRANS [transaction_ID] [THREAD n] [COUNT n]  
[DURATION duration unit] [TABULAR] | [FILE file_name [DETAIL]] [ALL]
```

Valid for MySQL, Oracle, and SQL Server.

Displays information about open transactions. `SHOWTRANS` shows any of the following, depending on the database type:

- Process checkpoint (indicating the oldest log needed to continue processing the transaction in case of an Extract restart).
- Transaction ID
- Extract group name
- Redo thread number
- Timestamp of the first operation that Oracle GoldenGate extracts from a transaction (not the actual start time of the transaction)
- System change number (SCN)
- Redo log number and RBA
- Status (Pending COMMIT or Running). Pending COMMIT is displayed while a transaction is being written after a `FORCETRANS` was issued.

Without options, `SHOWTRANS` displays all open transactions that will fit into the available buffer. However, it doesn't display the output user name sometimes for an open active transaction because the user name is not provided in the begin record from transaction log.

See the examples for sample output of `SHOWTRANS`. To further control output, see the following options.

transaction_ID

Limits the command output to a specific transaction.

THREAD n

Valid only for Oracle.

Constrains the output to open transactions against a specific Oracle RAC thread. For *n*, use a RAC thread number that is recognized by Extract.

COUNT n

Constrains the output to the specified number of open transactions, starting with the oldest one. Valid values are 1 to 1000.

DURATION duration unit

Restricts the output to transactions that have been open longer than the specified time, where:

duration is the length of time expressed as a whole number.

unit is one of the following to express seconds, minutes, hours, or days:

S | SEC | SECS | SECOND | SECONDS
M | MIN | MINS | MINUTE | MINUTES
H | HOUR | HOURS
D | DAY | DAYS

TABULAR

Valid only for Oracle.

Generates output in tabular format similar to the default table printout from SQL*Plus. The default is field-per-row.

FILE *file_name* [DETAIL]

Valid only for Oracle and SQL Server. Not valid for MySQL.

Forces Extract to write the transaction information to the specified file. There is no output to the console.

For Oracle, you can write a hex and plain-character dump of the data by using `FILE` with `DETAIL`. This dumps the entire transaction from memory to the file. Viewing the data may help you decide whether to skip the transaction or force it to the trail.

 **Note:**

Basic detail information is automatically written to the report file at intervals specified by the `WARNLONGTRANS CHECKINTERVAL` parameter.

[ALL]

This option allows showing all the transaction in COM. It is useful when detecting potential issues with committed transactions that are remaining in COM.

SKIPTRANS *transaction_ID* [THREAD *n*] [FORCE]

Valid for Db2 LUW, Db2 IBM, MySQL, Oracle, and SQL Server.

Forces Extract to skip the specified transaction, thereby removing any current data from memory and ignoring any subsequent data. A confirmation prompt must be answered unless `FORCE` is used. After using `SKIPTRANS`, wait at least five minutes if you intend to issue `SEND EXTRACT` with `FORCESTOP`. Otherwise, the transaction is still present. Note that skipping a transaction may cause data loss in the target database.

 **Note:**

To use `SKIPTRANS`, the specified transaction must be the oldest one in the list of transactions shown with `SHOWTRANS`. You can repeat the command for other transactions in order of their age.

transaction_ID

The transaction ID number. Get the ID number with `SHOWTRANS` or from an Extract runtime message.

THREAD *n*

Valid only for Oracle.

Use `THREAD n` to specify which thread generated the transaction in an Oracle RAC environment if there are duplicate transaction IDs. `SKIPTRANS` specifies the checkpoint index number, not the actual thread number. To specify the correct thread, issue the `INFO EXTRACT group_name SHOWCH` command, and then specify the `READ` checkpoint index number that corresponds to the thread number that you want to skip.

FORCE

Valid for Oracle and SQL Server. Not valid for MySQL.

Use `FORCE` to bypass the prompt that confirms your intent to skip the transaction.

STATUS

Returns a detailed status of the processing state, including current position and activity. Possible processing status messages on the `Current status` line are:

- Delaying – waiting for more data
- Suspended – waiting to be resumed
- Processing data – processing data
- Starting initial load – starting an initial load task
- Processing source tables – processing data for initial load task
- Reading from data source – reading from the data source, such as a source table or transaction log
- Adding record to transaction list – adding a record to the file memory transaction list
- At EOF (end of file) – no more records to process

In addition to the preceding statuses, the following status notations appear during an Extract recovery after an abend event. You can follow the progress as Extract continually changes its log read position over the course of the recovery.

- In recovery[1] – Extract is recovering to its checkpoint in the transaction log.
- In recovery[2] – Extract is recovering from its checkpoint to the end of the trail.
- Recovery complete – The recovery is finished, and normal processing will resume.

STOP

Stops Extract. If there are any long-running transactions (based on the `WARNLONGTRANS` parameter), the following message will be displayed:

```
Sending STOP request to EXTRACT EXTE...
There are open, long-running transactions. Before you stop Extract,
make the archives containing data for those transactions available for
when Extract restarts. To force Extract to stop, use the SEND EXTRACT
group, FORCESTOP command.
Oldest redo log file necessary to restart Extract is:
Redo Thread 1, Redo Log Sequence Number 150, SCN 31248005, RBA 2912272.
```

TRACE[2] {*file_name* | OFF}

Turns tracing on and off. Tracing captures information to the specified file to reveal processing bottlenecks. Contact Oracle Support for assistance if the trace reveals significant processing bottlenecks.

TRACE

Captures step-by-step processing information.

TRACE2

Identifies code segments rather than specific steps.

file_name

Specifies the name of the file to which the trace information is written. If a trace is already running when `SEND EXTRACT` is issued with `TRACE`, the existing trace file is closed and the trace is resumed to the new file specified with *file_name*.

OFF

Turns off tracing.

TRACE OFF *file_name*

Turns tracing off only for the specified trace file.

TRACEINIT

Resets tracing statistics back to 0 and then starts accumulating statistics again. Use this option to track the current behavior of processing, as opposed to historical.

TRANLOGOPTIONS INTEGRATEDPARAMS (*parameter_specification*)

(Oracle) Supports an integrated Extract. Sends a parameter specification to the database inbound server while Extract is running in integrated mode. Only one parameter specification can be sent at a time with this command. You can send multiple parameter changes, issue multiple `SEND EXTRACT` commands.

To preserve the continuity of processing, the parameter change is made at a transaction boundary.

TRANLOGOPTIONS {PURGEORPHANEDTRANSACTIONS | NOPURGEORPHANEDTRANSACTIONS}

Valid for Oracle RAC. Enables or disables purging of orphaned transactions that occur when a node fails and Extract cannot capture the rollback.

TRANLOGOPTIONS TRASCLEANUPFREQUENCY *minutes*

Valid for Oracle RAC. Specifies the interval, in minutes, after which Oracle GoldenGate scans for orphaned transactions and then re-scans to confirm and delete them. Valid values are from 1 to 43200 minutes. Default is 10 minutes.

VAMESSAGE 'Teradata_command'

VAMESSAGE { 'ARSTATS' | 'INCLUDELIST [*filter*]' | 'EXCLUDELIST [*filter*]' }

VAMESSAGE 'OPENTRANS'

Sends a command to the capture API that is used by Extract.

A Teradata command can be any of the following:

'control:terminate'

Stops a replication group. Required before dropping or altering a replication group in Teradata.

'control:suspend'

Suspends a replication group. Can be used when upgrading Oracle GoldenGate.

'control:resume'

Resumes a replication group after it has been suspended.

'control:copy database.table'

Copies a table from the source database to the target database.

'ARSTATS'

Displays TMF audit reading statistics.

'FILELIST [*filter*]'

Displays the list of tables for which Extract has encountered data records in the audit trail that match the selection criteria in the `TABLE` parameters. The `filter` option allows use of a wildcard pattern to filter the list of tables returned. `GETFILELIST` can also be used in the same manner.

'EXCLUDELIST [*filter*]'

Displays the list of tables for which Extract has encountered data records in the audit trail that do not match the selection criteria in the `TABLE` parameters. The `filter` option

allows use of a wildcard pattern to filter the list of tables returned. Certain system tables that are implicitly excluded will always be present in the list of excluded tables.

A SQL Server command can be the following:

```
'OPENTRANS'
```

Prints a list of open transactions with their transaction ID, start time, first LSN, and the number of operations they contain.

Examples

```
SEND EXTRACT exte, ROLLOVER
```

```
SEND EXTRACT exte, STOP
```

```
SEND EXTRACT exte, VAMMESSAGE 'control:suspend'
```

```
SEND EXTRACT exte, TRANLOGOPTIONS TRANCLEANUPFREQUENCY 20
```

This example explains SKIPTRANS. Start with the following SHOWCH output, which shows that thread 2 is at Read Checkpoint #3.

```
INFO exte SHOWCH
```

```
Read Checkpoint #3  
Oracle RAC Redo Log  
Startup Checkpoint (starting position in the data source):  
Thread #: 2  
Sequence #: 17560  
RBA: 65070096  
Timestamp: 2011-07-30 20:04:47.000000  
SCN: 1461.3499051750 (6278446271206)  
Redo File: RAC4REDO/sss11g/onlinelog/group_4.292.716481937
```

Therefore, SKIPTRANS should be: SKIPTRANS *xid* THREAD 3.

```
SEND EXTRACT exte, SHOWTRANS COUNT 2
```

The following shows the default output of SHOWTRANS.

```
Oldest redo log file necessary to restart Extract is:  
Redo Thread 1, Redo Log Sequence Number 148, SCN 30816254, RBA 17319664
```

```

-----
XID          : 5.15.52582
Items       : 30000
Extract     : JC108XT
Redo Thread : 1
Start Time  : 2011-01-18:12:51:27
SCN        : 20634955
Redo Seq   : 103
Redo RBA   : 18616848
Status     : Running
-----

```

```

-----
XID          : 7.14.48657
Items       : 30000
Extract     : JC108XT
Redo Thread : 1
Start Time  : 2011-01-18:12:52:14
SCN        : 20635145
Redo Seq   : 103
Redo RBA   : 26499088
Status     : Running
-----

```

The following example shows SHOWTRANS output with TABULAR in effect (view is truncated on right).

```

XID          Items  Extract  Redo Thread  Start Time
5.15.52582  30000  JC108XT      1           2011-01-18:12:52:14

```

Dumping transaction memory at 2011-01-21 13:36:54.

Record #1:

Header (140 bytes):

```

0: 0000 0A4A 0000 FFFF 0000 0000 0057 6C10      ...J.....Wl.
16: 02FF 3F50 FF38 7C40 0303 4141 414E 5A77     ..?P.8|@...AAANZw
32: 4141 4641 4141 4B6F 4941 4144 0041 4141     AAFFAAKoIAAD.AAA
48: 4E5A 7741 4146 4141 414B 6F49 4141 4400     NZwAAFAAAKoIAAD.
64: 4141 414E 5A77 414A 2F41 4142 7A31 7741     AAANZwAJ/AABz1wA
80: 4141 0041 4141 4141 4141 4141 4141 4141     AA.AAAAAAAAAAAAAA
96: 4141 4141 4100 0000 0140 FF08 0003 0000     AAAAA....@.....
112: 0000 0000 0000 70FF 0108 FFFF 0001 4A53     .....p.....JS
128: 554E 2E54 4355 5354 4D45 5200                UN.TCUSTMER.

```

Data (93 bytes):

```

0: 2C00 0400 0400 0000 0100 0200 0300 0000     ,.....
16: 0000 0000 0800 0000 1800 0000 2000 0400     .....
32: 1000 0600 0200 0000 284A 414E 456C 6C6F     .....(JANElllo
48: 6352 4F43 4B59 2046 4C59 4552 2049 4E43     cROCKY FLYER INC
64: 2E44 454E 5645 5220 6E43 4F20 7365 7400     .DENVER nCO set.
80: 0000 0000 0000 0C00 0000 0000 00                .....

```

When analyzing the summary output of SHOWTRANS, understand that it shows all currently running transactions on the database (as many as will fit into a predefined buffer). Extract must track every open transaction, not just those that contain operations on tables configured for Oracle GoldenGate.

The `Items` field of the `SHOWTRANS` output shows the number of operations in the transaction that have been captured by Oracle GoldenGate so far, not the total number of operations in the transaction. If none of the operations are for configured tables, or if only some of them are, then `Items` could be 0 or any value less than the total number of operations.

The `Start Time` field shows the timestamp of the first operation that Oracle GoldenGate extracts from a transaction, not the actual start time of the transaction itself.



Note:

Command output may vary somewhat from the examples shown due to ongoing enhancements of Oracle GoldenGate.

The following example shows sending BR request to Extract `exte`

```
SEND exte BR BRSTATUS
```

Output:

```
Bounded Recovery Parameter:
Options      = _BRDEBUG _NOBRCLEANUP _BRFORCE_ASSERT
BRINTERVAL  = 40SECONDS
BRDIR       = /home/mpopeang/ogg_test/
Bounded Recovery Status: IN PROGRESS
Checkpoint interval = 40SECONDS
Next checkpoint   = 2020-01-15 21:10:47
Last checkpoint# = 49
Last checkpoint   = 2020-01-15 21:10:07
Total objects     = 65
Total size        = 426 MB
Outstanding objects = 58
Outstanding size   = 384 MB
Object pool 1: p12733_extr:RECOVERY: COMPLETE: start:SeqNo: 1580,
RBA: 793460, SCN: 0.664178312(664178312), Timestamp: 2020-01-15
20:35:45.000000,
Thread: 1, end=SeqNo:1580,
RBA: 793460, SCN: 0.664178312 (664178312), Timestamp: 2020-01-15
20:35:45.000000,
Thread: 1, complete=SeqNo: 1580, RBA: 793460,
SCN:0.664178312 (664178312), Timestamp: 2020-01-15 20:35:45.000000,
Thread: 1 at 2020-01-15 20:38:52.435830
CHECKPOINT: start=SeqNo: 1637, RBA: 10182312, SCN: 0.669567539
(669567539),
Timestamp: 2020-01-15 21:09:59.000000, Thread: 1, end=SeqNo: 1637,
RBA:10182312, SCN: 0.669567539 (669567539), Timestamp: 2020-01-15
21:09:59.000000,
Thread: 1
```

The following example provides details on each of the object pools persisted by BR:

```
SEND eoradb2 BR BRSTATS
```

Output:

```
Object pool #0, instance: 1, id: p12733_extr
```

Object sizes through life of Extract group:

Sizes in bytes		:	POs	
512K	to	1M-1	:	13
1M	to	2M-1	:	37
4M	to	8M-1	:	398
8M	to	16M-1	:	2
16M	to	32M-1	:	10

Object ages through life of Extract group:

```
duration: BCP intervals in the life of the PO
duration          0:          230
duration          30 to      39:      230
```

Extant object sizes as of most recent BCP:

Sizes in bytes		:	POs	
512K	to	1M-1	:	8
1M	to	2M-1	:	17
4M	to	8M-1	:	200
16M	to	32M-1	:	5

Extant object ages as of most recent BCP:

```
duration: BCP intervals in the life of the PO
duration          30 to      39:      230
```

SET EDITOR

Use `SET EDITOR` to change the default text editor for the current session of GGSCI. The default editors are Notepad for Windows and vi for UNIX. CLI input, including to create parameter files, takes the character set of the local operating system.

Syntax

```
SET EDITOR program_name
```

program_name
Any text editor.

Example

The following example changes the default editor to Notepad++.

```
SET EDITOR notepad++
```

SEND REPLICAT

Use `SEND REPLICAT` to communicate with a starting or running Replicat process. The request is processed as soon as Replicat is ready to accept commands from users.

Syntax

```
SEND REPLICAT group_name[threadID],
{
  CACHEDMGR {CACHESTATS | CACHEQUEUES | CACHEVMUSAGE} |
  FORCESTOP |
  GETLAG |
  GETPARAMINFO [parameter_name] [FILE output_file] |
  HANDLECOLLISIONS | NOHANDLECOLLISIONS [table_spec] |
  INTEGRATEDPARAMS(parameter_specification) |
  LOGEND |
  REPORT [HANDLECOLLISIONS [table_spec]] |
  RESUME |
  STATUS |
  STOP |
  TRACE[2] [DDLINCLUDE | DDL[ONLY]] file_name |
  TRACE[2] OFF |
  TRACE OFF file_name |
  TRACEINIT |
  THREADS (threadID[, threadID][, ...][, thread_range[, thread_range]
  [, ...])
}
```

***group_name*[*threadID*]**

The name of the Replicat group or the name of a specific thread of a coordinated Replicat, for example `fin003`. If the command is issued for a specific thread, then an option that is used applies only to that thread. As an alternative, you can issue `SEND REPLICAT` with the `THREADS` option instead of including *threadID* with the group name. If Replicat is not running, an error is returned.

CACHEDMGR {CACHESTATS | CACHEQUEUES | CACHEVMUSAGE}

Returns statistics about the Oracle GoldenGate memory cache manager. `CACHEDMGR` should only be used as explicitly directed by Oracle Support.

CACHESTATS

Returns statistics for file caching.

CACHEQUEUES

Returns statistics for the free queues only.

CACHEVMUSAGE

Returns statistics for the virtual memory usage.

FORCESTOP

Forces Replicat to stop, bypassing any notifications. This command will roll back any active transaction and stop the process immediately. This command applies to Replicat as a whole and cannot be used for a specific Replicat thread.

GETLAG

Shows a true lag time between Replicat and the trail. Lag time is the difference, in seconds, between the time that the last record was processed by Replicat and the timestamp of the record in the trail. The results are the same as `LAG REPLICAT`.

GETPARAMINFO [*parameter_name*] [**FILE** *output_file*]

Use `GETPARAMINFO` to query runtime parameter values of a running instance, including Extract, Replicat, and Manager. You can query for a single parameter or all parameters and send the output to the console or a text file

parameter_name

The default behavior is to display all parameters in use, meaning those parameters that have ever been queried by the application, parameters, and their current values. If you specify a particular parameter, then the output is filtered by that name.

FILE output_file

The name of the text file that your output is redirected to.

HANDLECOLLISIONS | NOHANDLECOLLISIONS [*table_spec*]

Control `HANDLECOLLISIONS` behavior. Instead of using this option, you can specify the `HANDLECOLLISIONS` or `NOHANDLECOLLISIONS` parameter in the Replicat parameter file. See `HANDLECOLLISIONS | NOHANDLECOLLISIONS` in *Reference for Oracle GoldenGate*. This command can be sent directly to an individual thread by means of `SEND REPLICAT group_name[threadID]` or you can use the `THREADS` option to send the command through the coordinator thread to affect multiple threads.

HANDLECOLLISIONS

Use `HANDLECOLLISIONS` to enable automatic error handling when performing initial data loads while the source database is active. Make certain to disable `HANDLECOLLISIONS`, either by issuing `SEND REPLICAT` with the `NOHANDLECOLLISIONS` option or by removing the parameter from the parameter file, after the initial load is complete and online data changes have been applied to the target tables.

 **Note:**

The message returned by `SEND REPLICAT` with `HANDLECOLLISIONS`, when issued for a specific Replicat thread, shows that the command set `HANDLECOLLISIONS` for all `MAP` statements, not only the one handled by the specified thread. This is a known issue. The command actually affects only the `MAP` statement that includes the specified thread.

NOHANDLECOLLISIONS

Turns off the `HANDLECOLLISIONS` parameter but does not remove it from the parameter file. To avoid enabling `HANDLECOLLISIONS` the next time Replicat starts, remove it from the parameter file.

table_spec

table_spec restricts `HANDLECOLLISIONS` or `NOHANDLECOLLISIONS` to a specific target table or a group of target tables specified with a standard wildcard (*).

INTEGRATEDPARAMS (*parameter_specification*)

(Oracle) Supports an integrated Replicat. Sends a parameter specification to the database inbound server while Replicat is running in integrated mode. Only one parameter specification can be sent at a time with this command. To send multiple parameter changes, issue multiple `SEND REPLICAT` commands as in the following example.

```
SEND REPLICAT repe INTEGRATEDPARAMS (parallelism 4)
SEND REPLICAT repe INTEGRATEDPARAMS (max_sga_size 250)
```

To preserve the continuity of processing, the parameter change is made at a transaction boundary.

LOGEND

Confirms whether or not Replicat has processed all of the records in the data source.

REPORT [`HANDLECOLLISIONS` [*table_spec*]]

Generates an interim statistical report to the Extract report file. The statistics that are displayed depend upon the configuration of the `STATOPTIONS` parameter when used with the `RESETREPORTSTATS` | `NORESETREPORTSTATS` option. See `STATOPTIONS`.

HANDLECOLLISIONS

Shows tables for which `HANDLECOLLISIONS` has been enabled.

table_spec

Restricts the output to a specific target table or a group of target tables specified with a standard wildcard (*).

RESUME

Resumes (makes active) a process that was suspended by an `EVENTACTIONS SUSPEND` event. The process resumes normal processing from the point at which it was suspended.

STATUS

Returns the current location within the trail and information regarding the current transaction. Fields output are:

- Processing status (per thread, if Replicat is coordinated)
- Position in the trail file (per thread, if Replicat is coordinated)
- Trail sequence number (per thread, if Replicat is coordinated)
- RBA in trail
- Trail name

Possible processing status messages are:

- Delaying – waiting for more data
- Suspended – waiting to be resumed
- Waiting on deferred apply – delaying processing based on the `DEFERAPPLYINTERVAL` parameter.
- Processing data – processing data
- Skipping current transaction – `START REPLICAT` with `SKIPTRANSACTION` was used.
- Searching for `START ATCSN csn` – `START REPLICAT` with `ATCSN` was used.
- Searching for `START AFTERCSN csn` – `START REPLICAT` with `AFTERCSN` was used.
- Performing transaction timeout recovery – Canceling current incomplete transaction and repositioning to start new one (see the `TRANSACTIONTIMEOUT` parameter).
- Waiting for data at logical EOF after transaction timeout recovery – Waiting to receive remainder of incomplete source transaction after a `TRANSACTIONTIMEOUT` termination.
- At EOF (end of file) – no more records to process

Possible thread status messages when `THREADS` is used or the command is issued for a specific thread are:

- Waiting for consensus stop point: This indicates that the threads are attempting to synchronize for a barrier transaction.
- Waiting for Watermark: Indicates that all threads are attempting to stop at the same transaction boundary in the trail, known as the global watermark.
- Waiting on all threads to start up: Indicates that the thread is waiting for all of the threads to start after a successful barrier transaction or a Replicat startup.

Possible coordinator thread status messages are:

- Waiting for all threads to register: Indicates that the `MAP` statements are all being parsed to determine the thread IDs that are specified in them.
- Processing data: Indicates that data is being processed normally.
- Suspended, waiting to be resumed: Indicates that a `SEND REPLICAT` command with a `SUSPEND` request was sent to Replicat.
- At EOF: Indicates that there is no more data in the trail to process.
- Waiting to register `MAP` statistics: Indicates that Replicat is collecting processing statistics to send to the report file.

STOP

Stops Replicat gracefully. This command applies to Replicat as a whole and cannot be used for a specific Replicat thread.

THREADS (*threadID* [, *threadID*] [, ...] [, *thread_range* [, *thread_range*] [, ...])

Issues the command only for the specified thread or threads of a coordinated Replicat. You can use this option or you can use *groupname* with *threadID*. Without either of those options, the command applies to all active threads.

threadID [, *threadID*] [, ...]

Specifies a thread ID or a comma-delimited list of threads in the format of *threadID*, *threadID*, *threadID*.

thread_range [, *thread_range*] [, ...]

Specifies a range of threads in the form of `threadIDlow-threadIDhigh` or a comma-delimited list of ranges in the format of `threadIDlow-threadIDhigh, threadIDlow-threadIDhigh`.

A combination of these formats is permitted, such as `threadID, threadID, threadIDlow-threadIDhigh`.

TRACE[2] [DDLINCLUDE | DDL[ONLY]] *file_name*

Turns tracing on and off. Tracing captures information to the specified file to reveal processing bottlenecks. Tracing also can be enabled by means of the Replicat parameters `TRACE` and `TRACE2`.

If the Replicat is in coordinated mode and `TRACE` is used with a `THREADS` list or range, a trace file is created for each currently active thread. Each file name is appended with its associated thread ID. This method of identifying trace files by thread ID does not apply when `SEND REPLICAT` is issued by `groupname` with `threadID` (as in `SEND REPLICAT fin003 TRACE...`) or when only one thread is specified with `THREADS`. Contact Oracle Support for assistance if the trace reveals significant processing bottlenecks.

TRACE

Captures step-by-step processing information.

TRACE2

Identifies code segments rather than specific steps.

DDLINCLUDE | DDLONLY

(Replicat only) Enables DDL tracing and specifies how DDL tracing is included in the trace report.

- `DDLINCLUDE` includes DDL tracing in addition to regular tracing of transactional data processing.
- `DDL[ONLY]` excludes the tracing of transactional data processing and only traces DDL. This option can be abbreviated to `DDL`.

file_name

file_name specifies the relative or fully qualified name of a file to which Oracle GoldenGate logs the trace information. If a trace is already in progress, the existing trace file is closed and the trace resumes to the file specified with *file_name*. For example:

```
SEND REPLICAT group_name TRACE file_name DDLINCLUDE
```

If no other options will follow the file name, the `FILE` keyword can be omitted, for example:

```
SEND REPLICAT group_name TRACE DDLINCLUDE file_name
```

TRACE[2] OFF

Turns off tracing.

TRACE OFF *file_name*

Turns tracing off only for the specified trace file. This option supports the `EVENTACTIONS` feature, where there can be multiple trace files due to multiple `EVENTACTIONS` statements.

TRACEINIT

Resets tracing statistics back to 0 and then starts accumulating statistics again. Use this option to track the current behavior of processing, as opposed to historical.

Examples

```
SEND REPLICAT repe, HANDLECOLLISIONS
```

```
SEND REPLICAT repe, REPORT HANDLECOLLISIONS rep_*
```

```
SEND REPLICAT repe, GETLAG
```

```
SEND REPLICAT repe, INTEGRATEDPARAMS(parallelism 10)
```

The following gets lag for thread 3 of a coordinated Replicat.

```
SEND REPLICAT repe, GETLAG
```

The following enables tracing for only thread 1 of a coordinated Replicat. In this case, because only one thread is being traced, the trace file will not have a `threadID` extension. The file name is `trace.trc`.

```
SEND REPLICAT repe, TRACE THREADS(1) FILE ./dirrpt/trace.trc
```

The following enables tracing for threads 1,2, and 3 of a coordinated Replicat. Assuming all threads are active, the tracing produces files `trace001`, `trace002`, and `trace003`.

```
SEND REPLICAT repe TRACE THREADS(1-3) FILE ./dirrpt/trace.trc
```

The following enables tracing only for thread 1 of a coordinated Replicat. Because the command was issued directly for thread 1 without the use of a `THREAD` clause, the trace file is named `trace` (without a thread ID suffix).

```
SEND REPLICAT repe TRACE FILE ./dirrpt/trace.trc
```

SHELL

Use `SHELL` to execute shell commands from within the CLI.

Syntax

```
SHELL command
```

command

The system command to execute.

Examples

```
SHELL dir prod\*
```

```
SHELL rm ./dat*
```

SHOW

Use `SHOW` to display the Oracle GoldenGate environment.

Syntax

```
SHOW
```

Example

The following are samples of `SHOW` output. Additional entries may be displayed, depending on the database type.

```
Current directory: /scratch/ogg/sa/bin
DEBUG           : OFF
EDITOR          : vi
PAGER           : more
```

or

```
Parameter settings:
SET DEBUG       OFF
Current directory: C:\GG_81
Using subdirectories for all process files
Editor: notepad
Reports (.rpt)      C:\GG_81\dirrpt
Parameters (.prm)   C:\GG_81\dirprm
Replicat Checkpoints (.cpr) C:\GG_81\dirchk
Extract Checkpoints (.cpe) C:\GG_81\dirchk
Process Status (.pcs)  C:\GG_81\dirpcs
SQL Scripts (.sql)   C:\GG_81\dirsql
Database Definitions (.def) C:\GG_81\dirdef
```

START ER

Use the `START ER` to start multiple Extract and Replicat groups as a unit. Use it with wildcards to affect every Extract and Replicat group that satisfies the wildcard. For descriptions and optional parameters for this command, see `INFO EXTRACT`.

Syntax

```
START ER group_name
```

group_name

The wildcard specification for the groups that you want to affect with the command. Oracle GoldenGate automatically increases internal storage to track up to 100,000 wildcard entries.

Example

```
START ER *
```

STATS REPLICAT

Use `STATS REPLICAT` to display statistics for one or more Replicat groups. Thread statistics for a coordinated Replicat group are provided as follows.

Thread Lag Gap

The difference between the maximum lag and the minimum lag among all threads.

Coordinated Total DDLs

The total number of coordinated DDL transactions.

Coordinated Total PK-Update Transactions

The total number of coordinated transactions that involved an update to a primary key.

Coordinated Total EMI Transactions

The total number of coordinated `EVENTACTIONS` events.

Total Transactions with User-Requested Coordination

The total number of coordination's that were explicitly requested in the configuration by means of the `COORDINATED` option of the `MAP` parameter.

Average Coordination Time

The average time (in seconds) spent in coordination among all threads.

Syntax

```
STATS REPLICAT group_name  
[, statistic]  
[, DDLONLY]  
[, TABLE [container. | catalog.] schema.table]  
[, TOTALONLY [container. | catalog.] schema.table]  
[, REPORTCDR]  
[, REPORTCHARCONV]
```

```
[, REPORTDETAIL | NOREPORTDETAIL]  
[, REPORTRATE {HR | MIN | SEC}]
```

group_name

The name of a Replicat group or a wildcard (*) to specify multiple groups. For example, T* shows statistics for all Replicat groups whose names begin with T.

statistic

The statistic to be displayed. More than one statistic can be specified by separating each with a comma, for example STATS REPLICAT finance, TOTAL, DAILY.

TOTAL

Displays totals since process startup.

DAILY

Displays totals since the start of the current day.

HOURLY

Displays totals since the start of the current hour.

LATEST

Displays totals since the last RESET command.

RESET

Resets the counters in the LATEST statistical field.

DDLONLY

Displays the statistics for DDL statements including number of DDL statements in a readable format.

TABLE [container. | catalog.]schema.table_name

Displays statistics only for the specified table or a group of tables specified with a wildcard (*). The table name or wildcard specification must be fully qualified with the two-part or three-part name, for example hr.emp or *.*.*.

TOTALONLY [container. | catalog.]schema.table_name

Summarizes the statistics for the specified table or a group of tables specified with a wildcard (*). The table name or wildcard specification must be fully qualified with the two-part or three-part name, for example hr.emp or *.*.*.

REPORTCDR

Shows statistics for Conflict Detection and Resolution. Statistics include:

- Total CDR conflicts
- CDR resolutions succeeded
- CDR resolutions failed
- CDR INSERTROWEXISTS conflicts
- CDR UPDATEROWEXISTS conflicts
- CDR UPDATEROWMISSING conflicts
- CDR DELETEROWEXISTS conflicts
- CDR DELETEROWMISSING conflicts

REPORTCHARCONV

Reports statistics for character validation when character-set conversion is performed. The following statistics are added to the `STATS` output:

Total column character set conversion failure: the number of validation or conversion failures in the current Replicat run.

Total column data truncation: the number of times that column data was truncated in the current Replicat run as the result of character set conversion

REPORTDETAIL | NOREPORTDETAIL

Controls whether or not the output includes operations that were not replicated as the result of collision errors. These operations are reported in the regular statistics (inserts, updates, and deletes performed) plus as statistics in the detail display, if enabled. For example, if 10 records were insert operations and they were all ignored due to duplicate keys, the report would indicate that there were 10 inserts and also 10 discards due to collisions. The default is `REPORTDETAIL`.

REPORTRATE {HR | MIN | SEC}

Displays statistics in terms of processing rate rather than absolute values.

HR

Sets the processing rate in terms of hours.

MIN

Sets the processing rate in terms of minutes.

SEC

Sets the processing rate in terms of seconds.

Examples

The following example displays total and hourly statistics per minute for a specific table, and it also resets the latest statistics. Statistics for discarded operations are not reported.

```
STATS REPLICAT finance, TOTAL, HOURLY, TABLE sales.acct, REPORTRATE MIN,
RESET, NOREPORTDETAIL
```

The following example displays the same statistics as the previous example, but for thread 3 of a coordinated Replicat group.

```
STATS REPLICAT fin003, TOTAL, HOURLY, TABLE sales.acct, REPORTRATE MIN,
RESET, NOREPORTDETAIL
```

STATS EXTRACT

Use `STATS EXTRACT` to display statistics for one or more Extract groups. The output includes DML and DDL operations that are included in the Oracle GoldenGate configuration.

To get the most accurate number of operations per second that are being processed, do the following.

1. Issue the `STATS EXTRACT` command with the `RESET` option.
2. Issue the `STATS EXTRACT REPORTRATE` command. The `LATEST STATISTICS` field shows the operations per second.

 **Note:**

The actual number of DML operations executed on a Db2 database might not match the number of extracted DML operations reported by Oracle GoldenGate. Db2 does not log update statements if they do not physically change a row, so Oracle GoldenGate cannot detect them or include them in statistics.

 **Note:**

To get accurate statistics on a Teradata source system where Oracle GoldenGate is configured in maximum protection mode, issue `STATS EXTRACT` to the VAM-sort Extract, not the primary Extract. The primary Extract may contain statistics for uncommitted transactions that could be rolled back; whereas the VAM-sort Extract reports statistics only for committed transactions.

Syntax

```
STATS EXTRACT group_name
[, statistic]
[, DDLONLY]
[, TABLE [container. | catalog.] schema.table]
[, TOTALONLY [container. | catalog.] schema.table]
[, REPORTCDR]
[, REPORTCHARCONV]
[, REPORTFETCH | NOREPORTFETCH]
[, REPORTRATE time_units]
```

group_name

The name of an Extract group or a wildcard (*) to specify multiple groups. For example, `T*` returns statistics for all Extract groups whose names start with T.

statistic

The statistic to be displayed. More than one statistic can be specified by separating each with a comma, for example `STATS EXTRACT finance, TOTAL, DAILY`.

TOTAL

Displays totals since process startup.

DAILY

Displays totals since the start of the current day.

HOURLY

Displays totals since the start of the current hour.

LATEST

Displays totals since the last `RESET` command.

RESET

Resets the counters in the `LATEST` statistical field.

DDLONLY

Displays the statistics for DDL statements including number of DDL statements in a readable format.

TABLE [*container.* | *catalog.*]*schema.table_name*

Displays statistics only for the specified table or a group of tables specified with a wildcard (*). The table name or wildcard specification must be fully qualified with the two-part or three-part name, for example `hr.emp` or `*.*.*`.

TOTALONLY [*container.* | *catalog.*]*schema.table_name*

Summarizes the statistics for the specified table or a group of tables specified with a wildcard (*). The table name or wildcard specification must be fully qualified with the two-part or three-part name, for example `hr.emp` or `*.*.*`.

REPORTCDR

Shows statistics for Conflict Detection and Resolution. Statistics include:

- Total CDR conflicts
- CDR resolutions succeeded
- CDR resolutions failed
- CDR INSERTROWEXISTS conflicts
- CDR UPDATEROWEXISTS conflicts
- CDR DELROWEXISTS conflicts
- CDR DELROWMISSING conflicts

REPORTCHARCONV

Use only when **TABLE** parameters have a **TARGET** clause and character-set conversion is performed. The following statistics are added to the **STATS** output:

Total column character set conversion failure: the number of validation or conversion failures in the current Extract run.

Total column data truncation: the number of times that column data was truncated in the current Extract run as the result of character set conversion

REPORTFETCH | **NOREPORTFETCH**

Controls whether or not statistics about fetch operations are included in the output. The default is **NOREPORTFETCH**. The output of **REPORTFETCH** is as follows:

- row fetch attempts: The number of times Extract attempted to fetch a column value from the database when it could not obtain the value from the transaction log.
- fetch failed: The number of row fetch attempts that failed.
- row fetch by key: Valid for Oracle. The number of row fetch attempts that were made by using the primary key. The default is to fetch by row ID.

REPORTRATE *time_units*

Displays statistics in terms of processing rate rather than absolute values.

HR
MIN
SEC

Example

The following example displays total and hourly statistics per minute for a specific table, and it also resets the latest statistics and outputs fetch statistics.

```
STATS EXTRACT exte, TOTAL, HOURLY, TABLE hr.emp, REPORTRATE MIN,  
RESET, REPORTFETCH
```

```
STATS EXTRACT exte, LATEST, REPORTFETCH
```

STATS ER

Use the `STATS ER` to get statistics on multiple Extract and Replicat groups as a unit. Use it with wildcards to affect every Extract and Replicat group that satisfies the wildcard. For descriptions and optional parameters for this command, see `INFO EXTRACT`.

Syntax

```
STATS ER group_name
```

group_name

The wildcard specification for the groups that you want to affect with the command. For example, `T*` starts all groups whose names begin with T. Oracle GoldenGate automatically increases internal storage to track up to 100,000 wildcard entries.

Example

```
STATS ER *T*
```

START EXTRACT

Use `START EXTRACT` to start the Extract process. To confirm that Extract has started, use the `INFO EXTRACT` or `STATUS EXTRACT` command. Extract can be started at its normal start point (from initial or current checkpoints) or from an alternate, user-specified position in the data source.

Normal Start Point

Without options, `START EXTRACT` directs a primary Extract and a data pump Extract to start processing at one of the following locations in the data source to maintain data integrity:

- After graceful or abnormal termination: At the first unprocessed transaction in the data source from the previous run, as represented by the current read checkpoint.
- First-time startup after the group was created: At the start point specified with the `ADD EXTRACT` command.

Alternate Start Point

Before starting Extract with `ATCSN` or `AFTERCSN`, you must establish a physical starting location with one of the following commands:

- `ADD EXTRACT` with the `BEGIN` option set to a timestamp that is earlier than the CSN value specified with `ATCSN` or `AFTERCSN`. The transaction log that contains the timestamp and every log thereafter must be available on the system before Extract is started.
- `ALTER EXTRACT` to the sequence number of the log that contains the CSN specified with `ATCSN` or `AFTERCSN`.

Syntax

```
START EXTRACT group_name  
             [ATCSN csn | AFTERCSN csn]  
             [BRoptions]
```

group_name

The name of an Extract group or a wildcard (*) to specify multiple groups. For example, `T*` starts all Extract groups whose names begin with T.

`ATCSN csn` | `AFTERCSN csn`

Specifies an alternate start point.

ATCSN

Directs Extract to position its start point at the first transaction that has the specified CSN. Any transactions in the data source that have CSN values less than the specified one are skipped.

AFTERCSN

Directs Extract to position its start point at the beginning of the first transaction after the one that has the specified CSN. Any transactions in the data source that have CSN values that are less than, or equal to, the specified one are skipped.

csn

Specifies a CSN value. Enter the CSN value in the format that is valid for the database. Extract abends if the format is invalid and writes a message to the report file. To determine the CSN to supply after an initial load is complete, use the serial identifier at which the load utility completed. Otherwise, follow the instructions in the initial load procedure for determining when to start Extract.

The following are additional guidelines to observe when using `ATCSN` and `AFTERCSN`:

- The CSN is stored in the file header so that it is available to downstream processes.
- When a record that is specified with a CSN is found, Extract issues a checkpoint. The checkpoint ensures that subsequent Extract startups begin from the requested location, and not from a point prior to the requested CSN.
- You must establish a physical start point in the transaction log or trail for Extract with `ADD EXTRACT` or `ALTER EXTRACT` before using `ATCSN` or `AFTERCSN`. These options are intended to be an additional filter after Extract is positioned to a physical location in the data source.

BRoptions

Extract can be started with BR options. Here are some examples of the BR options:

- `START EXTRACT BROFF`
- `START EXTRACT BRRESET`
- `START EXTRACT BRInterval # BRKEEPSTALEFILES`
- `START EXTRACT BRKEEPSTALEFILES`
- `START EXTRACT BRFSOPTION`

See BR in *Reference for Oracle GoldenGate* for details.

Examples

```
START EXTRACT exte
```

```
START EXTRACT exte ATCSN 684993
```

```
START EXTRACT exte AFTERC SN 684993
```

START REPLICAT

Use `START REPLICAT` to start Replicat. To confirm that Replicat has started, use the `INFO REPLICAT` or `STATUS REPLICAT` command.

When starting an integrated Replicat group for an Oracle target database, `START REPLICAT` automatically registers Replicat with the target database.

A coordinated Replicat can only be started as a whole. There is no option to start individual threads. If the prior shutdown of a coordinated Replicat was not clean, the threads may have stopped at different positions in the trail file. If this happens, `START REPLICAT` writes a warning if the parameter file was changed since the prior run and raises an error if the number of threads was changed.

Normal Start Point

Replicat can be started at its normal start point (from initial or current checkpoints) or from an alternate, user-specified position in the trail.

`START REPLICAT`, without any options, causes Replicat to start processing at one of the following points to maintain data integrity:

- After graceful or abnormal termination: At the first unprocessed transaction in the trail from the previous run, as represented by the current read checkpoint.
- First-time startup after the group was created: From the beginning of the active trail file (seqno 0, rba 0).

Alternate Start Point

The `SKIPTRANSACTION`, `ATCSN`, and `AFTERCSN` options of `START REPLICAT` cause Replicat as a whole, or specific threads of a coordinated Replicat, to begin processing at a transaction in the trail other than the normal start point. Use these options to:

- Specify a logical recovery position when an error prevents Replicat from moving forward in the trail. Replicat can be positioned to skip the offending transaction or transactions, with the understanding that the data will not be applied to the target.
- Skip replicated transactions that will cause duplicate-record and missing-record errors after a backup is applied to the target during an initial load. These options cause Replicat to discard transactions that occurred earlier than the most recent set of changes that were captured in the backup. You can map the value of the serial identifier that corresponds to the completion of the backup to a CSN value, and then start Replicat to begin applying transactions from the specified CSN onward.

Note:

Skipping a transaction, or starting at or after a CSN, might cause Replicat to start more slowly than normal, depending on how much data in the trail must be read before arriving at the appropriate transaction record. To view the startup progress, use the `SEND REPLICAT` command with the `STATUS` option. To omit the need for Replicat to read through transactions that ultimately will be skipped, you can use the `ATCSN` or `AFTERCSN` option when starting Extract and the data pumps, so that those transactions are omitted from the trail, see [START EXTRACT](#).

Syntax

```
START REPLICAT group_name
[SKIPTRANSACTION | {ATCSN csn | AFTERCSN csn}]
[FILTERDUPTRANSACTIONS | NOFILTERDUPTRANSACTIONS]
[THREADS (threadID[, threadID][, ...][, thread_range[, thread_range][, ...])
```

group_name

The name of a Replicat group or a wildcard (*) to specify multiple groups. For example, `T*` starts all Replicat groups whose names begin with T.

SKIPTRANSACTION

Causes Replicat to skip the first transaction after its expected startup position in the trail. All operations from that first transaction are excluded.

If the `MAXTRANSOPS` parameter is also being used for this Replicat, it is possible that the process will start to read the trail file from somewhere in the middle of a transaction. In that case, the remainder of the partial transaction is skipped, and Replicat resumes normal processing from the next begin-transaction record in the file. The skipped records are written

to the discard file if the `DISCARDFILE` parameter is being used; otherwise, a message is written to the report file that is similar to:

```
User requested START SKIPTRANSACTION. The current transaction will be
skipped. Transaction ID txid, position Seqno seqno, RBA rba
```

`SKIPTRANSACTION` is valid only when the trail that Replicat is reading is part of an online change synchronization configuration (with checkpoints). Not valid for task-type initial loads (where `SPECIALRUN` is used with `ADD REPLICAT`).

ATCSN *csn* | AFTERCASN *csn*

Sets a user-defined start point at a specific CSN. When `ATCSN` or `AFTERCASN` is used, a message similar to one of the following is written to the report file:

```
User requested start at commit sequence number (CSN) csn-string
```

```
User requested start after commit sequence number (CSN) csn-string
```

General information about these options:

- Valid only when the trail that Replicat is reading is part of an online change synchronization configuration (with checkpoints). Not valid for task-type initial loads (where `SPECIALRUN` is used with `ADD REPLICAT`).
- To support starting at, or after, a CSN, the CSN is stored in the first trail record of each transaction. If Replicat is started with `AFTERCASN` against an earlier trail version, Replicat will abend and write an error to the report stating that the trail format is not supported.

ATCSN

Causes Replicat to start processing at the transaction that has the specified CSN. Any transactions in the trail that have CSN values that are less than the specified one are skipped.

AFTERCASN

Causes Replicat to start processing at the transaction that occurred after the one with the specified CSN. Any transactions in the trail that have CSN values that are less than, or equal to, the specified one are skipped.

csn

Specifies a CSN value. Enter the CSN value in the format that is valid for the database. See *Administering Oracle GoldenGate* for CSN formats and descriptions. Replicat abends if the format is invalid and writes a message to the report file. To determine the CSN to supply after an initial load is complete, use the commit identifier at which the load utility completed the load. Otherwise, follow the instructions in the initial load procedure for determining when to start Replicat.

FILTERDUPTRANSACTIONS | NOFILTERDUPTRANSACTIONS

Causes Replicat to ignore transactions that it has already processed. Use when Extract is repositioned to a new start point (see the `ATCSN` or `AFTERCASN` option of "[START EXTRACT](#)") and you are confident that there are duplicate transactions in the trail that could cause Replicat to abend. This option requires the use of a checkpoint

table. The default is `FILTERDUPTRANSACTIONS`. However, if you use `NOFILTERDUPTRANSACTIONS`, the integrated Replicat default setting is overridden and causes it to not filter the duplicates. So it has the same effect on both classic and integrated Replicat.

THREADS (*threadID*[, *threadID*][, ...][, *thread_range*[, *thread_range*][, ...])

Valid for `SKIPTRANSACTION`, `ATCSN`, and `AFTERCSN` when Replicat is in coordinated mode. Not valid for `START REPLICAT` without those options. Starts the specified Replicat thread or threads at the specified location.

threadID[, *threadID*][, ...]

Specifies a thread ID or a comma-delimited list of threads in the format of `threadID`, `threadID`, `threadID`.

thread_range[, *thread_range*][, ...]

Specifies a range of threads in the form of `threadIDlow-threadIDhigh` or a comma-delimited list of ranges in the format of `threadIDlow-threadIDhigh`, `threadIDlow-threadIDhigh`.

A combination of these formats is permitted, such as `threadID`, `threadID`, `threadIDlow-threadIDhigh`.

Examples

```
START REPLICAT repe
```

The following starts Replicat at an Oracle-specific CSN.

```
START REPLICAT repe, ATCSN 6488359
```

The following starts Replicat at a SQL Server-specific CSN after the one with the specified CSN.

```
START REPLICAT repe, AFTERCSN 0X000004D2:0000162E:0009
```

The following causes threads 4 and 5 of a coordinated Replicat to skip the first transaction after their last checkpoint when Replicat is started. If this were a 10-thread coordinated Replicat, threads 0-3 and 6-10 would all start at the normal start point, that of their last checkpoint.

```
START REPLICAT repe SKIPTRANSACTION THREADS(4-5)
```

The following example causes threads 1-3 of a coordinated Replicat to start at CSN 6488359, threads 9-10 to start after CSN 6488360, and threads 7 and 8 to skip the first transaction after its last checkpoint.

```
START REPLICAT repe ATCSN 6488359 THREADS(1-3), AFTERCSN 6488360  
THREADS(9-10), SKIPTRANSACTION THREADS(7,8)
```

START MANAGER

Use `START MANAGER` to start the Manager process. This applies to a non-clustered environment. In a Windows cluster, you should stop Manager from the Cluster Administrator.

Syntax

```
START MANAGER  
[, CPU number]  
[, PRI number]  
[, HOMETERM device_name]  
[, PROCESSNAME process_name]
```

CPU *number*

Valid for SQL/MX. Specifies the number of the CPU to be used for the process. Valid values are numbers 0 - 15 and -1 is default, which is assigned 1 higher than the last Manager started.

PRI *number*

Valid for SQL/MX. Specifies the Extract process priority. Valid values are numbers are 1 - 199 and -1 is the default, and is the same as the manager process priority.

HOMETERM *device_name*

Valid for SQL/MX. Specifies the name of the device to be used and must be a terminal or process. It can be entered in either Guardian \$ or OSS /G/xxxxxx form. The default is \$zhome or the current session HOMETERM when \$zhome is not defined.

PROCESSNAME *process_name*

Valid for SQL/MX. Specifies the name of the process as alphanumeric string up to five characters and can be entered in either Guardian \$ or OSS /G/xxxxxx form. The default is a system generated process name.

Examples

```
START MANAGER, CPU 2, PRI 148, HOMETERM /G/zhome, PROCESSNAME $ogmgr
```

SYNCHRONIZE REPLICAT

Valid for coordinated, integrated, and parallel Replicat. Use `SYNCHRONIZE REPLICAT` to return all of the threads of a Replicat to the same position in the trail file after an unclean shutdown. This position is the maximum checkpoint position of all of the threads, in other words, the most recent trail record processed among all of the threads. When `SYNCHRONIZE REPLICAT` is issued, all threads are started and allowed to process transactions until they reach the maximum checkpoint position, and then Replicat stops.

For more information about how to use `SYNCHRONIZE REPLICAT` to recover a coordinated Replicat after an unclean shutdown, or to enable repartitioning of data among different threads, see [Administering a Coordinated Replicat Configuration](#).

Syntax

```
SYNCHRONIZE REPLICAT group_name
```

group_name

The name of a Replicat group or a wildcard (*) to specify multiple groups. For example, `T*` synchronizes the threads of all Replicat groups whose names begin with T. The threads synchronize to the same position within their group, not to the same position across all Replicat groups being synchronized with this command.

Example

```
SYNCHRONIZE REPLICAT repe
```

UNDELETE MASTERKEY

Use the `UNDELETE MASTERKEY` command to remove the deletion mark from a master key version, thus retaining that version if the `PURGE WALLET` command is used. Only one version can be unmarked per `UNDELETE MASTERKEY` command. See [DELETE MASTERKEY](#) to mark a version of a master key for deletion.

The `OPEN WALLET` command must be used before using this command or any of the commands that add, renew, or delete the master keys in the wallet.

Syntax

```
UNDELETE MASTERKEY VERSION version
```

VERSION *version*

The version that is to be unmarked for deletion.

Example

This command unmarks version 3 of the master key and returns a message similar to the one shown.

```
UNDELETE MASTERKEY VERSION 3
```

Output:

```
Version 3 of Masterkey 'OGG_DEFAULT_MASTERKEY' undeleted from wallet at location './ wallet'.
```

Or

```
UNDELETE MASTERKEY VERSION 3
```

Output:

```
Version 3 of Masterkey 'OGG_DEFAULT_MASTERKEY' undeleted from wallet
at location './dirwlt'.
```

UNREGISTER EXTRACT

Valid for Oracle and PostgreSQL.

Use `UNREGISTER EXTRACT` to remove the registration of an Extract group from an Oracle database. `UNREGISTER EXTRACT` is valid only for a primary Extract group. Do not use it for a data pump Extract.

To register an Extract group with the database, use the `REGISTER EXTRACT` command.

To upgrade an Extract from classic capture mode to integrated capture mode, use the `ALTER EXTRACT` command.

For PostgreSQL, a replication slot is dropped in the connected database for PostgreSQL. This command ensures that the PostgreSQL database overwrites the existing transaction log or may archive the log. After deleting the Extract, the command must be run.

Syntax

```
UNREGISTER EXTRACT group_name
```

group_name

The name of the Extract group that is to be unregistered from the database. Do not use a wildcard. This group must currently be registered with the database.

DATABASE

(Oracle only) Disables integrated capture mode for the Extract group.

(Oracle only) This command removes the database capture (mining) server that has the same name as the Extract group. For additional information about support for, and configuration of, the Extract capture modes.

Before using `UNREGISTER EXTRACT` with `DATABASE`, do the following:

1. Stop Extract with the `STOP EXTRACT` command.
2. Log in to the mining database with the `DBLOGIN` or `MININGDBLOGIN` command with the privileges granted in the `dbms_goldengate_auth.grant_admin_privilege` procedure. For local capture, `DBLOGIN` is required. For downstream capture, `DBLOGIN` and `MININGDBLOGIN` are both required.
3. Delete the Extract group with `DELETE EXTRACT`.

Examples

```
UNREGISTER EXTRACT exte
```

```
UNREGISTER EXTRACT exte DATABASE
```

```
UNREGISTER EXTRACT exte with DATABASE PostgresDB
```

UPGRADE CHECKPOINTTABLE

Not valid for Replicat for Java, Oracle GoldenGate Applications Adapter, or Oracle GoldenGate Big Data.

Use the `UPGRADE CHECKPOINTTABLE` command to add a supplemental checkpoint table when upgrading Oracle GoldenGate.

Syntax

```
UPGRADE CHECKPOINTTABLE [[container. | catalog.]owner.table]
```

container. | *catalog.*

The Oracle pluggable database. If this option is omitted, the catalog or pluggable database defaults to the one that is associated with the `SOURCEDB`, `USERID`, or `USERIDALIAS` portion of the `DBLOGIN` command (depending on the database).

owner.table

The owner and name of the checkpoint table. An owner and name are not required if they are the same as those specified with the `CHECKPOINTTABLE` parameter in the `GLOBALS` file.

Example

```
UPGRADE CHECKPOINTTABLE ggadmin.ggs_checkpoint
```

UPGRADE HEARTBEATTABLE

Valid for Oracle, Db2 z/OS, Db2 for i, Db2 LUW, MySQL, PostgreSQL, SQL Server, Teradata, and TimesTen.

Use `UPGRADE HEARTBEATTABLE` when upgrading Oracle GoldenGate from a prior release, to enable any new heartbeat functionality available in the current release.

This command requires a `DBLOGIN`. On a CDB database for Oracle, a PDB login is required.

Oracle GoldenGate for Oracle database simplifies the administration of the heartbeat table by eliminating the need for `GGSCHEMA` or `HEARTBEATTABLE` parameter. In case of CDB root Extract, `GGSCHEMA` is used.

Syntax

```
UPGRADE HEARTBEATTABLE
```

VIEW ENCKEYS

Use `VIEW ENCKEYS` to display the contents of the `ENCKEYS` file in read-only mode on-screen.

Syntax

```
VIEW ENCKEYS
```

ADD CREDENTIALSTORE

Use the `ADD CREDENTIALSTORE` command to create a credential store. The credential store manages user IDs and their encrypted passwords (together known as *credentials*) that are used by Oracle GoldenGate processes to interact with the database.

The credential store eliminates the need to specify user names and clear-text passwords in the Oracle GoldenGate parameter files. An optional alias can be used in the parameter file instead of the user ID to map to a userid-password pair in the credential store.

The credential store is implemented as an auto-login wallet within the Oracle Credential Store Framework (CSF). The use of an LDAP directory is not supported for the Oracle GoldenGate credential store. The autologin wallet supports automated restarts of Oracle GoldenGate processes without requiring human intervention to supply the necessary passwords.

`ADD CREDENTIALSTORE` creates an empty credentials store in the location that is specified with the `CREDENTIALSTORELOCATION` parameter in the `GLOBALS` file, if used, or otherwise in the default location of `dircrd` in the Oracle GoldenGate installation directory. A credential store can be shared by multiple instances (installations) of Oracle GoldenGate on the same or different systems. Store a shared credential store in a shared file system, and specify this location in each Oracle GoldenGate instance by using the `CREDENTIALSTORELOCATION` parameter in each `GLOBALS` parameter file.

Only one credential store can be used at a time by any given instance of Oracle GoldenGate. For example, you can have a credential store named `/home/ogg/credentials` and a credential store named `/test/ogg/credentials`, but only one can be used at runtime by a given instance of Oracle GoldenGate. You can stop the processes to switch to a different credential store, but make certain to update the `CREDENTIALSTORELOCATION` parameter in each `GLOBALS` parameter file, and change the `USERIDALIAS` parameters to specify different aliases if needed.

Syntax

```
ADD CREDENTIALSTORE
```

ALTER DATASTORE

Use the `ALTER DATASTORE` command to change the memory model that is used for interprocess communication by the Oracle GoldenGate Monitor data store. Before using this command, stop all Oracle GoldenGate processes, including Manager.

Syntax

```
ALTER DATASTORE {MMAP | SHM [ID n] }
```

MMAP

Indicates that the data store should use memory mapped files for interprocess communications.

SHM [ID *n*]

Indicates that the data store should use System V shared memory for interprocess communications. This option is not available on Windows platforms. If `ID` is not specified, a suitable default ID is used.

Examples

Example 1

```
ALTER DATASTORE MMAP
```

Example 2

```
ALTER DATASTORE SHM
```

Example 3

```
ALTER DATASTORE SHM ID 1000
```

CLEAR INSTANTIATION CSN

Use `CLEAR INSTANTIATION CSN` on your target database to clear (reverse) the instantiation CSN manually. This command requires `DBLOGIN` where the user is the default Oracle GoldenGate schema.

Syntax

```
CLEAR INSTANTIATION CSN FOR [schema.]table FROM source-database-name
```

[*schema.*]*table*

The name of the table to clear the instantiation CSN on. If no schema is provided, the `DBLOGIN` user will be used.

source-database-name

The global name of the source database for which this is a target.

Example

```
CLEAR INSTANTIATION CSN FOR hr.employees FROM pdbeast.com
```

CREATE DATASTORE

Use the `CREATE DATASTORE` command to create an Oracle GoldenGate Monitor data store in the Oracle GoldenGate installation directory.

Syntax

```
CREATE DATASTORE [ MMAP | SHM [ID n] ]
```

MMAP

Indicates that the data store should use memory mapped files for interprocess communications.

SHM [ID *n*]

Indicates that the data store should use System V shared memory for interprocess communications. This option is not available on Windows platforms. If `ID` is not specified, a suitable default ID is used. `SHM` is the default.

Examples

```
CREATE DATASTORE MMAP
```

```
CREATE DATASTORE SHM
```

```
CREATE DATASTORE SHM ID 1000
```

CREATE SUBDIRS

Use `CREATE SUBDIRS` when installing Oracle GoldenGate. This command creates the default directories within the Oracle GoldenGate home directory. Use `CREATE SUBDIRS` before any other configuration tasks.



Note:

The `dirbdb` is not created with `CREATE SUBDIRS`; it is only created with `CREATE DATASTORE`.

Syntax

```
CREATE SUBDIRS
```

CREATE WALLET

Use the `CREATE WALLET` command to create a *master-key wallet*. This wallet stores the master key that is used by Oracle GoldenGate processes to encrypt the encryption keys that secure data over the network and in trail files and other Oracle GoldenGate files that store sensitive data.

This command creates an empty wallet that remains open for the duration of the GGSCI session. The GGSCI console returns messages similar to the following, indicating that the wallet is present and open.

```
Created wallet at location './dirwlt'.  
Opened wallet at location './dirwlt'.
```

The wallet is created as an *autologin* wallet (file extension `.sso`) to support automated restarts of Oracle GoldenGate processes without requiring human intervention to supply the necessary decryption passwords. The wallet file is created in the directory specified by the `GLOBALS` parameter `WALLETLOCATION`, if present, or otherwise in the default location of `dirwlt` in the Oracle GoldenGate installation directory.

The wallet is in a platform-independent format. It must either be stored on a shared file system that is accessible by all systems in the Oracle GoldenGate environment, or it must be copied to all of those systems initially and every time the master key changes.

The wallet is permanent within Oracle GoldenGate, but can be manually deleted with the appropriate command in the operating system, if that becomes necessary.

See [ADD MASTERKEY](#) to add a master key value to the wallet.

Syntax

```
CREATE WALLET
```

DBLOGIN

Use `DBLOGIN` to establish a database connection through GGSCI in preparation to issue other Oracle GoldenGate commands that affect the database. The user who issues `DBLOGIN` should have the appropriate database privileges to perform the functions that are enacted by those commands.

Any other special privileges that are required for a GGSCI command are listed with the reference documentation for that command.

Requirements When Configuring Extract or Replicat in Integrated Mode (Oracle)

If using `DBLOGIN` to issue `ADD EXTRACT`, `ALTER EXTRACT`, or `REGISTER EXTRACT` to initiate integrated Extract or `ADD REPLICAT`, `ALTER REPLICAT`, or `REGISTER REPLICAT` to initiate integrated Replicat against an Oracle database, the user who issues `DBLOGIN` must:

- have privileges granted through the Oracle `dbms_goldengate_auth.grant_admin_privilege` procedure.
- not be changed while Extract or Replicat is in integrated mode.

Syntax

```
DBLOGIN {
[SOURCEDB data-source] |
[, database@host:port] |
USERID {/ | userid}[, PASSWORD password]
    [algorithm ENCRYPTKEY {keyname | DEFAULT}] |
USERIDALIAS alias [DOMAIN domain] |
[SYSDBA | SQLID sqlid]
[SESSIONCHARSET character-set]
}
```

SOURCEDB *data-source*

SOURCEDB specifies a data source name. This option is required to identify one of the following:

- The source or target login database for SQL Server, MySQL, and databases that use ODBC

database@host:port

(MySQL) Specifies a connection string that contains the database name, host name, and database port number. Can be used to specify a port other than the default that is specified in the database configuration.

USERID

Supplies a database login credential, if required. Can be used if an Oracle GoldenGate credential store is not in use. Input varies, depending on the database, as follows:

userid

Specifies the name of a database user or a schema, depending on the database configuration. Use a TNS connection identifier (alias) to connect to any database. To log into a PDB in an Oracle multitenant container database, specify *userid* as a connect string, such as `gguser@DBEAST`. To log into the root container, specify *userid* as a common user, including the `c##` prefix, such as `c##ggadmin@DBEAST`.

/

(Oracle) Directs Oracle GoldenGate to use an operating-system login for Oracle, not a database user login. Use this argument only if the database allows authentication at the operating-system level. To use this option, the correct user name must exist in the database, in relation to the value of the Oracle `OS_AUTHENT_PREFIX` initialization parameter. For more information, see the `USERID` | `NOUSERID` parameter.

NOPASSWORD | **PASSWORD** *password*

The **NOPASSWORD** option is the alternative to the **PASSWORD** option when using external authentication because password is not required for external authentication such as using Kerberos authentication. See [Configuring Kerberos Authentication](#) .

Use when authentication is required to specify the password for the database user. If the password was encrypted by means of the `ENCRYPT PASSWORD` command, supply the encrypted password; otherwise, supply the clear-text password. If the password is case-sensitive, type it that way.

If the `PASSWORD` clause is omitted, you are prompted for a password, and the password is not echoed.

For PostgreSQL, `DBLOGIN` fails when login password contains a semicolon.

algorithm

If the password was encrypted with the `ENCRYPT PASSWORD` command, specify the encryption algorithm that was used:

AES128

AES192

AES256

ENCRYPTKEY {*keyname* | DEFAULT}

Specifies the encryption key that was specified with the `ENCRYPT PASSWORD` command.

Use one of the following:

ENCRYPTKEY *keyname*

Specifies the logical name of a user-created encryption key in the `ENCKEYS` lookup file. Use if `ENCRYPT PASSWORD` was used with the `KEYNAME keyname` option.

ENCRYPTKEY DEFAULT

Directs Oracle GoldenGate to generate a Blowfish key. Use if the `ENCRYPT PASSWORD` command was used with the `KEYNAME DEFAULT` option.

USERIDALIAS *alias* [DOMAIN *domain*]

Supplies a database login alias, if required. Can be used instead of the `USERID` option if there is a local Oracle GoldenGate credential store that contains a credential with the required privileges.

alias

Specifies the alias of a database user credential that is stored in the Oracle GoldenGate credential store. To log into a pluggable database in an Oracle multitenant container database, the user must be stored as a connect string, such as `gguser@DBEAST`. To log into the root container, the user must be stored as a common user, including the `c##` prefix, such as `c##ggadmin@DBEAST`.

DOMAIN *domain*

Specifies the credential store domain for the specified alias. A valid domain entry must exist in the credential store for the specified alias.

SYSDBA

(Oracle) Specifies that the user logs in as `sysdba`. This option can be used for `USERID` and `USERIDALIAS`.

SQLID *sqlid*

(Db2 on z/OS) Issues the SQL command `SET CURRENT SQLID = 'sqlid'` after the `USERID` login (with `PASSWORD`, if applicable) is completed. If the `SET` command fails, the entire `DBLOGIN` command fails as a unit.

SESSIONCHARSET *character-set*

(Teradata and MySQL) Sets a database session character set for the GGSCI connection to the database. All subsequent commands will use the specified session character set. This command option overrides any `SESSIONCHARSET` that is specified in the `GLOBALS` file.

Examples**(Oracle with SYSDBA)**

```
DBLOGIN USERID ggadmin@dc1 SYSDBA password  
AACAAAAAAAAAAAAJAUEUGODSCVJGJEEIUGKJDJTFNDKEJFFFTC AES128, ENCRYPTKEY  
securekey1
```

(MySQL)

```
DBLOGIN SOURCEDB ggadmin@host1:3305, USERIDALIAS ggeast
```

(MySQL)

```
DBLOGIN SOURCEDB database USERIDALIAS ggeast
```

(SQL Server with Integrated Windows authentication)

```
DBLOGIN SOURCEDB systemdsn
```

(SQL Server with SQL Server authentication)

```
DBLOGIN SOURCEDB systemdsn USERIDALIAS ggeast
```

DEFAULTJOURNAL

Use the `DEFAULTJOURNAL` command to set a default journal for multiple tables or files for the `ADD TRANDATA` command when used with a DB2 for i database, instead of having to use the `JOURNAL` keyword. Issue this command before issuing `ADD TRANDATA`. Any `ADD TRANDATA` command used without a journal assumes the journal from `DEFAULTJOURNAL`. To remove the use of a default journal, use the `CLEAR` option. To display the current setting of `DEFAULTJOURNAL`, you can issue the command without arguments.

Syntax

```
DEFAULTJOURNAL [library/journal] [CLEAR]
```

library/journal

The native name of the journal that you want to use as the default journal for `ADD TRANDATA`.

CLEAR

Stops the use of a default journal for `ADD TRANDATA`.

FC

Use `FC` to display and edit a previously issued GGSCI command and then execute it again. Previous commands are stored in the memory buffer and can be displayed by issuing the `HISTORY` command (see [HISTORY](#)).

Displaying Previous Commands

Issuing `FC` without arguments displays the most recent command. Options enable you to execute any previous command by specifying its line number or a text substring. Previous commands can be edited only if they were issued during the current GGSCI session, because history is not maintained from one session to another.

Editing Commands

The `FC` command displays the specified command and then opens an editor with a prompt containing a blank line starting with two dots. To edit a command, use the space bar to position the cursor beneath the character in the displayed command where you want to begin editing, and then use one of the following arguments. Arguments are not case-sensitive and can be combined.

Table 3-19 FC Editor Commands

Argument	Description
<code>i text</code>	<p>Inserts <code>text</code>. For example:</p> <pre>FC 9 SEND MGR .. i CHILDSTATUS SEND MGR CHILDSTATUS</pre>
<code>r text</code>	<p>Replaces <code>text</code>. For example:</p> <pre>FC 9 INFO MGR .. r EXTRACT extjd INFO EXTRACT extjd</pre>
<code>d</code>	<p>Deletes a character. To delete multiple characters, enter a <code>d</code> for each one. For example:</p> <pre>FC 10 INFO EXTRACT extjd, detail .. dddddddd INFO EXTRACT extjd</pre>

Table 3-19 (Cont.) FC Editor Commands

Argument	Description
<i>replacement text</i>	Replaces the displayed command with the text that you enter on a one-for-one basis. For example: <pre>FC 10 INFO MGR .. EXTRACT extjd INFO EXTRACT extjd</pre>

To execute the command, press **Enter** twice, once to exit the editor and once to issue the command. To cancel an edit, type a forward slash (/) twice.

Syntax

```
FC [n | -n | string]
```

n

Displays the command from the specified line. Each GGSCI command line is sequenced, beginning with 1 at the start of the session.

-n

Displays the command that was issued *n* lines before the current line.

string

Displays the last command that starts with the specified text string.

Examples**Example 1**

```
FC 9
```

Example 2

```
FC -3
```

Example 3

```
FC sta
```

FORCEAPPEND

FORCEAPPEND instructs Extracts, primary or data pump, to forgive the missing CSN information in existing output trails during recovery stage, so that the new trail files can be seemingly appended to the existing ones.

Syntax

```
START extract FORCEAPPEND
```

data_pump

The name of the Extract data pump for which the `FORCEAPPEND` option needs to be applied.

Example

```
START extempmp FORCEAPPEND
```

GETPARAMINFO

Use `GETPARAMINFO` to query runtime parameter values of a running instance, including Extract, Replicat, and Manager. You can query for a single parameter or all parameters and send the output to the console or a text file.

Syntax

```
SEND MGR | group GETPARAMINFO [parameter-name] [FILE output-file]
```

group

The name of the Extract or Replicat instance or `MANAGER`.

parameter-name

The default behavior is to display all parameters in use, meaning those parameters that have ever been queried by the application, parameters, and their current values. If you specify a particular parameter, then the output is filtered by that name.

output-file

The name of the text file that your output is redirected to.

Examples

```
START extempmp FORCEAPPEND
```

This example displays one parameter.

```
SEND MGR GETPARAMINFO PORT
```

This example displays all parameters loaded from parameter file into Replicat `repe` and those parameters that the `repe` has accessed.

```
SEND repe GETPARAMINFO
```

The following example redirects the output to a file.

```
SEND MGR GETPARAMINFO FILE mgrfile.out
```

INFO JAGENT

Use the `INFO JAGENT` command to determine whether or not the Oracle GoldenGate Monitor JAgent is running. This command is an alias for `STATUS JAGENT`.

Syntax

```
INFO JAGENT
```

INFO MANAGER

Use `INFO MANAGER` (or `INFO MGR`) to determine whether or not the Manager process is running and the process ID. If Manager is running, the port number is displayed. This command is an alias for `STATUS MANAGER`.

Syntax

```
INFO MANAGER
```

INFO MARKER

Use `INFO MARKER` to review recently processed markers from a NonStop system. A record is displayed for each occasion on which GGSCI, Logger, Extract, or Replicat processed the marker.

Markers can only be added on a NonStop system that uses Oracle GoldenGate for HP NonStop software

The following is an example of the output.

Processed	Added	Diff	Prog	Group
Node				
2012-02-16:14:41:15	2012-02-16:14:41:08	00:00:07	Extract	PQACMD
\QAMD				
	GROUPCMD REPLICAT RQACMD CLOSEFILES			
2012-02-16:14:41:13	2012-02-16:14:41:08	00:00:05	Extract	PQACMD
\QAMD				
	TACL CMD REPLICAT RQACMD FUP			
PURGEDATA \$QA16.QAETAR				

Where:

- `Processed` is the local time that a program processed the marker.
- `Added` is the local time at which the marker was inserted into the NonStop audit trails or log trails.
- `Diff` is the time difference between the `Processed` and `Added` values. `Diff` can serve as an indicator of the lag between the user application and Extract and Replicat activities.

- `Prog` shows which process processed the marker, such as GGSCI, Logger, Extract or Replicat.
- `Group` shows the Extract or Replicat group or Logger process that processed the marker. N/A is displayed if GGSCI processed the marker.
- `Node` shows the node where the marker was inserted into the audit trails.
- There might be an additional column if user-defined text was included in the `ADD MARKER` statement.

Syntax

```
INFO MARKER [COUNT number]
```

COUNT *number*

Restricts the list to a specified number of the most recent markers.

INFO PMSRVR

Use `INFO PMSRVR` to determine whether or not the Oracle GoldenGate Performance Metrics Service is running. This command is an alias for `STATUS PMSRVR`.

Syntax

```
INFO PMSRVR
```

OPEN WALLET

Use the `OPEN WALLET` command to open a master-key wallet. Opening a wallet decrypts the contents and loads them into the GGSCI memory. This command must be used before using any of the commands that add, renew, or delete the master keys in the wallet.

The wallet remains open for the rest of the GGSCI session. The name of the wallet to be opened is taken from the `GLOBALS` parameter `WALLETLOCATION`, if present, or otherwise it is opened from the default location in the Oracle GoldenGate installation directory.

Syntax

```
OPEN WALLET
```

REPAIR DATASTORE

Use the `REPAIR DATASTORE` command to repair the Oracle GoldenGate Monitor data store if it is corrupt or after an upgrade.

Before using this command, stop all Oracle GoldenGate processes, including Manager. For more information, see *Administering Oracle GoldenGate Monitor*.

Syntax

```
REPAIR DATASTORE
```

SEND MANAGER

Use `SEND MANAGER` to retrieve the status of the active Manager process or to retrieve dynamic port information as configured in the Manager parameter file.

Syntax

```
SEND MANAGER
[CHILDSTATUS [DEBUG]]
[GETPORTINFO [DETAIL]]
[GETPURGEOLDEXTRACTS]
```

CHILDSTATUS [DEBUG]

For the `CHILDSTATUS`, `GETPORTINFO` commands the `PORT` field is the Unix Domain Socket. The value listed in the `PORT` field is the system file that contains the properties for the Unix Domain Socket communication.

GETPORTINFO [DETAIL]

By default, retrieves the current list of ports that have been allocated to processes and their corresponding process IDs. `DETAIL` provides a list of all the ports defined using the `DYNAMICPORTLIST` parameter.

GETPURGEOLDEXTRACTS

Displays information about trail maintenance rules that are set with the `PURGEOLDEXTRACTS` parameter in the Manager parameter file, see `PURGEOLDEXTRACTS` for Extract and Replicat.

Examples

`SEND MANAGER CHILDSTATUS DEBUG` returns a child process status similar to the following. The basic `CHILDSTATUS` option returns the same display, without the `Port` column.

ID	Group	Process	Retry	Retry Time	Start Time	Port
1	EXTE	6524	0	None	2019/09/30 07:17:51	/ogg/19.1/dirtmp/EXTE.s
2	EXTS	6525	0	None	2019/09/30 07:17:51	/ogg/19.1/dirtmp/EXTS.s
3	REPE	6526	0	None	2019/09/30 07:17:51	/ogg/19.1/dirtmp/REPE.s

`SEND MANAGER GETPORTINFO DETAIL` returns a dynamic port list similar to the following.

Entry	Port	Program	Error	Process
0	/ogg/19.1/dirtmp/EXTE.s		0	4533 2019/09/30 07:17:51
1	/ogg/19.1/dirtmp/EXTS.s		0	2019/09/30

```
07:17:51
2 /ogg/19.1/dirtmp/REPE.s 0 2019/09/30 07:17:51
```

SEND MANAGER GETPURGEOLDEXTRACTS outputs information similar to the following.

```
PurgeOldExtracts Rules
Fileset                               MinHours MaxHours MinFiles MaxFiles UseCP
S:\GGS\DIRDAT\EXTTRAIL\P4\*           0         0         1         0         Y
S:\GGS\DIRDAT\EXTTRAIL\P2\*           0         0         1         0         Y
S:\GGS\DIRDAT\EXTTRAIL\P1\*           0         0         1         0         Y
S:\GGS\DIRDAT\REPTRAIL\P4\*           0         0         1         0         Y
S:\GGS\DIRDAT\REPTRAIL\P2\*           0         0         1         0         Y
S:\GGS\DIRDAT\REPTRAIL\P1\*           0         0         1         0         Y
OK
Extract Trails
Filename                               Oldest_Chkpt_Seqno  IsTable
IsVamTwoPhaseCommit
S:\GGS\8020\DIRDAT\RT                   3                   0         0
S:\GGS\8020\DIRDAT\REPTRAIL\P1\RT       13                  0         0
S:\GGS\8020\DIRDAT\REPTRAIL\P2\RT       13                  0         0
S:\GGS\8020\DIRDAT\REPTRAIL\P4\RT       13                  0         0
S:\GGS\8020\DIRDAT\EXTTRAIL\P1\ET       14                  0         0
S:\GGS\8020\DIRDAT\EXTTRAIL\P2\ET       14                  0         0
S:\GGS\8020\DIRDAT\EXTTRAIL\P4\ET       14                  0         0
```

SET NAMECCSID

Use `SET NAMECCSID` to set the CCSID (coded character set identifier) of the GGSCI session when you need to issue commands for tables in a DB2 for i database. This command is required if the CCSID of the object names stored in the SQL catalog tables is different from the CCSID of the system. The SQL catalog tables are created with the CCSID of the system, but the actual database object names could be represented with a different CCSID. The catalog does not indicate this difference when queried, and therefore Oracle GoldenGate could retrieve the name incorrectly unless `NAMECCSID` is present to supply the correct CCSID value.

To set the CCSID for `GLOBALS`, `Extract`, `Replicat`, or `DEFGEN`, use the `NAMECCSID` parameter.

`SET NAMECCSID` is not valid if the `DBLOGIN` command was previously issued, because that command affects the GGSCI session. To issue `SET NAMECCSID` after a `DBLOGIN` command, restart GGSCI.

To view the current CCSID, use the `SHOW` command. If the CCSID is not set through the GGSCI session or through the parameter `NAMECCSID`, the `SHOW` value will be `DEFAULT`.

Syntax

```
SET NAMECCSID {CCSID | DEFAULT}
```

CCSID

A valid DB2 for i coded character set identifier that is to be used for the GGSCI session.

DEFAULT

Indicates that the system CCSID is to be used for the GGSCI session.

Example

```
SET NAMECCSID 1141
```

SET INSTANTIATION CSN

Use `SET INSTANTIATION CSN` on your target database to set the instantiation CSN manually. This command requires `DBLOGIN`. It enables a Replicat with the `DBOPTIONS ENABLE_INSTANTIATION_FILTERING` option to filter out records below the specified CSN for any object without Oracle data pump import instantiation information. It is an alternative to specifying `@FILTER(@GETENV('TRANSACTION','CSN'))`.

To enable instantiation SCN filtering, you must do the following:

1. Your Replicat parameter file must contain `DBOPTIONS ENABLE_INSTANTIATION_FILTERING`.
2. The instantiation SCNs must be set at the target database for each table.

You can do this using one of the following two methods:

Automatically set the source SCN by the Oracle data pump upon import if the tables were prepared at the source database using `ADD TRANDATA PREPARECSN` or `ADD SCHEMATRANDATA PREPARECSN` prior to the Oracle data pump export.

or

Manually set the instantiation source SCN at the target database using this command.

Syntax

```
SET INSTANTIATION CSN csn FOR [schema.]table FROM source-database-name
```

csn

The CSN number that instantiation will begin.

[schema.]table

The name of the table to set the instantiation CSN on. If no schema is provided, the `DBLOGIN` user is used.

source-database-name

The global name of the source database for which this is a target.

Example

```
SET INSTANTIATION CSN 12345678 FOR hr.employees FROM orcl.com
```

START JAGENT

Use the `START JAGENT` command to start the Oracle GoldenGate Monitor JAgent process in a non-clustered environment.

Syntax

```
START JAGENT
```

START PMSRVR

Use the `START PMSRVR` command to start the Oracle GoldenGate Performance Metrics Service process.

Syntax

```
START PMSRVR
```

STATUS JAGENT

Use the `STATUS JAGENT` command to determine whether or not the Oracle GoldenGate Monitor JAgent is running. This command is an alias for `INFO JAGENT`.

Syntax

```
STATUS JAGENT
```

STATUS MANAGER

Use `STATUS MANAGER` to see if the Manager process is running and any associate process ID. If Manager is running, the port number is displayed.

Syntax

```
STATUS MANAGER
```

STATUS PMSRVR

Use the `STATUS PMSRVR` command to determine whether or not the Oracle GoldenGate Performance Metrics Service is running. This command is an alias for `INFO PMSRVR`.

Syntax

```
STATUS PMSRVR
```

STOP JAGENT

Use the `STOP JAGENT` command to stop the Oracle GoldenGate Monitor JAgent process in a non-clustered environment.

Syntax

```
STOP JAGENT [ ! ]
```

!
(Exclamation point) Bypasses the prompt that confirms the intent to stop the JAgent.

Examples

```
STOP JAGENT
```

```
STOP JAGENT !
```

STOP MANAGER

Use `STOP MANAGER` to stop the Manager process. This applies to non-clustered environments. In a Windows cluster, Manager must be stopped through the Cluster Administrator.

Syntax

```
STOP MANAGER [!]
```

!
(Exclamation point) Bypasses the prompt that confirms the intent to shut down the Manager.

STOP PMSRVR

Use the `STOP PMSRVR` command to stop the Oracle GoldenGate Performance Metrics Service.

Syntax

```
STOP PMSRVR [ ! ]
```

!
(Exclamation point) Bypasses the prompt that confirms the intent to stop the Performance Metrics Server.

Examples

```
STOP PMSRVR
```

```
STOP PMSRVR !
```

VIEW GGSEVT

Use `VIEW GGSEVT` to view the Oracle GoldenGate error log (`ggserr.log` file). This file contains information about Oracle GoldenGate events, such as process startup, shutdown, and exception conditions. This information is recorded in the system error log, too, but viewing the Oracle GoldenGate error log sometimes is more convenient and may retain events further back in time.

The display can be lengthy. To exit the display before reaching the end, use the operating system's standard methods for terminating screen output.

Syntax

```
VIEW GGSEVT
```

Example

The following is sample `VIEW GGSEVT` output:

```
2011-01-08 11:20:56 GGS INFO      301 GoldenGate Manager for Oracle,  
mgr.prm: Command received from GUI (START GGSCI ).  
2011-01-08 11:20:56 GGS INFO      302 GoldenGate Manager for Oracle,  
mgr.prm: Manager started GGSCI process on port 7840.  
2011-01-08 11:21:31 GGS INFO      301 GoldenGate Manager for Oracle,  
mgr.prm: Command received from GUI (START GGSCI ).
```