

Oracle GoldenGate Row Comparison Process and Alert

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Document Control

Change Record

Date	Author	Version	Change Reference
March 10, 2019	Vladimir Grigorian	1.0	First Draft
March 20, 2019	Vladimir Grigorian	2.0	Changed scripts from 5 mins checks from cron to on-demand run.

Reviewers

Name	Position

Distribution

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Introduction

Purpose

The purpose of this document is document is to outline a procedure for comparing row counts in source and target in a GoldenGate replication.

Audience

This document is intended for:

- Oracle DBAs and GoldenGate Administrators.
-

Assumptions

None.

Overview of GoldenGate Configuration

The following outlines the intended setup for this configuration.

Table 1. Server Information (Due to Hardware Constraint this POC was executed on a Single Server)

	Source	Destination
Hostname	Oralinux6	Oralinux6
OS	3.8.13-55.1.2.el7uek.x86_64	3.8.13-55.1.2.el7uek.x86_64
GoldenGate Home	/u02/gg/source	/u02/gg/target
Oracle Instance	PBMP	STBMP
Oracle Version	12.1.0.2.0	12.1.0.2.0
GoldenGate version	11.2.1.0.27	11.2.1.0.27

Table 2. GoldenGate Processes Information

	Primary	Standby
Manager Port	7809	7810
DataPump	ESNDRT01	ESNDRT01
Failover Scripts in	/u02/gg/source/scripts	/u02/gg/source/scripts
Trails	/u02/gg/source/dirdat/s1	/u02/gg/source/dirdat/s1
GoldenGate Admin	GGATE	GGATE
User schemas	SENDER	SENDER

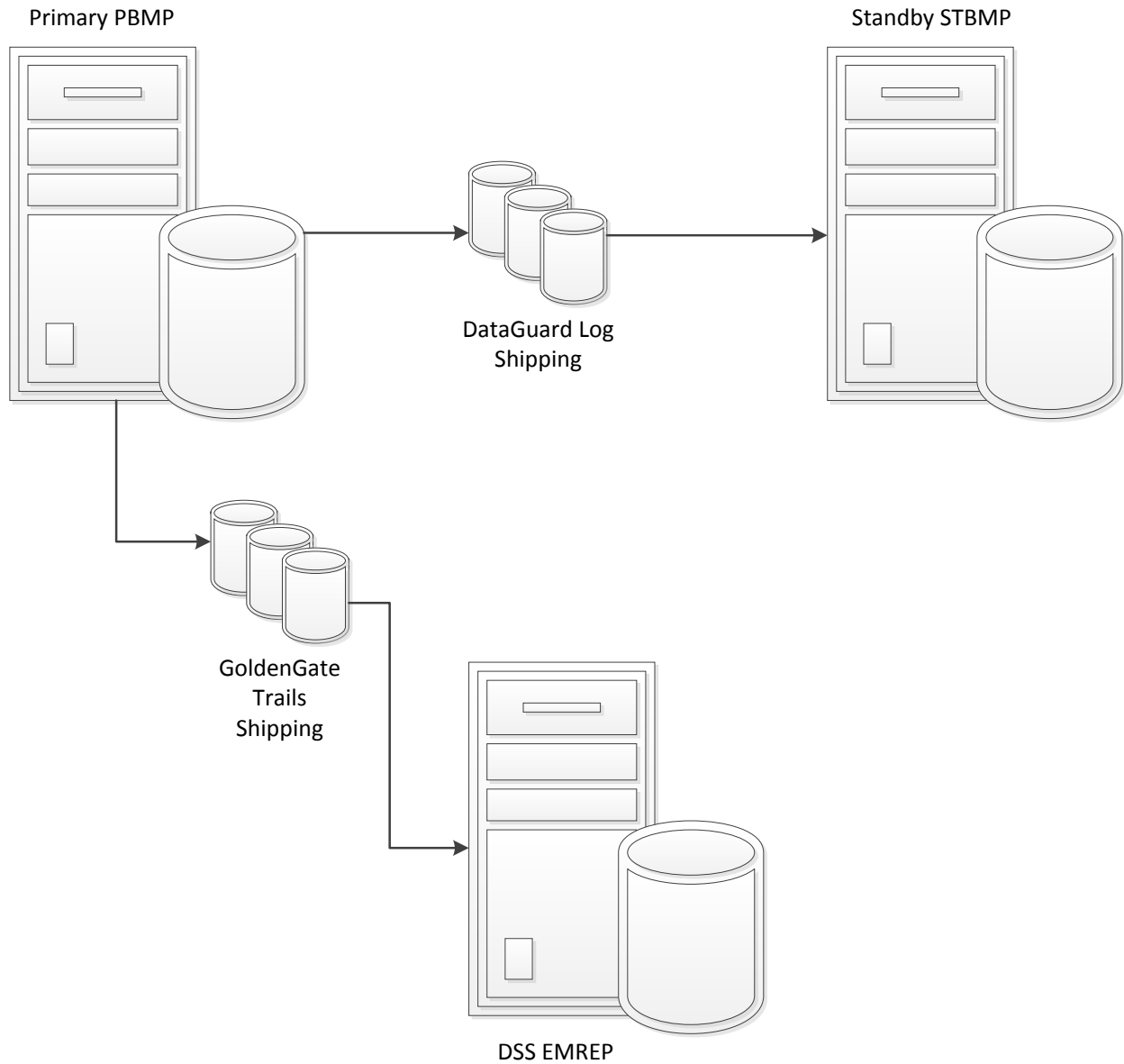


Fig 1. Regular DataGuard and GoldenGate Operation

1. GoldenGate Row Count Comparison Between Source and Target

A GoldenGate DBA / Admin sometimes needs an insight into the difference between the source and target, in an effort to determine if the replication is running smoothly. There are tools for this purpose, including Oracle's own [Veridata](#). But most of environments without unlimited licensing don't have access to such an expensive software.

The following process runs a nightly job of comparing each table on the source with the target and at the end of the process it shoots out an email with a row comparison report.

The following shows the steps for creating the process.

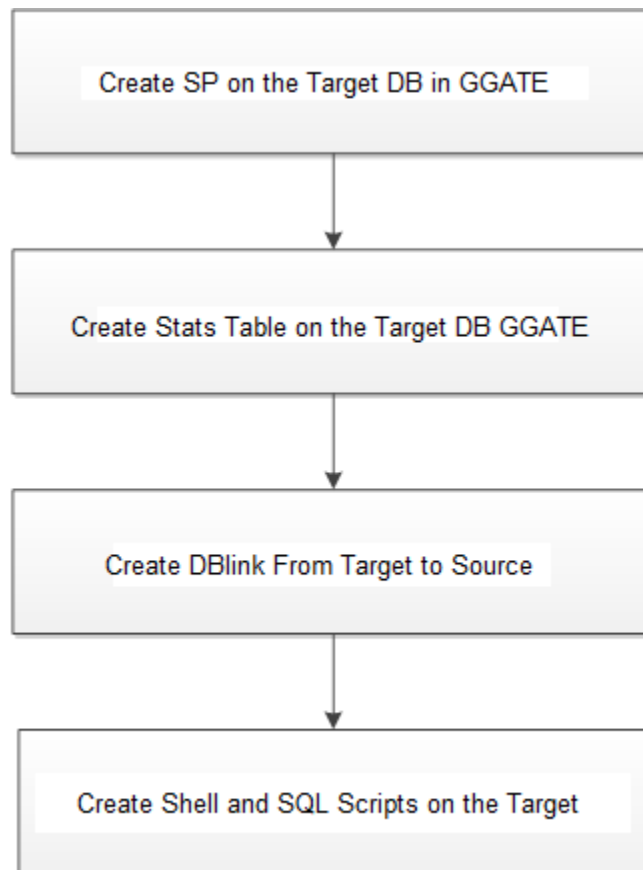


Table 1. GoldenGate Row Comparison Process Creation Steps

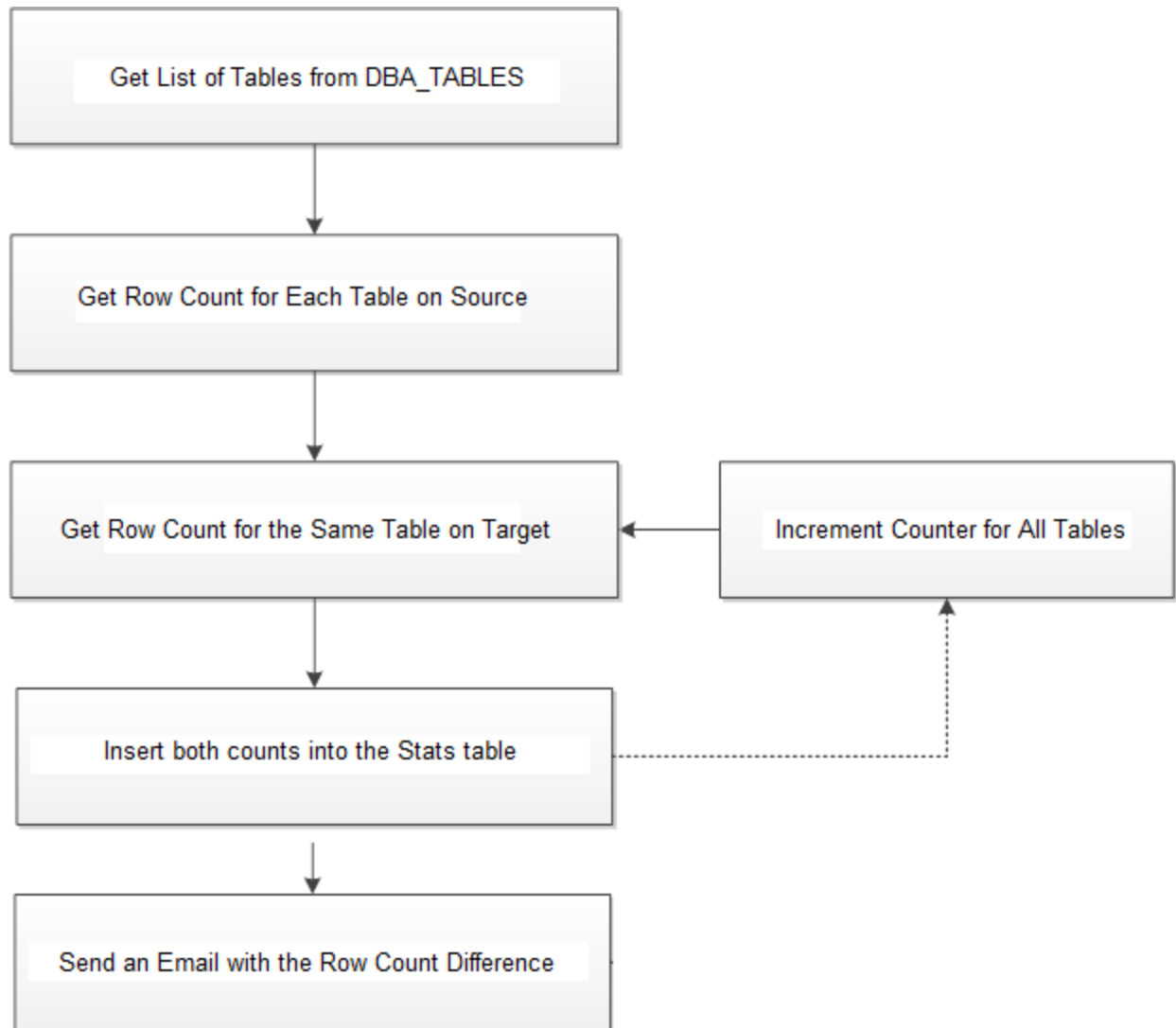


Fig 2. GoldenGate Row Counts Process Actual Steps

2. Implementation

1. Stored Procedure in GGATE

```

create or replace procedure rowcounts(v_tgtschema in varchar2, v_srcschema in
varchar2, v_dblink in varchar2)
is
v_tgtcount number(16) := 0;
v_srccount number(16) := 0;
v_sqlstmt0 varchar2(1000);
v_sqlstmt1 varchar2(1000);
v_sqlstmt2 varchar2(1000);
begin
  for vtable
  in (select table_name
      from all_tables
      where owner = v_tgtschema
      order by 1)
  loop
    v_sqlstmt0 := 'select count(*) from '||v_tgtschema||'.'||vtable.table_name;
    --dbms_output.put_line(v_sqlstmt0);
    execute immediate v_sqlstmt0 into v_tgtcount;
    v_sqlstmt1 := 'select count(*) from '||v_srcschema||'.'||vtable.table_name||'@'||v_dblink;
    --dbms_output.put_line(v_sqlstmt1);
    execute immediate v_sqlstmt1 into v_srccount;
    v_sqlstmt2 := 'update onetstats set row_cnt_source='|| v_srccount ||', row_cnt_target=' ||
v_tgtcount || ', end_time=sysdate where schemaname='''||v_tgtschema||''' and
tablename='''||vtable.table_name||''' and dataset=null';
    --dbms_output.put_line(v_sqlstmt2);
    execute immediate v_sqlstmt2;
    if (sql%notfound)
    then
      v_sqlstmt2 := 'insert into onetstats
(schemaname,tablename,start_time,end_time,row_cnt_source,row_cnt_target,dataset)
values ('''||v_tgtschema||''','''||vtable.table_name||''',sysdate,sysdate,' || v_srccount || ', ' ||
v_tgtcount || ', null)';
      --dbms_output.put_line (v_sqlstmt2);
      execute immediate v_sqlstmt2;
    end if;
  end loop;
end;

```

```

commit;
end loop;
exception
  when others
  then
    dbms_output.put_line(sqlerrm);
end;
```

2. Create table in GGATE

```

create table &ggate_user..onetstats (
  schemaname varchar2(30),
  tablename varchar2(30),
  start_time date,
  end_time date,
  row_cnt_source number,
  row_cnt_target number,
  dataset number
)
;
```

3. Create dblink

```

create database link GGATECOUNTS connect to GGATE identified by password using
'SOURCE';
```

```

connect ggate/password@target
select * from ONETSTATS;
```

4. Create SQL script

```

masu2:/home/oracle/scripts/DBA> vi ggate_rowcounts.sql
truncate table ggate.onetstats;
exec ggate.rowcounts ('PDPROD', 'PDPROD', 'GGATECOUNTS');
set timing off time off veri off space 1 flush on pause off termout on numwidth 10
```

```

set echo off feedback off heading off pages 999 lines 200 newpage 1
set trimspool on trimout on
TTITLE CENTER -
"MA UAT GoldenGate MASU => MADWU PDPROD Table Row Count Difference"
SKIP 1 -
CENTER ===== SKIP 1
spool $HOME/scripts/DBA/log/ggate_rowcounts.log
select SCHEMANAME || '.' || TABLENAME , (ROW_CNT_SOURCE -
ROW_CNT_TARGET ) from ggate.onetstats;
SELECT TO_CHAR (SYSDATE, 'MM-DD-YYYY HH24:MI:SS') "Report Created"
FROM DUAL;
spool off

```

5. Create the KSH shell script, the wrapper

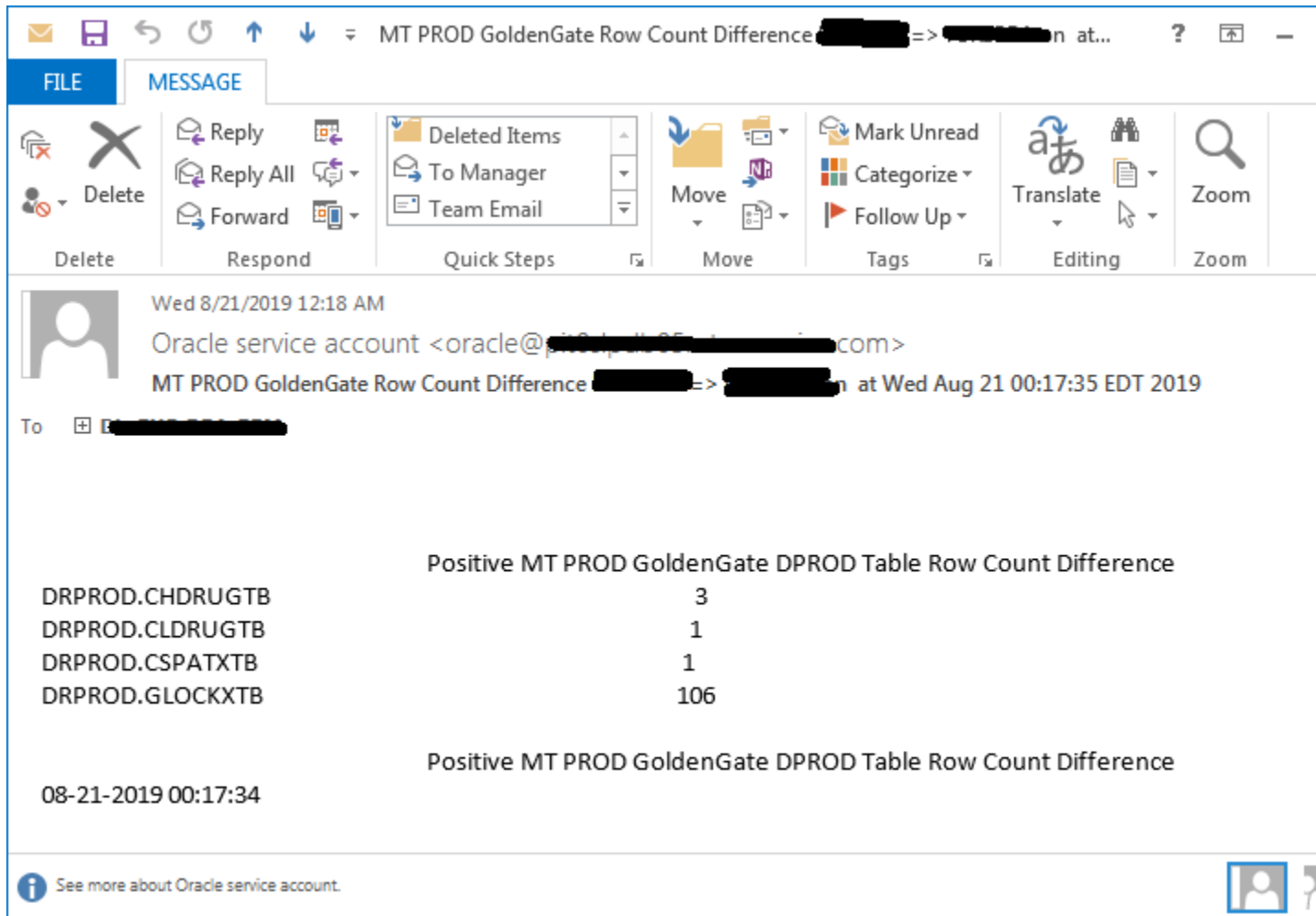
```

target:/home/oracle/scripts/DBA> more $HOME/scripts/DBA/ggate_rowcounts.ksh
#!/bin/ksh
#
# Compare GG rowcounts PRPROD user MASU MADWU
# written by: Vlad
#
process_name=MA_UAT_GOLDENGATE_ROWCOUNT
grpmail=grigorianvlad@yahoo.com
. $HOME/masu.env
rm $HOME/scripts/DBA/log/ggate_rowcounts.log
sqlplus -s / << EOF
set serveroutput on size unlimited
@/home/oracle/scripts/DBA/ggate_rowcounts.sql;
exit;
EOF
mailx -s "UAT MA GoldenGate Row Count Difference Source => Target on $BOX at
$(date)" grigorianvlad@yahoo.com < $HOME/scripts/DBA/log/ggate_rowcounts.log
TTITLE CENTER 'MA UAT GoldenGate MASU => MADWU PDPROD Table Row
Count Difference' SKIP 1 -
CENTER ===== SKIP 1 LEFT 'Table' -
RIGHT 'Difference' SKIP 2

```

6. Implementing the Row Counts GoldenGate Emails Alerts

To test this functionality simply schedule the ksh wrapper to run at a desired time. Keep in mind for large tables and/or a large number of tables the process may take hours or longer. It actually selects count of actual rows, so it is also resource intensive, so schedule it after business hours. A simple email alert shown below.



END OF DOCUMENT