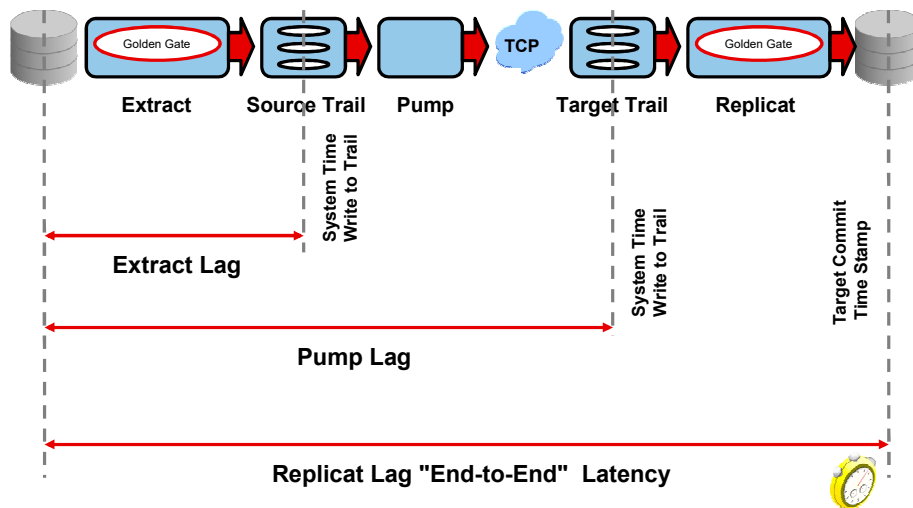


## Monitoring: What Is Lag?



**Lag:** Is the Extract lag in the diagram in the slide. It is the difference in time between when a change record is processed by Extract (written to the trail) and when the time stamp of that record is committed in the target database.

**Latency:** Is the Replicat lag in the diagram. It is the difference in time between when a change is made to source data and when that change is reflected in the target data.

## Monitoring: Checking Lag Statistics

To view lag, use the `Send` or `Lag` commands:

```
GGSCI> Send {Extract|Replicat} {<group|wildcard>},  
GetLag
```

Or...

```
GGSCI> Lag {Extract| Replicat|ER} {<group|wildcard>}
```

You can also use the `Info`, `Detail` command to view lag:

- Is not as accurate as the `Send` and `Lag` commands
- Provides additional information such as checkpoint positions, process status, and working directories

```
GGSCI> Info {Extract|Replicat|ER} {<group|wildcard>},  
Detail
```

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### Examples

GGSCI 12> Lag Replicat \*

Sending GETLAG request to REPLICAT ORAREP...

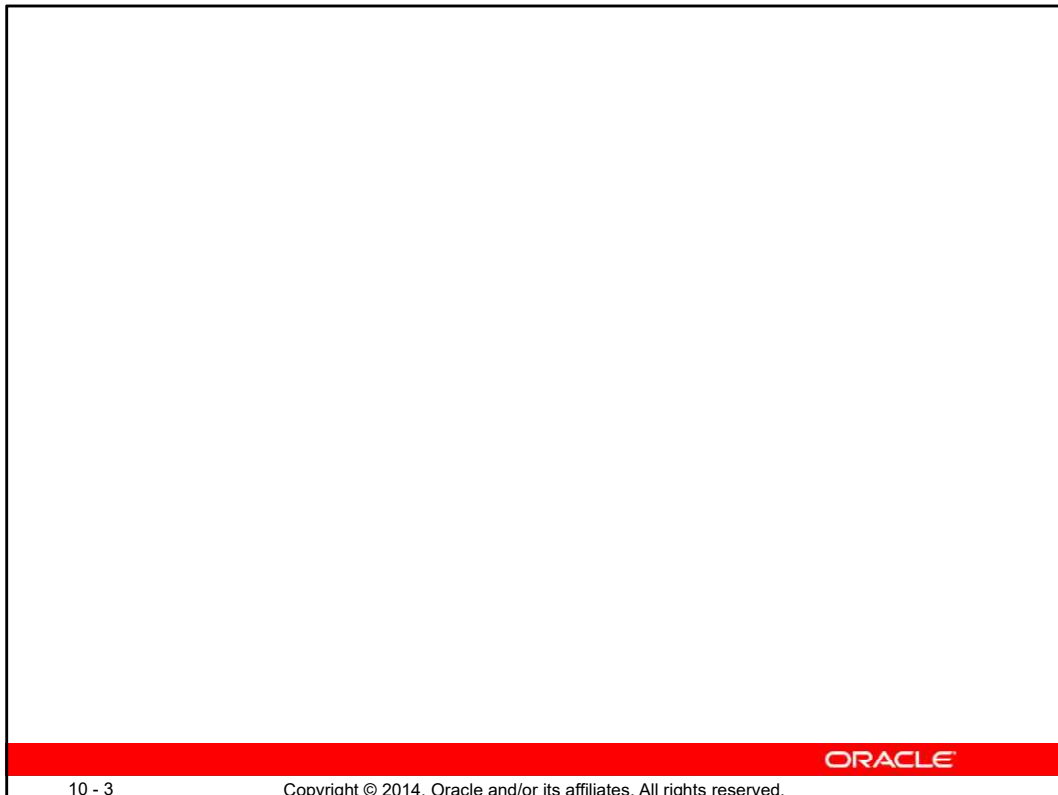
No records yet processed.

At EOF, no more records to process.

Sending GETLAG request to REPLICAT REPORA2...

Last record lag: 7 seconds.

At EOF, no more records to process.



GGSCI 13> Lag ER \*

Sending GETLAG request to EXTRACT ORAEXT2...  
Last record lag: 1 second.  
At EOF, no more records to process.

Sending GETLAG request to REPLICAT ORAREP...  
No records yet processed.  
At EOF, no more records to process.

Sending GETLAG request to REPLICAT REPORA2...  
Last record lag: 7 seconds.  
At EOF, no more records to process

## Monitoring: Controlling How Lag Is Reported

Manager parameters control how lag is checked and reported.

- `LagReportMinutes` and `LagReportHours` specify the interval at which Manager checks for Extract and Replicat lag
- `LagCriticalSeconds`, `LagCriticalMinutes`, and `LagCriticalHours` specify a "critical" lag threshold that forces a warning message to the error log when reached.
- `LagInfoSeconds`, `LagInfoMinutes`, and `LagInfoHours` specify how often to report lag information to the error log.

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LagCritical parameter syntax (Manager parameter file):

`LagCriticalSeconds <seconds> | LagCriticalMinutes <minutes> | LagCriticalHours <hours>`

LagReport parameter syntax (Manager parameter file):

`LagReportMinutes <minutes> | LagReportHours <hours>`

LagInfo parameter syntax (Manager parameter file):

`LagInfoSeconds <seconds> | LagInfoMinutes <minutes> | LagInfoHours <hours>`

The LagCritical setting affects all Extract and Replicat processes on the local system.

LagInfo: Value of zero (0) forces a message at the frequency specified with LagReportMinutes or LagReportHours. If the lag is greater than the value specified with one of the LagCritical parameters, Manager reports the lag as critical; otherwise, it reports the lag as an informational message.

The shorter interval for monitoring lag at initial implementation can be lengthened after the system is up.

## Monitoring: Checking Volume Statistics

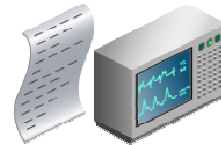
You can check volume statistics by doing the following:

- Using `Report` or `ReportCount` parameters
- Using the `Stats` command
- Generating reports on demand with commands:

```
GGSCI> Send [ Extract | Replicat ] <group>, Report
```

- Viewing reports and the history of reports:

```
GGSCI> View Report <group>  
GGSCI> View Report <group>[n]  
GGSCI> View Report <filename>
```



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## Monitoring: Using the Report parameter

- The `Report` parameter generates report statistics.
- The results are printed to the report file.
- You can schedule the counts at regular intervals or on specific days of the week at specific times of the day.

Syntax:

```
:  
Report {At <hh:mi> | On <day> | At <hh:mi> On <day>}  
:
```



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Report is valid for Extract and Replicat.

Use Report to specify when Extract or Replicat generates interim runtime statistics in a process report. The statistics are added to the existing report. By default, runtime statistics are displayed at the end of a run unless you intentionally kill the process.

The statistics for Report are carried over from the previous report. For example, if the process performed 10 million inserts one day and 20 million the next, and if a report is generated at 3:00 each day, the first report would show the first 10 million inserts, and the second report would show those inserts plus the current day's 20 million inserts, for a total of 30 million.

To reset the statistics when a new report is generated, use the StatOptions parameter with the ResetReportStats option.

## Monitoring: Using ReportCount

- The `ReportCount` parameter generates a count of the records that have been processed since Extract or Replicat started.
- The results are printed to the report file.
- You can schedule the counts at regular intervals or after a specific number of records.

Syntax:

```
:  
ReportCount [Every] <count>  
{Records | Seconds | Minutes | Hours}[ , Rate]  
:
```



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Records | Seconds | Minutes | Hours: The unit of measure for <count>, in terms of records, is seconds, minutes, or hours.

Rate: Reports the number of operations per second and the change in rate as a measurement of performance. The “rate” statistic is the total number of records divided by the total time elapsed since the process started. The “delta” statistic is the number of records since the last report divided by the time since the last report.

Note: The calculations are done using microsecond time granularity. The time intervals are shown without fractional seconds, and the rate values are shown as whole numbers.

The best results are obtained using Minutes or Hours and Rate.

## Monitoring: Using the Stats Command

- To view the volume of records being processed, with an option to filter by table name, use the `Stats` command:

```
GGSCI> Stats {Extract|Replicat|ER}  
           {<group|wildcard>} [Table <name|wildcard>]
```

- The basic `Stats` command shows the number of processed operations by type for each table.
  - Statistics are shown for the following periods:
    - Since the process started
    - By the hour
    - By the day
    - The latest statistics

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### Using the Stats Command: Example

This example is for Extract. These statistics are repeated for each table but are omitted from the example for all tables except one (due to space constraints).

GGSCI > Stats Extract oraext

Sending Stats request to EXTRACT ORAEXT...

Start of Statistics at 2014-03-08 16:94:38.

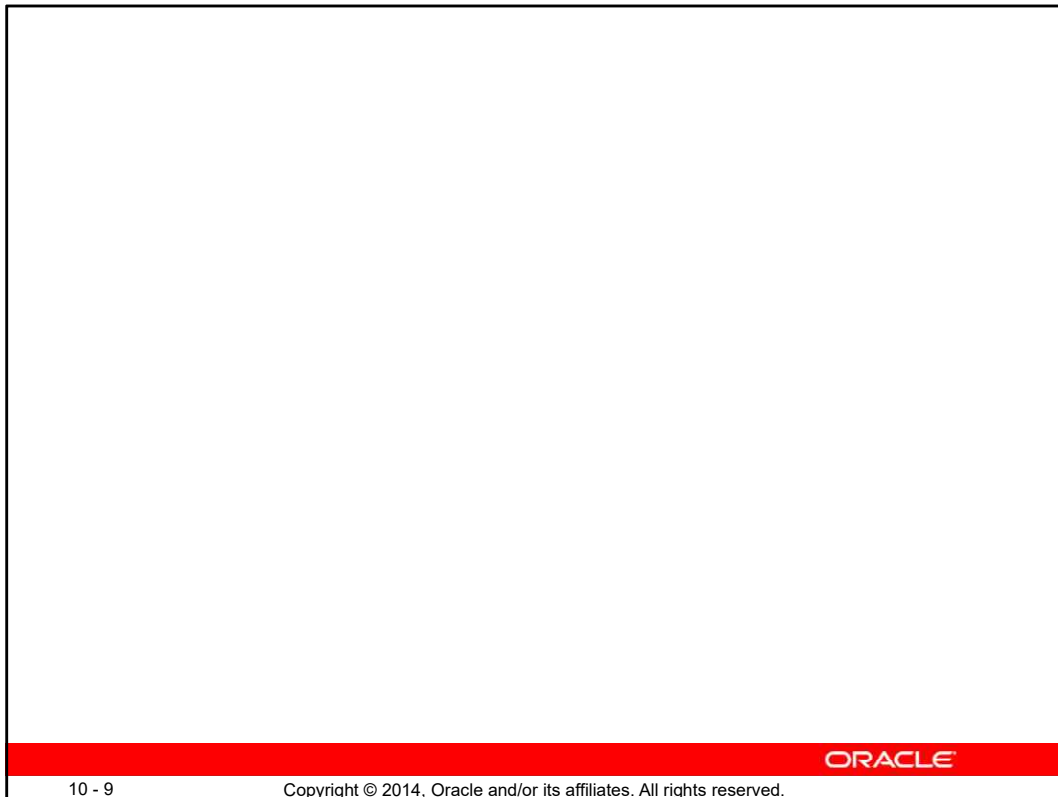
Output to /home/goldengate802/dirdat/xx:

Extracting from HR.EMPLOYEES to HR.EMPLOYEES:

\*\*\* Total statistics since 2014-03-08 16:35:05 \*\*\*

Total inserts	704.00
Total updates	0.00
Total deletes	160.00
Total discards	0.00
Total operations	864.00





\*\*\* Daily statistics since 2014-03-08 16:35:05 \*\*\*

Total inserts 704.00  
Total updates 0.00  
Total deletes 160.00  
Total discards 0.00  
Total operations 864.00

\*\*\* Hourly statistics since 2014-03-08 16:35:05 \*\*\*

Total inserts 704.00  
Total updates 0.00  
Total deletes 160.00  
Total discards 0.00  
Total operations 864.00

\*\*\* Latest statistics since 2014-03-08 16:35:05 \*\*\*

Total inserts 704.00  
Total updates 0.00  
Total deletes 160.00  
Total discards 0.00  
Total operations 864.00

## Monitoring: Using the Stats Com m and

Stats <option> enables filtering of the information:

```
Stats {Extract|Replicat|ER} {<group|wildcard>},  
      <option>
```

- View processing rate (instead of absolute numbers):

```
ReportRate {Hr|Min|Sec}
```

- View summary of operations for a table since startup:

```
TotalsOnly <table>
```

- Limit output to one or more statistics:

```
{Total | Daily | Hourly | Latest}
```

- Clear all filters that were set with previous options:

```
Reset
```

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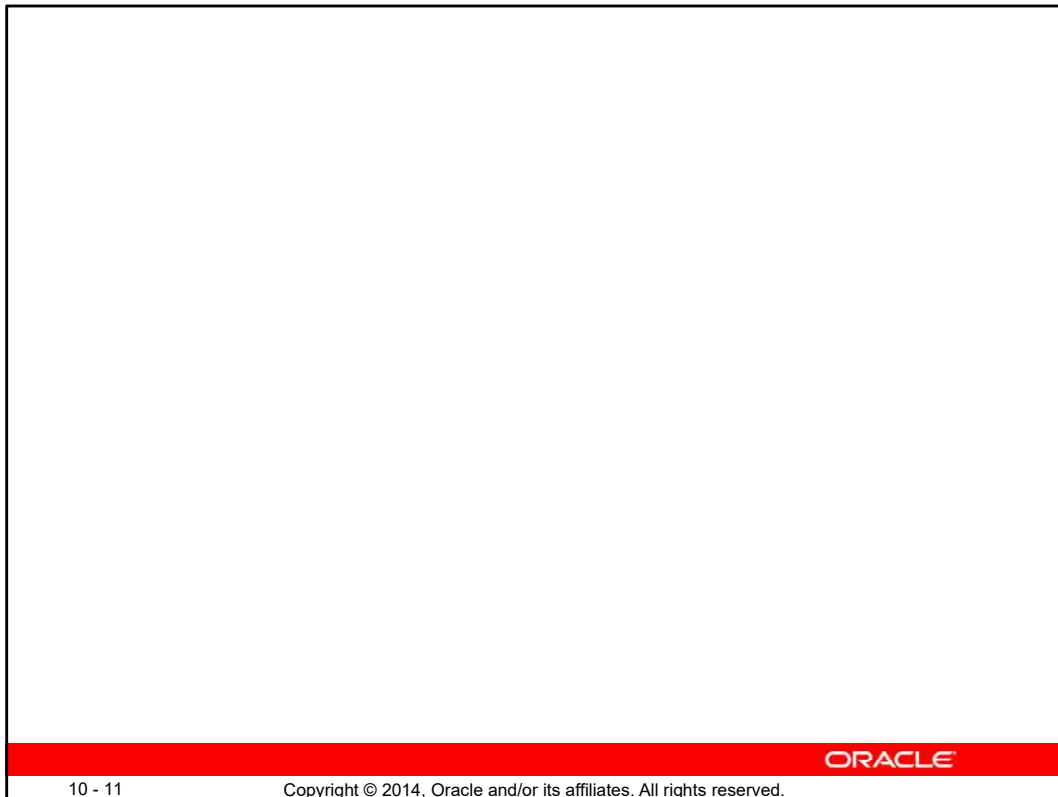
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### Stats...ReportRate

\*\*\* Latest statistics since 2014-03-08 16:35:05 \*\*\*

```
Total inserts/hour:  718.39  
Total updates/hour:   0.00  
Total deletes/hour:   0.00  
Total discards/hour:  0.00  
Total operations/hour: 718.39
```



Stats...TotalsOnly <table>

Start of Statistics at 2014-03-08 17:06:93.

Output to /home/goldengate802/dirdat/xx:

Cumulative totals for specified table(s):

\*\*\* Total statistics since 2006-03-08 16:35:05 \*\*\*

Total inserts 352.00

Total updates 0.00

Total deletes 0.00

Total discards 0.00

Total operations 352.00

Stats...TotalsOnly <table>

\*\*\* Daily statistics since 2014-03-08 16:35:05 \*\*\*

Total inserts 352.00

Total updates 0.00

Total deletes 0.00

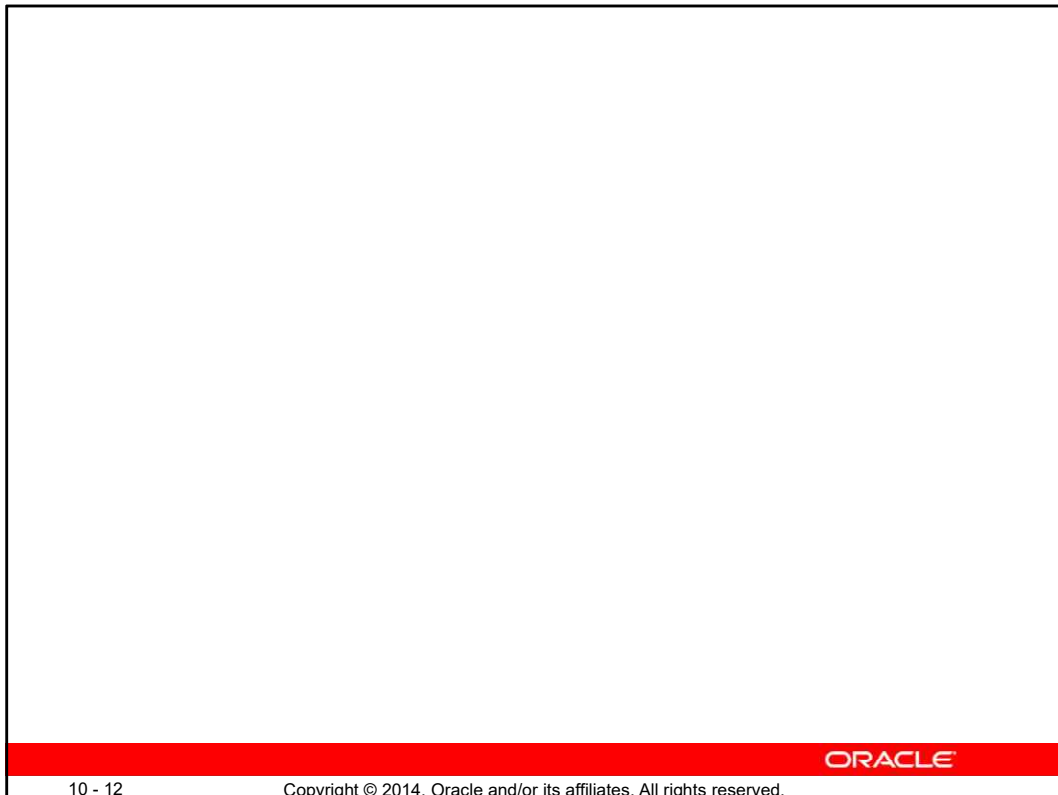
Total discards 0.00

Total operations 352.00

Extracting from HR.LOCATIONS to HR.LOCATIONS:

\*\*\* Latest statistics since 2014-03-08 16:35:05 \*\*\*

No database operations have been performed.



Stats...LATEST

Start of Statistics at 2014-03-08 17:18:23.

Output to /home/goldengate802/dirdat/xx:

Extracting from HR.EMPLOYEES to HR.EMPLOYEES:

\*\*\* Latest statistics since 2006-03-08 16:35:05 \*\*\*

Total inserts 704.00

Total updates 0.00

Total deletes 160.00

Total discards 0.00

Total operations 864.00

Extracting from HR.DEPARTMENTS to HR.DEPARTMENTS:

\*\*\* Latest statistics since 2006-03-08 16:35:05 \*\*\*

Total inserts 352.00

Total updates 0.00

Total deletes 0.00

Total discards 0.00

Total operations 352.00