

## 17 Troubleshooting

You can enable tracing, locate log and trace files, and troubleshooting common issues.

### Troubleshooting Tips

Use these tips to discover information about the sharded database that you need to help you troubleshoot issues.

### Pre-Deployment Network Validation

Several GDSCTL commands have a `-validate_network` option to detect network configuration issues as early as possible during the specification and deployment of sharded databases.

The `-validate_network` can be used in following GDSCTL commands for sharded databases:

```
add {invitednode | invitedsubnet}
```

```
add shard
```

```
deploy
```

```
start gsm
```

```
validate (also includes -show_errors)
```

### Checking the Sharding Method

Run `gdsctl config sdb` to check which sharding method, also known as the shard type, is used in the sharded database.

The sharding method can be system-managed, composite, or user-defined.

The sharding method is shown under "Shard type" in the output of `gdsctl config sdb` as shown here.

### Copy

```
gdsctl> config sdb
```

```
GDS Pool administrators
```

```
-----
```

```
Replication Type
```

```
-----
```

```
Data Guard
```

```
Shard type
```

```
-----
```

```
System-managed
```

```
Shard spaces
```

```
-----
```

shd1

## Services

-----

srv1

Checking the Replication Type

Run `gdsctl config sdb` to check which method is used for shard replication in the sharded database.

The replication type is shown under "Replication Type" in the output of `gdsctl config sdb` as shown here.

Copy

`gdsctl> config sdb`

## GDS Pool administrators

-----

### Replication Type

-----

Data Guard

Shard type

-----

System-managed

Shard spaces

-----

shd1

## Services

-----

srv1

Table 17-1 Replication types in `config sdb` output

Replication Type	Value Shown in Output
------------------	-----------------------

Oracle Data Guard	Data Guard
-------------------	------------

Raft

Checking the Oracle Data Guard Protection Mode

You can run `gdsctl config shardspace` on a given shardspace to check the Oracle Data Guard protection mode in your GDSCTL session, rather than switching to DGMGRL.

Data Guard can be configured in three different protection modes: MaxProtection, MaxAvailability, and MaxPerformance.

The Data Guard protection mode is shown under PROTECTION MODE in the `gdsctl config shardspace` command output, as shown here.

Copy

`GDSCTL> config shardspace -shardspace shd1`

Shard Group	Region	Role
-----	-----	-----
db1	east	Primary

PROTECTION_MODE	Chunks
-----	-----
MaxProtection	6

Checking Which Shards Are Mapped to a Key  
 You can run gdsctl config chunks -key to check which shards are mapped to a sharding key.

#### Example 1: Single Table Family

In the following example, there is only one table family in the sharded database configuration, and the table is partitioned (sharded) on data type number.

In this example, the user is checking which chunk sharding key value "2" is mapped to. In the output it shows sharding key 2 is mapped to chunk "3" and is present in the database "aime1b".

Copy

```
GDSCTL> config chunks -key 2
Range Definition
```

Chunks	Range Definition
-----	-----
3	1431655764-2147483646

Databases

```
-----
aime1b
Similarly, this can be done for any data type sharding is done on.
Also, a multiple column sharding key can be checked with comma
separated values.
```

The range definition is the range of hash values and can be ignored.

#### Example 2: Multiple Table Families

In a multiple table family configuration, add the option -table\_family to specify the table family to which the specified sharding key belongs.

The config chunks command lists shards from all shardgroups in the topology. This example also lists a Data Guard standby shardgroup, as shown by the addition of "aime1e" to the Databases (shards) list.

Copy

```
GDSCTL> config chunks -key 1 -table_family
testuserfam3.customersfam1
```

## Range Definition

Chunks	Range Definition
1	0-357913941

## Databases

aim1b  
aim1e

### Example 3: Specifying a Multiple Column Sharding Key

When a table is sharded by multiple columns, specify the sharding key value as a comma-separated list as shown here.

Copy

```
GDSTCL> config chunks -key 10,mary,2010-04-04
```

## Range Definition

Chunks	Range Definition
4	1288490187-1717986916

## Databases

aim1b  
aim1e

Checking Shard Operation Mode (Read-Only or Read-Write)

You can check whether shards are running in read-only or read-write mode by running `gdctl config chunks -cross_shard`.

The `gdctl config chunks -cross_shard` command output shows which shards, listed under "Database", are running in read-only and read-write modes, as shown below. The command also lists the chunk ranges on those shards.

Copy

```
gdctl config chunks -cross_shard
```

### Read-Only cross shard targets

Database	From	To
tst3b_cdb2_pdb1	1	3
tst3c_cdb3_pdb1	9	10
tst3d_cdb2_pdb1	4	5
tst3e_cdb3_pdb1	6	8

### Chunks not offered for cross-shard

Shard space	From	To
-------------	------	----

-----

Read-Write cross-shard targets

-----

Database	From	To
-----	----	--
tst3b_cdb2_pdb1	1	5
tst3c_cdb3_pdb1	6	10

Chunks not offered for Read-Write cross-shard activity

-----

Data N/A

Checking DDL Text

Run `gdsctl show ddl -ddl ddl_id` to get the text for the specified DDL.

The DDL numeric identifier is specified with `-ddl ddl_id` to get the text and other details of a particular DDL, as shown here.

Copy

`gdsctl show ddl -ddl 5`

DDL Text: CREATE SHARDED TABLE Customers ( CustNo NUMBER NOT NULL, Name VARCHAR2(50), Address VARCHAR2(250), Location VARCHAR2(20), Class VARCHAR2(3), CONSTRAINT RootPK PRIMARY KEY(CustNo)) PARTITION BY CONSISTENT HASH (CustNo) PARTITIONS AUTO TABLESPACE SET ts1

Owner: TESTUSER1

Object name: CUSTOMERS

DDL type: C

Obsolete: 0

Failed shards:

Note: The show ddl command output might be truncated. You can run `SELECT ddl_text FROM gsmadmin_internal.ddl_requests` on the shard catalog to see the full text of the statements.

Checking Chunk Migration Status

Run `gdsctl config chunks -show_reshard` to check the status of chunk migration.

A chunk move is a long running operation, whether user-initiated or internal (during incremental deploy), so if you need to check the status, the `gdsctl config chunks -show_reshard` provides the following status indicators as the move progresses.

empty - indicates no chunk migration in progress

scheduled - chunk is pending movement, which could be because it is waiting on another chunk move to complete, or the move didn't initiate due to some error

running - current in progress

failed - chunk move failed. Check GSM traces and source and target database traces for details.

In the following example, chunk move status is shown in the "Ongoing chunk movement" table in the command output.

Copy

```
gdsctl config chunks -show_reshard
```

Chunks

Database	From	To
tst3b_cdb2_pdb1	1	6
tst3c_cdb3_pdb1	7	10
tst3d_cdb2_pdb1	1	6
tst3e_cdb3_pdb1	7	10

Ongoing chunk movement

Chunk status	Source	Target
7 Running	tst3c_cdb3_pdb1	tst3b_cdb2_pdb1
8 scheduled	tst3c_cdb3_pdb1	tst3b_cdb2_pdb1
9 scheduled	tst3c_cdb3_pdb1	tst3b_cdb2_pdb1
10 scheduled	tst3c_cdb3_pdb1	tst3b_cdb2_pdb1

Checking Table Type (Sharded or Duplicated)

You can check whether tables are sharded or duplicated in dba/all/user\_tables using SELECT TABLE\_NAME,SHARDED,DUPLICATED FROM user\_tables;.

In the following example, column "S" indicates whether a table is sharded, and column "D" indicates whether a table is duplicated.

Copy

```
SQL> select TABLE_NAME,SHARDED,DUPLICATED from user_tables;
```

TABLE_NAME	S	D
CUSTOMERS	Y	N
DUP1	N	Y
LINEITEMS	Y	N
MLOG\$_DUP1	N	N
ORDERS	Y	N

Checking User Type (Local or ALL\_SHARD)

You can find out which users are created as local users and which are sharded database users by selecting the username and ALL\_SHARD column in dba/all/user\_users.

Copy

```
SQL> select USERNAME,ALL_SHARD from users_users where
username='TESTUSER1';
```

USERNAME	ALL_SHARD
TESTUSER1	YES

Identifying Tables Created as Sharded Tablespaces

You can find out whether tablespaces are used for a sharded table by selecting the TABLESPACE\_NAME and CHUNK\_TABLESPACE columns in dba/all/user\_tablespaces.

The value in the CHUNK\_TABLESPACE column is Y in dba/all/user\_tablespaces if it is a tablespace for a sharded table.

Copy

```
SQL> select TABLESPACE_NAME,CHUNK_TABLESPACE from user_tablespaces;
```

TABLESPACE_NAME	CHUNK_TABLESPACE
SYSTEM	N
SYSAUX	N
TEMP	N
SYSEXT	N
TS1	Y

Checking if Shard DDL is Enabled or Disabled

You can check if Shard DDL is enabled or disabled in the current SQL session.

These examples show the result of checking Shard DDL status after enabling and disabling Shard DDL.

Copy

```
SQL> alter session enable shard ddl;
```

Session altered.

```
SQL> select shard_ddl_status from v$$session where AUDSID =
userenv('SESSIONID');
```

SHARD_DD
ENABLED

Copy

```
SQL> alter session disable shard ddl;
```

Session altered.

```
SQL> select shard_ddl_status from v$$session where AUDSID =
```

```
userenv('SESSIONID');
```

```
SHARD_DD
```

```
-----
```

```
DISABLED
```

Filtering Data by Sharding Key

You can set the SHARD\_QUERIES\_RESTRICTED\_BY\_KEY parameter to enable or disable data filtering by a specified sharding key.

The parameter SHARD\_QUERIES\_RESTRICTED\_BY\_KEY can be set with ALTER at the system or session level. If enabled, DMLs will only display select data for specified SHARDING\_KEY set in the client connection.

In the following example, the client connection is established with a shard with SHARDING\_KEY specified as "1". However, when the client runs a SELECT on the customers table, all of the rows in that table in the shard are displayed.

Copy

connection established for client with sharding\_key=1

```
SQL> select * from customers order by custno;
```

CUSTNO	NAME	ADDRESS	LOCATION	CLA
1	John	Oracle KM	Bangalore	A
50	Larry	Oracle HQ	SFO	B

2 rows selected.

```
SQL>
```

Now, as shown below, we enable session level filtering, and the result of the same SELECT statement is restricted to only the single row that matches the SHARD\_KEY specified in the client connection.

Copy

```
SQL> alter session set shard_queries_restricted_by_key = true;
```

Session altered.

```
SQL> select current_shard_key from dual;
```

```
CURRENT_SHARD_KEY
```

```
-----  
1
```

1 row selected.

```
SQL> select * from customers;
```

CUSTNO	NAME	ADDRESS	LOCATION	CLA
--------	------	---------	----------	-----



1 John            Oracle KM   Bangalore   A  
Gathering Optimizer Statistics on Sharded Tables  
You can gather statistics on sharded tables from the coordinator database.

The statistic preference parameter COORDINATOR\_TRIGGER\_SHARD, when set to TRUE on all of the shards, allows the coordinator database to import the statistics gathered on the shards.

The PL/SQL procedures DBMS\_STATS.GATHER\_SCHEMA\_STATS() and DBMS\_STATS.GATHER\_TABLE\_STATS() gather statistics on sharded tables and duplicated tables in the shards and in the coordinator database. See also, REPORT\_GATHER\_TABLE\_STATS Function.

### Manual Statistics Gathering

Set COORDINATOR\_TRIGGER\_SHARD to TRUE on all of the shards.

This step is performed only one time and only on the shards. If, for example, you have a schema named sharduser:

```
Copy
connect / as sysdba
EXECUTE
DBMS_STATS.SET_SCHEMA_PREFS('SHARDUSER','COORDINATOR_TRIGGER_SHARD',
'TRUE');
Gather statistics across the shards.
```

The user should be an all-shards user and needs to have privileges to access dictionary tables.

On the shards run the following.

```
Copy
connect sharduser/password
EXEC DBMS_STATS.GATHER_SCHEMA_STATS(ownname => 'SHARDUSER', options
=> 'GATHER');
```

When all shards are completed, to pull aggregated statistics run the following on the coordinator.

```
Copy
connect sharduser/password
EXEC DBMS_STATS.GATHER_SCHEMA_STATS(ownname => 'SHARDUSER', options
=> 'GATHER');
```

Check the statistics on all of the shards.

```
Copy
connect sharduser/password
```

```
ALTER SESSION SET nls_date_format='DD-MON-YYYY HH24:MI:SS';
col TABLE_NAME form a40
set pagesize 200 linesize 200
```

```

SELECT TABLE_NAME, NUM_ROWS, sharded, duplicated, last_analyzed
FROM user_tables
WHERE table_name not like 'MLOG%' and table_name not like 'RUPD%'
and table_name not like 'USLOG%';

```

Automatic Statistics Gathering

Set COORDINATOR\_TRIGGER\_SHARD to TRUE on all of the shards.

This step is performed only one time and only on the shards. If, for example, you have a schema named sharduser:

Copy

```
connect / as sysdba
```

```
EXECUTE
```

```
DBMS_STATS.SET_SCHEMA_PREFS('SHARDUSER','COORDINATOR_TRIGGER_SHARD',
'TRUE');
```

Schedule a job to pull aggregated statistics on the shards and on the coordinator database.

The user should be an all-shards user and must have privileges to access dictionary tables.

Start the following job on the shards:

Copy

```
connect sharduser/password
```

```
BEGIN
```

```
DBMS_SCHEDULER.CREATE_JOB (
    job_name => 'Gather_Stats_2',
    job_type => 'PLSQL_BLOCK',
    job_action => 'BEGIN DBMS_STATS.GATHER_SCHEMA_STATS(ownname =>
''DEMO'', options => ''GATHER''); END;',
    start_date => SYSDATE,
    repeat_interval =>
'freq=daily;byday=MON,TUE,WED,THU,FRI,SAT,SUN;byhour=14;byminute=10;
bysecond=00',
    end_date => NULL,
    enabled => TRUE,
    comments => 'Gather table statistics');
END;
```

```
/
```

After the job on all of the shards is finished, start the following job on the coordinator.

Copy

```
connect sharduser/password
```

```
BEGIN
```

```
DBMS_SCHEDULER.CREATE_JOB (
    job_name          => 'Gather_Stats_2',
    job_type          => 'PLSQL_BLOCK',
    job_action        => 'BEGIN
```

```

DBMS_STATS.GATHER_SCHEMA_STATS(ownname => 'DEMO', options =>
  'GATHER'); END;',
  start_date          => SYSDATE,
  repeat_interval     =>
'freq=daily;byday=MON,TUE,WED,THU,FRI,SAT,SUN;byhour=15;byminute=10;
bysecond=00',
  end_date            => NULL,
  enabled              => TRUE,
  comments             => 'Gather table statistics');
END;
/

```

Generate HTML SQL Monitor Output for a Query Running from the Shard Catalog

To generate an HTML SQL monitor output, you can follow these steps:

Add hint to query:

Copy

```
SELECT /*+ MONITOR */ ...
```

For example, a cross-shard query from the shard catalog:

Copy

```
select /*+ MONITOR */ count(*) from CUSTOMER;
```

Get SQL\_ID of the query from v\$sql.

Copy

```

SELECT SQL_ID, SQL_FULLTEXT
FROM V$SQL
WHERE UPPER(SQL_FULLTEXT) LIKE '%CUSTOMER%'
AND LAST_ACTIVE_TIME > sysdate -1
ORDER BY LAST_ACTIVE_TIME DESC;

```

Generate a report in a file ( for example, report.html in either the default or a specific folder with the same or different name).

Copy

```

SET LONG 1000000
SET LONGCHUNKSIZE 1000000
SET LINESIZE 1000
SET PAGESIZE 0
SET TRIM ON
SET TRIMSPPOOL ON
SET ECHO OFFSET FEEDBACK OFF
spool report.html
-- replace sql_id values with sql_id of the query
SELECT DBMS_SQLTUNE.report_sql_monitor( sql_id => 'dfj5upfq6w50j',
  type => 'ACTIVE', report_level => 'ALL') AS report
FROM dual;
spool off;

```

Find the generated SQL Monitor report and view it in a browser or any HTML viewer tool.

## Tracing and Debug Information

You can enable tracing for your sharded database and find information in any of several trace files. GDSCTL also has several commands that can display status and error information.

### Enabling Tracing

Enable PL/SQL tracing to track down issues in the sharded database.

To get full tracing, set the GWM\_TRACE level as shown here. The following statement provides immediate tracing, but the trace is disabled after a database restart.

Copy

```
ALTER SYSTEM SET EVENTS 'immediate trace name GWM_TRACE level 263';
```

To disable the GWM\_TRACE, issue:

Copy

```
ALTER SYSTEM SET EVENTS 'immediate trace name GWM_TRACE level 200';
```

The following statement enables tracing that continues in perpetuity, but only after restarting the database.

Copy

```
ALTER SYSTEM SET EVENT='10798 trace name context forever, level 7' SCOPE=spfile;
```

It is recommended that you set both of the above traces to be thorough.

To trace everything in the sharded database environment, you must enable tracing on the shard catalog and all of the shards. The traces are written to the RDBMS session trace file for either the GDSCTL session on the shard catalog, or the session(s) created by the shard director (also called GSM) on the individual shards.

### Where to Find Alert Logs and Trace Files

There are several places to look for trace and alert logs in the sharded database environment.

Standard RDBMS trace files located in diag/rdbms/.. will contain trace output.

Output from 'deploy' will go to job queue trace files db\_unique\_name\_jXXX\_PID.trc.

Output from other GDSCTL commands will go to either a shared server trace file db\_unique\_name\_sXXX\_PID.trc or dedicated trace file db\_unique\_name\_ora\_PID.trc depending on connect strings used.

Shared servers are typically used for many of the connections to the catalog and shards, so the tracing is in a shared server trace file named SID\_s00\*.trc.

GDSCCTL has several commands that can display status and error information.

Use GDSCCTL STATUS GSM to view locations for shard director (GSM) trace and log files.

Copy

```
GDSCCTL> status
```

```
Alias                SHARDDIRECTOR1
Version              18.0.0.0.0
Start Date           25-FEB-2016 07:27:39
Trace Level           support
Listener Log File     /u01/app/oracle/diag/gsm/slc05abw/
sharddirector1/alert/log.xml
Listener Trace File   /u01/app/oracle/diag/gsm/slc05abw/
sharddirector1/trace/
ora_10516_139939557888352.trc
Endpoint summary      (ADDRESS=(HOST=shard0)(PORT=1571)
(PROTOCOL=tcp))
GSMOCI Version        2.2.1
Mastership            N
Connected to GDS catalog Y
Process Id            10535
Number of reconnections 0
Pending tasks.        Total 0
Tasks in process.     Total 0
Regional Mastership    TRUE
Total messages published 71702
Time Zone              +00:00
Orphaned Buddy Regions: None
GDS region             region1
Network metrics:
```

```
    Region: region2 Network factor:0
```

The non-XML version of the alert.log file can be found in the /trace directory as shown here.

Copy

```
/u01/app/oracle/diag/gsm/shard-director-node/sharddirector1/trace/
alert*.log
```

To decrypt log output in GSM use the following command.

Copy

```
GDSCCTL> set _event 17 -config_only
```

Primary shard director (GSM) trace/alert files include status and errors on any and all asynchronous commands or background tasks (move chunk, split chunk, deploy, shard registration, Data Guard configuration, shard DDL processing, etc.)

To find pending AQ requests for the shard director, including error status, use GDSCCTL CONFIG.

To see ongoing and scheduled chunk movement, use GDSCTL CONFIG CHUNKS -show\_reshard

To see shards with failed DDLs, use GDSCTL SHOW DDL -failed\_only

To see the DDL error information for a given shard, use GDSCTL CONFIG SHARD -shard shard\_name

#### Common Error Patterns and Resolutions

Troubleshoot common errors in Oracle Globally Distributed Database.

#### Shard Director Fails to Start

If you encounter issues starting the shard director, try the following:

To start Scheduler you must be inside ORACLE\_HOME on each shard server.

#### Copy

```
GDSCTL>start gsm -gsm shardDGdirector
```

GSM-45054: GSM error

GSM-40070: GSM is not able to establish connection to GDS catalog

GSM alert log, /u01/app/oracle/diag/gsm/shard1/sharddgdirector/trace/alert\_gds.log

GSM-40112: OCI error. Code (-1). See GSMOCI trace for details.

GSM-40122: OCI Catalog Error. Code: 12514. Message: ORA-12514:

TNS:listener does not

currently know of service requested in connect descriptor

GSM-40112: OCI error. Code (-1). See GSMOCI trace for details.

2017-04-20T22:50:22.496362+05:30

Process 1 in GSM instance is down

GSM shutdown is successful

GSM shutdown is in progress

NOTE : if not message displayed in the GSM log then enable GSM trace level to 16

while adding GSM itself.

Remove the newly created shard director (GSM) that failed to start.

#### Copy

```
GDSCTL> remove gsm -gsm shardDGdirector
```

Add the shard director using trace level 16.

#### Copy

```
GDSCTL> add gsm -gsm shardDGdirector -listener port_num -pwd
```

gsmcatuser\_password

-catalog hostname:port\_num:shard\_catalog\_name

-region region1 -trace\_level 16

If the shard catalog database is running on a non-default port (other than 1521), set the remote listener.

Copy

```
SQL> alter system set  
local_listener='(DESCRIPTION=(ADDRESS=(PROTOCOL=tcp)  
(HOST=hostname)(PORT=port_num)))';
```

Tablespace Set Creation Fails

A failure in tablespace set creation may be due to DB\_FILES parameter set too low.

DB\_FILES parameter default setting is 200. This may be too low for sharded databases with a large number of shards and chunks. You may also require a larger number of data files in a Raft replication scenario

To calculate the number of database files created for sharding objects on a given shard:

Sharded database files required = (Number of CREATE TABLESPACE SET SQL statements executed using SHARD DDL) \* (Number of chunks present on the shard + 1)

DB\_FILES must be set to at least the number of files used by sharding (above) PLUS non-sharding database files (system, sysaux, and so on) PLUS any extra needed by generic RDBMS code (5); therefore:

DB\_FILES required in each shard = (Number of sharded database files required, as calculated above) + Number of default database files(6) + 5

To check free DB\_FILES and parameter setting:

Copy

```
SQL> select count(*) from v$datafile;
```

```
      COUNT(*)  
-----  
XxxXX
```

```
SQL> show parameter db_files
```

NAME	TYPE	VALUE
db_files	integer	200

Issues Using Deploy Command

Copy

```
GDSCtl> deploy
```

```
GSM-45029: SQL error
```

```
ORA-29273: HTTP request failed
```

```
ORA-06512: at "SYS.DBMS_ISCHED", line 3715
```

```
ORA-06512: at "SYS.UTL_HTTP", line 1267
ORA-29276: transfer timeout
ORA-06512: at "SYS.UTL_HTTP", line 651
ORA-06512: at "SYS.UTL_HTTP", line 1257
ORA-06512: at "SYS.DBMS_ISCHED", line 3708
ORA-06512: at "SYS.DBMS_SCHEDULER", line 2609
ORA-06512: at "GSMADMIN_INTERNAL.DBMS_GSM_POOLADMIN", line 14284
ORA-06512: at line 1
Solution : Check the $ORACLE_HOME/data/pendingjobs for the exact
error. ORA-1017 is thrown if any issues on wallet.
```

On problematic Shard host stop the remote scheduler agent.

Copy

```
schagent -stop
rename wallet direcotry on Database home
```

Copy

```
mv $ORACLE_HOME/data/wallet $ORACLE_HOME/data/wallet.old
start the remote scheduler agent and it will create new wallet
directory
```

Copy

```
schagent -start
schagent -status
echo welcome | schagent -registerdatabase 10.10.10.10 8080
```

Issues Moving Chunks

If you encounter issues with MOVE CHUNK, try the following:

Issue: Initialization parameter remote\_dependencies\_mode has a default value of timestamp; therefore, because prvtgwmult.plb is run and DBMS\_GSM\_UTILITY recompiled during upgrade, GDSCTL MOVE CHUNK runs into ORA-04062 errors similar to the following.

Copy

GSM Errors:

```
server:ORA-03749: Chunk move cannot be performed at this time.
ORA-06512: at "SYS.DBMS_SYS_ERROR", line 79
ORA-06512: at "GSMADMIN_INTERNAL.DBMS_GSM_DBADMIN", line 5497
ORA-04062: timestamp of package "GSMADMIN_INTERNAL.DBMS_GSM_UTILITY"
has been
changed
ORA-06512: at line 1
ORA-06512: at "GSMADMIN_INTERNAL.DBMS_GSM_DBADMIN", line 5366
ORA-06512: at line 1 (ngsmoci_execute)
Workaround 1: Restart the source and target shards after upgrade.
```

Workaround 2: ALTER SYSTEM SET remote\_dependencies\_mode=signature on both source and target.



### Issues with Oracle Database Vault

Do not enable Oracle Database Vault on your sharded databases. Oracle Globally Distributed Database does not support Oracle Database Vault.

### Issue During Deployment of Role-Separated Environment

The GSM-45029: SQL ERROR NO MORE DATA TO READ FROM SOCKET error occurs when you perform administrative operations for Oracle Globally Distributed Database or for Oracle Global Data Services (GDS) and connect through a listener that runs in the Oracle Real Application Clusters (Oracle RAC) or Oracle Restart account in a role-separated environment. The error occurs where the Oracle RAC or Oracle Restart account is different from the Oracle Database account.

### Solution:

Start a listener in the Oracle Database account on the sharded catalog database and on each shard, if it is not already running.

The listener can be used to connect and perform administrative operations.

This listener can also be used when you provide an Oracle Database Transparent Network Substrate (TNS) address, when it is required for administrative commands, such as add shard.