

More Configuration Options

by Ahmed Baraka

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)

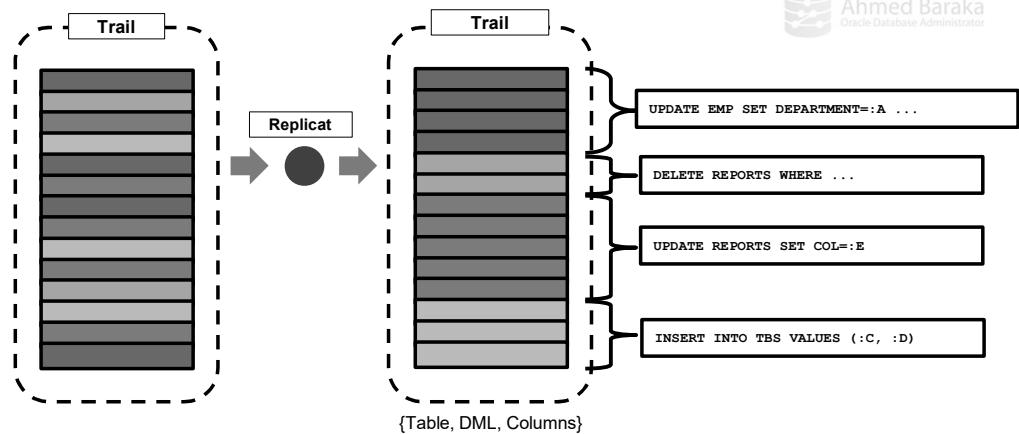
- Force the statistics in the report to age:

```
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



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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



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

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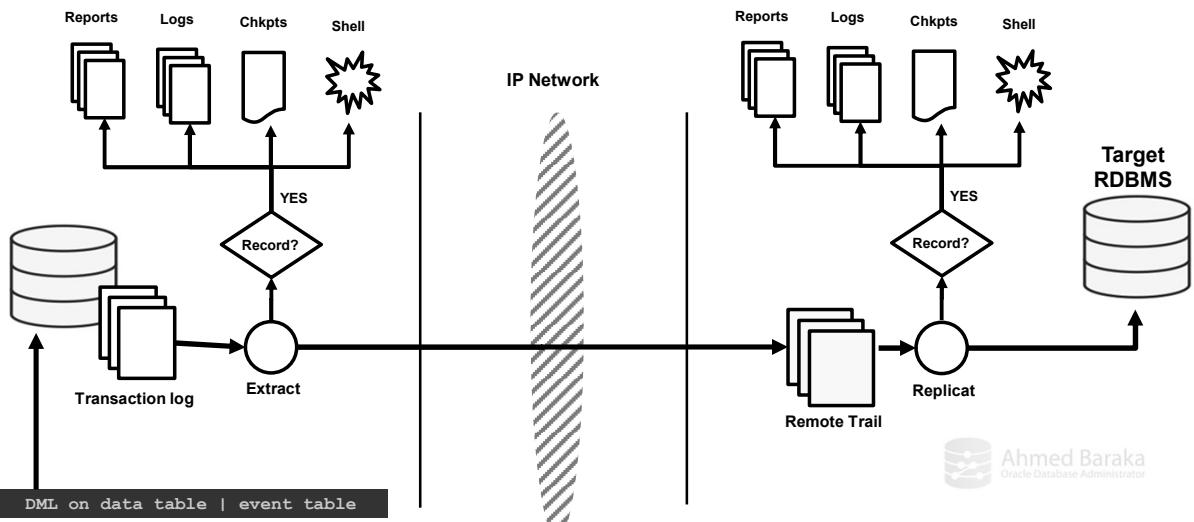
About COMPRESS Option

- 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



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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 [INCLUDEVENT]]]
[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]] [, ...] )
```

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



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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

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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