

# **More Configuration Options**

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## **Introduction to Oracle Data Guard**

In this lecture, we are going to talk about the basic concepts of Oracle Data Guard

# Objectives

By the end of this lecture, you should be able to:

- Manage Oracle GoldenGate Report Files
- Implement `BatchSQL` processing
- Use compression on the outgoing blocks of records
- Understand and use Event Marker System



## About Oracle GoldenGate Report Files

- Report files contain logs for the process activities, warnings, and errors raised by the process
- Saved as `<OGG_HOME>/dirrpt/<process name><sequence number>.rpt`
- By default, up to ten files are maintained for a single process
- To view a process report:

```
GGSCI> VIEW REPORT <process name> | <filename>
VIEW REPORT ehr
VIEW REPORT ehr0
```

## GoldenGate Report File Parameters

- The interval to generate the run-time statistics in the report:

```
REPORT {AT hh:mi | ON day | AT hh:mi ON day}  
REPORT AT 17:00  
REPORT ON SUNDAY AT 1:00
```

- The interval to generate count of transaction records:

```
REPORTCOUNT [EVERY] count {RECORD | RECORDS | SECOND  
| SECONDS | MINUTE | MINUTES | HOUR | HOURS}
```

```
REPORTCOUNT EVERY 10 MINUTES
```

## GoldenGate Report File Parameters (cont)

- Force the statistics in the report to age:

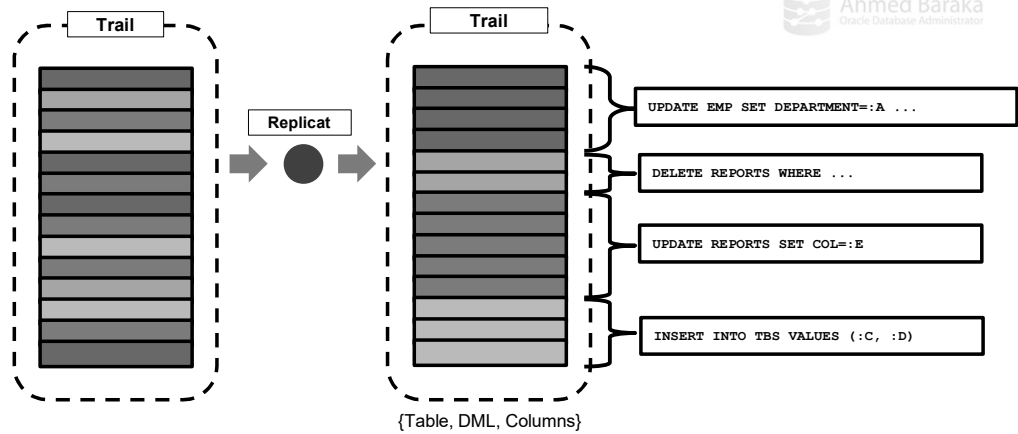


```
REPORTROLLOVER {AT hh:mi | ON day | AT hh:mi ON day}  
REPORTROLLOVER AT 05:30 ON friday
```

- To generate report file on demand:

```
SEND [ EXTRACT | REPLICAT ] <group>, REPORT
```

## BatchSQL: Overview



## About BatchSQL

- Valid for Replicat
- Organizes similar SQL statements into arrays
- Increases the performance of Replicat
- Higher gain with smaller rows
- Referential integrity preserved



## BatchSQL Options

BATCHSQL

```
[BATCHERRORMODE | NOBATCHERRORMODE]
[BATCHESPERQUEUE n]
[BATCHTRANSOPS n]
[BYTESPERQUEUE n]
[OPSPERBATCH n]
[OPSPERQUEUE n]
[THREADS (threadID[, threadID][, ...][, thread_range[,
thread_range][, ...])]
[TRACE];
```





## BatchSQL Options



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Option	Description	Default V.
<b>NoBatchErrorMode</b>	Switch to normal mode when error	
<b>BatchErrorMode</b>	Do not leave BATCHSQL mode when error.	
<b>BatchesPerQueue</b>	Number of batches per one memory queue	50
<b>BytesPerQueue</b>	Maximum number of bytes for one queue	20 MB
<b>OpsPerBatch</b>	Maximum number of row operations in one batch	1200
<b>OpsPerQueue</b>	Maximum number of row operations in all batches in one queue	1200
<b>BatchTransOps</b>	Maximum batch operations before commit	1000
<b>Trace</b>	Enables detailed tracing of BATCHSQL activity	

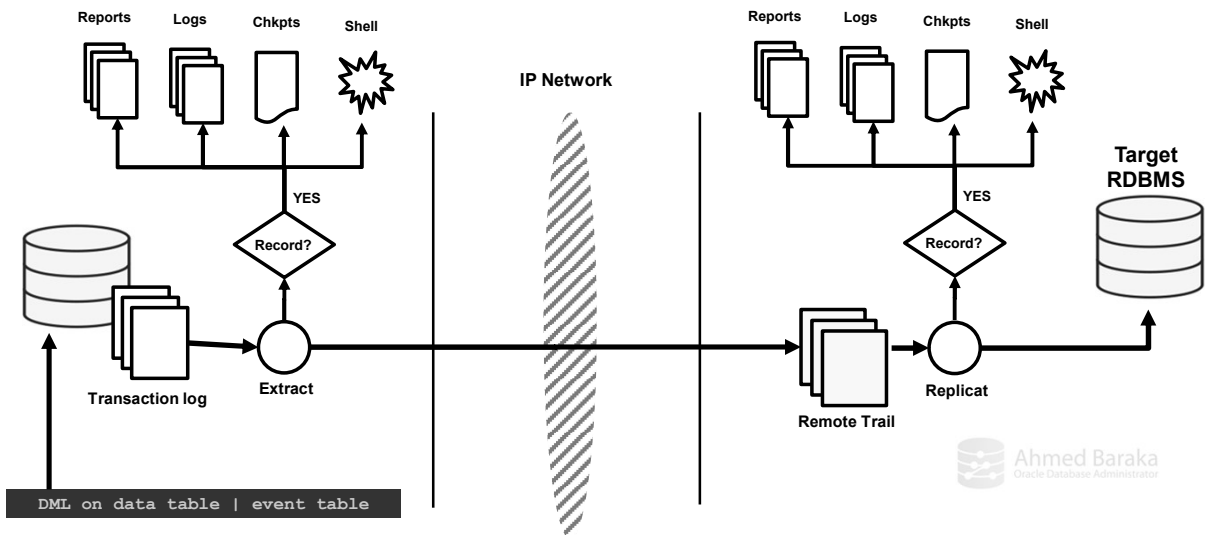
## About COMPRESS Option



- Option of `RMTHOST` parameter
- Compresses outgoing blocks of records
- Reduces bandwidth requirements
- Valid for online or batch Extract processes
- `COMPRESSTHRESHOLD` sets the minimum block size on which the compression should be performed (1,000 B)

```
RmtHost server2, MgrPort 7809, Compress,  
CompressThreshold 750
```

## Event Marker System



## Raising Database Events with Event Marker System

- Enables Oracle GoldenGate processes to take a defined action based on an event record in the transaction log or in the trail.
- The event record could be one of the following:
  - A record in a data table that satisfies a specific filter condition
  - A record inserted into a dedicated event table
- Implemented by `EventActions` of the `TABLE` or `MAP`
- `TABLE` parameter for Replicat process is mainly for events

## Event Marker System: Possible Actions

- Stop a process
- Ignore the current record
- Log an informational or warning message to the report file, Oracle GoldenGate error log, and system event log
- Generate a report file
- Roll over the trail file
- Activate tracing
- Write a checkpoint before or after writing the record to the trail
- Run a shell command in the OS



## EVENTACTIONS Syntax

```
EVENTACTIONS (  
  [STOP | SUSPEND | ABORT | FORCESTOP]  
  [IGNORE [RECORD | TRANSACTION [INCLUDEEVENT]]  
  [DISCARD]  
  [LOG [INFO | WARNING]]  
  [REPORT]  
  [ROLLOVER]  
  [SHELL 'command' | SHELL ('command', VAR variable =  
    {column_name | expression} [, ...]) ]  
  [CHECKPOINT [BEFORE | AFTER | BOTH]]  
  [TRACE[2] file [TRANSACTION] [DDL[INCLUDE] | DDLONLY] [PURGE |  
  APPEND]] [, ...] )
```



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## Event Marker System: Examples

- Any record where COMMAND\_NO = 100 is ignored and a log message is written:

```
Map GGS.COMMANDS, Target GGS.COMMANDS,  
  Filter (COMMAND_ID=100), EventActions (Discard, Log);
```

- Whenever a record is written to the event table, the trail file is rolled over:

```
Table GGS.MYEVENTS, EventActions (Rollover);
```

## Event Actions Order



Before record written/applied	Process record	After record written/applied
Trace Log Checkpoint Before Ignore Discard Shell Rollover	...unless Ignore or Discard are used	Report Suspend Abort Checkpoint After ForceStop Stop



## Event Marker System: Use Cases

- Schedule stopping Replicat process
- Stop processing when data anomalies are encountered
- Trace a specific transaction:



```
MAP sales.order, TARGET rpt.order;  
TABLE source.order,  
  FILTER (@GETENV ('GGHEADER', 'OPTYPE') = 'INSERT' AND  
    ORDER_NO = 1),  
  EVENTACTIONS (TRACE order_1.trc TRANSACTION);
```

## Event Marker System: Use Cases (cont..)

- Execute a batch process in source to be ignored by Replicat:

```
TABLE GGS.JOB, FILTER (@STREQ (JOB_TYPE =  
'HOUSEKEEPING')=1), EVENTACTIONS (IGNORE TRANSACTION);
```

## Summary

In this lecture, you should have learnt how to:

- Manage Oracle GoldenGate Report Files
- Implement `BatchSQL` processing
- Use compression on the outgoing blocks of records
- Understand and use Event Marker System

