Oracle® GoldenGate Application Adapters for BASE24

D24 Dual Site Supplemental Guide

12*c* (12.1.2) Release

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CHAPTER 1

Introducing D24

This chapter introduces D24, a supplemental module that facilitates BASE24 data replication in a dual site configuration. Topics include:

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Overview

D24 allows customer and transaction data to be synchronized bi-directionally in real time throughout the day. In the event of an outage on one system, the full transaction load will be processed on the remaining system, ensuring continuous availability. D24 works in conjunction with the ACI dual site enhancement for BASE24 6.0 version 4 to do the following:

- Set the remote flag in the TLF and PTLF multi-network token BK. D24 will either update the token if found or add the token if not found, and if no tokens are found, add both the BK token and the Header token. This flag is used by BASE24 Settlement, Super Extract, and transaction log record perusal servers.
- Flip the dual site indicator in the TDF, PTDF, ATDD1, and PTDD1 files. This indicator is used in BASE24 Settlement.
- Calculate and apply the delta or transaction amount to the target CAF, PBF, and UAF fields. Applying the delta rather than overlaying the entire target field with the source value, means that only the delta (the difference between the before and after field value) is applied to the target fields. This reduces the possibility of records becoming out of sync if changes are being received from both sites in a dual site environment.
- Capture the initial insert of the header record and create the local transaction log files using the Oracle GoldenGate template files. Perform this task if BASE24 is configured to run with two transaction log files for each product (TLF, PTLF) on each site; one for local BASE24 authorizations and a second for combined site A and B transaction log records. Oracle GoldenGate creates the local BASE24 TLF and PTLF files when BASE24 creates the daily combined TLF and PTLF files without the alternate key files. This reduces the authorization response time in BASE24.
- Support notification coordination for the delivery-side BASE24 applications closing and re-opening their files when a full refresh completes. This feature also notifies the Oracle GoldenGate processes on the source side to close their files. A slightly different configuration of this feature is required if full refreshes are done in parallel on each site.

Components

The following components comprise D24:

- **TACLB24:** Macro that executes when the TACL process starts. This macro performs the following functions:
  - Starts CHGNOTE on the target system.
  - Renames the newly created file to the current file name.
  - Sends a Marker to the corresponding Replicat process on the source system to close its files. The Replicat will re-open the files as it processes its extract trail records.

- **D24UE:** The C programming language user exit bound into the Replicat process that monitors for file RENAME operations. When a RENAME is encountered it will start the GGSPROC ($GGB00) process to start and monitor the TACL. The user exit also maintains flags used by BASE24 for dual site processing and conflict resolution for CAF, PBF, and UAF financial fields.
- **GGSREFR:** Edit file that contains the names of all the files that will use D24 when they are fully refreshed. It also identifies which Replicat process on the source system receives the TACLB24 marker prompting BASE24 to close its files.
- **Notify:** Runs as a BASE24 satellite process and sends the message to all BASE24 processes on the Refresh notify list in the LCONF to close and open the refreshed file.
- **GGSPROC:** Process started by the user exit when it processes a file RENAME operation. This process will start a TACL process and monitor the result of the TACL.

If you are running BASE24 in Native mode on servers, then you need the following objects:

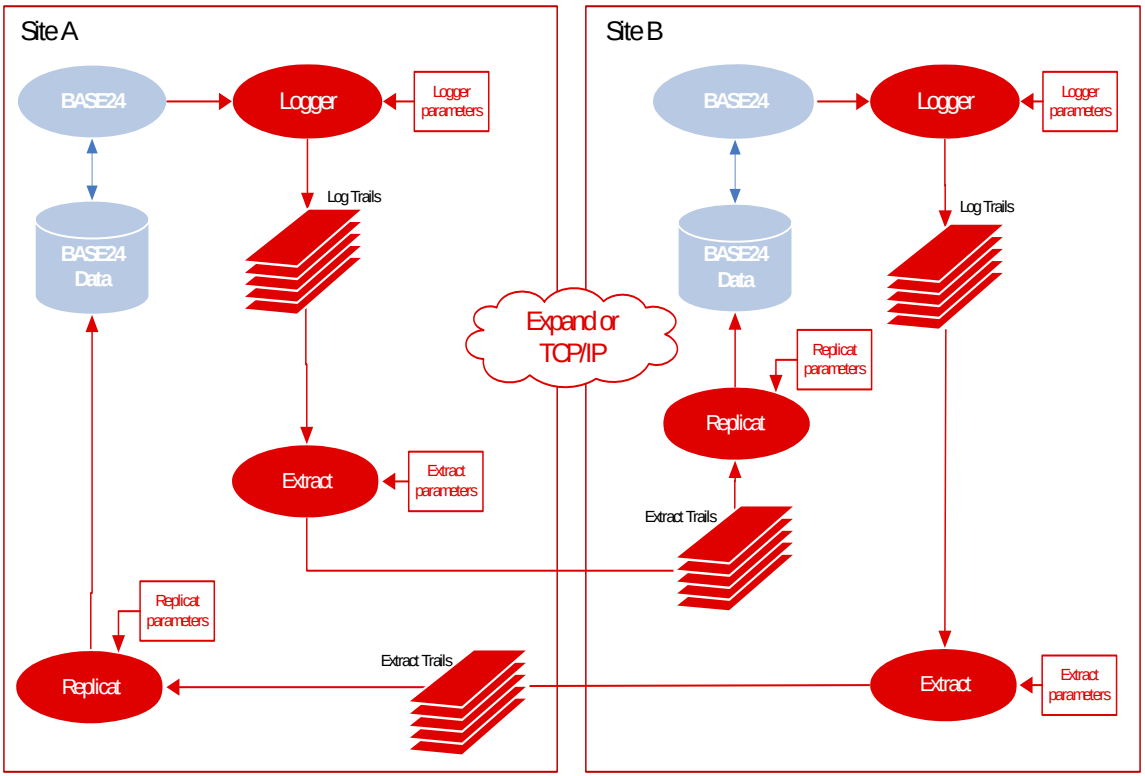
- **GGSPROCN:** Native version of **GGSPROC**.
- **D24UEN:** Native version of the D24 user exit; must be bound to a native Replicat, which requires super.super.

D24 processing

To understand how D24 affects your BASE24 and Oracle GoldenGate for BASE24 implementation, you must understand its logical data flow, illustrated in the diagram.

Oracle GoldenGate processes and trails are shown in red. BASE24 processes and databases are shown in gray.

Figure 1 D24 data flow overview



Site A Components	Description
BASE24	Application processing ATM and POS records
BASE24 data	Source data for Oracle GoldenGate D24 processing

Site A Components	Description
Logger parameters	Contains parameters that control Logger actions.
Logger and Logger trails	Captures changes to the PTLF, TLF, PTDF, TDF, and other BASE24 files and write them to Logger trails.
Extract parameters	Controls the actions of the Extracts in your D24 configuration.
Extract	Reads Logger trails from site A and writes to the Extract trails on site B.
Extract trails	Receives data from the Extract on site B.
Replicat parameters	Controls the actions of the Replicats in your D24 configuration.
Replicat and Replicat trails	Contains the D24 user exit and CREATETEMPLATE file for creating local TLF and PTLF files. Reads the extract trails with data from site B and writes them to the BASE24 database.

Site B Components	Description
Extract trails	Receives data from the Extract on site A.
Replicat parameters	Controls the actions of the Replicats in your D24 configuration.
Replicat and Replicat trails	Contains the D24 user exit and CREATETEMPLATE file for creating local TLF and PTLF files. Reads the Extract trails with data from site B and writes them to the BASE24 database.

Site B Components	Description
BASE24	Application processing ATM and POS records
BASE24 data	Source data for Oracle GoldenGate D24 processing
Logger parameters	Contains parameters that control Logger actions.
Logger and Logger trails	Captures changes to the PTLF, TLF, PTDF, TDF, and other BASE24 files and write them to Logger trails.
Extract parameters	Controls the actions of the Extracts in your D24 configuration.
Extract	Reads Logger trails from site B and writes to the extract trails on site A.

D24 implementation overview

Before you begin installing D24 code, it is important to understand and plan each step of your implementation. This section outlines the a basic D24 implementation project; customize it to fit your own business needs.

- Download Oracle GoldenGate for NonStop and Oracle GoldenGate for BASE24 to the HP NonStop Server.
- Download D24

  Go to https://support.oracle.com to download the D24 PAK file that contains all the components required to fully install D24. For HP NonStop Servers running on use the latest D24DVnn file.

  The D24 subvolume will be used as the staging subvolume for moving the D24 files to their proper location.

- Configure Oracle GoldenGate parameter files.
- Copy required files to the subvolume where Oracle GoldenGate is installed.

Site A	Site B
GLOBALS	GLOBALS
MGRPARAM	MGRPARAM
LOGPARM	LOGPARM
EXB24AB	EXB24BA
EXTLFAB	EXTLFBA
EXTDFAB	EXTDFBA
RPB24BA	RPB24AB
RPD24BA	RPD24AB
RPTDFBA	RPTDFAB
RPTLFBA	RPTLFAB
RPTLFAA	RPTLFBB

- Install the user exit
- Configure full refresh feature
  - TACLB24
  - GGSREFR
  - The Notify process
- Configure the ATD and PTD DDL files
  - Create D24 subvolumes D24ADDL and D24PDDL
  - Copy DDL files into D24ADDL and D24PDDL
  - Modify DDLFATD File
  - DDL compile D24ADDL files

  - Modify DDLFPTD File
  - DDL compile D24PDDL files

- Configure DEFGEN DELTA File (appendix A)
  - Run DEFGEN
  - Modify DEFGEN output files to designate delta fields
  - Use the supplied CAFDEF, PBFDEF, and UAFDEF as examples for modifying the DEFGEN output file.

- Add Oracle GoldenGate components
- Bind BASELIB and GGSLIB to SKELB
- Configure AFT Screens:

Screen Assignments	Usage
LCONF: Assign screen FUP-FILE-NAME	Used by Refresh to set the location of the FUP program to load the refreshed file.
LCONF: Assign screen CAF-<refresh group>	Used by the Notify process and Refresh to notify the Authorization processes to close and open the newly refreshed file. This assign is optional if there is a current assign in your BASE24 system for this file.
LCONF: Assign screen PBFDA-<refresh group>	Used by the Notify process and Refresh to notify the Authorization processes to close and open the newly refreshed file. This assign is optional if there is a current assign in your BASE24 system for this file.
LCONF: Assign screen PBFCC-<refresh group>	Used by the Notify process and Refresh to notify the Authorization processes to close and open the newly refreshed file. This assign is optional if there is a current assign in your BASE24 system for this file.

Screen Assignments	Usage
LCONF: Assign screen PBFSV-<refresh group>	Used by the Notify process and Refresh to notify the Authorization processes to close and open the newly refreshed file. This assign is optional if there is a current assign in your BASE24 system for this file.
LCONF: Assign screen POS-PTLF	Used by POS Settlement, Extract, Refresh and Server-PTLF if a PTLF other than that in the generic LCONF POS-PTLF is to be used by these processes.
LCONF: Assign screen REMOTE-LCONF	Used by DCT to access remote Pathway in order to communicate with remote device handler managing remotely connected ATM.
LCONF: Assign screen REMOTE-PMON	Used by DCT to access remote Pathway in order to communicate with remote device handler managing remotely connected ATM.
LCONF: Assign screen TLF	Used by ATM Settlement, Extract, Refresh, and Server-TLF if a TLF other than that in the Generic LCONF TLF is to be used by these processes
LCONF Parameter screen BROADCAST-DELAY	Used by Settlement to control delay period after new (P)TLF creation and prior to sending notify messages to enable creation of Oracle GoldenGate copies of files to complete. Used by Refresh to control delay after sending of notify messages to completion of impacting.
LCONF Parameter screen BROADCAST-NOTIFY	Used by Settlement and Refresh to control broadcast of notify messages.
LCONF Parameter screen DUAL-SITE-DISPLAY	Used by Server-TLF and Server-PTLF to control identification of remote records on detail display.
LCONF Parameter screen DUAL-SITE-MODE	Used by Settlement, Extract, Refresh, and DCT to control access to and management of local and remote records.

- Configure transaction file templates:
  - **D24TMPL.POYYMMDD:** Template file for local PTLF when a combined PTLF is also configured.
  - **D24TMPL.TLYYMMDD:** Template file for local TLF when a combined TLF is also configured.

CHAPTER 2
Installing D24

This chapter guides you through installing D24. This procedure is discussed in the following topics:

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Planning for D24

The following elements impact the success of your D24 implementation:

- Consider the time between Settlement creating the next day's transaction log file and the time it takes to deliver it to the local TLF and PTLF. You can configure the amount of time the Settlement process will wait after creating the transaction log files and before notifying the BASE24 processes in its LCONF Notify list, and adjust it to suit your environment and business needs.
- Plan for significantly increased storage requirements because full record images are required for the following files: TDF, PTDF, ATDD1, PTDD1, UAF, PBF, CAF.
- Plan for larger trail output from your Loggers, Extracts, and Replicats. The UAF, PBF, and CAF files require both the before and after-images to calculate the transaction amounts, increasing the amount of space they take up in the trails.
- Ensure the replicated ILF files are kept separate from the local ILF files on each site. Oracle GoldenGate processing requires that file updates use non-unique alternate keys.

Prerequisites

Before you upload Oracle GoldenGate for D24, you must:

- Install Oracle GoldenGate for HP NonStop version 10.0 (or later) in its own subvolume.
- Bind the BASELIB and GGSLIB to SKELB in the BASE24 application.
- Configure the PATHCONF file.
- Configure the XPNET environment using NCPCOM or the N1ACONF node obey file.

Bind the Oracle GoldenGate intercept library to SKELB

To bind the Oracle GoldenGate intercept library BASELIB into SKELB, you must modify the BINDSKEL macro with the location of your current SKELB library on <BASE24 volume>.XPNET.SKELB.

The following is an example of this modification. Either use EDIT or TEDIT to modify the BINDSKEL file:

```
?tacl macro
#frame
#push bindin fl modts modts2

sink [#definedelete =skelb]
sink [#definedelete =skelbn]
sink [#definedelete =baselib]

add define =skelb,  class map, file <BASE24 volume>.xpnet.skelb
add define =skelbn, class map, file <BASE24 volume>.xpnet.skelbn
add define =baselib, class map, file baselib
```

Once the BINDSKEL macro has been modified, run BINDSKEL to generate the new SKELBN library.

The XPNET release determines which subvolume the SKELB is located.

For example:

XPNET 2.1:

```
add define =skelb,  class map, file <BASE24 volume>.spannet.skelb
add define =skelbn, class map, file <BASE24 volume>.spannet.skelbn
```

XPNET 3.0:

```
add define =skelb,  class map, file <BASE24 volume>.xpnet.skelb
add define =skelbn, class map, file <BASE24 volume>.xpnet.skelbn
```

There are no expected Oracle GoldenGate warnings or errors for the BIND and AXCEL programs. Should you encounter exceptions to the warnings, see the ACI XPNET 2.1 or 3.0 Implementation Guide.

Configure the PATHCONF file

The Oracle GoldenGate library GGSLIB must be set for the Pathway Servers that maintain the data files. Enter the following line in the Pathway Configuration file <BASE24 volume>.PRODCNTL.PATHCONF:

```
SET SERVER GUARDIAN-LIB   $DATA01.GGSPROD.GGSLIB
```

You must perform this task for the all Servers *except:*

- NCS
- NCP
- NCPI-xx
- NCSP
- NCSS
- MENUHELP

The following is the PATHCONF CAF Server example:

```
[ CARD ACCOUNT FILE SERVER                                          ]
RESET SERVER
SET SERVER CPUS                0:1
SET SERVER PROGRAM             <BASE24 volume>.BA60OBJ.SVCAF
SET SERVER DELETEDELAY         10 MINS
SET SERVER TIMEOUT             60 SECS
SET SERVER PRI                 135
SET SERVER HOMETERM            $VHS
SET SERVER GUARDIAN-LIB <      <OGG volume>.<OGG subvol>.GGSLIB
ADD SERVER SERVER-CAF
For the SERVER-DPCT set the GUARDIAN-LIB to <BASE24
volume>.XPNET.SKELBN

[ DEVICE CONTROL TERMINAL SERVER                                    ]
RESET SERVER
SET SERVER CPUs                0:1
SET SERVER PROGRAM             <BASE24 volume>.BA60OBJ.SVDPCT
SET SERVER GUARDIAN-LIB        <BASE24 volume>.XPNET.SKELBN
SET SERVER HIGHPIN             OFF
SET SERVER DELETEDELAY         12 HRS
SET SERVER PRI                 135
SET SERVER PROCESS             $PPCT
SET SERVER NUMSTATIC           0
SET SERVER HOMETERM            $VHS
ADD SERVER SERVER-DPCT
```

Handling multiple instances of BASE24

To run Oracle GoldenGate for multiple BASE24 networks on the same HP NonStop Server, you must configure the second Oracle GoldenGate environment by:

- Specifying its own prefix (such as $XX)
- Specifying its own AUDCFG file (such as $SYSTEM.<Oracle GoldenGate subvol>.AUDCFG).
- Setting the GUARDIAN-LIB parameter in the PATHCONF file, and add two DEFINE settings. Add the following settings to each server listed above:

```
SET SERVER DEFINE =GGS_PREFIX, CLASS MAP, FILE $<two character prefix>
SET SERVER DEFINE =GGS_AUDCFG, CLASS MAP, FILE $SYSTEM.<Oracle
GoldenGate subvol>.AUDCFG
```

The following example illustrates both the GUARDIAN-LIB and DEFINE settings:

```
[ CARD ACCOUNT FILE SERVER                                          ]
RESET SERVER
SET SERVER CPUs                0:1
SET SERVER PROGRAM             <BASE24 vol>.BA6TOBJ.SVCAF
SET SERVER DELETEDELAY         10 MINS
SET SERVER TIMEOUT             60 SECS
SET SERVER PRI                 135
SET SERVER HOMETERM            $vhs
SET SERVER GUARDIAN-LIB        <BASE24 volume>.XPNET.SKELBN
SETSERVERDEFINE =GGS_PREFIX,CLASSMAP,FILE$<twocharacterprefix>
SET SERVER DEFINE =GGS_AUDCFG,CLASS MAP,FILE $SYSTEM.<Oracle
GoldenGate subvol>.AUDCFG
ADD SERVER                     SERVER-CAF
```

Configure the N1ACONF file

<BASE24 volume>.PRODCNTL.N1ACONF is an obey file that can be used instead of NCPCOM (explained on page 32) to configure XPNET. The BASE24 online processes are defined in this file and the Notify process must be added to it. The following statements must be inserted into the N1ACONF file where the other PROCESS statements are:

```
== Oracle GoldenGate NOTIFY PROCESS

RESET PROCESS
SET PROCESS BCPU 0
SET PROCESS LIBRARY <BASE24 vol>.XPNET.SKELBN
SET PROCESS PROGRAM <BASE24 vol>.BA60OBJ.REFRP
SET PROCESS PPD $P1NO
```

```
SET PROCESS PRIORITY 150
SET PROCESS CPU 1
SET PROCESS STARTUP DEMAND
SET PROCESS DEFINES ON
SET PROCESS QAT 64
ADD PROCESS P1A^NOTIFY, UNDER SYSNAME \SITEA, UNDER NODE P1A^NODE
```

For \SITEB the last line would be:

```
ADD PROCESS P1A^NOTIFY, UNDER SYSNAME \SITEB, UNDER NODE P1A^NODE
```

The new library you created earlier, SKELBN, should replace the SKELB references in the N1ACONF file. The following example illustrates this new library location using an Oracle GoldenGate volume/subvolume in the N1ACONF file:

```
RESET PROCESS
SET PROCESS BCPU 1
SET PROCESS LIBRARY <BASE24 volume>.XPNET.SKELBN
SET PROCESS PROGRAM <BASE24 volume>.PS60obj.RTAU
SET PROCESS PPD $p1R1
SET PROCESS PRIORITY 175
SET PROCESS CPU 0
SET PROCESS STARTUP AUTOMATIC
SET PROCESS QAT 64
ADD PROCESS P1A^RTAU1, UNDER SYSNAME \SITEA, UNDER NODE P1A^NODE
```

Downloading D24

Go to My Oracle Support to download D24:

https://support.oracle.com

1. Login to My Oracle Support.
2. Click the **Patches & Updates** tab.
3. Under the **Patch Search** tab, enter Patch Number **27024312**, and click **Search**.
4. Click the patch number, select your **Platform**, and then click **Download**.

Installing D24

Once you have the ZIP file, complete the following procedure:

- Unzip the file on your workstation. The file is in PAK format. The file name will include information such as the release and the operating system of the NonStop system that will host Oracle GoldenGate represented as a letter and number.
- Transfer the file to the HP NonStop Server in binary mode. Use the <GGS volume>.D24 as the destination location.
- Restore the D24 files.
  - Locate X24UNPAK. This macro is used to restore BASE24 modules using the syntax:

    ```
    TACL> RUN X24UNPAK <module>
    ```

    Where <module> can be D24, T24, or N24. If <module> is left blank, then help is displayed. If multiple modules are entered, then only the last is installed.
  - Restore the files by running the X24UNPAK macro using D24 as the <module>.

    ```
    TACL> RUN X24UNPAK D24
    ```

    The macro restores the install files to $<GGS volume>.D24 . Two additional subvolumes that include sample parameter files for site A and site B are restored to $<GGS volume>.D24A and $<GGS volume>.D24B.

Notify process full refresh feature

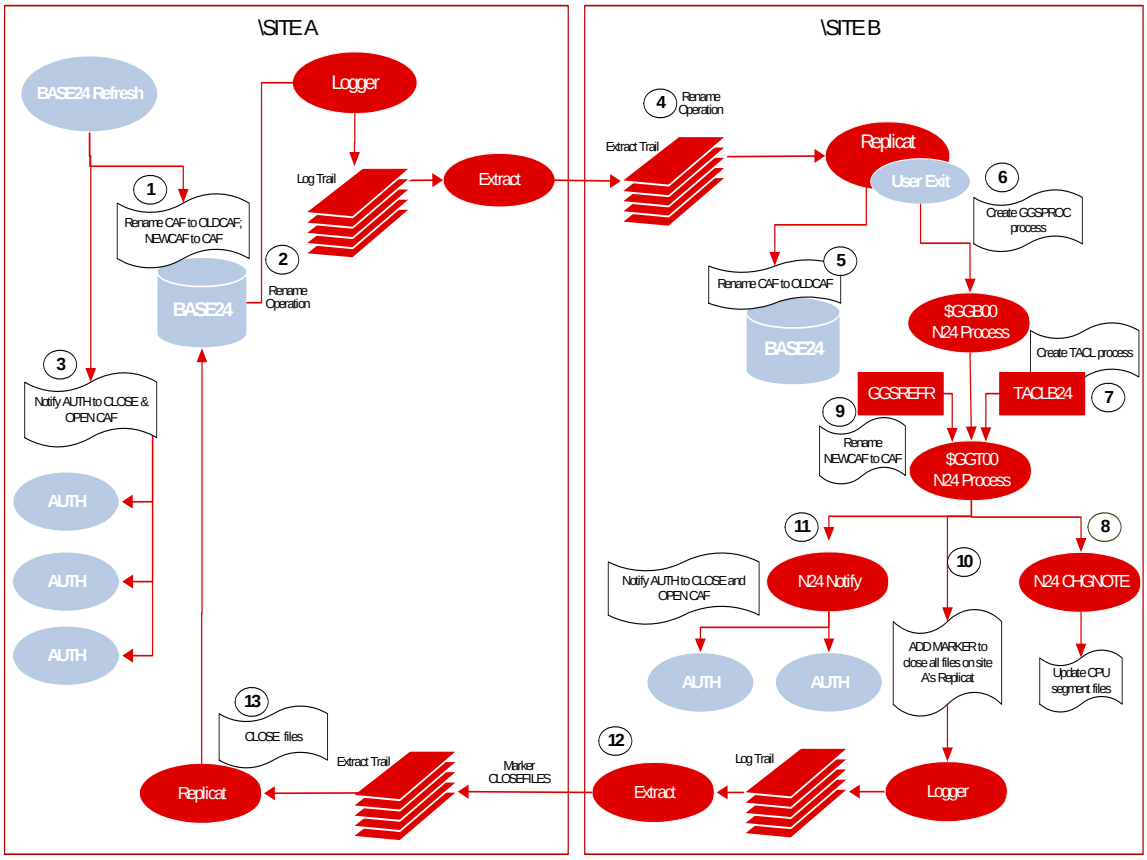
Overview of full refresh processing

To understand how the Notify process affects your BASE24 and Oracle GoldenGate for BASE24 implementation, you must understand its logical data flow, illustrated in the diagrams in this section.

Full refresh replication

The next diagram illustrates dual site full refresh processing using replication. The sequence of events starts with the renaming of the CAF files and continues until the last acknowledgment of the refresh.

Figure 2 Notify process data flow for full refresh replication



Source objects on site A	Data flow
BASE24 Refresh process	Renames the CAF file to OLDCAF and the NEWCAF file to CAF **(1).** The CAF and NEWCAF files are the Card Authorization Files set to be refreshed. Forwards cutover messages to all active BASE24 Refresh processes **(3).** Updates the OLDCAF and CAF files until all cutover messages are received **(3)**. Verifies that all BASE24 processes have closed OLDCAF and opened CAF **(3)**.
Logger, log trail	Extracts the file rename operations performed by the BASE24 refresh process and writes them to a log trail **(2)**.
Extract	Reads the log trail and writes the rename operation records to the extract trail on site B **(4)**.
Target objects on site B	**Data flow**
Extract trail	Receives renamed file records from site A **(4)**.
Replicat	Replicates the file renames **(5)**. Starts first Notify GGSPROC process, $GGB00 **(6)**.
Notify process $GGB00	Started whenever a renamed file contains an EXITPARAM "NOTIFY" in its MAP statement **(6)**. Starts the Notify TACL process $GGT00 **(7)**.

Notify process $GGT00	TACL process that runs the TACLB24 macro **(7)**, which: ◆ Verifies the values in incoming reference files ◆ Starts the CHGNOTE program **(8)**. This triggers the intercept libraries to reread the shared segment file. ◆ Renames the files as requested by the user exit on site B. Renames NEWCAF to CAF. **(9)** ◆ Sends a CLOSEFILE marker to a Logger that writes the marker to its log trail **(10)**. ◆ Starts an NCPCOM process and sends cutover messages to Notify **(11)**.
Notify	Receives cutover messages from NCPCOM **(11)**. Forwards cutover messages to all active BASE24 Refresh processes **(11).** Updates the OLDCAF and CAF files until all cutover messages are received **(11)**. Verifies that all BASE24 processes have closed OLDCAF and opened CAF **(11)**.
Source objects on site B	**Data flow**
Logger, log trail	Extracts CLOSEFILE marker data from $GGT00 and writes it to a log trail**(10)**.
Extract	Reads the log trail containing CLOSEFILE markers and writes it to an Extract trail on site A **(12)**.
Target objects on site A	**Data flow**
Extract trail	Receives CLOSEFILE markers from the Extract on site B **(12)**.

Replicat	Writes the CLOSEFILE marker to BASE24, which closes the current set of CAF and NEWCAF files and kicks off the new renaming process **(13)**.

Parallel full refresh processing

The next diagram illustrates an environment where the full refresh processing runs independently on two sites.

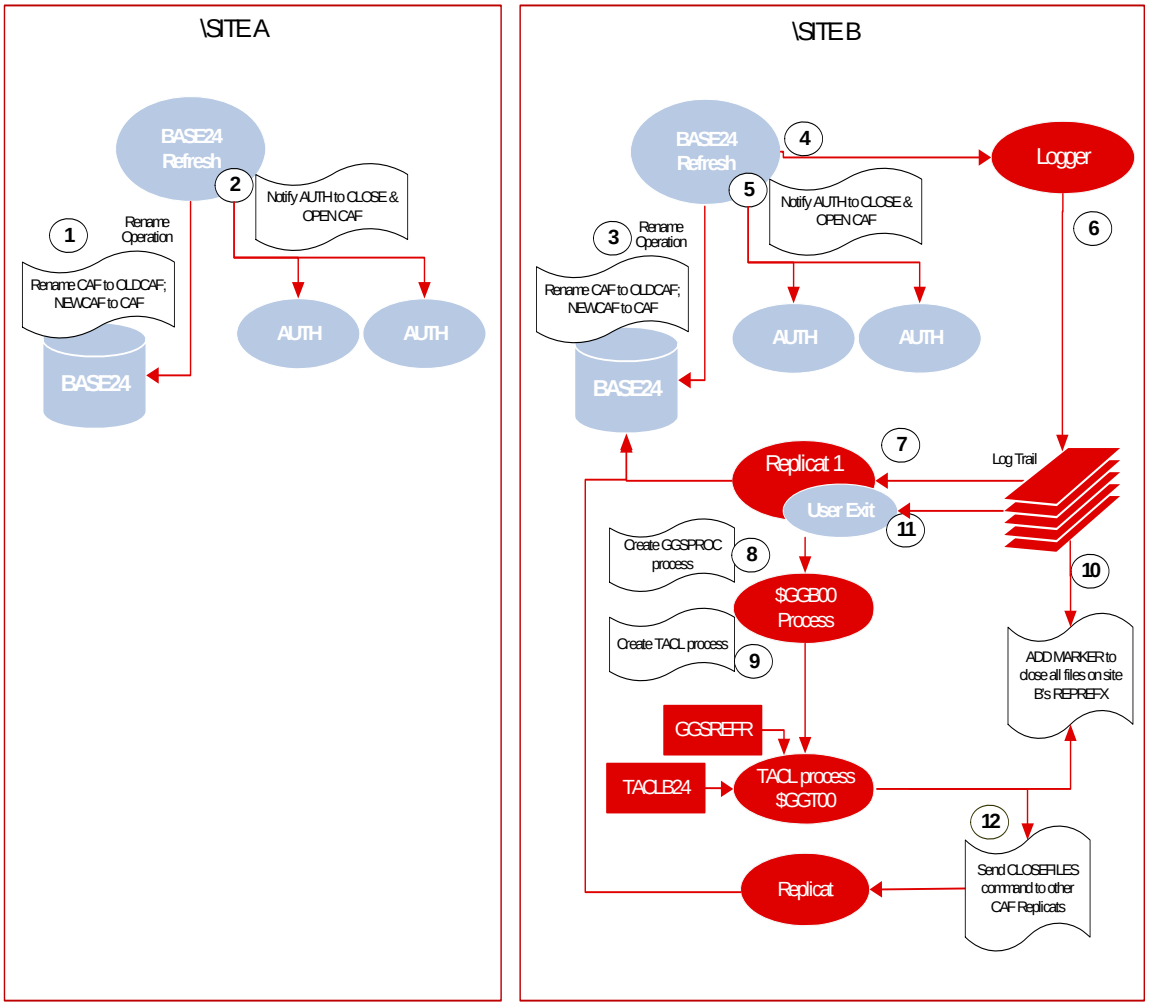
Site A

The refresh process on site A does not have the Oracle GoldenGate intercept library bound to itself or to the FUP used to load the new file.

Site B

The refresh process on site B has the Oracle GoldenGate intercept library, but the FUP does not. In this case the optional processing flag <optflag> is set in the GGSREFR file.

Figure 3 Notify process data flow for parallel full refresh processing



objects on site A	Data flow
BASE24 Refresh process	Renames the CAF file to OLDCAF and the NEWCAF file to CAF **(1).** Cutover messages are sent to all active BASE24 Refresh processes **(2).** Updates the OLDCAF and CAF files until all cutover messages are received **(2)**. Verifies that all BASE24 processes have closed OLDCAF and opened CAF **(2).**
Objects on site B	**Data flow**
BASE24 Refresh process	Renames the CAF file to OLDCAF and the NEWCAF file to CAF **(3).** Cutover messages are sent to all active BASE24 Refresh processes **(5).** Updates the OLDCAF and CAF files until all cutover messages are received **(5)**. Verifies that all BASE24 processes have closed OLDCAF and opened CAF **(5).**
Logger	Logger captures the rename operation **(4)**. Because the FUP process does not include the intercept library only file operations are captured by the Logger.
log trail	The rename operations are written to the log trail **(6)**.
Replicat 1	Reads the log trail and replicates the file renames **(7)**. Starts first Notify GGSPROC process, $GGB00 **(7)**. Reads the log trail and processes the CLOSEFILE **(11)**.

Notify process $GGB00	Starts the Notify TACL process $GGT00 **(8)**.
Notify process $GGT00	TACL process that runs the TACLB24 macro **(9)**, which: ◆ Verifies the values in incoming reference files ◆ Sends a CLOSEFILE marker to the Logger process log trail **(10)**. ◆ Sends a GGSCI CLOSEFILES command to all local Replicats identified in the GGSREFR **(12)**.

Configuring the full refresh feature

The Notify process (N24) facilitates communication between dual sites, and is installed as part of D24. Because your sites are both sources and targets, you must install and configure this feature on site A and site B. To install this feature, you must:

- Move N24 files into position
- Edit the TACLB24 Macro
- Edit the GGSREFR file
- Configure the LCONF
- Add the Notify process to BASE24

Move N24 files into position

- Move the following files to your Oracle GoldenGate for HP NonStop subvolume:
  - TACLB24
  - GGSREFR
  - GGSPROC
- Move the Notify program to the same volume and subvolume as your BASE24 programs.

Edit the TACLB24 Macro

Using EDIT or TEDIT, open the TACLB24 macro file in your Oracle GoldenGate subvolume. Look for the comment line "== Customer must populate these values". To configure the

TACLB24 macro to work in your environment, you must point it to your Pathway server and a variety of different programs and files, as well as set some Oracle GoldenGate default names as shown in the following example:

1. Open the TACLB24 file using the NonStop EDIT or TEDIT utility.
2. Look for the following comment line in the macro edit file:

   ```
   == Customer must populate these values
   ```

3. Enter the location of your Pathway PPD for your BASE24 network.

   ```
   [#set :ppmn     $ppmn]
   ```

4. Enter the location of your NCPCOM program.

   ```
   [#set :ncpcom <OGG volume>.xpnetnn.ncpcom]
   ```

5. Set the location of your CHGNOTE program.

   ```
   [#set :chgnote <OGG volume>.<OGG subvol>.chgnote]
   ```

6. Identify your default Oracle GoldenGate prefix.

   ```
   [#set :prfx     $GG]
   ```

7. Set the location of your AUDCFG file.

   ```
   [#set :audcfg   $system.ggs.audcfg]
   ```

8. Identify BASE24's Notify logical process name.

   ```
   [#set :notify   <node name>.p1a^node.p1a^notify]
   ```

9. Set the location of GGSCI.

   ```
   [#set :ggsci <OGG volume>.<OGG subvol>.ggsci]
   ```

10. Set the location of your Refresh edit file.

    ```
    [#set :ggsrefr <OGG volume>.<OGG subvol>.ggsrefr]
    ```

The next two steps are optional:

11. Set the Replicat name for site 1.

```
[#set :repref1  REPREF1]
```

12. Set the Replicat name for site 2.

```
[#set :repref2  REPREF2]
```

Your final file will look like this sample:

```
== Customer must populate these values
[#set :ppmn     $ppmn]
[#set :ncpcom   $data8.xpnet30.ncpcom]
[#set :chgnote  $data7.ggs.chgnote]
[#set :prfx     $GG]
[#set :audcfg   $system.ggs.audcfg]
[#set :notify   \ggs2.p1a^node.p1a^notify]
[#set :ggsci    $data7.ggs.ggsci]
[#set :ggsrefr  $data7.ggs.ggsrefr]
[#set :repref1  REPREF1]
[#set :repref2  REPREF2]
== Customer must populate these values above
```

Edit the GGSREFR file

GGSREFR defines the files that will use D24 when they are renamed as part of the Refresh process. A DEFINE =NOTIFY statement is required as it contains the location of the TACLB24 macro.

In the following sample, see where you must supply your own environment variables:

Figure 4 Sample space separated list of BASE24 full refresh files:

```
==    <fname>         <refrgrp> <replcat> <refrtype> <optppd> <optnotify> <optflag> <optLCONF>
<location>.PRO1DATA.PBF  BK02    RPD24AB     1
<location>.PRO1DATA.CAF  0001    RPD24AB     7       $PPMN    P1A^NOTIFY
<location>.PRO1DATA.NEG  BK01    RPD24AB     D       $PPMN    P1A^NOTIFY
<location>.PRO1DATA.CAF0 BK11    RB2423      7       $PPMN    P1A^NOTIFY     5      CAF-0001
```

Explanation of variables:

- **<fname>:** The file name or names that are to be refreshed. These files should only be specified if there is a full refresh. The files specified should be local and used as target files. If you have files on the same disk and subvolume, then specify the order of the files from largest file name size to shortest file name size. Fully qualify each file name with an HP NonStop system name.
- **<refrgrp>:** The BASE24 refresh group as defined in the IDF.
- **<replcat>:** The Replicat group name that closes and opens its files to allow bi-directional processing. This Replicat will always be on the source system and not the target.
- **<refrtype>:** Indicates which file has been refreshed. Valid values for files used by the Notify process are as follows:
  - 1 = Positive Balance File (PBF) for DDA and NOW accounts if multiple PBFs are used or all accounts if PBFs are combined
  - 2 = Positive Balance File (PBF) for savings accounts if multiple PBFs are used
  - 3 = Positive Balance File (PBF) for credit card accounts if multiple PBFs are used
  - 5 = Stop Payment File (SPF)
  - 6 = No Book File (NBF) - BASE24-teller only
  - 7 = Cardholder Authorization File (CAF)
  - 9 = Warning/Hold/Float File (WHFF) - BASE24-teller only
  - A = Corporate Check File (CCF) - BASE24-atm self-service banking (SSB) Check Application only
  - B = Check Status File (CSF) - BASE24-atm self-service banking (SSB) Check Application only
  - D = Negative Card File (NEG)
  - E = Customer/Card Information File (CCIF)
  - F = Customer/Card Memo File (CCMF)
  - Blank = Statement Print Data File (SPDF)

You can also choose to use the following optional parameters:

- **<optppd>:** The BASE24 Pathway name that is associated with the file name specified for the target system.

This process name is derived from the customer-specified values in the TACLB24 macro, if not specified here. Use this value when you have multiple BASE24 environments and one Oracle GoldenGate environment.

- **<optnotify>:** The BASE24 symbolic name that is used to deliver a command to the associated Notify process for the target system and the particular target file name specified.

  The symbolic process name is derived from the customer-specified values in the TACLB24 macro, if not specified with this file. This value is to be used when there are multiple Logical Networks for a BASE24 environment and one Oracle GoldenGate environment. You must specify the <optppd> parameter when using this value.

- **<optflag>:** This option flag has two potential uses:
  - The first indicates whether the macro should perform a full notification, or only send a CLOSEFILES command and marker to local Replicats. This is used mainly when full refreshes are required on target and source independent of each other.
    - **0** = full notification (the default)
    - **1** = only send the CLOSEFILES command and marker to local Replicats
  - The second allows specification of an LCONF assign to use in place of the file name in the <optLCONF>. This is required for non-standard ACI files.
    - **5** = allows specification of an LCONF assign to use in place of the file name, but does not generate a notification of a file name mismatch.
    - **6** = allows specification of an LCONF assign to use in place of the file name and notifies when the file name in GGSREFR does not match the LCONF value specified.

- **<optLCONF>:** When the <optflag> is set to 5 or 6, this specifies an LCONF assign to validate.

Note When the primary refresh file has partitions, only the primary file name should be specified in GGSREFR.

Once you have edited the GGSREFR, you must edit your parameters and ensure that the GLOBALS file includes all the required DEFINES.

Configure the LCONF

The following LCONF assigns must be available for the Notify process to retrieve the proper file name (usually the CAF/PBF <refresh groupname>). Unless the LCONF value was specified in GGSREFR using the <optflag> = 5 or 6, you must configure the LCONF so Notify can communicate the correct location of the file to be reopened. In each assign message, you must specify:

- The file to be refreshed
- The location of the refreshed file
- The template used to create the file

The following examples show where to place environment-specific information in your LCONF file. These assigns are optional if there is a current assign in your BASE24 system. For more information refer to the explanation on page 28 of the <optFlag> and <optLCONF> parameters in GGSREFR.

Figure 5 LCONF assign for the CAF

```
************************** LCONF ASSIGN MESSAGE ***************************

                Process Name:  ****************

                     ASSIGN:  CAF-<IDF Refresh group>
                         TO:  <node name>.<volume>.PRO1DATA.CAF
                   Template:  <node name>.<volume>.PRO1TPLT.CAF
 Product Use:
     BASE      ATM       POS



 Comments:    THE NAME OF THE CARD AUTHORIZATION FILE.  TEMPLATE REQUIRED FOR
              FULL-FILE REFRESH.  READ BY THE REFRESH PROCESS AND NOTIFY
              PROCESS.


User Field:

 Record read O.K.
 ====================== Last Modified 01/10/10 08:44:04 ======================
F2=READ F3=ADD F4=DELETE F5=UPDATE F6=RD NEXT F7=PREV F10=PRINT F16=EXIT
SF2=SEARCH-FOR-MATCH
```

LCONF assign for the PBF

The PBF file can be referenced in four different ways in the LCONF:

- PBF file
- PBFDA for Checking Accounts
- PBFSV for Savings Accounts
- PBFCC for Credit Card Accounts

Figure 6 LCONF assign for a PBF file

```
************************** LCONF ASSIGN MESSAGE ***************************

                Process Name:  ****************

                     ASSIGN:  PBF-<IDF Refresh group>
                         TO:  <node name>.<volume>.PRO1DATA.PBF
                   Template:  <node name>.<volume>.PRO1TPLT.PBF
 Product Use:
     BASE       ATM        POS



 Comments:     THE NAME OF THE POSITIVE BALANCE FILE.  TEMPLATE REQUIRED FOR
               FULL-FILE REFRESH.  READ BY THE REFRESH PROCESS AND NOTIFY
               PROCESS.


User Field:

 Record read O.K.
 ====================== Last Modified 01/10/10 08:44:04 ======================
F2=READ F3=ADD F4=DELETE F5=UPDATE F6=RD NEXT F7=PREV F10=PRINT F16=EXIT
SF2=SEARCH-FOR-MATCH
```

Figure 7 LCONF assign for a PBFDA, PBFSV, or PBFCC file

```
************************** LCONF ASSIGN MESSAGE ****************************

                Process Name:  ***************

                     ASSIGN:  PBF-<IDF Refresh group>
                         TO:  <node name>.<volume>.PRO1DATA.PBF
                   Template:  <node name>.<volume>.PRO1TPLT.PBF
 Product Use:
     BASE      ATM       POS



 Comments:    THE NAME OF THE POSITIVE BALANCE FILE.  TEMPLATE REQUIRED FOR
              FULL-FILE REFRESH.  READ BY THE REFRESH PROCESS AND NOTIFY
              PROCESS.


User Field:

 Record read O.K.
 ====================== Last Modified 01/10/10 08:44:04 ======================
F2=READ F3=ADD F4=DELETE F5=UPDATE F6=RD NEXT F7=PREV F10=PRINT F16=EXIT
SF2=SEARCH-FOR-MATCH
```

LCONF assign for GGSFUP

You must configure the FUP-FILE-NAME assign screen with the location of the GGSFUP program that loads the newly-refreshed files. To create a GGSFUP program:

1. FUP DUP the system's FUP object program into the Oracle GoldenGate subvolume and name it GGSFUP.
2. Use the BIND PROGRAM command in GGSCI to bind the GGSLIB library to the GGSFUP program.
3. FUP LICENSE the new GGSFUP program
4. Fill in the location of the GGSFUP program in the LCONF FUP-FILE-NAME Assign screen

Figure 8 LCONF assign for the FUP program

```
BASE24-BASE LOGICAL NET CONFIG FILE PRO1        04/04/19 05:11 02 OF 04
                          LNCF ASSIGN SCREEN
                    READ BY: ****************
                ASSIGN NAME: FUP-FILE-NAME
                LOCATION/ID: <\system>.<GGS vol>.<GGS subvol>.GGSFUP
              TEMPLATE FILE:
 USAGE CODES:
 BASE ATM  POS  ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 COMMENTS:    FUP THAT IS USED FOR FULL REFRESHES

USER FIELD:
 RECORD LAST CHANGED: 04/04/05  06:46   BY USER: 0255 , 00000255   CHANGE
 ********************************** BASE24 ***********************************
  NEW PAGE:        FILE DESTINATION:        NEW LOGICAL NETWORK ID:
 SF2 - SEARCH-FOR-MATCH         F12-HELP
```

Add the Notify process to BASE24

Note Remember to add N24 to both sites in your implementation.

The Notify process for D24 must be included in your XPNET configuration. Its purpose is to take the place of the standard refresh processing instigated by Replicat. You may have already completed this step using the N1ACONF obey file as explained on page 15. If not, refer to this example of how you might use NCPCOM to add this process to your existing XPNET configuration:

```
TACL> NCPCOM $PPMN
1 > set process like P1A^REFR
   Process \SITEB.P1A^NODE.P1A^REFR set complete.
2 > set process ppd $P1NO
3 > set process program <BASE24 vol>.<BASE24 subvol>.NOTIFY
4 > add process \SITEB.P1A^NODE.P1A^NOTIFY
   Process \SITEB.P1A^NODE.P1A^NOTIFY added.
```

Repeat these steps for every logical network in your dual-site implementation.

Configuring the ATD and PTD DDL

For Oracle GoldenGate D24 to operate correctly, you must configure the ATD and PTD DDL files with the correct record layouts. This is because ACI DDL for the ATDxx and PTDxx data files contain all the definitions but lack adequate record layouts for data mapping. To configure the ATD and PTD DDL you must:

- Edit the ATM DDLFATD
- Edit the POS DDLFPTD

Edit the ATM DDLFATD

Changes must be made to the DDLFATD file to be used with Oracle GoldenGate. The order of the definitions must be re-arranged so the DDL will compile without any problems.

To edit the DDLFATD:

1. Create A new subvolume, D24ADDL, for the ATM device files. Copy the following files into the subvolume D24ADDL:
   - DDLFATD
   - DDLFTDF
   - DDLGADEF
   - DDLGATD
   - DDLGDEFS
2. Ensure the BLDDICT file is created to compile files and that it contains the following commands:

```
VOLUME <volume>.D24ADDL
FUP PURGE DICT*
DDL / IN DDLGDEFS, OUT $S.#DEFS / DICT
DDL / IN DDLGADEF, OUT $S.#ADEF / DICT
DDL / IN DDLGATD,  OUT $S.#GATD / DICT
DDL / IN DDLFATD,  OUT $S.#FATD / DICT
DDL / IN DDLFTDF, OUT $S.#TDF  / DICT
```

Note The location <volume>.D24ADDL is used in the DICTIONARY parameter located in the Oracle GoldenGate RPTDFAB (BA) parameter file.

3. Change the order of the DDLFATD files:

Original Order of Files	Required Order of Files
?section atd-history	?section atd-history
?section atd-deflist	?section atd-deflist
?section atdd1	?section atdd2
?section atdd2	?section atds1
?section atds1	?section atdd1-core
?section atdd1-core	?section atds1-core
?section atds1-core	?section atdd1

4. Comment out the DATA-AREA and perform the following task:

   Determine the length of the ATDD1-CORE definition and subtract it from the size of the DATA-AREA field. For example, in the file below the original DATA-AREA field is 3938 bytes and the length of the ATDD1-CORE definition is 540 bytes. Therefore the length of the DATA-AREA is 3938 less 540, or 3398.

```
* Oracle GoldenGate Dual Site Modification
!00187B00
* 02 DATA-AREA PIC X(3938). !00187B01
* CORE LENGTH = 540  29SEP03
   02 CORE TYPE ATDD1-CORE.
   02 DATA-AREA PIC X(3398).
```

Note The actual values of the DATA-AREA and ATTD1-CORE definitions can change with new fixes or new releases. Check them in the current DDLFATD file before making the above changes.

5. Once the changes are made, re-compile the DDLFATD file.

Edit the POS DDLFPTD

Changes must be made to the DDLFPTD file so Oracle GoldenGate processes data correctly. The order of the definitions must be re-arranged so the DDL will compile without any problems.

To edit the POS DDLFPTD:

1. Create a new subvolume, D24PDDL for the POS device files, and add the following files:

- DDLFPTD
- DDLFPTDF
- DDLGDEFS
- DDLGPTD

2. Ensure the BLDDICT file is created to compile the files, andthat it contains the following commands:

```
VOLUME <volume>.D24PDDL
FUP PURGE DICT*
DDL / IN DDLGDEFS, OUT $S.#DEFS / DICT
DDL / IN DDLGPTD,  OUT $S.#GPTD / DICT
DDL / IN DDLFPTD,  OUT $S.#FPTD / DICT
DDL / IN DDLFPTDF, OUT $S.#PTDF / DICT
```

Note The location <volume>.D24PDDL is used in the DICTIONARY parameter, located in the Oracle GoldenGate RPTDFAB(BA) parameter file.

3. Change the file order in the DDLFPTD:

Original Order	Required Order
?section ptd-history	?section ptd-history
?section ptd-deflist	?section ptd-deflist
?section ptdd1	?section ptdd2
?section ptdd2	?section ptds1
?section ptds1	?section ptdd1-core
?section ptdd1-core	?section ptds1-core
?section ptds1-core	?section ptdd1

4. Change the end of the PTDD1 record definition by commenting out the DATA-AREA field and performing the following:

Determine the length of the PTDD1-CORE definition and subtract it from the size of the DATA-AREA field (3916). In the example below, the CORE LENGTH is 2370 bytes. Therefore the length of the DATA-AREA is 3916 less 2370, resulting in 1546.

```
* Oracle GoldenGate Dual Site Modifications
*
* 02 DATA-AREA PIC X(3916). !00238A01
* CORE LENGTH = 2370   14NOV03
02 CORE                          TYPE PTDD1-CORE.
02 DATA-AREA                      PIC X(1546).
```

Note The length of the DATA-AREA and PTTD1-CORE definitions can change with new fixes or new releases. Check the actual values in the current DDLFPTD file before making the above changes.

5. Once the changes are made, re-compile the DDLFPTD file.

Configuring the D24 user exit

The D24 user exit, bound into Replicat, performs three functions:

- Adds or updates the multiple logical net token for the TLF and PTLF files so BASE24 can distinguish local transaction log records from remote log records.
- Merges N24 (full refresh) functionality for BASE24 satellite processes into the dual site product.
- Applies the amount field difference between the source record befor-image and after-image to the replicated field. Called delta functionality, this eliminates the possibility of overlaying amount values between systems.

For the user exit to work properly, you must install the code, edit the EXITPARAM, and configure Oracle GoldenGate parameters.

Prerequisite: configure Oracle GoldenGate components

In order to preserve data integrity between remote and local systems, you must ensure records are in uncompressed, or full image format. To accomplish this, you must configure the following components:

- **Logger Parameter File:** Use the NOCOMPRESSUPDATES and GETBEFOREUPDATES parameters for the CAF, PBF and UAF files.
- **Extract Parameter File:** Use the GETUPDATEBEFORES parameter.
- **Replicat Parameter File:** Use the GETUPDATEBEFORES, NOCOMPENSCRIBEMAPS and CUSEREXIT parameters.

Install the user exit

To run the BINDEXIT macro that binds the user exit D24UE with the Replicat program, complete the following tasks:

1. Make sure you are on the volume and subvolume where Oracle GoldenGate is installed.
2. From the TACL prompt, run the BINDEXIT utility.

```
TACL>  RUN BINDEXIT
```

3. Answer the prompts in the following example:

```
BINDEXIT Utility

Creates a new EXTRACT or REPLICAT object file with bound in USER
EXIT routines.   Enter X at any prompt to quit.

Enter type of object to create, EXTRACT or REPLICAT: REPLICAT
Enter name of your USER EXIT object file:            D24UE
Enter name of the NEW REPLICAT object file:          REPD24
SQL Catalog for SQLCOMP (or N to avoid SQL compile): GGSCAT
Accelerate code when BIND finished (Y/N)?            Y
```

The following example shows typical output of the BINDEXIT utility:

```
Creating new REPLICAT object file...
*** Binder conflicts, check output in $S.#BIND.REPD24 ***

New REPLICAT file $DATA06.GGS7000.REPD24 created with user exits.
Accelerating $DATA06.GGS7000.REPD24...
@ACCELERATOR - T9276D30 - 11MAY01 - (Apr  2 2001)
Copyright Tandem Computers, Incorporated, 1988-1997
```

```
Options:  SAFE UC PROCDEBUG NOTLINKABLE INHERITSCC_ON ATOMIC_ON
OVTRAP_ON
TRUNCATEINDEXING_ON SAFEALIASINGRULES_ON

System name = \GGS2
CPU number = 0, CPU type = Unknown
Accelerated on 10/26/2001 at 12:02:39.
204523 TNS instruction words
294909 TNS/R instructions
2.88 inline code expansion factor

TNS File Name: \GGS2.$DATA06.GGS7000.REPD24
Binder Region Present
Symbols Region Present
0 Errors were detected
0 Warnings were issued

Accelerated File Name: \GGS2.$DATA06.GGS7000.REPD24
CPU Time 0:04:05.633
Elapsed Time 0:05:53
Extended segment size = 17545640 bytes.
STOPPED: 0,217
CPU time: 0:00:12.509
1: Process terminated with warning diagnostics

TACL>  FUP LICENSE REPD24 (must be Super.Super)
```

Binding the user exit in a native environment

To bind your user exit in a native environment, you must run the NLDEXIT macro to bind the native user exit D24UEN with the native Replicat program. Complete the following tasks:

1. Ensure you are on the volume and subvolume where Oracle GoldenGate is installed.
2. Make sure you have installed and licensed the native version of Replicat.
3. From a TACL prompt, run the following:

```
TACL> RUN NLDEXIT
```

4. Enter the following prompts:

```
NLDEXIT Utility

Creates a new Native EXTRACT or REPLICAT object file linked with a
USEREXIT module.
Enter X at any prompt to quit.

Enter type of GGS object to create, Extract or Replicat: Replicat
GGS Object Type: REPLICAT
Enter $Vol.Subvol for REPLICAT Relinkable: $DATA06.HBSV7020
Enter location of userexit object: GGSDEVN.D24UEN
Enter name for new object file: REPD24N
Does your User Exit contain C++ modules (Y/N) : Y
What C++ runtime version (2/3) : 3
Does your User Exit contain Cobol modules (Y/N) : Y

New REPLICAT file $DATA06.HBSV7020.REPD24N created with user exits.

SQL Catalog for SQLCOMP (or N to avoid SQL compile): GGSCAT
```

Configuring delta processing

When running bi-directional processing in a high-demand environment such as an ATM or POS system, certain files must remain up-to-date. To help ensure fields such as amounts and available balances remain current, D24 will apply delta processing. Delta processing looks at the before and after-image fields, then applies the difference of the two. To do this, the user exit reads a DEFGEN output file and parses it to determine delta processing requirements you specify. You can apply delta processing to any file you want; see *Appendix 1: Delta Fields* for recommendations for delta processing fields.

Before selecting a field for delta processing, be aware of the following caveats:

- You must run DEFGEN to create a valid output file, and must specify its location in the mapped file structures or definitions. DEFGEN can generate definitions for file segments; however, if a file segment is not designated as a delta field it is ignored.
- You must designate the fields that require delta processing.
- Any field after a variable length field within a segment or definition is not included in the current design.

- Delta processing for entry-sequenced files is currently not supported. In addition, audited files are not supported at this time.

To configure delta processing, you must:

- Generate DEFGEN for D24
- Edit the EXITPARAM

Processing reset transactions

For certain fields, BASE24 applications may set a period to accumulate the amount. At the end of that time, the first transaction that is processed will reset the accumulated amount to zero.

In a bi-directional environment if, for any reason, the first transaction of the accumulation period for one of the sites (the *reset transaction*) is processed before an already-processed reset transaction comes in from the other site, the accumulator is reset on and replicated to both sides, which calculates an incorrect accumulator amount.

For example assume an accumulating account has a balance of $100. At the beginning of the reset period it receives a deposit of $400 on site A. Normal processing would be:

- Site A receives a $400 deposit as the first transaction of the period and resets the balance to zero and then to $400.
- It sends the operation to site B, where delta processing is applied. The site A ending balance ($400) less the site A beginning balance (- $100) plus site B current balance(+ $100) results in $400.
- Next there is a $50 withdrawal on site B making the balance $350.
- This transaction is sent to site A where the delta of the site B ending balance ($350) minus the site A current balance ($400) is applied. This calculation of ($350 - $400) + $400 brings site A's balance to $350 as well.

However, if something causes out-of-order operations, something like the following can occur:

- Site A receives the $400 deposit and its accumulator is reset to zero and then set to $400.

- For some reason (such as the network is down) the transaction is not sent to site B at this time.
- In the meantime site B receives a $50 withdrawal that, as far as it knows, is the first transaction of the accumulation period for the account. It processes it as a reset transaction and the account balance on site B is reset to zero and then set to negative $50.
- Whatever delayed the transaction is resolved, so the $400 deposit comes in from site A to site B. It is processed as a regular transaction and delta processing is applied. The delta of 400 minus the before balance of 100 gets applied to the site B balance of -$50 resulting in an incorrect $250 balance.
- Likewise the $50 withdrawal comes to site A from site B and is processed as a regular transaction. The delta of negative 50 minus 100 gets applied to the site A balance of $400 resulting in an incorrect $250 balance.

To help handle this situation, the following types of fields must be identified in the DEFGEN output generated for delta processing:

- A *usage accumulator* field, which is reset to zero on a periodic basis determined by the user.
- A *conditional* field, which stores the date of the last reset transaction. This is updated whenever Oracle GoldenGate processes a reset transaction.

Generate DEFGEN for D24

The DEFGEN output file is read the first time a MAP statement calls for the D24 user exit. The MAP statement calls an EXITPARAM, which has the DEFGEN output file name. The user exit builds an internal definition table that identifies each definition as a segment or standard definition, and the delta fields for that definition.

For files, definitions, and delta fields to be processed by the D24 user exit, you must generate an output file from the DEFGEN utility program and edit the output file. For DEFGEN instructions, see the *HP NonStop Administrator's Guide*. Generate your own DEFGEN file for each file type you plan to process. Once you have generated the definitions, copy the definition files into a new DDL source file. All definitions for a file must be contiguous.

To prepare the DEFGEN output file:

1. Run DEFGEN on each file which requires delta processing.

```
RUN DEFGEN EXPANDDDL MAXCOLNAMELEN 50 EXPANDGROUPARRAYS
RESOLVEDUPGROUP OMITREDEFS
File/Table to create definition for (or Exit): <BASE24 data
volume>.<BASE24 data subvolume>.CAF1 (UNIQUE for Each SEG)
Include DDL record definition (Y?N)? Y
DDL dictionary: <BASE24 dictionary volume>.<BASE24 dictionary
subvolume>
DDL record definition name: POSCAF
```

Note The *File/Table to create definition for* each segment must be unique for each prompt or DEFGEN will replace the previous definition. If you have multiple definitions for one file type (such as three CAF definitions), then use copies of your file so the definitions are not replaced.

2. Open the DEFGEN file for editing (use Edit or Tedit).

```
TACL>  TEDIT CAFDEF
```

3. Add a line to identify the definition.

   Insert this line in front of the definition; it identifies either a segment or a standard definition. This line ties the segment definition to the actual data by segment id. Each segment in the data record has its segment id at the start of the segment.

```
Segment Definition Line <exitparm file id> SEGID <segment #>
```

   - <exitparm file id> identifies which file is being processed.
   - SEGID identifies a segment definition respectively.
   - <segment #> is a four digit number that identifies the segment.

4. Add a column to identify the delta fields

   Add a new column at the end of the field line that indicates the fields role in delta processing.

   - **D** (binary delta processing) indicates that the difference between before and after amounts are used to update this field.

- **U** (usage accumulator) indicates this field is used to accumulate the amount over a specified time period.
- **C** (conditional) indicates this field stores the date of the last reset of the usage accumulator fields. Note that only one conditional field should be defined for any segment definition.
- **A** (default use after image) indicates this field is to use the After image if the source was altered, otherwise it is not replicated.
- **N** (never replicated)

Edit the EXITPARAM

For the D24 user exit to enable delta processing functionality, each file being extracted must have a MAP and EXITPARAM statement. The MAP statement specifies which file is extracted and replicated; the EXITPARAM governs how the file is replicated. The following EXITPARAM string is required and must be in the proper order when using the D24 user exit:

```
EXITPARAM: "<file id>, <def location> [, NOTIFY | NOTIFYT]
          [, WARNINGS | WARNINGD] [, DELTAADD] [, -O<filename>]"
```

Option	Description
`<file id>`	File identifier that determines the file type to be processed by the user exit. It identifies file types for applying the changes to balance, amount, and accumulation fields as designated by the DEFGEN output file. This identifier can be a maximum of four characters that identify a valid file, such as CAF, PBF or UAF. The user can specify up to 4 alpha-numeric characters per each MAP statement.

Option	Description
	TLF or PTLF cannot be used because these identifiers indicate files that use the remote flag in the multi-logical net token. All other alpha-numeric field combinations are allowed.
`<def location>`	Fully qualified file name of the output DEFGEN per file type and based on target file name. If you have differing CAF definitions, then you will need different definition files generated by DEFGEN and different file identifiers. When only a file name is supplied, the default Oracle GoldenGate volume and subvolume is used. **Note:** This field is required for the delta function.
`NOTIFY | NOTIFYT`	NOTIFY is used to identify which files are monitored for BASE24 full refresh renames. This is an optional Notify process parameter for the target mapped file. NOTIFYT is used to turn on extensive Trace functionality in the user exit as well as GGSPROC logic. **Note:** The NOTIFYT option should only be used when instructed by Oracle GoldenGate that it is needed for debugging.
`WARNINGS | WARNINGD`	WARNINGS triggers the display of warning messages when a mismatch is found between local and remote delta fields. This option only applies to the files that are designated as delta files, and also only to those fields designated as delta fields. It is ignored for the TLF and PTLF files. The default is not to display any warnings. This is an optional D24 parameter.

Option	Description
	WARNINGD turns on the WARNINGS option and also triggers the user exit to call DEBUG when there is a critical error. **Note:** The WARNINGD option can have a negative impact on the system and is necessary only when instructed by Oracle Support that it is required for debugging.
DELTAADD	DELTAADD changes the processing for the following operations when there is a problem with the target record: ◆ Insert When the record already exists, DELTAADD turns on delta processing so that the delta value is accumulated to the target. ◆ Update When the record does not exist, the system changes the update to an insert operation. When the record exists, the delta feature (a calculated delta value) is updated for the fields specified in the definition file.
-O<filename>	<filename> identifies the name of a file to be used when the target file does not exist, such as can happen when an update occurs after a file is renamed to OLD<file> but before the NEW<file> is renamed to take its place. If the <filename> is not qualified, as may be required because of space constraints, then it must be located on the same volume and subvolume as the missing target file.

Note Because the EXITPARAM options may exceed the allotted space, if all parameters are needed, the DEF file should be placed on the Oracle GoldenGate default subvolume.

Each file uses specific parameter options. The following table lists the parameter options required for each file:

Function	File ID	Parameter Options
Delta	CAF	Required: <file id>, <def location> Optional: NOTIFY, WARNINGS, DELTAADD, -O<filename>
Delta	PBF	Required: <file id>, <def location> Optional: NOTIFY, WARNINGS, DELTAADD, -O<filename>
Delta	UAF	Required: <file id>, <def location> Optional: NOTIFY, WARNINGS, DELTAADD, -O<filename>
Delta Definition File	n/a	Required: filename
Remote Flag	TLF	Required: TLF <file id>
Remote Flag	PTLF	Required: PTLF <file id>
Notify process	full refresh files	Required: NOTIFY

Each file must have its own MAP and EXITPARAM statements. See the following table for examples:

Sample EXITPARAMS

EXITPARAM	Description
`MAP <source>.CAF, TARGET <target>.CAF, EXITPARAM "CAF,<volume>.D24.CAFDEF";`	Only the delta function will be applied to this CAF file. No warning messages.
`MAP <source>.CAF, TARGET <target>.CAF, EXITPARAM "CAF, <volume>.D24.CAFDEF, WARNINGS";`	The delta function will be applied to the CAF file, and uses the DEFGEN output of CAFDEF. For each delta field that does not match between the local and remote system, a warning message will be displayed.
`MAP <source>.PBF, TARGET <target>.PBF, EXITPARAM "PBF,<volume>.D24.PBFDEF, NOTIFY";`	The delta function will be applied to this PBF file, no warning messages. The Notify process will be used.
`MAP <source>.NEG, TARGET <target>.NEG, EXITPARAM "NOTIFY";`	The Notify process will be used for this NEG file.
`MAP <source>.CAF, TARGET <target>.CAF, EXITPARAM "NOTIFY";`	Only the Notify process will be used for the CAF file.
`MAP <source>.PBF, TARGET <target>.PBF, EXITPARAM "PBF, <volume>.D24.PBFDEF3, NOTIFY, WARNINGS";`	The delta function will be applied to this PBF file using the PBF file id and a DEFGEN output file of PBFDEF3. If any delta fields do not match between the source and target files, then a warning message will be displayed. The Notify process will be used for this PBF file.
`MAP <source>.UAF, TARGET <target>.UAF, EXITPARAM "UAF, <volume>.D24.UAFDEF";`	Only the delta function will be applied to this UAF file type. No warning messages.

EXITPARAM	Description
`MAP <source>.UAF, TARGET <target>.UAF, EXITPARAM "UAF, <volume>.D24.UAFDEF", NOTIFY,WARNINGS,DELTAADD;`	The delta function will be applied to the UAF file for both inserts and updates. Updates will be changed to inserts if the target record does not exist. Warning messages will be displayed and the Notify process will be used for this UAF file.
`MAP <source>.CAF, TARGET <target>.CAF, EXITPARAM “CAF,<volume>.D24.CAFDEF, -OOLDCAF, WARNINGS”;`	The delta function will be applied to the CAF file. If the target CAF file is missing, then OLDCAF will be opened in its place.

Configuring initial data synchronization

Before regular dual-site processing can begin with D24, files must be loaded to change field values between site A and site B. This can be done using Oracle GoldenGate's initial load facility or using FUP to duplicate the files required and using the EDIT function in the LCONF server.

If you decide to synchronize your databases using FUP DUP, then you must edit the LCONF file to point to your new environment. Specifically, edit the LCONF screen as follows:

```
L*CONF: <Enter NonStop node name> <Enter Volume name>
```

Before starting up both BASE24 environments, one site will have to be designated as the initial master site (such as site A in this example). All the BASE24 files have to be loaded from site A to site B. This can be done in one of the following methods:

- BACKUP files from site A and RESTORE the files to site B
- FUP DUP the files from site A to site B
- Use Oracle GoldenGate Direct Load for all files. For step-by-step instructions, see the *HP NonStop Administrator's Guide*

Initial data synchronization requirements

- Make sure the Oracle GoldenGate Logger is running and all processes that access the BASE24 database either have the Oracle GoldenGate library BASELIB or GGSLIB bound into them.
- If Oracle GoldenGate DEFINES are required, then make sure all processes have the correct Oracle GoldenGate files and processes open.
- It is acceptable to have the Extracts running on \SITEA, however the Replicats on \SITEB must NOT be running.
- Make sure the LCONF is loaded correctly; see Sample LCONF initial data synchronization parameters.
- If you are using Replicat to load files initially, then make sure the HANDLECOLLISIONS parameter is set on in the Replicat parameter files. This is to allow changes to the database that happen during the time of backing up and restoring to be applied to the target database without encountering missing or duplicate errors. Once all the Extracts and Replicats show zero lag, stop the Replicats and comment out the HANDLECOLLISIONS parameter. Then restart the Replicats.

Sample LCONF initial data synchronization parameters

These samples shows parameter files specifically configured for LCONF initial data synchronization.

Sample Extract parameter file:

```
EILCONF
--
-- EILCONF - This Extract reads the source LCONF file and writes to
-- Remote / Extract File \SITEB.<volume>.B24INIT.LCONF

-- Directly read the LCONF source file
SOURCEISFILE

-- Set the discard file
DISCARDFILE <volume>.GGSDISC.EILCONF, PURGE

-- Use the length of the record read.  Do not pad with spaces
NOFILLSHORTRECS
```

```
-- Output Extract file to be read by the Replicat RILCONF
EXTFILE\SITEB.<volume>,B24INIT.LCONF,MEGABYTES<megabytes>,PURGE

-- SOURCE DATA FILE TO BE LOADED
FILE  \SITEA.<volume>.PRO1DATA.L1CONF;
```

Sample Replicat parameter file:

```
RILCONF
--
-- RILCONF - This Replicat reads the Remote / Extract File
-- <volume>.B24INIT.LCONF and loads the target LCONF file.

-- One time processing for initial load
SPECIAL RUN
-- Tell Replicat to end at end of file
END RUNTIME

-- Set the discard file
DISCARDFILE <volume>.GGSDISC.RILCONF, PURGE
-- Set the dictionary location
DICTIONARY <BASE24 base volume>.BA60DDL

-- Use the target dictionary
ASSUMETARGETDEFS
-- Do block reads
FASTREADS

-- Identify the EXTRACT FILE to be read
EXTFILE \SITEB.<volume>.B24INIT.LCONF

-- Map the LCONF file and substitute NonStop node and volume.
```

```
MAP \SITEA.<volume>.PRO1CNTL.L*CONF, TARGET
\SITEB.<volume>.PRO1CNTL.*,
   TARGETDEF LCONF,
   COLMAP (PRIKEY        = PRIKEY,
          PROD-IND       = PROD-IND,
          LCONF.COMMENTS = @STRSUB (LCONF.COMMENTS, "\SITEA",
                                    "\SITEB"),
          LAST-CHNG-TIME = LAST-CHNG-TIME,
          FILE-NAME      = @STRSUB (FILE-NAME, "\SITEA", "\SITEB"),
          TEMPLATE       = @STRSUB (TEMPLATE, "\SITEA", "\SITEB"),
          USER-FIELD     = USER-FIELD,
          USER-FLD2      = USER-FLD2),
          PROD-IND-ADNL  = PROD-IND-ADNL,
          USER-FLD4      = USER-FLD4,
          LAST-AFM       = LAST-AFM),
   WHERE (ITEM-TYP = "A");
MAP \SITEA.<volume>.PRO1CNTL.L*CONF,
TARGET \SITEB.<volume>.PRO1CNTL.*,
   TARGETDEF LCONF,
   COLMAP (PRIKEY        = PRIKEY,
          PROD-IND       = PROD-IND,
          LCONF.COMMENTS = @STRSUB (LCONF.COMMENTS, "\SITEA",
          "\SITEB"),
          LAST-CHNG-TIME = LAST-CHNG-TIME,
          PLGTH          = PLGTH,
          PTXT           = @STRSUB (PTXT, "\SITEA", "\SITEB"),
          USER-FLD3      = USER-FLD3,
          PROD-IND-ADNL  = PROD-IND-ADNL,
          USER-FLD4      = USER-FLD4,
          LAST-AFM       = LAST-AFM),
   WHERE (ITEM-TYP = "P");
```

CHAPTER 3

Configuring D24

This chapter guides you through configuring change capture on both sites of your dual-site environment. Topics include:

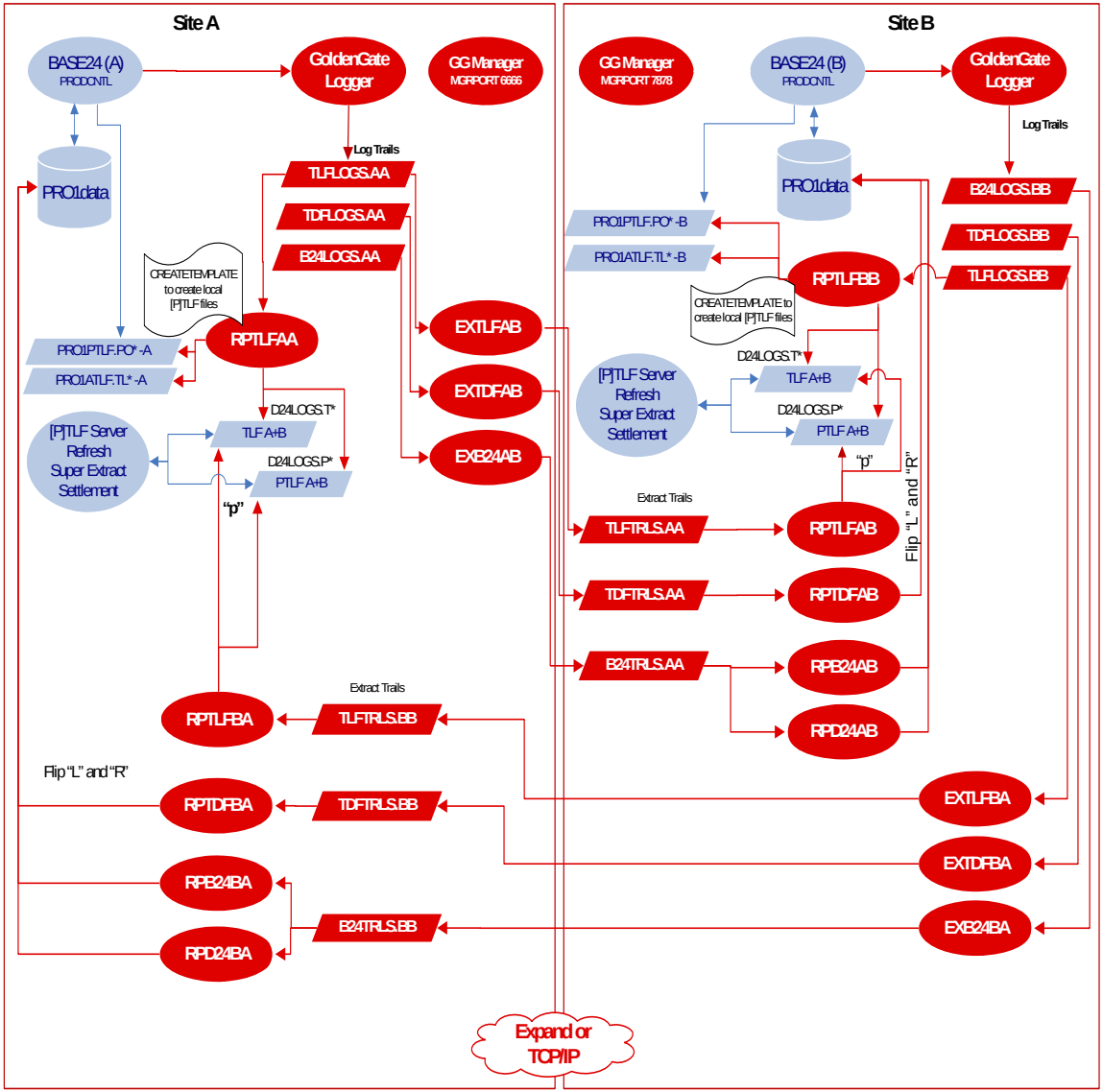
Contents

Overview

This chapter outlines a typical change capture environment for dual site processing and suggests one way to configure the Oracle GoldenGate components. Your business needs, data loads, and other factors are discussed in “Planning for D24” on page 12.

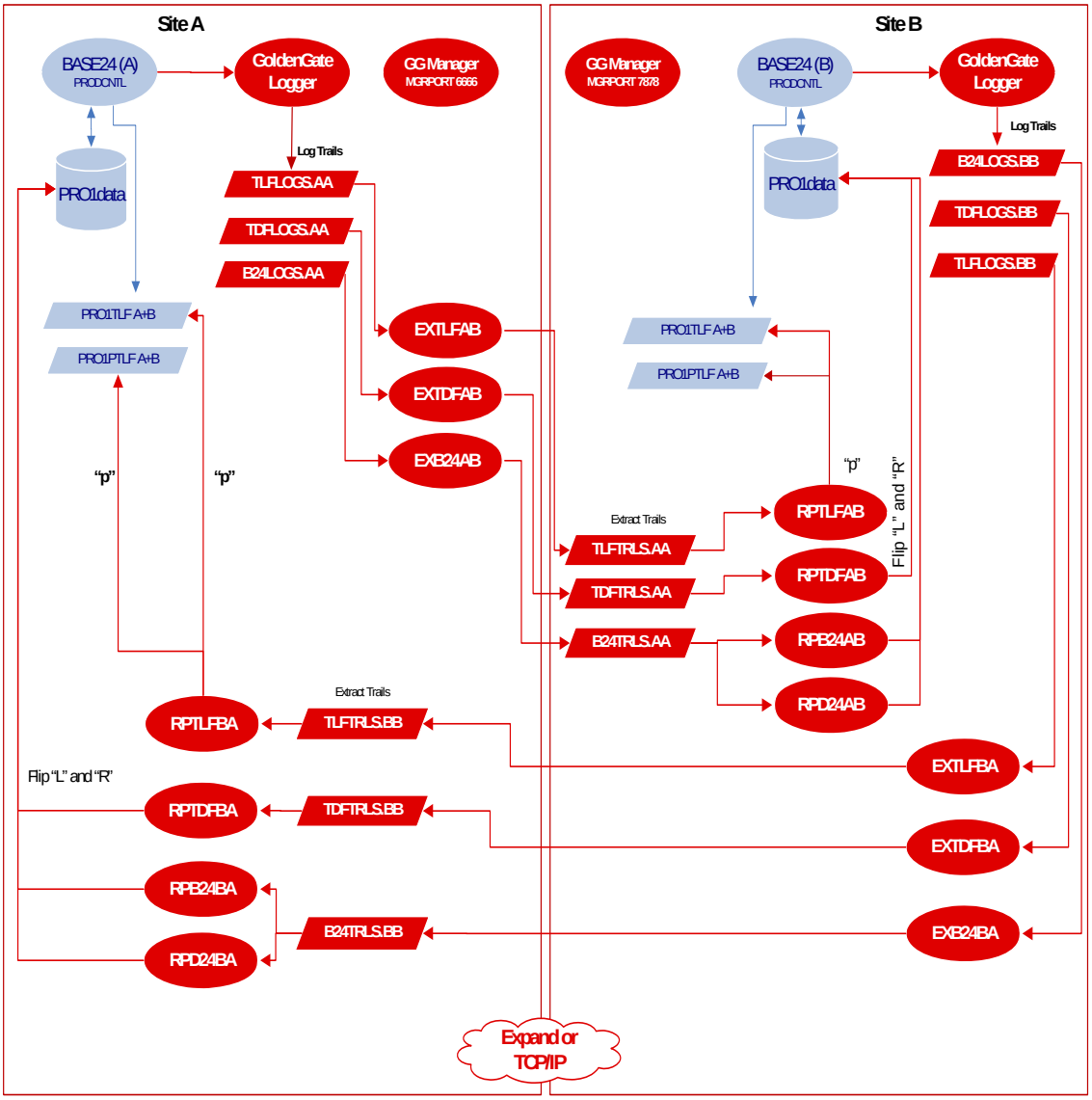
The following diagrams illustrate the typical environment.

Figure 9 Overview with local and combined transaction log files



The configuration in Figure 9 includes local TLF and PTLF files that are created by Oracle GoldenGate and the combined transaction logs. shows a configuration with only the

combined transaction logs. Oracle GoldenGate processes and trails are shown in red; BASE24 in blue-gray.Overview with combined transaction logs.



Naming conventions

In this chapter, Oracle GoldenGate components are named according to the following convention. In the table, a sample Replicat name, RPTLFBA, has been broken into three parts:

RP	TLF	BA
Oracle GoldenGate Component: ◆ RP = Replicat ◆ EX= Extract	Files to capture, such as: ◆ TLF = TLF and PTLF files ◆ TDF = device files ◆ B24 = BASE24 data files	Replication direction: ◆ BA = site B to site A ◆ AB = site A to site B ◆ AA = siteA to site A ◆ BB = site B to site B

Sample D24 components - site A

The site A configuration in this chapter uses the following components:

One Global parameter file

One Manager

Three Loggers

- **$GGL00** (Logger 0): Captures changes to the PTLF and TLF files. It is read by the EXTLFAB Extract and the RPTLFAA Replicat
- **$GGL01** (Logger 1): Captures changes to the PTD, ATD and TDF files. It is read by the EXTDFAB Extract.
- **$GGL02** (Logger 2): Captures changes to all the other BASE24 data files. It is read by the EXB24AB Extract.

Three Extracts

- **EXTLFAB**: Reads logtrail TLFLOGS.AA and writes the trail records to the extract trail TLFTRLS.AA on \SITEB. The Extract will exclude the transaction log header record (record type "00").
- **EXTDFAB:** Reads logtrail TDFLOGS.AA and writes the extract trail records to TDFTRLS.AA on \SITEB.

- **EXB24AB:** Reads logtrail B24LOGS.AA and writes the extract trail records to B24TRLS.AA on \SITEB.

Five Replicats

- **RPTLFAA:** Creates local transaction log files and updates combined transaction log files.
- **RPTLFBA:** Updates combined transaction log files only.
- **RPTDFBA:** Updates ATDD1, TDF, PTDF, and PTDD1 files.
- **RPD24BA:** Updates CAF, PBF, UAF, and IDF files.
- **RPB24BA:** Updates other BASE24 files.

Sample D24 components - site B

The site B configuration in this chapter uses the following components:

One Global parameter file

One Manager

Three Loggers

- **$GGL00** (Logger 0): Captures changes to the PTLF and TLF files. It is read by the EXTLFBA Extract and the RPTLFBB Replicat
- **$GGL01** (Logger 1): Captures changes to the PTD, ATD, and TDF files. It is read by the EXTDFBA Extract.
- **$GGL02** (Logger 2): Captures changes to all the other BASE24 data files. It is read by the EXB24BA Extract.

Three Extracts

- **EXTLFBA:** Reads log trail TLFLOGS.BB and writes the extract trail records to TLFTRLS.BB on \SITEA. The Extract will exclude the transaction log header record (record type "00").
- **EXTDFBA:** Reads log trail TDFLOGS.BB and writes the extract trail records to TDFTRLS.BB on \SITEA.
- **EXB24BA:** Reads log trail B24LOGS.BB and writes the extract trail records to B24TRLS.BB on \SITEA.

Five Replicats

- **RPTLFBB:** Creates local transaction log files and updates combined transaction log files.
- **RPTLFAB:** Updates combined transaction log files only.
- **RPTDFAB:** Updates ATDD1, TDF, PTDF, and PTDD1 files.
- **RPD24AB:** Updates CAF, PBF, UAF, and IDF files.
- **RPB24AB:** Updates other BASE24 files.

Configuring site A parameter files

Edit parameter files with either the EDIT or TEDIT program. In the following examples, comments explain each parameter's purpose. To learn how to edit parameter files, see the *HP NonStop Administrator's Guide*.

The following sample parameter files show you required parameters and options for assigning specific files to specific Oracle GoldenGate components.

To configure site A of your dual-site implementation, you must:

- Create Global parameters
- Create Manager parameters
- Create Logger parameters
- Create Extract parameters
- Create Replicat parameters

Create Global parameters

D24 requires statements in the GLOBALS parameter file similar to the following to specify the Oracle GoldenGate <prefix>, AUDCFG, and the TACLB24 macro, as well as other information.

```
ADD DEFINE =GGS_AUDCFG, CLASS MAP, FILE $SYSTEM.GGS.AUDCFG
ADD DEFINE =GGS_PREFIX, CLASS MAP, FILE $<prefix>
ADD DEFINE =NOTIFY, CLASS MAP, FILE <GGS volume>.<GGS subvol>.TACLB24
```

Create Manager parameters

The Manager parameter file must specify the Manager's port for TCP/IP-only communication and configure other parameters as you would for any Oracle GoldenGate implementation.

```
PORT <manager port number> (If TCP/IP)

-- Keep the (P)TLF remote/extract trails for at least
-- 2 days and processed
PURGEOLDEXTRACTS <volume>.TLFTRLS.BB, USECHECKPOINTS, MINKEEPDAYS 2

-- Keep the TDF, PTDF, ATDD1 and PTDD1 remote/extract trails for
-- at least 2 days and processed
PURGEOLDEXTRACTS <volume>.TDFTRLS.BB, USECHECKPOINTS, MINKEEPDAYS 2

-- Keep the rest of the BASE24 data files remote/extract trails
-- for at least 2 days and processed
PURGEOLDEXTRACTS <volume>.B24TRLS.BB, USECHECKPOINTS, MINKEEPDAYS 2
```

Create Logger parameters

1. Create Logger 0

   Logger 0 captures TLF from PRO1ATLF, PTLF from PRO1PTLF, and D24LOGS. Its parameter file should specify the location, number, and size of the logger trails.

   Sample parameter file:

```
LOG <volume>.TLFLOGS.AA, MEGABYTES <megabytes>, NUMFILES <num>,
SECURE "NCNC"

-- Primary and backup CPU for Logger 0
CPU 0,1

-- Get unstructured files
GETUNSTRUCTURED

-- Get bulk loads
GETBULKIO
```

```
-- Use the full record image, do not compress the updates
NOCOMPRESSUPDATES

-- Make priority higher than BASE24 nucleus (NETWORK)
PRI 180

-- List the files to be captured
FILE <volume>.PRO1ATLF.T*
FILE <volume>.PRO1PTLF.P*
FILE <volume>.D24LOGS.T*
FILE <volume>.D24LOGS.P*
```

2. Create Logger 1

   Captures ATDD1, ATDS1, ATDD2, TDF, PTDD1, PTDS1, PTDD2, and PTDF. Its parameter file should specify the location, number, and size of the logger trails, as well as the files to exclude from the Settlement process. If you are going to apply delta processing to the before and after-images of certain fields, you must also use NOCOMPRESSUPDATES to ensure calculations are correct.

   ```
   LOG <volume>.TDFLOGS.AA, MEGABYTES <megabytes>, NUMFILES <num>,
   SECURE "NCNC"

   -- Primary and backup CPU for Logger 1
   CPU 1,0

   -- Get unstructured files
   GETUNSTRUCTURED

   -- Get bulk loads
   GETBULKIO

   -- Use the full record image, do not compress the updates
   NOCOMPRESSUPDATES

   -- Make priority higher than BASE24 nucleus (NETWORK)
   PRI 180

   -- List the files to be captured
   FILE <volume>.PRO1DATA.TDF*
   FILE <volume>.PRO1DATA.PTDF*
   ```

```
FILE <volume>.PRO1DATA.ATD*
FILE <volume>.PRO1DATA.PTD*

-- List the files to be excluded by the Settlement program
EXCLUDEFILE <volume>.PRO1DATA.TDF*,  PROGRAM <volume>.PRO1OBJ.*SETL
EXCLUDEFILE <volume>.PRO1DATA.PTDF*,  PROGRAM <volume>.PRO1OBJ.*SETL
EXCLUDEFILE <volume>.PRO1DATA.ATD*,  PROGRAM <volume>.PRO1OBJ.*SETL
EXCLUDEFILE <volume>.PRO1DATA.PTD*,  PROGRAM <volume>.PRO1OBJ.*SETL
```

3. Create Logger 2

Captures all BASE24 data files except ATDD1, ATDS1, ATDD2, TDF, PTDD1, PTDS1, PTDD2, and PTDF.

Sample parameter file:

```
LOG <volume>.B24LOGS.AA, MEGABYTES <megabytes>, NUMFILES <num>,
SECURE "NCNC"

-- Primary and backup CPU for Logger 2
CPU 0,1

-- Get unstructured files
GETUNSTRUCTURED

-- Get bulk loads
GETBULKIO

-- Make priority higher than BASE24 nucleus (NETWORK)
PRI 180

-- List the files to be captured
FILE <volume>.PRO1DATA.*CAF*, NOCOMPRESSUPDATES, GETBEFOREUPDATES
FILE <volume>.PRO1DATA.*PBF*, NOCOMPRESSUPDATES, GETBEFOREUPDATES
FILE <volume>.PRO1DATA.UAF, NOCOMPRESSUPDATES, GETBEFOREUPDATES
FILE <volume>.PRO1DATA.IDF, NOCOMPRESSUPDATES
FILE <volume>.PRO1CNTL.L*CONF, NOCOMPRESSUPDATES
FILE <volume>.PRO1DATA.*, COMPRESSUPDATES

-- List the files to be excluded
EXCLUDEFILE <volume>.PRO1DATA.TDF*
EXCLUDEFILE <volume>.PRO1DATA.PTDF*
EXCLUDEFILE <volume>.PRO1DATA.ATD*
```

```
EXCLUDEFILE <volume>.PRO1DATA.PTD*
EXCLUDEFILE <volume>.PRO1DATA.IDF*, PROGRAM <volume>.PRO1OBJ.*SETL
EXCLUDEFILE <volume>.PRO1DATA.HCF*
EXCLUDEFILE <volume>.PRO1DATA.ECF*
EXCLUDEFILE <volume>.PRO1DATA.*UAF*, PROGRAM <volume>.PRO1OBJ.*SETL
EXCLUDEFILE <volume>.PRO1DATA.PRDF*, PROGRAM <volume>.PRO1OBJ.*SETL
EXCLUDEFILE <volume>.PRO1DATA.FF*, PROGRAM <volume>.PRO1OBJ.*SETL
EXCLUDEFILE <volume>.PRO1DATA.F0*, PROGRAM <volume>.PRO1OBJ.*SETL
```

Create Extract parameters

1. Create Extract group EXB24AB

   Extract group EXB24AB reads the log trails \SITEA.<volume>.B24LOGS.AA and moves everything to the remote/extract trail \SITEB.<volume>.B24TRLS.AA. This includes all BASE24 data files not in the other Extracts.

   Sample parameter file:

```
EXTRACT EXB24AB

-- Set the discard file
DISCARDFILE <volume>.GGSDISC.EXB24AB, PURGE

-- Get all file operations
GETFILEOPS

-- Get the before-images
GETUPDATEBEFORES

-- Do not pad records that are not maximum size
NOFILLSHORTRECS

-- Do not check if the source files exist, just pass all files through
PASSTHRU

-- Do block writes
FASTIO

-- Do block reads
FASTREADS
```

```
-- Set the TCP/IP process name (If TCP/IP)
-- TCPIPPROCESSNAME <tcp/ip process name>
-- Set the TCP/IP address and the manager port number (If TCP/IP)
-- RMTHOST <tcp/ip address> , MGRPORT <manager port number>
-- Set the location of the remote trail (If TCP/IP)
-- RMTTRAIL \SITEB.<volume>.B24TRLS.AA

-- Set the location of the extract trail (If Expand)
-- Comment out(If TCP/IP)
EXTTRAIL \SITEB.<volume>.B24TRLS.AA

-- Move all files in the Logtrail to \SITEB
FILE $*.*.*;
```

2. Create Extract group EXTDFAB

   EXTDFAB reads the log trails \SITEA.<volume>.TDFLOGS.AA and moves everything to the remote/extract trail \SITEB.<volume>.TDFTRLS.AA. This includes the TDF, PTDF, ATDD1, and PTDD1 files.

   Sample Parameter File:

```
EXTRACT EXTDFAB

-- Set the discard file
DISCARDFILE <volume>.GGSDISC.EXTDFAB, PURGE

-- Get all file operations
GETFILEOPS

-- Do not pad records that are not maximum size
NOFILLSHORTRECS

-- Do not check if the source files exist, just pass all files through
PASSTHRU

-- Do block writes
FASTIO

-- Do block reads
FASTREADS
```

```
-- Set the TCP/IP process name(If TCP/IP)
-- TCPIPPROCESSNAME <tcp/ip process name>
-- set the TCP/IP address and the manager port number (IF TCP/IP)
-- RMTHOST <tcp/ip address> , MGRPORT <manager port number>
-- Set the location of the remote trail (IF TCP/IP)
-- RMTTRAIL \SITEB.<volume>.TDFTRLS.AA

-- Set the location of the extract trail (IF Expand)
-- Comment out (If TCP/IP)
EXTTRAIL \SITEB.<volume>.TDFTRLS.AA

-- Move all files in the Logtrail to \SITEB
FILE $*.*.*;
```

3. Create Extract group EXTLFAB

EXTLFAB reads the log trails \SITEA.<volume>.TLFLOGS.AA and moves everything to the remote/extract trail \SITEB.<volume>.TLFTRLS.AA. This includes TLF and PTLF files.

Sample parameter file:

```
EXTRACT EXTLFAB

-- Set the discard file
DISCARDFILE <volume>.GGSDISC.EXTLFAB, PURGE

-- Set the dictionary location
DICTIONARY <BASE24 atm volume>.AT60DDL

-- Ignore all file operations
IGNOREFILEOPS

-- Do not pad records that are not maximum size
NOFILLSHORTRECS

-- Do block writes
FASTIO

-- Do block reads
FASTREADS

-- Remove comments and set the TCP/IP process name (If TCP/IP)
-- TCPIPPROCESSNAME <tcp/ip process name>
```

```
-- set the TCP/IP address and the manager port number (If TCP/IP)
-- RMTHOST <tcp/ip address> , MGRPORT <manager port number>
-- Set the location of the remote trail ((If TCP/IP)
-- RMTTRAIL \SITEB.<volume>.TLFTRLS.AA

-- Set the location of the extract trail (If Expand)
-- Comment out(If TCP/IP)
EXTTRAIL \SITEB.<volume>.TLFTRLS.AA

-- Move all TLF files in the log trail to \SITEB except header record
FILE $*.*.T*,
   DEF TLF,
   NOCOLMAP,
   ALTNAME <volume>.PRO1TMPL.TLYYMMDD,
   WHERE (TLF.HEAD.REC-TYP <> "00");

-- Set the POS dictionary location
DICTIONARY <BASE24 pos volume>.PS60DDL

-- Move all PTLF files in the log trail to \SITEB except header record
FILE $*.*.P*,
   DEF PTLF,
   NOCOLMAP,
   ALTNAME <volume>.PRO1TMPL.POYYMMDD,
   WHERE (PTLF.HEAD.REC-TYP <> "00");
```

Create Replicat parameters

1. Create Replicat group RPB24BA

   RPB24BA reads the remote/extract trail <volume>.B24TRLS.BB and replicates all BASE24 data files from site B except for the CAF, PBF, UAF, and IDF files.

   Sample parameter file:

```
REPLICAT RPB24BA

-- Set the discard file
DISCARDFILE <volume>.GGSDISC.RPB24BA, PURGE

-- Set the dictionary location
DICTIONARY <BASE24 base volume>.BA60DDL
```

```
-- Only used during Initial Loads
-- HANDLECOLLISIONS

-- Get the before-images
GETUPDATEBEFORES

-- Use the target dictionary
ASSUMETARGETDEFS
--No audited operations required, restarts no re-applied data
NOAUDITREPS

-- Replicat the file operations to the files
GETFILEOPS

-- Do block reads
FASTREADS

-- Map all the BASE24 data files not replicated in other Replicats

MAP \SITEB.<volume>.PRO1DATA.*, TARGET \SITEA.<volume>.PRO1DATA.*;
MAPEXCLUDE \SITEB.<volume>.PRO1DATA.*IDF*
MAPEXCLUDE \SITEB.<volume>.PRO1DATA.*CAF*
MAPEXCLUDE \SITEB.<volume>.PRO1DATA.*PBF*
MAPEXCLUDE \SITEB.<volume>.PRO1DATA.*UAF*

-- Map the LCONF file and substitute NonStop node and volume.
-- If the SITE, VOLUME or SUBVOLUME is different between sites,
-- substitute the correct SITE, VOLUME or SUBVOLUME name.
```

```
MAP \SITEB.<volume>.PRO1CNTL.L*CONF,
   TARGET \SITEA.<volume>.PRO1CNTL.*,
      TARGETDEF LCONF,
      COLMAP (PRIKEY         = PRIKEY,
              PROD-IND       = PROD-IND,
              LCONF.COMMENTS =
                   @STRSUB (LCONF.COMMENTS, "\SITEB", "\SITEA",
                                            "VOLB",     "VOLA",
                                            "SUBVOLB", "SUBVOLA"),
              LAST-CHNG-TIME = LAST-CHNG-TIME,
              FILE-NAME =
                   @STRSUB (FILE-NAME, "\SITEB", "\SITEA",
                                       "VOLB",     "VOLA",
                                       "SUBVOLB", "SUBVOLA"),
              TEMPLATE =
                   @STRSUB(TEMPLATE, "\SITEB", "\SITEA"
                                     "VOLB",     "VOLA",
                                     "SUBVOLB", "SUBVOLA"),
         USER-FIELD         = USER-FIELD,
         USER-FLD2          = USER-FLD2,
         PROD-IND-ADNL      = PROD-IND-ADNL,
         USER-FLD4          = USER-FLD4,
         LAST-AFM           = LAST-AFM),
      WHERE (ITEM-TYP = "A");

-- If the site, VOLUME or SUBVOLUME is different between sites,
-- substitute the correct SITE, VOLUME or SUBVOLUME name.

MAP \SITEB.<volume>.PRO1CNTL.L*CONF,
   TARGET \SITEA.<volume>.PRO1CNTL.*,
      TARGETDEF LCONF,
      COLMAP (PRIKEY        = PRIKEY,
              PROD-IND      = PROD-IND,
              LCONF.COMMENTS =
                   @STRSUB (LCONF.COMMENTS, "\SITEB",   "SITEA"
                                            "VOLB",     "VOLA",
                                            "SUBVOLB", "SUBVOLA"),
         LAST-CHNG-TIME     = LAST-CHNG-TIME,
         PLGTH              = PLGTH,
```

```
      PTXT =
           @STRSUB (PTXT, "\SITEB", "\SITEA",
                          "VOLB",     "VOLA",
                          "SUBVOLB", "SUBVOLA"),
      USER-FLD3         = USER-FLD3,
      PROD-IND-ADNL     = PROD-IND-ADNL,
      USER-FLD4         = USER-FLD4,
      LAST-AFM          = LAST-AFM),
   WHERE (ITEM-TYP = "P");
```

2. Create Replicat group RPD24BA

   RPD24BA - This Replicat reads the remote/extract trail <volume>.B24TRLS.BB and replicates the CAF, PBF, UAF, and IDF files from site B.

   Sample parameter file:

```
REPLICAT RPD24BA

-- Set the discard file
DISCARDFILE <volume>.GGSDISC.RPD24BA, PURGE
-- Set the dictionary location
DICTIONARY <BASE24 base volume>.BA60DDL

-- Only used during Initial Loads
-- HANDLECOLLISIONS

-- Set the user exit flag
CUSEREXIT

-- For all file error 11's do exception processing
REPERROR 11, EXCEPTION

-- Get the before-images
GETUPDATEBEFORES

-- Use the target dictionary
ASSUMETARGETDEFS

--No audited operations required, restarts no re-applied data
NOAUDITREPS
```

```
-- Replicate the file operations to the files
GETFILEOPS

-- Do block reads
FASTREADS
-- Treat 'updates' as uncompressed because they are
NOCOMPENSCRIBEMAPS

-- MAP the CAF file with EXCEPTIONSONLY mapping
MAP \SITEB.<volume>.PRO1DATA.CAF,
   TARGET \SITEA.<volume>.PRO1DATA.CAF,
      EXITPARAM "CAF, <volume>.D24.CAFDEF, -OOLDCAF,WARNINGS";

MAP \SITEB.<volume>.PRO1DATA.CAF0,
   TARGET \SITEA.<volume>.PRO1DATA.CAF0;

MAP \SITEB.<olume>.PRO1DATA.CAF,
   TARGET \SITEA.<volume>.PRO1DATA.OLDCAF,
      EXITPARAM "CAF,<volume>.D24.CAFDEF,WARNINGS",
      EXCEPTIONSONLY;

MAP \SITEB.<volume>.PRO1DATA.OLDCAF,
   TARGET \SITEA.<volume>.PRO1DATA.OLDCAF,
      EXITPARAM "CAF, <volume>.D24.CAFDEF,-OCAF,WARNINGS";

MAP \SITEB.<volume>.PRO1DATA.OLDCAF,
   TARGET \SITEA.<volume>.PRO1DATA.CAF,
      EXITPARAM "CAF,<volume>.D24.CAFDEF,WARNINGS", EXCEPTIONSONLY;

-- MAP the PBF file with EXCEPTIONSONLY mapping
MAP \SITEB.<volume>.PRO1DATA.PBF,
   TARGET \SITEA.<volume>.PRO1DATA.PBF,
      EXITPARAM "PBF,<volume>.D24.PBFDEF,-OPBFDA,WARNINGS";

MAP \SITEB.<volume>.PRO1DATA.PBF,
   TARGET \SITEA.<volume>.PRO1DATA.OPBFDA,
      EXITPARAM "PBF,<volume>.D24.PBFDEF,WARNINGS",
      EXCEPTIONSONLY;

MAP \SITEB.<volume>.PRO1DATA.OPBFDA,
   TARGET \SITEA.<volume>.PRO1DATA.OPBFDA;
      EXITPARAM "PBF, <volume>.D24.PBFDEF,-OPBF,WARNINGS";
```

```
MAP \SITEB.<volume>.PRO1DATA.OPBFDA,
   TARGET \SITEA.<volume>.PRO1DATA.PBF,
      EXITPARAM "PBF,<volume>.D24.PBFDEF,WARNINGS",
      EXCEPTIONSONLY;

MAP \SITEB.<volume>.PRO1DATA.NEWC*,
   TARGET \SITEA.<volume>.PRO1DATA.*,
      EXITPARAM "CAF,<volume>.D24.CAFDEF,NOTIFY,WARNINGS";

MAP \SITEB.<volume>.PRO1DATA.NCAF*,
   TARGET \SITEA.<volume>.PRO1DATA.*,
      EXITPARAM "CAF,<volume>.D24.CAFDEF,NOTIFY, WARNINGS";

MAP \SITEB.<volume>.PRO1DATA.NPBF*,
   TARGET \SITEA.<volume>.PRO1DATA.*,
      EXITPARAM "PBF,<volume>.D24.PBFDEF,NOTIFY, WARNINGS";

MAP \SITEB.<volume>.PRO1DATA.UAF,
   TARGET \SITEA.<volume>.PRO1DATA.UAF,
      EXITPARAM "UAF,<volume>.D24.UAFDEF,-OOUAF,DELTAADD,WARNINGS";

-- Map the IDF file
-- If the SITE, volume or Subvolume is different between sites,
-- substitute the correct SITE, volume or subvolume name.
MAP \SITEB.<volume>.PRO1DATA.IDF,
   TARGET \SITEA.<volume>.PRO1DATA.IDF,
      TARGETDEF IDF,
      COLMAP (USEDEFAULTS,
            NEG-NAME  = @STRSUB (NEG-NAME, "\SITEB",  "\SITEA",
                                           "VOLB", "VOLA",
                                           "SUBVOLB", "SUBVOLA"),
            UAF-NAME  = @STRSUB (UAF-NAME,  "\SITEB", "\SITEA"),
            CAF-NAME  = @STRSUB (CAF-NAME,  "\SITEB", "\SITEA"),
            PBF1-NAME = @STRSUB (PBF1-NAME, "\SITEB", "\SITEA"),
            PBF2-NAME = @STRSUB (PBF2-NAME, "\SITEB", "\SITEA"),
            PBF3-NAME = @STRSUB (PBF3-NAME, "\SITEB", "\SITEA"),
            PBF4-NAME =@STRSUB  (PBF4-NAME,  "\SITEB","\SITEA"));
```

3. Create Replicat group RPTDFBA

RPTDFBA - This Replicat reads the remote/extract trail <volume>.TDFTRLS.BB and does the following:

- Replicates the TDF records and switches the value between L and R in the field TDF.DUAL-SITE-IND.
- Replicates the ATDD1 records and switches the value between L and R in the field ATDD1.CORE.DUAL-SITE-IND.
- Replicates the PTDF records and switches the value between L and R in the field PTDF.DUAL-SITE-TKN.
- Replicates the PTDD1 records and switches the value between L and R in the field PTDD1.CORE.DUAL-SITE-IND.

Note L and R values represent flags that indicate whether the device is attached locally or remotely.

Sample parameter file:

```
REPLICAT RPTDFBA

-- Set the dictionary location
DICTIONARY <volume>.D24ADDL

-- Use the target site definitions
ASSUMETARGETDEFS

-- Set the discard file
DISCARDFILE <volume>.GGSDISC.RPTDFBA, PURGE

--No audited operations required, restarts no re-applied data
NOAUDITREPS

-- Replicat the file operations to the files
GETFILEOPS

-- Do block reads
FASTREADS
```

```
-- Set handlecollisions only for Initial Loads
-- HANDLECOLLISIONS

-- Map the TDF records
MAP \SITEB.<volume>.PRO1DATA.TDF,
   TARGET \SITEA.<volume>.PRO1DATA.TDF,
      TARGETDEF TDF,
      COLMAP (USEDEFAULTS,
         TDF.DUAL-SITE-IND =
         @IF (@STRCMP (TDF.DUAL-SITE-IND, "R") = 0, "L", "R"));

MAP \SITEB.<volume>.PRO1DATA.ATDD1,
   TARGET \SITEA.<volume>.PRO1DATA.ATDD1,
      TARGETDEF ATDD1,
      COLMAP (USEDEFAULTS, ATDD1.CORE.DUAL-SITE-IND =
         @IF (@STRCMP (ATDD1.CORE.DUAL-SITE-IND, "R") = 0, "L", "R"));

-- Map the ATDD2 records
MAP \SITEB.<volume>.PRO1DATA.ATDD2,
   TARGET \SITEA.<volume>.PRO1DATA.ATDD2;

-- Map the ATDS1 records
MAP \SITEB.<volume>.PRO1DATA.ATDS1,
   TARGET \SITEA.<volume>.PRO1DATA.ATDS1;

-- Set the POS dictionary location
DICTIONARY <volume>.D24PDDL

-- Map the PTDF records
MAP \SITEB.<volume>.PRO1DATA.PTDF,
   TARGET \SITEA.<volume>.PRO1DATA.PTDF,
      TARGETDEF PTDF,
      COLMAP (USEDEFAULTS,
         PTDF.REC.DUAL-SITE-IND =
         @IF (@STRCMP (PTDF.REC.DUAL-SITE-IND, "R") = 0, "L", "R"));
```

```
-- Map the PTDD1 records
MAP \SITEB.<volume>.PRO1DATA.PTDD1,
   TARGET \SITEA.<volume>.PRO1DATA.PTDD1,
      USEDEFAULTS,
         PTDD1.CORE.DUAL-SITE-IND =
         @IF (@STRCMP (PTDD1.CORE.DUAL-SITE-IND, "R") = 0, "L", "R"));

-- Map the PTDS1 records
MAP \SITEB.<volume>.PRO1DATA.PTDS1,
   TARGET \SITEA.<volume>.PRO1DATA.PTDS1;

-- Map the PTDD2 records
MAP \SITEB.<volume>.PRO1DATA.PTDD2,
   TARGET \SITEA.<volume>.PRO1DATA.PTDD2;
```

4. Create Replicat group RPTLFAA

   RPTLFAA reads the local (P)TLF log trail <volume>.TLFLOGS.AA and does the following:

   - Replicates the create and purge operations to the combined A+B (P)TLF files for site A.
   - Replicates the (P)TLF the header record write from Settlement to the local (P)TLF. This will cause the Replicat to create local (P)TLF file using the CREATETEMPLATE parameter. The local (P)TLF file will be created without alternate key files.
   - Replicates the local (P)TLF records into the combined A+B (P)TLF files.

   Settlement creates the combined A+B (P)TLF files and the authorization processes update the local A (P)TLF files.

Sample parameter file:

```
REPLICAT RPTLFAA

-- Set the dictionary location
DICTIONARY <BASE24 atm volume>.AT60DDL

-- Set the discard file
DISCARDFILE <volume>.GGSDISC.RPTLFAA, PURGE

-- Use the target site definitions
ASSUMETARGETDEFS
```

```
-- No Audited Operations required, restarts no re-applied data.
NOAUDITREPS
-- Do not replicate file operations for the local (P)TLF files
IGNOREFILEOPS
-- Do block reads
FASTREADS

-- Map the TLF records
MAP \SITEA.<volume>.PRO1ATLF.T*, TARGET \SITEA.<volume>.D24LOGS.*,
   TARGETDICT <BASE24 atm volume>.AT60DDL,
   TARGETDEF TLF,
   NOCOLMAP;

-- Set the dictionary location
DICTIONARY <BASE24 pos volume>.AT60DDL
-- Map the PTLF records
MAP \SITEA.<volume>.PRO1PTLF.P*, TARGET \SITEA.<volume>.D24LOGS.*,
   TARGETDICT <BASE24 pos volume>.PS60DDL,
       TARGETDEF PTLF,
       NOCOLMAP;

-- Set the dictionary location
DICTIONARY <BASE24 atm volume>.AT60DDL

-- Map only the header TLF record to the local file
MAP \SITEA.<volume>.D24LOGS.T*, DEF TLF,
  TARGET \SITEA.<volume>.PRO1ATLF.*,
   COLMAP ( USEDEFAULTS ),
   TARGETDICT <BASE24 atm volume>.AT60DDL,
   TARGETDEF TLF,
   CREATETEMPLATE <volume>.D24TMPL.TLYYMMDD,
   ALTFILECHAR 2,
   WHERE (TLF.HEAD.REC-TYP = "00");

-- Set the dictionary location
DICTIONARY <BASE24 pos volume>.PS60DDL
```

```
-- Map only the header PTLF record to the local file
MAP \SITEA.<volume>.D24LOGS.P*, DEF PTLF,
  TARGET \SITEA.<volume>.PRO1PTLF.*,
   COLMAP ( USEDEFAULTS ),
   TARGETDICT <BASE24 pos volume>.PS60DDL,
   TARGETDEF PTLF,
   CREATETEMPLATE <volume>.D24TMPL.POYYMMDD,
   ALTFILECHAR 2,
   WHERE (PTLF.HEAD.REC-TYP = "00");
```

5. Create Replicat group RPTLFBA

   Depending on your site, configure one of the following two Replicats.

   Option 1: Local and combined transaction log files

   RPTLFBA reads the remote/extract trails <volume>.TLFTRLS.BB. This Replicat has the DUALTKN user exit to add to or update the field DUAL_SITE_IND in the MULT_LN_TKN token. This field is used to indicate if the (P)TLF is from a remote site.

   - The user exit performs the following functions:
     - If the token exists, the user exit updates the DUAL_SITE_IND field with P.
     - If the token does not exist, the user exit adds the token with the DUAL_SITE_IND field set to P.
     - If the header token does not exist, the user exit adds both the header token and the MULT_LN_TKN token with the field set to P.

     The Replicat updates local and combined A+B (P)TLF files.

   Sample parameter file:

```
REPLICAT RPTLFBA

-- Set the dictionary location
DICTIONARY <BASE24 atm volume>.AT60DDL

-- Use the target site definitions
ASSUMETARGETDEFS

-- Set the user exit
CUSEREXIT
```

```
-- Set the discard file
DISCARDFILE <volume>.<prefix>SDISC.RPTLFBA, PURGE

-- No Audited Operations required, restarts no re-applied data.
NOAUDITREPS

-- Ignore the file operations to the combined A+B (P)TLF files
IGNOREFILEOPS

-- Do block reads
FASTREADS

-- Map financial and exception TLF records
MAP \SITEB.<volume>.PRO1ATLF.T*, TARGET \SITEA.<volume>.D24LOGS.*,
   TARGETDEF TLF,
   NOCOLMAP,
   EXITPARAM "TLF",
   WHERE (TLF.HEAD.REC-TYP <> "00");

-- Map 'Forced Balanced' TLF records
MAP \SITEB.<volume>.D24LOGS.T*, TARGET \SITEA.<volume>.D24LOGS.*,
   TARGETDEF TLF,
   NOCOLMAP,
   EXITPARAM "TLF",
   WHERE (TLF.HEAD.REC-TYP <> "00");

-- Set the dictionary location
DICTIONARY <BASE24 pos volume>.PS60DDL

-- Map financial and exception PTLF records
MAP \SITEB.<volume>.PRO1PTLF.P*, TARGET \SITEA.<volume>.D24LOGS.*,
   TARGETDEF PTLF,
   NOCOLMAP,
   EXITPARAM "PTLF",
   WHERE (PTLF.HEAD.REC-TYP <> "00");

-- Map 'Forced Balanced' PTLF records
MAP \SITEB.<volume>.D24LOGS.P*, TARGET \SITEA.<volume>.D24LOGS.*,
   TARGETDEF PTLF,
   NOCOLMAP,
   EXITPARAM "PTLF",
   WHERE (PTLF.HEAD.REC-TYP <> "00");
```

Option 2: Combined transaction log files only

RPTLFBA reads the remote/extract trails <volume>.TLFTRLS.BB. This Replicat has the D24 user exit to add or update the DUAL_SITE_IND field in the MULT_LN_TKN token. This field is used to indicate if the (P)TLF is from a remote site.

- The user exit will do the following:
  - If the token exists, the user exit updates the DUAL_SITE_IND field with P.
  - If the token does not exist, the user exit adds the token with the DUAL_SITE_IND field set to P.
  - If the header token does not exist, the user exit adds both the header token and the MULT_LN_TKN token with the field set to P.

The replicat only updates the combined A+B (P)TLF files.

Sample parameter file:

```
REPLICAT RPTLFBA

-- Set the dictionary location
DICTIONARY <BASE24 atm volume>.AT60DDL

-- Use the target site definitions
ASSUMETARGETDEFS

-- Set the user exit
CUSEREXIT

-- Set the discard file
DISCARDFILE <volume>.GGSDISC.RPTLFBA, PURGE

-- Ignore the file operations to the combined A+B (P)TLF files
IGNOREFILEOPS

-- Do block reads
FASTREADS

-- Map financial and exception TLF records
```

```
MAP \SITEB.<volume>.PRO1ATLF.T*, TARGET \SITEA.<volume>.PRO1ATLF.*,
   TARGETDEF TLF,
   NOCOLMAP,
   EXITPARAM "TLF",
   WHERE (TLF.HEAD.REC-TYP <> "00");

-- Set the dictionary location
DICTIONARY <BASE24 pos volume>.PS60DDL

-- Map financial and exception PTLF records
MAP \SITEB.<volume>.PRO1PTLF.P*, TARGET \SITEA.<volume>.PRO1PTLF.*,
   TARGETDEF PTLF,
   NOCOLMAP,
   EXITPARAM "PTLF",
   WHERE (PTLF.HEAD.REC-TYP <> "00");
```

Configuring site B parameter files

To configure site B, you must:

- Configure GLOBALS parameters
- Configure Manager parameters
- Create Logger parameters
- Create Extract parameters
- Create Replicat parameters

Configure GLOBALS parameters

D24 requires statements in the GLOBALS parameter file similar to the following to specify the Oracle GoldenGate <prefix>, AUDCFG, and the TACLB24 macro, as well as other information. Process the following:

```
ADD DEFINE =GGS_AUDCFG, CLASS MAP, FILE $SYSTEM.GGS.AUDCFG
ADD DEFINE =GGS_PREFIX, CLASS MAP, FILE $<prefix>
ADD DEFINE =NOTIFY, CLASS MAP, FILE <GGS volume>.<GGS subvol>.TACLB24
```

Configure Manager parameters

The Manager parameter file must specify the Manager's port for TCP/IP-only communication and configure other parameters as you would for any Oracle GoldenGate implementation.

Sample parameter file:

```
-- ************************************************************
-- Manager Parameter File
-- ************************************************************
-- Manager port for the Extracts on the \SITEB site to use as
-- RMTHOST mgrport
PORT <manager port number> (IF TCP/IP)

-- Keep the (P)TLF remote/extract trails for at least 2 days
-- and processed
PURGEOLDEXTRACTS<volume>.TLFTRLS.AA, USECHECKPOINTS, MINKEEPDAYS 2

-- Keep the TDF, PTDF, ATDD1 and PTDD1 remote/extract trails
-- for at least 2 days and processed
PURGEOLDEXTRACTS<volume>.TDFTRLS.AA, USECHECKPOINTS, MINKEEPDAYS 2

-- Keep the rest of the BASE24 data files remote/extract trails
-- for at least 2 days and processed
PURGEOLDEXTRACTS <volume>.B24TRLS.AA, USECHECKPOINTS, MINKEEPDAYS 2
```

Create Logger parameters

1. Create Logger 0

   Logger 0 captures TLF from PRO1ATLF and D24LOGS and PTLF from PRO1PTLF and D24LOGS.

   Sample parameter file:

   ```
   -- LOGGER 0
   -- Location, number and size of the Logger trails
   LOG <volume>.TLFLOGS.BB, MEGABYTES <megabytes>, NUMFILES <num>,
   SECURE "NCNC"
   ```

```
-- Primary and backup CPU for Logger 0
CPU 0,1

-- Get unstructured files
GETUNSTRUCTURED

-- Get bulk loads
GETBULKIO

--Use the full record image, do not compress the updates
NOCOMPRESSUPDATES

-- Make priority higher than BASE24 nucleus (NETWORK)
PRI 180

-- List the files to be captured
FILE <volume>.PRO1ATLF.T*
FILE <volume>.PRO1PTLF.P*
FILE <volume>.D24LOGS.T*
FILE <volume>.D24LOGS.P*
```

2. Create Logger 1

   Logger 1 captures ATDD1, ATDS1, ATDD2, TDF, PTDD1, PTDS1, PTDD2 and PTDF files.

   Sample parameter file:

```
-- LOGGER 1
LOG <volume>.TDFLOGS.BB, MEGABYTES <megabytes>, NUMFILES <num>,
SECURE "NCNC"

-- Primary and backup CPU for Logger 1
CPU 1,0

-- Get unstructured files
GETUNSTRUCTURED

-- Get bulk loads
GETBULKIO

--Use the full record image, do not compress the updates
NOCOMPRESSUPDATES
```

```
-- Make priority higher than BASE24 nucleus (NETWORK)
PRI 180

-- List the files to be captured
FILE <volume>.PRO1DATA.TDF*
FILE <volume>.PRO1DATA.PTDF*
FILE <volume>.PRO1DATA.ATD*
FILE <volume>.PRO1DATA.PTD*

-- List the files to be excluded by the Settlement program
EXCLUDEFILE <volume>.PRO1DATA.TDF*, PROGRAM <volume>.PRO1OBJ.*SETL
EXCLUDEFILE <volume>.PRO1DATA.PTDF*,PROGRAM <volume>.PRO1OBJ.*SETL
EXCLUDEFILE <volume>.PRO1DATA.ATD*, PROGRAM <volume>.PRO1OBJ.*SETL
EXCLUDEFILE volume>.PRO1DATA.PTD*,  PROGRAM <volume>.PRO1OBJ.*SETL
```

3. Create Logger 2.

Logger 2 captures all BASE24 data files except the ATDD1, ATDS1, ATDD2, TDF, PTDD1, PTDS1, PTDD2 and PTDF files

Sample parameter file:

```
--  LOGGER 2
LOG <volume>.B24LOGS.BB, MEGABYTES <megabytes>, NUMFILES <num>,
SECURE "NCNC"

-- Primary and backup CPU for Logger 2
CPU 0,1

-- Get unstructured files
GETUNSTRUCTURED

-- Get bulk loads
GETBULKIO

-- Make priority higher than BASE24 nucleus (NETWORK)
PRI 180

-- List the files to be captured
FILE<volume>.PRO1DATA.*CAF*,   NOCOMPRESSUPDATES,GETBEFOREUPDATES
FILE<volume>.PRO1DATA.*PBF*,   NOCOMPRESSUPDATES,GETBEFOREUPDATES
FILE<volume>.PRO1DATA.UAF,     NOCOMPRESSUPDATES,GETBEFOREUPDATES
```

```
FILE <volume>.PRO1CNTL.L*CONF,  NOCOMPRESSUPDATES
FILE <volume>.PRO1DATA.*,       COMPRESSUPDATES

-- List the files to be excluded
EXCLUDEFILE <volume>.PRO1DATA.TDF*
EXCLUDEFILE <volume>.PRO1DATA.PTDF*
EXCLUDEFILE <volume>.PRO1DATA.ATD*
EXCLUDEFILE <volume>.PRO1DATA.PTD*
EXCLUDEFILE <volume>.PRO1DATA.IDF*,  PROGRAM<volume>.PRO1OBJ.*SETL
EXCLUDEFILE <volume>.PRO1DATA.HCF*
EXCLUDEFILE <volume>.PRO1DATA.ECF*
EXCLUDEFILE <volume>.PRO1DATA.*UAF*, PROGRAM<volume>.PRO1OBJ.*SETL
EXCLUDEFILE <volume>.PRO1DATA.PRDF*, PROGRAM<volume>.PRO1OBJ.*SETL
EXCLUDEFILE <volume>.PRO1DATA.FF*,   PROGRAM<volume>.PRO1OBJ.*SETL
EXCLUDEFILE <volume>.PRO1DATA.F0*,   PROGRAM <volume>.PRO1OBJ.*SETL
```

Create Extract parameters

1. Create EXB24BA

   EXB24BA reads the log trails \SITEB.<volume>.B24LOGS.BB and moves everything to the remote/extract trail \SITEA.<volume>.B24TRLS.BB. This includes all BASE24 data files not in the other Extracts.

   Sample parameter file:

```
EXTRACT EXB24BA
-- Set the discard file
DISCARDFILE <volume>.GGSDISC.EXB24BA, PURGE

-- Get all file operations
GETFILEOPS

-- Get the before-images
GETUPDATEBEFORES

-- Do not pad records that are not maximum size
NOFILLSHORTRECS

-- Do not check if the source files exist, just pass all files through
PASSTHRU
```

```
-- Do block writes
FASTIO

-- Do block reads
FASTREADS

-- Set the TCP/IP process name (If TCP/IP)
-- TCPIPPROCESSNAME <tcp/ip process name>
-- set the TCP/IP address and the manager port number (If TCP/IP)
-- RMTHOST <tcp/ip address> , MGRPORT <manager port number>
-- Set the location of the remote trail (If TCP/IP)
-- RMTTRAIL \SITEA.<volume>.B24TRLS.BB

-- Set the location of the remote trail (If Expand)
-- Comment out(If TCP/IP)
EXTTRAIL \SITEA.<volume>.B24TRLS.BB

-- Move all files in the log trail to \SITEA
FILE $*.*.*;
```

2. Create Extract EXTDFBA

   EXTDFBA reads the log trails \SITEB.<volume>.TDFLOGS.BB and moves everything to the remote/extract trail \SITEA.<volume>.TDFTRLS.BB. This includes the TDF, PTDF, ATDD1 and PTDD1 files.

   Sample parameter file:

```
EXTRACT EXTDFBA

-- Set the discard file
DISCARDFILE <volume>.<prefix>SDISC.EXTDFBA, PURGE

-- Get all file operations
GETFILEOPS

-- Do not pad records that are not maximum size
NOFILLSHORTRECS

-- Do not check if the source files exist, just pass all files through
PASSTHRU
```

```
-- Do block writes
FASTIO

-- Do block reads
FASTREADS

-- Set the TCP/IPprocess name (If TCP/IP)
-- TCPIPPROCESSNAME <tcp/ip process name>
-- set the TCP/IP address and the manager port number (If TCP/IP)
-- RMTHOST <tcp/ip address> , MGRPORT <manager port number>
-- Set the location of the Remote Trail (If TCP/IP)
-- RMTTRAIL \SITEA.<volume>.TDFTRLS.BB

-- Set the location of the Remote Trail (If Expand)
-- Comment out(If TCP/IP)
EXTTRAIL \SITEA.<volume>.TDFTRLS.BB

-- Move all files in the Logtrail to \SITEA
FILE $*.*.*;
```

3. Create Extract EXTLFBA

   EXTLFBA reads the log trails \SITEB.<volume>.TLFLOGS.BB and moves everything to the remote/extract trail \SITEA.<volume>.TLFTRLS.BB. This includes TLF and PTLF files.

   Sample parameter file:

```
EXTRACT EXTLFBA
-- Set the discard file
DISCARDFILE <volume>.GGSDISC.EXTLFBA, PURGE

-- Set the dictionary location
DICTIONARY <BASE24 atm volume>.AT60DDL

-- Ignore all file operations
IGNOREFILEOPS

-- Do not pad records that are not maximum size
NOFILLSHORTRECS

-- Do block writes
FASTIO
```

```
-- Do block reads
FASTREADS

-- Remove comments and set the TCP/IPprocess name (If TCP/IP)
-- TCPIPPROCESSNAME <tcp/ip process name>
-- set the TCP/IP address and the manager port number (If TCP/IP)
-- RMTHOST <tcp/ip address> , MGRPORT <manager port number>
-- Set the location of the Remote Trail (If TCP/IP)
-- RMTTRAIL \SITEA.<volume>.TLFTRLS.BB

-- Set the location of the Remote Trail (IF Expand)
-- Comment out (If TCP/IP)
EXTTRAIL \SITEA.<volume>.TLFTRLS.BB

-- Move all TLF files in the Logtrail to \SITEA except header record
FILE $*.*.T*,
    DEF TLF,
    NOCOLMAP,
    ALTNAME <volume>.PRO1TMPL.TLYYMMDD,
    WHERE (TLF.HEAD.REC-TYP <> "00");

-- Set the POS dictionary location
DICTIONARY <BASE24 pos volume>.PS60DDL

-- Move all PTLF files in the Logtrail to \SITEA except header record
FILE $*.*.P*,
    DEF PTLF,
    NOCOLMAP,
    ALTNAME <volume>.PRO1TMPL.POYYMMDD,
    WHERE (PTLF.HEAD.REC-TYP <> "00");
```

Create Replicat parameters

1. Create Replicat RPB24AB

   RPB24AB reads the remote/extract trail <volume>.B24TRLS.AA and replicates all BASE24 data files from site A except CAF, PBF, UAF and IDF files.

Sample parameter file:

```
REPLICAT RPB24AB

-- Set the discard file
DISCARDFILE <volume>.GGSDISC.RPB24AB, PURGE

-- Set the dictionary location
DICTIONARY <BASE24 base volume>.BA60DDL

-- Only used during Initial Loads
-- HANDLECOLLISIONS

-- Get the before-images
GETUPDATEBEFORES
-- Use the target dictionary
ASSUMETARGETDEFS

-- Replicat the file operations to the files
GETFILEOPS

-- Do block reads
FASTREADS

-- Map all the BASE24 data files not replicated in other Replicats
MAP \SITEA.<volume>.PRO1DATA.*, TARGET \SITEB.<volume>.PRO1DATA.*;
MAPEXCLUDE \SITEA.<volume>.PRO1DATA.*IDF*
MAPEXCLUDE \SITEA.<volume>.PRO1DATA.*CAF*
MAPEXCLUDE \SITEA.<volume>.PRO1DATA.*PBF*
MAPEXCLUDE \SITEA.<volume>.PRO1DATA.*UAF*

-- Map the LCONF file and substitute NonStop node and volume.
-- If the SITE, volume or subvolume is different between sites,
-- substitute the correct SITE, volume or subvolume name.
MAP \SITEA.<volume>.PRO1CNTL.L*CONF,
TARGET \SITEB.<volume>.PRO1CNTL.*,
```

```
   TARGETDEF LCONF,
      COLMAP (PRIKEY         = PRIKEY,
              PROD-IND       = PROD-IND,
              LCONF.COMMENTS =
                   @STRSUB (LCONF.COMMENTS, "\SITEA",   "\SITEB",
                                            "VOLA",    "VOLB",
                                            "SUBVOLA", "SUBVOLB"),
              LAST-CHNG-TIME = LAST-CHNG-TIME,
              FILE-NAME =
                   @STRSUB (FILE-NAME, "\SITEA",  "\SITEB",
                                       "VOLA",    "VOLB",
                                       "SUBVOLA", "SUBVOLB"),
              TEMPLATE =
                   @STRSUB(TEMPLATE, "\SITEA",  "\SITEB"
                                     "VOLA",    "VOLB",
                                     "SUBVOLA", "SUBVOLB"),
          USER-FIELD         = USER-FIELD,
          USER-FLD2          = USER-FLD2,
          PROD-IND-ADNL      = PROD-IND-ADNL,
          USER-FLD4          = USER-FLD4,
          LAST-AFM      = LAST-AFM),
          WHERE (ITEM-TYP = "A");

-- If the SITE, VOLUME or SUBVOLUME is different between sites,
-- substitute the correct SITE, VOLUME or SUBVOLUME name.
MAP \SITEA.<volume>.PRO1CNTL.L*CONF, TARGET
\SITEB.<volume>.PRO1CNTL.*,
   TARGETDEF LCONF,
      COLMAP (PRIKEY         = PRIKEY,
              PROD-IND       = PROD-IND,
              LCONF.COMMENTS =
                   @STRSUB (LCONF.COMMENTS, "\SITEA",   "\SITEB",
                                            "VOLA",    "VOLB",
                                            "SUBVOLA", "SUBVOLB"),
              LAST-CHNG-TIME = LAST-CHNG-TIME,
              PLGTH          = PLGTH,
              PTXT =
                   @STRSUB (PTXT, "\SITEA", "\SITEB"
                                  "VOLA",    "VOLB",
                                  "SUBVOLA", "SUBVOLB"),
```

```
                USER-FLD3     = USER-FLD3,
                PROD-IND-ADNL  = PROD-IND-ADNL,
                USER-FLD4     = USER-FLD4,
                LAST-AFM       = LAST-AFM),
   WHERE (ITEM-TYP = "P");
```

2. Create Replicat RPD24AB

   RPD24AB reads the remote/extract trail <volume>.B24TRLS.AB and replicates the CAF, PBF, UAF, and IDF files from site A.

   Sample parameter file:

```
REPLICAT RPD24AB

-- Set the discard file
DISCARDFILE <volume>.GGSDISC.RPD24AB, PURGE

-- Set the dictionary location
DICTIONARY <BASE24 base volume>.BA60DDL

-- Only used during Initial Loads
-- HANDLECOLLISIONS

-- Set the user exit flag
CUSEREXIT

-- For all file error 11's do exception processing
REPERROR 11, EXCEPTION

-- Get the before-images
GETUPDATEBEFORES

-- Use the target dictionary
ASSUMETARGETDEFS

-- Replicate the file operations to the files
GETFILEOPS

-- Do block reads
FASTREADS
```

```
-- Treat 'updates' as uncompressed because they are
NOCOMPENSCRIBEMAPS

-- MAP the CAF file with EXCEPTIONSONLY mapping
MAP \SITEA.<volume>.PRO1DATA.CAF,
   TARGET \SITEB.<volume>.PRO1DATA.CAF,
      EXITPARAM "CAF,<volume>.D24.CAFDEF,-OOLDCAF,WARNINGS";

MAP \SITEA.<volume>.PRO1DATA.CAF0,
   TARGET \SITEB.<volume>.PRO1DATA.CAF0;

MAP \SITEA.<volume>.PRO1DATA.CAF,
   TARGET \SITEB.<volume>.PRO1DATA.OLDCAF,
      EXITPARAM "CAF,<volume>.D24.CAFDEF,WARNINGS",
      EXCEPTIONSONLY;

MAP \SITEA.<volume>.PRO1DATA.OLDCAF,
   TARGET \SITEB.<volume>.PRO1DATA.OLDCAF,
      EXITPARAM "CAF,<volume>.D24.CAFDEF,-OCAF,WARNINGS";

MAP \SITEA.<volume>.PRO1DATA.OLDCAF,
   TARGET \SITEB.<volume>.PRO1DATA.CAF,
      EXITPARAM "CAF,<volume>.D24.CAFDEF,WARNINGS",
      EXCEPTIONSONLY;

-- MAP the PBF file with EXCEPTIONSONLY mapping
MAP \SITEA.<volume>.PRO1DATA.PBF,
   TARGET \SITEB.<volume>.PRO1DATA.PBF,
      EXITPARAM "PBF,<volume>.D24.PBFDEF,WARNINGS";

MAP \SITEA.<volume>.PRO1DATA.PBF,
   TARGET \SITEB.<volume>.PRO1DATA.OPBFDA,
      EXITPARAM "PBF,<volume>.D24.PBFDEF,WARNINGS",
      EXCEPTIONSONLY;

MAP \SITEA.<volume>.PRO1DATA.OPBFDA,
   TARGET \SITEB.<volume>.PRO1DATA.OPBFDA,
      EXITPARAM "PBF,<volume>.D24.PBFDEF,-OPBF,WARNINGS";
```

```
MAP \SITEA.<volume>.PRO1DATA.OPBFDA,
   TARGET \SITEB.<volume>.PRO1DATA.PBF,
      EXITPARAM "PBF,<volume>.D24.PBFDEF,WARNINGS",
      EXCEPTIONSONLY;

MAP \SITEA.<volume>.PRO1DATA.NEWC*,
   TARGET \SITEB.<volume>.PRO1DATA.*,
      EXITPARAM "CAF,<volume>.D24.CAFDEF,NOTIFY,WARNINGS";

MAP \SITEA.<volume>.PRO1DATA.NPBF*,
   TARGET \SITEB.<volume>.PRO1DATA.*,
      EXITPARAM "PBF,<volume>.D24.PBFDEF,NOTIFY,WARNINGS";

MAP \SITEA.<volume>.PRO1DATA.NCAF*,
   TARGET \SITEB.<volume>.PRO1DATA.*,
      EXITPARAM "CAF,<volume>.D24.CAFDEF,NOTIFY,WARNINGS";

MAP \SITEA.<volume>.PRO1DATA.UAF,
   TARGET \SITEB.<volume>.PRO1DATA.UAF,
      EXITPARAM "UAF,<volume>.D24.UAFDEF,-OOUAF,DELTAADD,WARNINGS";

-- Map the IDF file
MAP \SITEA.<volume>.PRO1DATA.IDF,
   TARGET\SITEB.<volume>.PRO1DATA.IDF, TARGETDEF IDF,
      COLMAP (USEDEFAULTS,
         NEG-NAME     = @STRSUB (NEG-NAME, "\SITEA",  "\SITEB",
                                           "VOLA",    "VOLB",
                                          "SUBVOLA", "SUBVOLB")
         UAF-NAME     = @STRSUB (UAF-NAME, "\SITEA", "\SITEB"),
         CAF-NAME     = @STRSUB (CAF-NAME, "\SITEA", "\SITEB"),
         PBF1-NAME    = @STRSUB (PBF1-NAME, "\SITEA", "\SITEB"),
         PBF2-NAME    = @STRSUB (PBF2-NAME, "\SITEA", "\SITEB"),
         PBF3-NAME    = @STRSUB(PBF3-NAME, "\SITEA", "\SITEB"),
         PBF4-NAME    = @STRSUB (PBF4-NAME, "\SITEA", "\SITEB"));
```

3. Create Replicat RPTDFAB

RPTDFAB reads the remote/extract trail <volume>.TDFTRLS.AA and does the following:

- Replicates the TDF records and switches the value L to R in the field TDF.DUAL-SITE-IND.

- Replicates the ATDD1 records and switches the value L to R in the field ATDD1.CORE.DUAL-SITE-IND.
- Replicates the PTDF records and switches the value L to R in the field PTDF.DUAL-SITE-TKN.
- Replicates the PTDD1 records and switches the value L to R in the field PTDD1.CORE.DUAL-SITE-IND.

Note L and R values represent flags that indicate whether a record came from the device is attached locally or remotely.

Sample parameter file:

```
REPLICAT RPTDFAB

-- Set the dictionary location
DICTIONARY <volume>.AT60DDL

-- Use the target site definitions
ASSUMETARGETDEFS

-- Set the discard file
DISCARDFILE <volume>.GGSDISC.RPTDFAB, PURGE

-- Replicat the file operations to the files
GETFILEOPS

-- Do block reads
FASTREADS

-- Set handlecollisions only for Initial Loads
-- HANDLECOLLISIONS

-- Map the TDF records
MAP \SITEA.<volume>.PRO1DATA.TDF,
   TARGET \SITEB.<volume>.PRO1DATA.TDF,
   TARGETDEF TDF,
   COLMAP (USEDEFAULTS,
           TDF.DUAL-SITE-IND =
              @IF (@STRCMP (TDF.DUAL-SITE-IND, "R") = 0, "L", "R"));
```

```
MAP \SITEA.<volume>.PRO1DATA.ATDD1,
   TARGET \SITEB.<volume>.PRO1DATA.ATDD1,
   TARGETDEF ATDD1,
   COLMAP (USEDEFAULTS,
           ATDD1.CORE.DUAL-SITE-IND =
           @IF (@STRCMP (ATDD1.CORE.DUAL-SITE-IND, "R") = 0, "L", "R"))

-- Map the ATDD2 records
MAP \SITEA.<volume>.PRO1DATA.ATDD2,
   TARGET \SITEB.<volume>.PRO1DATA.ATDD2;

-- Map the ATDS1 records
MAP \SITEA.<volume>.PRO1DATA.ATDS1,
   TARGET \SITEB.<volume>.PRO1DATA.ATDS1;

-- Set the POS dictionary location
DICTIONARY <volume>.D24PDDL

-- Map the PTDF records
MAP \SITEA.<volume>.PRO1DATA.PTDF,
   TARGET \SITEB.<volume>.PRO1DATA.PTDF,
   TARGETDEF PTDF,
   COLMAP (USEDEFAULTS,
          PTDF.REC.DUAL-SITE-IND =
          @IF (@STRCMP (PTDF.REC.DUAL-SITE-IND, "R") = 0, "L", "R"));

-- Map the PTDD1 records
MAP \SITEA.<volume>.PRO1DATA.PTDD1,
   TARGET \SITEB.<volume>.PRO1DATA.PTDD1,
   TARGETDEF PTDD1,
   COLMAP (USEDEFAULTS,
          PTDD1.CORE.DUAL-SITE-IND =
          @IF (@STRCMP (PTDD1.CORE.DUAL-SITE-IND, "R") = 0, "L", "R"));

-- Map the PTDS1 records
MAP \SITEA.<volume>.PRO1DATA.PTDS1,
   TARGET \SITEB.<volume>.PRO1DATA.PTDS1;

-- Map the PTDD2 records
MAP \SITEA.<volume>.PRO1DATA.PTDD2,
   TARGET \SITEB.<volume>.PRO1DATA.PTDD2;
```

4. Create Replicat RPTLFBB

   RPTLFBB reads the local (P)TLF log trails <volume>.TLFLOGS.BB and does the following:

   - Replicates the create and purge operations to the combined A+B (P)TLF files for Site B.
   - Replicates the (P)TLF the header record write from Settlement to the local (P)TLF. This will cause the Replicat to create the local (P)TLF file using the CREATETEMPLATE parameter. The local (P)TLF file will be created without alternate key files.
   - Replicates the local (P)TLF records into the combined A+B (P)TLF files.

   Settlement creates the combined A+B (P)TLF files and the authorization processes update the local (P)TLF files.

   Sample parameter file:

```
REPLICAT RPTLFBB

-- Set the dictionary location
DICTIONARY <BASE24 atm volume>.AT60DDL

-- Set the discard file
DISCARDFILE <volume>.GGSDISC.RPTLFBB, PURGE

-- Use the target site definitions
ASSUMETARGETDEFS

-- Do not replicate file operations for the local (P)TLF files
IGNOREFILEOPS

-- Do block reads
FASTREADS

-- Map the TLF records
MAP \SITEB.<volume>.PRO1ATLF.T*, TARGET \SITEB.<volume>.D24LOGS.*
    TARGETDICT <BASE24 atm volume>.AT60DDL,
    TARGETDEF TLF,
    NOCOLMAP;

-- Set the dictionary location
DICTIONARY <BASE24 pos volume>.PS60DDL
```

```
-- Map the PTLF records
MAP \SITEB.<volume>.PRO1PTLF.P*, TARGET \SITEB.<volume>.D24LOGS.*
    TARGETDICT <BASE24 pos volume>.PS60DDL,
    TARGETDEF PTLF,
    NOCOLMAP;

-- Set the dictionary location
DICTIONARY <BASE24 atm volume>.PS60DDL

-- Map only the header TLF record to the local file
MAP \SITEB.<volume>.D24LOGS.T*, DEF TLF
  TARGET \SITEB.<volume>.PRO1ATLF.*,
    COLMAP ( USEDEFAULTS ),
    TARGETDICT <BASE24 atm volume>.AT60DDL,
    TARGETDEF TLF,
    CREATETEMPLATE <volume>.D24TMPL.TLYYMMDD,
    ALTFILECHAR 2,
    WHERE (TLF.HEAD.REC-TYP = "00");

-- Set the dictionary location
DICTIONARY <BASE24 pos volume>.PS60DDL

-- Map only the header PTLF record to the local file
MAP \SITEB.<volume>.D24LOGS.P*,DEF PTLF,
  TARGET \SITEB.<volume>.PRO1PTLF.*,
    COLMAP ( USEDEFAULTS ),
    TARGETDICT <BASE24 pos volume>.PS60DDL,
    TARGETDEF PTLF,
    CREATETEMPLATE <volume>.D24TMPL.POYYMMDD,
    ALTFILECHAR 2,
    WHERE (PTLF.HEAD.REC-TYP = "00");
```

5. Create Replicat RPTLFAB

Depending on your site, configure one of the following Replicats.

Option 1: Local and combined transaction log files

RPTLFAB reads the remote/extract trails <volume>.TLFTRLS.AB. This Replicat has the D24 user exit that adds or updates the field DUAL_SITE_IND in the MULT_LN_TKN token. This field is used to indicate if the (P)TLF is from a remote site.

- The user exit will do the following:
  - If the token exists, it updates the DUAL_SITE_IND field with P.
  - If the token does not exist, it adds the token with the DUAL_SITE_IND field set to P.
  - If the header token does not exist, it adds both the header token and the MULT_LN_TKN token with the field set to P.
- The Replicat updates the local and combined A+B (P)TLF files

Sample parameter file:

```
REPLICAT RPTLFAB

-- Set the dictionary location
DICTIONARY <BASE24 atm volume>.AT60DDL
-- Use the target site definitions
ASSUMETARGETDEFS
-- Set the user exit
CUSEREXIT
-- Set the discard file
DISCARDFILE <volume>.<prefix>SDISC.RPTLFAB, PURGE

-- Ignore the file operations to the combined A+B (P)TLF files
IGNOREFILEOPS
-- Do block reads
FASTREADS

-- Map financial and exception TLF records
MAP \SITEA.<volume>.PRO1ATLF.T*, TARGET \SITEB.<volume>.D24LOGS.*,
   TARGETDEF TLF,
   NOCOLMAP,
   EXITPARAM "TLF",
   WHERE (TLF.HEAD.REC-TYP <> "00");

-- Map 'Forced Balanced' TLF records
MAP \SITEA.<volume>.D24LOGS.T*, TARGET \SITEB.<volume>.D24LOGS.*,
   TARGETDEF TLF,
   NOCOLMAP,
   EXITPARAM "TLF",
   WHERE (TLF.HEAD.REC-TYP <> "00");
```

```
-- Set the dictionary location
DICTIONARY <BASE24 pos volume>.PS60DDL

-- Map financial and exception PTLF records
MAP \SITEA.<volume>.PRO1PTLF.P*, TARGET \SITEB.<volume>.D24LOGS.*,
   TARGETDEF PTLF,
   NOCOLMAP,
   EXITPARAM "PTLF",
   WHERE (PTLF.HEAD.REC-TYP <> "00");

-- Map 'Forced Balanced' PTLF records
MAP \SITEA.<volume>.D24LOGS.P*, TARGET \SITEB.<volume>.D24LOGS.*,
   TARGETDEF PTLF,
   NOCOLMAP,
   EXITPARAM "PTLF",
   WHERE (PTLF.HEAD.REC-TYP <> "00);
```

Option 2: Combined transaction files only

RPTLFAB reads the remote/extract trails <volume>.TLFTRLS.AB. This Replicat has the D24 user exit that adds or updates the field DUAL_SITE_IND in the MULT_LN_TKN token. This field is used to indicate if the (P)TLF is from a remote site.

- The user exit will do the following:
  - If the token exists, it updates the DUAL_SITE_IND field with P.
  - If the token does not exist, it adds the token with the DUAL_SITE_IND field set to P.
  - If the header token does not exist, it adds both the header token and the MULT_LN_TKN token with the field set to P.

The Replicat only updates the combined A+B (P)TLF files

Sample parameter file:

```
REPLICAT RPTLFAB

-- Set the dictionary location
DICTIONARY <BASE24 atm volume>.AT60DDL
-- Use the target site definitions
ASSUMETARGETDEFS
```

```
-- Set the user exit
CUSEREXIT
-- Set the discard file
DISCARDFILE <volume>.GGSDISC.RPTLFAB, PURGE

-- Ignore the file operations to the combined A+B (P)TLF files
IGNOREFILEOPS
-- Do block reads
FASTREADS

-- Map financial and exception TLF records
MAP\SITEA.<volume>.PRO1ATLF.T*,TARGET\SITEB.<volume>.PRO1ATLF.*,
    TARGETDEF TLF,
    NOCOLMAP,
    EXITPARAM "TLF",
    WHERE (TLF.HEAD.REC-TYP <> "00");

-- Set the dictionary location
DICTIONARY <BASE24 pos volume>.PS60DDL

-- Map financial and exception PTLF records
MAP\SITEA.<volume>.PRO1PTLF.P*,TARGET\SITEB.<volume>.PRO1PTLF.*,
    TARGETDEF PTLF,
    NOCOLMAP,
    EXITPARAM "PTLF",
    WHERE (PTLF.HEAD.REC-TYP <> "00");
```

Adding and starting Oracle GoldenGate components

With your parameter files configured, you are ready to add the components you need for your particular dual-site environment. In this section, sample commands show how to optimize and run the parameters you have built in the previous sections.

To add all your Oracle GoldenGate components, you must:

- Start site A Manager
- Add site A Loggers
- Add site A Extracts
- Add extract/remote trails for site A Extracts

- Start site B Manager
- Add site B Loggers
- Add site B Extracts
- Add extract/remote trails for site B Extracts
- Add site A Replicats
- Add site B Replicats
- Start site A components
- Start site B components

Start site A Manager

Syntax `GGSCI> START MANAGER`

Starts the Manager process, which is responsible for keeping Extracts and Replicats running and maintaining extract trails. The Manager process is part of the default Oracle GoldenGate environment, therefore when Oracle GoldenGate is installed, the Manager process is automatically added. The Manager process only has to be started.

Add site A Loggers

Syntax `GGSCI> ADD LOGGER`

This single command adds all your Logger processes to your Oracle GoldenGate environment. The Logparm file defines:

- the number of Logger processes
- the location, number and size of the log trails for each Logger process
- the files to be monitored

Add site A Extracts

Syntax

```
GGSCI> ADD EXTRACT EXB24AB, LOGTRAILSOURCE <vol>.B24LOGS.AA
GGSCI> ADD EXTRACT EXTDFAB, LOGTRAILSOURCE <vol>.TDFLOGS.AA
GGSCI> ADD EXTRACT EXTLFAB, LOGTRAILSOURCE <vol>.TLFLOGS.AA
```

This command adds the Extracts for each parameter file built previously. The ADD command specifies which logtrail the Extract reads.

Add extract/remote trails for site A Extracts

Syntax

```
GGSCI> ADD EXTTRAIL \SITEB.<volume>.B24TRLS.AA, EXTRACT
EXB24AB

GGSCI> ADD EXTTRAIL \SITEB.<volume>.TDFTRLS.AA, EXTRACT
EXTDFAA

GGSCI> ADD EXTTRAIL \SITEB.<volume>.TLFTRLS.AB, EXTRACT
EXTLFAB
```

These commands add the extract trail to the Oracle GoldenGate environment. The actual files are not created until the first log record is written to the target site.

Start site B Manager

Syntax

```
GGSCI> START MANAGER
```

This command starts the Manager process, which keeps the Extracts and Replicats running and maintains the extract trails. When Oracle GoldenGate is installed the Manager process is automatically added; the Manager process only has to be started.

Add site B Loggers

Syntax

```
GGSCI> ADD LOGGER
```

Description:

This single command adds all your Logger processes to your Oracle GoldenGate environment. The Logparm file defines:

- the number of Logger processes
- the location, number and size of the log trails for each Logger process
- the files to be monitored

Add site B Extracts

Syntax

```
GGSCI> ADD EXTRACT EXB24BA, LOGTRAILSOURCE
<volume>.B24LOGS.BB

GGSCI> ADD EXTRACT EXD24BA, LOGTRAILSOURCE
<volume>.D24LOGS.BB

GGSCI> ADD EXTRACT EXTDFBA, LOGTRAILSOURCE
<volume>.TDFLOGS.BB

GGSCI> ADD EXTRACT EXTLFBA, LOGTRAILSOURCE
<volume>.TLFLOGS.BB
```

These commands add the Extract processes for the Extract parameter files built previously, and specify the logtrails to be read.

Add extract/remote trails for site B Extracts

Syntax

```
GGSCI> ADD EXTTRAIL \SITEA.<volume>.B24TRLS.BB, EXTRACT
EXB24BA

GGSCI> ADD EXTTRAIL \SITEA.<volume>.TDFTRLS.BB, EXTRACT
EXTDFBA

GGSCI> ADD EXTTRAIL \SITEA.<volume>.TLFTRLS.BB, EXTRACT
EXTLFBA
```

These commands add extract/remote trails to the Oracle GoldenGate environment. The actual files are not created until the first log records are written to the target site.

Add site A Replicats

Syntax

```
GGSCI> ADD REPLICAT RPB24BA, EXTTRAILSOURCE
<volume>.B24TRLS.BB

GGSCI> ADD REPLICAT RPD24BA, EXTTRAILSOURCE
<volume>.B24TRLS.BB, PROGRAM REPD24

GGSCI> ADD REPLICAT RPTDFBA, EXTTRAILSOURCE
<volume>.TDFTRLS.BB
```

```
GGSCI> ADD REPLICAT RPTLFBA, EXTTRAILSOURCE
<volume>.TLFTRLS.BB PROGRAM REPD24
```

These commands add the Replicat processes for the parameter files you built previously.

Optional Replicat:

Syntax

```
GGSCI> ADD REPLICAT RPTLFAA, LOGTRAILSOURCE
<volume>.TLFLOGS.AA
```

This command adds the Replicat process RPTLFAA. This Replicat is used to deliver the TLF file changes from the local transaction log files on \SITEA to combined transaction log files on \SITEA.

Note This Replicat is only required if two transaction log files are used; one for the local A files and a second for the combination of A and B transaction log files.

Add site B Replicats

Syntax

```
GGSCI> ADD REPLICAT RPB24AB, EXTTRAILSOURCE
<volume>.B24TRLS.AA

GGSCI> ADD REPLICAT RPD24AB, EXTTRAILSOURCE
<volume>.B24TRLS.AA, PROGRAM REPD24

GGSCI> ADD REPLICAT RPTDFAB, EXTTRAILSOURCE
<volume>.TDFTRLS.AA

GGSCI> ADD REPLICAT RPTLFAB, EXTTRAILSOURCE
<volume>.TLFTRLS.AA, PROGRAM REPD24
```

These commands add the Replicat processes for the parameter files you built previously.

Optional Replicat:

```
GGSCI> ADD REPLICAT RPTLFBB, LOGTRAILSOURCE <volume>.TLFLOGS.BB
```

This command adds the Replicat process RPTLFBB. This Replicat is used to deliver the TLF file changes from the local transaction log files on \SITEB to combined transaction log files on \SITEB.

This Replicat is only required if two transaction log files are used; one for the local B files and a second for the combination of A and B transaction log files.

Start site A components

1. Start Logger.

   ```
   GGSCI> START LOGGER
   ```

   This command starts the Logger processes. The information in the Logparm file that is used by the Logger and intercept libraries is loaded into each CPU'S memory.

2. Start the Extracts.

   ```
   GGSCI> START EXB24AB

   GGSCI> START EXTDFAB

   GGSCI> START EXTLFAB
   ```

3. Start Replicat

   ```
   GGSCI> START RPB24BA

   GGSCI> START RPD24BA

   GGSCI> START RPTDFBA

   GGSCI> START RPTLFBA

   GGSCI> START RPTLFAA
   ```

Note This Replicat is only required if two transaction log files are used; one for the local B files and a second for the combination of A and B transaction log files.

Start site B components

1. Start Logger.

   ```
   GGSCI> START LOGGER
   ```

This command starts the Logger processes. The information in the Logparm file that is used by the Logger and intercept libraries is loaded into each CPU's memory.

2. Start Extract

```
GGSCI> START EXB24BA

GGSCI> START EXTDFBA

GGSCI> START EXTLFBA
```

3. Start Replicat

```
GGSCI> START RPB24AB

GGSCI> START RPD24AB

GGSCI> START RPTDFAB

GGSCI> START RPTLFAB

GGSCI> START RPTLFBB
```

Note This Replicat is only required if two transaction log files are used; one for the local B files and a second for the combination of A and B transaction log files.

CHAPTER 4

D24 Messages

This chapter lists messages you may see in your BASE24/Oracle GoldenGate environment while running D24. Topics include:

Contents

Overview

This chapter covers two types of messages: those generated by the delta and remote flag functions, and messages generated by EMS or TACL. Messages generated by flag functions have the following characteristics:

- If the message number is in the range of 200 to 299 it is a warning message. The user exit will display the message and processing continues.
- If the message number is in the range between 300 and 399, it is an error message. The user exit will display the message and cause the Replicat to abend.
- Messages generated by the N24 function retain their original formats.

Error messages

UE 201: WARNING: POSSIBLE OUT OF SYNC CONDITION FOR FILE <FILE NAME> RECORD <RECORD #> FIELD <FIELD NAME> FIID: <NAME> ACCOUNT: <ACCOUNT #> AFTER VAL: <VALUE> TARGET BEFORE: <VALUE> DELTA VAL: <VALUE> TARGET AFTER: <VALUE> MIS-MATCH RECS: <#> LAST BEFORE IMAGE TRAIL <TRAIL #> AT <TRAIL RBA>

Cause The initial value of the source did not match the initial value of the target. AFTER VAL is the value captured from the source after update/insert was applied. TARGET BEFORE is the value on target before the update or insert is applied For an update, the DELTA VAL is the difference between AFTER VAL and TARGET BEFORE. For an insert, it is the accumulated total. TARGET AFTER is the resulting value on the target. The MIS-MATCH RECS displays the number of records with unmatched values if the WARNINGS option is included.

Recovery Use either the card number or account number in BASE24 to research the records. This message can display if the delivery between the sites is being delayed. It may be necessary to re-sync the files if the problem persists Please contact Oracle Support for additional help. For more information, go to http://support.oracle.com.

UE 301: ERROR: INVALID EXITPARAM VALUE. LAST BEFORE IMAGE TRAIL <TRAIL #> AT <TRAIL RBA>.

Cause At least one of the values in the EXITPARAM parameter was invalid.

Recovery Check the Replicat parameter file and correct the EXITPARAM.

UE 302: ERROR: <FILE NAME> UPDATES ARE COMPRESSED.

Cause The update record in the trail is in compressed format.

Recovery On the source side please check the Logparm parameter file and make sure the files are captured in uncompressed format. Use Logdump to determine the next RBA. In GGSCI use the ALTER command to change the Replicat's positioning and restart the Replicat.

UE 303: ERROR: <FILE NAME> 'BEFORE' AND 'AFTER' IMAGES ARE OUT OF SYNC.

Cause The user exit expects the order of the records to be first the before-image followed immediately by the after-image. In this case the after-image record came before the before-image record. The Logparm, Extract or Replicat parameter files may not be configured correctly.

Recovery Please contact Oracle Support. For more information, go to http://support.oracle.com.

UE 304: ERROR: INVALID "<EXITPARAM VALUE>" PARAMETER.

Cause The EXITPARAM contains values that start with one of the following names CAF, PBF, UAF, NOTIFY, or WARNINGS, but contains additional characters.

Recovery Please edit the Replicat parameter file and fix the EXITPARAM. Then restart the Replicat

UE 305: ERROR: <GUARDIAN ERROR NUMBER> RETURNED BY FILE_GETINFOLISTBYNAME_ . LAST BEFORE IMAGE TRAIL <TRAIL #> AT <TRAIL RBA>.

Cause An error occurred calling the function FILE_GETINFOLISTBYNAME_ .

Recovery Research the file error and contact Oracle Support. For more information, go to http://support.oracle.com.

UE 306: ERROR: <FILE NAME>, FILE IS UNSTRUCTURED.

Cause The target file is an unstructured file.

Recovery Edit the YReplicat parameter file and fix the MAP statement.

UE 308: ERROR: <ERROR NUMBER> RETURNED BY GET_ALTKEY_INFO FUNCTION.

Cause Getting the record key information returned an error.

Recovery Contact Oracle Support. For more information, go to http://support.oracle.com.

UE 307 ERROR: INVALID SEG LGTH FOR <SEG #> IN TRAIL <TRAIL #> AT <TRAIL RBA>

Cause The length for a particular segment is out of bounds or zero. The prior segment may have had an invalid length.

Recovery Contact Oracle Support. For more information, go to http://support.oracle.com.

UE 309: ERROR:<ERROR NUMBER> RETURNED BY GET_DELTA_FLDS FOR FILE <TARGET FILE NAME>.

Cause The WARNINGS parameter was found in the EXITPARM, however it must be used with one of the following files CAF, PBF or UAF.

Recovery Check the Replicat parameter file and correct the EXITPARAM.

UE 310 ERROR: THE NUMBER OF <FILE NAME> FILE IDS HAS EXCEEDED ITS LIMIT.

Cause The user exit allows for 100 opens for each of the delta files. This limit has been exceeded.

Recovery Contact Oracle Support. For more information, go to http://support.oracle.com.

UE 311 ERROR: DEFGEN FILE IS NOT AN EDIT FILE FOR <DEFGEN FILE NAME>. LAST BEFORE IMAGE TRAIL <TRAIL #> AT <TRAIL RBA>.

Cause The file identified in the EXITPARAM as the DEFGEN output file is not an edit file and therefore invalid.

Recovery Check the Replicat parameter file, and correct the DEFGEN file name.

UE 312 ERROR: TOO MANY PARAMETERS ENTERED. LAST BEFORE IMAGE TRAIL <TRAIL #> AT <TRAIL RBA>.

Cause Depending on the file identifier, there may be from 1 to 4 parameters. Too many parameters were entered for this file type.

Recovery Check the Replicat parameter file and correct the EXITPARAM.

UE 313 ERROR: <GUARDIAN ERROR NUMBER>, CALLING DEFINEINFO. LAST BEFORE IMAGE TRAIL <TRAIL #> AT <TRAIL RBA>.

Cause The user exit encountered an internal error calling the DEFINEINFO procedure.

Recovery Please contact Oracle Support. For more information, go to http://support.oracle.com.

UE 314 ERROR: <GUARDIAN ERROR NUMBER>, CALLING GET_RECORD <UNIQUE IDENTIFIER>. LAST BEFORE IMAGE TRAIL <TRAIL #> AT <TRAIL RBA>.

Cause The user exit encountered an internal error calling the GET_RECORD procedure.

Recovery This message is located several times in the user exit. The <unique identifier> identifies the specific call.

UE 315 ERROR: <GUARDIAN ERROR NUMBER>, CALLING FILE_GETINFOLIST.

Cause The user exit encountered an internal error calling the FILE_GETINFOLIST procedure.

Recovery Please contact Oracle Support. For more information, go to http://support.oracle.com.

UE 316 ERROR: <GUARDIAN ERROR NUMBER>, CALLING KEYPOSITIONX FOR FILE <TARGET FILE NAME>.

Cause The user exit encountered an internal error calling the KEYPOSITIONX procedure.

Recovery Contact Oracle Support. For more information, go to http://support.oracle.com.

UE 317 ERROR: <GUARDIAN ERROR NUMBER>, CALLING KEYPOSITIONX FOR FILE <TARGET FILE NAME>. LAST BEFORE IMAGE TRAIL <TRAIL #> AT <TRAIL RBA>

Cause The user exit encountered an internal error calling the KEYPOSITIONX procedure.

Recovery Contact Oracle Support. For more information, go to http://support.oracle.com.

UE 318 ERROR: <GUARDIAN ERROR NUMBER>, CALLING READUPDATELOCKX FOR FILE <FILE NAME>. LAST BEFORE IMAGE TRAIL <TRAIL #> AT <TRAIL RBA>

Cause The user exit encountered an internal error calling the READUPDATELOCKX procedure.

Recovery Check the error number and file in the message. If possible, correct the error and restart the Replicat. If the error cannot be corrected, please contact Oracle Support.

UE319 ERROR: <GUARDIAN ERROR NUMBER>, CALLING READUPDATELOCKX FOR FILE <FILE NAME>. LAST BEFORE IMAGE TRAIL <TRAIL #> AT <TRAIL RBA>

Cause The user exit encountered an internal error calling the READUPDATELOCKX procedure.

Recovery Contact Oracle Support. For more information, go to http://support.oracle.com.

UE 320 ERROR: SEGMENT <SEGMENT NUMBER> NOT VALID FOR RECORD <REC KEY>.

Cause A segment was found in the data record <rec key> without a corresponding definition.

Recovery Check the DEFGEN output file for the missing segment definition.

UE 321ERROR: <ERROR NUMBER> RETURNED FROM PROCESS_DELTADDEFS

Cause An error was returned by the process_deltadefs function. Another error message should have preceded this message to identify the exact problem.

Recovery If the problem cannot be resolved, please contact Oracle Support. For more information, go to http://support.oracle.com.

UE 322 ERROR: SEGMENT <SEGMENT NUMBER> NOT FOUND FOR RECORD <REC KEY>

Cause A field in the DEFGEN output file had a definition but no corresponding data field was found in the record <rec key>.

Recovery Check the DEFGEN output file to make sure the segment definition is correct. Contact Oracle Support if the problem cannot be resolved. For more information, go to http://support.oracle.com.

UE 323 ERROR: INVALID FIELD TYPE <FIELD DATA TYPE> FOR RECORD <REC KEY>

Cause A D was found for a field that did have a valid data field type (that is 130, 132 or 134).

Recovery Check the DEFGEN output file for the indicated field.

UE 324 ERROR: INVALID DEF FILE, INVALID FIELD TAG <FIELD TAG> LINE <FIELD NAME> SEG <N> IN <DEF FILE>

Cause A value other than “A”, “C”, “D”, “N”, or “U” was found.

Recovery Check the DEFGEN output file for the indicated field.

UE 325 ERROR: INVALID DEF FILE, CONDITIONAL FIELD WRONG SIZE, LINE <FIELD NAME> SEG <N> IN <DEF FILE>

Cause A “C” was found for a column with a length other than 6 bytes.

Recovery Check the DEFGEN output file for the indicated field.

UE 326 ERROR: INVALID DEF FILE, FIELD OFFSET PAST 4096, LINE <FIELD NAME> SEG <N> IN <DEF FILE>

Cause An offset was found to be longer than allowed.

Recovery Check the DEFGEN output file for the indicated field.

UE 327 ERROR: INVALID DEF FILE, SEG ID GREATER THAN MAX OF <N>, SEG <N> IN <DEF FILE>

Cause A SEGID entry was found that is greater than allowed.

Recovery Check the DEFGEN output file for the indicated SEGID.

UE 328 ERROR: CONDITIONAL FIELD MUST BE DEFINED FOR THIS FIELD <NAME> SEG <N>

Cause No conditional field was found.

Recovery Check the DEFGEN output file for the indicated field.

UE 329 ERROR: *** INVALID DEF FILE, ONLY ONE CONDITIONAL FIELD ALLOWED PER SEGMENT, SEG <N> IN <DEF FILE>

Cause More than one conditional field was found.

Recovery Check the DEFGEN output file for the indicated field.

UE 330 ERROR: *** INVALID DEF FILE, CONDITIONAL FIELD C FOUND ON <FIELD NAME> SEG <N> IN <DEF FILE> WITHOUT U FIELD

Cause Conditional field “C” was used without using “U”.

Recovery Check the DEFGEN output file for the indicated field.

UE 400 ERROR: <GUARDIAN ERROR NUMBER>, UNABLE TO OPEN DEF FILE <FILE NAME>

Cause The user exit encountered an error opening the DEFGEN file.

Recovery Check the error number and file in the message. If possible, correct the error and restart the Replicat. If the error cannot be corrected, please contact Oracle Support. For more information, go to http://support.oracle.com.

UE 401 ERROR: <GUARDIAN ERROR NUMBER>, UNABLE TO ALLOCATE SPACE FOR <FILE NAME>

Cause The user exit encountered an error allocating space for the delta field definitions.

Recovery Check the error number and file in the message. If possible, correct the error and restart the Replicat. If the error cannot be corrected, please contact Oracle Support. For more information, go to http://support.oracle.com.

UE 402 ERROR: <GUARDIAN ERROR NUMBER>, UNABLE TO ALLOCATE MORE SPACE MAXFIELDS IN <FILE NAME>

Cause The user exit encountered an error allocating more space for the delta field definitions, the maximum number of delta fields has been allocated.

Recovery Please contact Oracle Support. For more information, go to http://support.oracle.com.

UE 403 ERROR: <GUARDIAN ERROR NUMBER>, UNABLE TO REALLOCATE FOR ACTUAL SPACE FOR <FILE NAME>

Cause The user exit encountered an error allocating space for the delta field definitions.

Recovery Check the error number and file in the message. If possible, correct the error and restart the Replicat. If the error cannot be corrected, please contact Oracle Support. For more information, go to http://support.oracle.com.

UE 404 ERROR: <GUARDIAN ERROR NUMBER>, INVALID DEF FILE LINE <FIELD NAME> SEG <DEFINITION ID> IN <FILE NAME>

Cause The DEFGEN file has an invalid value for the line specified.

Recovery Check the line specified for a valid field type and offset. Typically this is for fields identified as a delta field with the wrong field. The field must be types 130, 132, or 134. If possible, correct the DEFGEN file error and restart the Replicat. If the error cannot be corrected, please contact Oracle Support. For more information, go to http://support.oracle.com.

UE 405 ERROR: <GUARDIAN ERROR NUMBER>, INVALID DEF FILE NO DELTA FIELDS <FIELD NAME>

Cause The DEFGEN file is either not a valid DEFGEN output or does not have delta fields designated by a D in the last column.

Recovery Check the file specified and validate there are delta fields defined. Typically this is for those that do not page right after the last column of data in the DEFGEN file. The field must be identified by a D in the very last column. If possible, correct the DEFGEN file error and restart the Replicat.

If the error cannot be corrected, please contact Oracle Support. For more information, go to http://support.oracle.com.

7285 GGSCI FILE NAME NOT FOUND IN THE LCONF

Cause The LCONF assign for GGSCI is not defined.

Recovery Please add the LCONF ASSIGN to support this function. Take the appropriate action to CLOSEFILES for the associated Replicats if required.

7290 GGSCI-IN-FILE NAME NOT FOUND IN THE LCONF

Cause The LCONF assign for GGSCI-IN-FILE is not defined.

Recovery Please add the LCONF ASSIGN to support this function. Take the appropriate action to CLOSEFILES for the associated Replicats if required.

7295 ERROR <ERROR> ON PROCESS_CREATE

Cause An error has occurred while trying to create a process.

Recovery Please take the appropriate action to CLOSEFILES for the associated Replicats if required. Typically you can use the SEND REPLICAT <replicat names> CLOSEFILES command from GGSCI on the local system to do this. Please call Oracle Support if this error persists. For more information, go to http://support.oracle.com.

7300 ERROR <ERROR> ON OPEN. UNABLE TO COMMUNICATE WITH PROCESS <NAME>

Cause An error has occurred while trying to open a GGSCI process.

Recovery Please take the appropriate action to CLOSEFILES for the associated Replicats if required. Typically you can use the SEND REPLICAT <replicat names> CLOSEFILES command from GGSCI on the local system to do this. Please call Oracle Support if this error persists.

7305 ERROR <ERROR> ON WRITE. UNABLE TO COMMUNICATE WITH PROCESS <NAME>

Cause An error has occurred while trying to write the startup message to the GGSCI process.

Recovery Please take the appropriate action to CLOSEFILES for the associated Replicats if required. Typically you can use the SEND REPLICAT <replicat names> CLOSEFILES command from GGSCI on the local system to do this. Please call Oracle Support if this error persists.

7310 ERROR <ERROR> ON CLOSE. UNABLE TO COMMUNICATE WITH PROCESS <NAME>

Cause An error has occurred while trying to close communication with a GGSCI process.

Recovery Please take the appropriate action to CLOSEFILES for the associated Replicats if required. Typically you can use the SEND REPLICAT <replicat names> CLOSEFILES command from GGSCI on the local system to do this. Please call Oracle Support if this error persists. For more information, go to http://support.oracle.com.

7315 NOTIFY IS NOT CURRENTLY SET UP TO SUPPORT 9503

Cause The Notify process does not have a GGSCI or GGSCI-IN-FILE defined to support the 9503 message.

Recovery Please set up the appropriate ASSIGNS to support this function.

N24 EMS and TACL messages

EXPECTING VALID ORIGINAL <FILENAME>

Cause The file specified as the original file is not in a valid format. The TACL macro will not compete processing unless the file and associated parameters passed to the macro are in a valid Tandem format for a file name. The macro will return and not complete.

Recovery Check all mapping parameters contained with the Replicat and start the full Refresh process again. Please call Oracle Support if this error persists. For more information, go to http://support.oracle.com.

EXPECTING VALID TARGET <FILENAME>

Cause The file specified as the target file is not in a valid format. The TACL macro will not compete processing unless the file and associated parameters passed to the macro are in a valid Tandem format for a file name. The macro will return and not complete.

Recovery Check all mapping parameters contained with the Replicat and start the full Refresh process again. Please call Oracle Support if this error persists. For more information, go to http://support.oracle.com.

RENAME ERROR <GUARDIAN ERROR> ON <ORIGINAL FILE> <TARGET FILE>

Cause The rename for the specified files could not take place, the Guardian Error specified is the reason and cause. The TACL macro will not compete processing unless the files are renamed. The macro will return and not complete.

Recovery Fix the problem with the rename and restart the Replicat to complete the full Refresh process on the target side.

EXPECTING EXISTING <FILENAME>

Cause The rename for the specified file could not take place, the file specified does not exist. The TACL macro will not compete processing unless the files are renamed. The macro will return and not complete.

Recovery Fix the problem with the rename and restart the Replicat to complete the full Refresh process on the target side.

EXPECTING EXISTING <GGSREFR FILE> <FILENAME SPECIFIED>

Cause The file specified as the GGSREFR file is not in a valid format or does exist. The TACL macro will not compete processing unless the file and associated parameters within the macro are in a valid Tandem format for a file name and the GGSREFR file exists. The macro will return and not complete.

Recovery Check the GGSREFR file location contained within the TACLB24 macro and start the full Refresh process again. Please call Oracle Support if this error persists. For more information, go to http://support.oracle.com.

ERROR <NCPCOM PROCESS> IS NOT A PROCESS !

Cause The process specified as the NCPCOM process is not in a valid format or does exist as a PATHMON process. The TACL macro will not complete processing unless the process :ncpcom associated within the macro are in a valid Tandem format for a process and the process exists. The macro will return and not complete.

Recovery Check the NCPCOM process contained within the TACLB24 macro and change the process name. Or, if it is specified within the GGSREFR file please modify the GGSREFR file appropriately. Start the Replicat process again. Please call Oracle Support if this error persists. For more information, go to http://support.oracle.com.

ERROR <NCPCOM PROCESS> IS NOT A PATHWAY MONITOR !

Cause The process specified as the NCPCOM process is not in a valid format or does exist as a PATHMON process. The TACL macro will not compete processing unless the process :ncpcom is associated within the macro is in a valid Tandem format for a process and the process exists as a PATHMON process. The macro will return and not complete.

Recovery Check the NCPCOM process contained within the TACLB24 macro and change the process name. Or, if it is specified within the GGSREFR file please modify the GGSREFR file appropriately. Start the Replicat process again. Please call Oracle Support if this error persists. For more information, go to http://support.oracle.com.

ERROR IN SENDING NCPCOM MESSAGE <OUTPUT FROM NCPCOM>

Cause The process starting NCPCOM was not able to deliver the message to the Notify process for reasons specified in the message output. The TACLB24 will not compete processing unless the Notify process message is delivered. The macro will return and not complete. However prior steps have been completed.

Recovery Check the BASE24 processes that have the OCAF still open. If all items completed successfully for the Refresh and the Replicat you may send the 9503 message 9503***<filename><refrg><refrt> to Notify or just WARMBOOT your BASE24 processes. Please validate that the processing

of all other steps have been completed before manual intervention. Please call Oracle Support if this error persists. For more information, go to http://support.oracle.com.

<LCONF ASSIGN> ASSIGN NAME NOT FOUND IN THE LCONF

Cause The Notify process was not able to deliver the message to all BASE24 process for reasons specified in the message output. The TACLB24 will compete processing but the Notify process message is not delivered. The macro will return and complete. All prior steps have been completed.

Recovery Check the BASE24 processes that have the old file still open. This is mostly like a case of not adding the right LCONF values or a typo within the GGSREFR for the REFRESH GROUP. Please fix those issues. If all items completed successfully for the Refresh and the Replicat you may send the 9503***<filename><refrg><refrt> to Notify or just WARMBOOT your BASE24 processes. Please validate that the processing of all other steps have been completed before manual intervention. Please call Oracle Support if this error persists. For more information, go to http://support.oracle.com.

NO NOTIFY MESSAGE DELIVERED TO B24 PROCESSES

Cause The Notify process was not able to deliver the message to all BASE24 process for reasons specified in the message output. The TACLB24 will compete processing but the Notify process message is not delivered. The macro will return and complete. All prior steps have been completed.

Recovery Check the BASE24 processes that have the old file still open. This may be caused by not adding the right LCONF values or a typo within the GGSREFR for the REFRESH GROUP. Please fix those issues. If all items completed successfully for the Refresh and the Replicat you may send the 9503***<filename><refrg><refrt> to Notify or just WARMBOOT your BASE24 processes. Please validate that the processing of all other steps have been completed before manual intervention. Call Oracle Support if this error persists. For more information, go to http://support.oracle.com.

ERROR PARTITION SPECIFIED IN GGSREFR FILE HAS TO BE THE PRIMARY FILE ONLY.

Cause A partition was specified as a file name in the GGSREFR file.

Recovery Change the <filename> to the name and location of the primary file. Specifying a partitioned file without the optional LCONF parameter will not notify the proper file name within BASE24. Specify the <optflag> = 5 or 6 and add an <optLCONF> parameter to the GGSREFR file.

ERROR ALTKEY SPECIFIED IN GGSREFR FILE HAS TO BE THE PRIMARY FILE ONLY.

Cause An alternate key file was specified as a file name in the GGSREFR file.

Recovery Change the <filename> to the name of the primary file. Specifying an alternate key file without the optional LCONF parameter will not notify the proper file name within BASE24. Specify the <optflag> = 5 or 6 and add an <optLCONF> parameter to the GGSREFR file.

Warning messages

MACRO EXITING <FILENAME> NOT FOUND IN <EDIT FILE NAME>

Cause The file specified is not in the EDIT file for BASE24 full file refreshes. The TACL macro will not compete processing unless the file and associated parameters are contained in the GGSREFR edit file. The macro will return and not complete.

Recovery Add the Refresh file name to the edit file GGSREFR along with all parameters and start the full Refresh process again.

ASSUMING RESTART OF REPLICAT <FILENAME> EXISTS

Cause The rename for the specified file could not take place, the file specified already exists. The TACL macro will compete processing yet the files will not be renamed. The macro will complete processing without renaming the files.

Recovery The problem with the rename and restart of the Replicat is to be fixed prior to this message. The full Refresh process to complete once the Replicat is restarted on the target side. The message is only to inform you that

processing is completed within the TACL macro even though the rename was not accomplished.

REFRESH GROUP TRUNCATED

Cause The file GGSREFR contains an entry for the REFRESH GROUP that is greater than the maximum size of a refresh group. The TACLB24 will truncate the value and continue processing. The macro completes using the truncated value.

Recovery Modify the GGSREFR file for the REFRESH GROUP that is longer than it should be. Start the full Refresh process again or if all items completed successfully for the Refresh and the Replicat you may send the 9503***<filename><refrg><refrt> to Notify or just WARMBOOT your BASE24 processes. Please validate that the processing of all other steps have been completed before manual intervention. Please call Oracle Support if this warning persists. For more information, go to http://support.oracle.com.

REPLCAT NAME TRUNCATED

Cause The file GGSREFR contains an entry for a Replicat that is greater than the maximum size of a Replicat name. The TACLB24 will truncate the value and continue processing. The macro completes using the truncated value.

Recovery Modify the GGSREFR file for the Replicat name that is longer than it should be. Start the full Refresh process again. Please call Oracle Support if this warning persists. For more information, go to http://support.oracle.com.

REFRESH TYPE TRUNCATED

Cause The file GGSREFR contains an entry for the REFRESH TYPE that is greater than the maximum size of a refresh type. The TACLB24 will truncate the value and continue processing. The macro completes using the truncated value.

Recovery Modify the GGSREFR file for the REFRESH TYPE that is longer than it should be. Start the full Refresh process again or if all items completed successfully for the Refresh and the Replicat you may send the 9503***<filename><refrg><refrt> to Notify or just WARMBOOT your BASE24 processes. Please validate that the processing of all other steps

have been completed before manual intervention. Please call Oracle Support if this warning persists. For more information, go to http://support.oracle.com.

Informational messages

RENAME FOR <ORIGINAL FILE> TO <TARGET FILE> COMPLETED.

The rename for the specified file was successful.

CHGNOTE COMPLETED.

The CHGNOTE process was executed.

NOTIFY MESSAGE QUEUED TO <BASE24 NOTIFY PROCESS> FOR REFRESH <REFRESH GROUP>

The message was sent to the BASE24 Notify process and was delivered successfully.

REFRESH FOR <FILENAME> ACKNOWLEDGED BY ALL PROCESSES.

The message was sent to each BASE24 process contained on the REF-Notifyxx list and was acknowledged successfully.

APPENDIX 1:
Delta Fields

This appendix outlines recommended records and fields that may benefit from delta processing. For delta processing configuration information, see Configuring delta processing in Chapter Two.

Table 1 PBF Fields

Field	Redef	Debit/ Credit	Description
Base Segment			
AVAIL-BAL		DB	Available balance for non-credit accounts.
AVAIL-CR	X	CR	Available credit for credit accounts.
LEDG-BAL		DB	Current account balance for non-credit accounts.
AVAIL-CR	X	CR	Credit limit for credit accounts
AMT-ON-HLD	X	DB	Total amount of non-credit account funds being held.

Field	Redef	Debit/ Credit	Description
CR-BAL	X	CR	Current credit balance for credit accounts.
CASH-OUT-TODAY		DB	Total amount of cash paid out during the current processing day.
CASH-IN-TODAY		DB	Total amount of cash deposited during the current processing day.
OVRDRFT-LMT		DB	Amount of overdraft protection available for non-credit accounts.
POS Segment			
TTL-FLOAT		CR	Balance of credit transactions associated with this account for which the paperwork has not been received.
CUR-FLOAT		CR	Amount of credit used by this account since the last refresh.

Table 2 CAF Fields

Field	Redef	Debit/ Credit	Description
Base Segment			
TTL-WDL-PRD		DB	Total amount of purchases and cash withdrawals made against non-credit accounts.
OFFL-WDL-PRD		DB	Total amount of purchases and cash withdrawals made offline against non-credit accounts.
TTL-CCA-PRD		CR	Total amount of cash advanced against credit accounts.
OFFL-CCA-PRD		CR	Total amount of cash advanced offline against credit accounts.
TTL-WDL-LMT		DB	Maximum amount of purchases and cash withdrawals allowed against non-credit accounts.
OFFL-WDL-LMT		DB	Maximum amount of purchases and cash withdrawals allowed offline against non-credit accounts.
TTL-CCA-LMT		CR	Maximum amount of cash advances allowed against credit accounts.
OFFL-CCA-LMT		CR	Maximum amount of cash advances allowed offline against credit accounts.

Field	Redef	Debit/ Credit	Description
AGGR-LMT		DB/CR	Maximum aggregate amount of cash disbursements allowed against credit and non-credit accounts, plus purchases allowed against non-credit accounts.
OFFL-ACCR-LMT		DB/CR	Maximum aggregate amount of offline cash disbursements allowed against credit and non-credit accounts, plus offline purchases allowed against non-credit accounts.
ATM Segment			
TTL-WDL-PRD		DB	Total amount of cash withdrawals made against non-credit accounts.
OFFL-WDL-PRD		DB	Total amount of cash withdrawals made offline against non-credit accounts.
TTL-CCA-PRD		CR	Total amount of cash advanced against credit accounts.
OFFL-CCA-LMT		CR	Maximum amount of cash advances allowed offline against credit accounts.
DEP-CR-PRD		--	Total amount of deposit credit accumulated during the current usage period.
DEP-CR-LMT		--	Maximum amount of deposit credit single usage accumulation period
NUM-DEP-CR-PRD		--	Number of deposit credits during the current usage accumulation period.

Field	Redef	Debit/ Credit	Description
POS Segment			
TTL-PUR-PRD		CR	Total amount of purchases made against credit accounts.
OFFL-PUR-PRD		CR	Total amount of purchases made offline against credit accounts.
TTL-CCA-PRD		CR	Total amount of cash advanced against credit accounts.
OFFL-CCA-PRD		CR	Total amount of cash advanced offline against credit accounts.
TTL-WDL-PRD		DB	Total amount of purchases and ash withdrawals made against non-credit accounts.
OFFL-WDL-PRD		DB	Total amount of purchases and cash withdrawals made offline against non-credit accounts.
TTL-PUR-LMT		CR	Maximum amount of purchases allowed against credit accounts.
OFFL-PUR-LMT		CR	Maximum amount of purchases allowed offline against credit accounts.
TTL-CCA-LMT		CR	Maximum amount of cash advances allowed against credit accounts.
OFFL-CCA-LMT		CR	Maximum amount of cash advances allowed offline against credit accounts.

Field	Redef	Debit/ Credit	Description
TTL-WDL-LMT		DB	Maximum amount of purchases and cash withdrawals allowed against non-credit accounts.
OFFL-WDL-LMT		DB	Maximum amount of purchases and cash withdrawals allowed offline against non-credit accounts.
TTL-RFND-CR-PRD		CR	Total amount of refund/replenishment credit received during the current usage accumulation period.
OFFL-RFND-CR-PRD		CR	Total amount of refund/replenishment credit received offline during the current usage accumulation period.
TTL-RFND-CR-LMT		CR	Maximum amount of refund/replenishment credits that can be received.
OFFL-RFND-CR-LMT		CR	Maximum amount of refund/replenishment credits that can be received offline.
NUM-RFND-CR-PRD		CR	Number of refund/replenishment credits during the current usage period.

Table 3 UAF Fields

Field	Re-def	Debit/ Credit	Description
Base Segment			

Field	Re-def	Debit/ Credit	Description
TTL-WDL-PRD		DB	Total amount of purchases and cash withdrawals made against non-credit accounts.
OFFL-WDL-PRD		DB	Total amount of purchases and cash withdrawals made offline against non-credit accounts.
TTL-CCA-PRD		CR	Total amount of cash advanced against credit accounts.
OFFL-CCA-PRD		CR	Total amount of cash advanced offline against credit accounts.
ATM Segment			
TTL-WDL-PRD		DB	Total amount of cash withdrawals made against non-credit accounts.
OFFL-WDL-PRD		DB	Total amount of cash withdrawals made offline against non-credit accounts.
TTL-CCA-PRD		CR	Total amount of cash advanced against credit accounts.
OFFL-CCA-LMT		CR	Maximum amount of cash advances allowed offline against credit accounts.

Field	Re-def	Debit/ Credit	Description
POS Segment			
TTL-PUR-PRD		CR	Total amount of purchases made against credit accounts.
OFFL-PUR-PRD		CR	Total amount of purchases made offline against credit accounts.
TTL-CCA-PRD		CR	Total amount of cash advanced against credit accounts.
OFFL-CCA-PRD		CR	Total amount of cash advanced offline against credit accounts.
TTL-WDL-PRD		DB	Total amount of purchases and ash withdrawals made against non-credit accounts.
OFFL-WDL-PRD		DB	Total amount of purchases and cash withdrawals made offline against non-credit accounts.
TTL-WDL-PRD		DB	Total amount of purchases and cash withdrawals made offline against non-credit accounts.
OFFL-WDL-PRD		DB	Total amount of purchases and cash withdrawals made offline against non-credit accounts.
TTL-RFND-CR-PRD		CR	Total amount of refund credits received during the accumulation period.
OFFL-RFND-CR-PRD		CR	Total amount of refund credits received offline during the accumulation period.

Field	Re-def	Debit/ Credit	Description
NUM-RFND-CR-PRD			Number of refund credits received during the accumulation period.
PRE-AUTH Segment			
TTL-WDL-PRD		DB	Total amount of cash withdrawals made against non-credit accounts.
OFFL-WDL-PRD		DB	Total amount of cash withdrawals made offline against non-credit accounts.
TTL-CCA-PRD		CR	Total amount of cash advanced against credit accounts.
OFFL-CCA-PRD		CR	Total amount of cash advanced offline against credit accounts.

APPENDIX 2:
Templates

This appendix depicts layout templates for TLF and PTLF files.

Sample templates

Figure 10 TLF template

```
D24TMPL.TLYYMMDD
ENSCRIBE
TYPE E
FORMAT 1
EXT ( <number of primary extents> PAGES, <number of secondary extents>
PAGES )
REC 4072
BLOCK  4096
MAXEXTENTS 100
BUFFERED
```

Figure 11 PTLF template

```
D24TMPL.POYYMMDD
ENSCRIBE
TYPE E
FORMAT 1
EXT (<number of primary extents> PAGES, <number of secondary extents>
PAGES)
REC 4072
BLOCK  4096
MAXEXTENTS 100
BUFFERED
```

APPENDIX 3:
Dual Site LCONF Records

This appendix illustrates the changes required in the BASE24 configuration to support Oracle GoldenGate for D24 Dual Site.

Assign REMOTE-LCONF

Used by DCT to access remote Pathway in order to communicate with remote Device handler managing remotely connected ATM.

Figure 12 Assign REMOTE-LCONF

```
BASE24-BASE  LOGICAL NET CONFIG FILE  PRO1        04/04/29  14:44  02 OF 04
                             LNCF ASSIGN SCREEN
                    READ BY: ****************
                ASSIGN NAME: REMOTE-LCONF
                LOCATION/ID: <\remote node>.<volume>.PRODCNTL.L1CONF
              TEMPLATE FILE:
 USAGE CODES:
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 COMMENTS:   LCONF FOR THE REMOTE LCONF



 USER FIELD:
 RECORD LAST CHANGED: 03/11/04  15:42   BY USER: 0255 , 00000255   CHANGE
 *********************************** BASE24 ***********************************
  NEW PAGE:        FILE DESTINATION:        NEW LOGICAL NETWORK ID:
 SF2 - SEARCH-FOR-MATCH         F12-HELP
RECORD RETRIEVED FROM <node>.<volume>.PRODCNTL.L1CONF                         0000
```

Assign REMOTE-PMON

Used by DCT to access remote Pathway in order to communicate with remote Device Handler managing remotely connected ATM

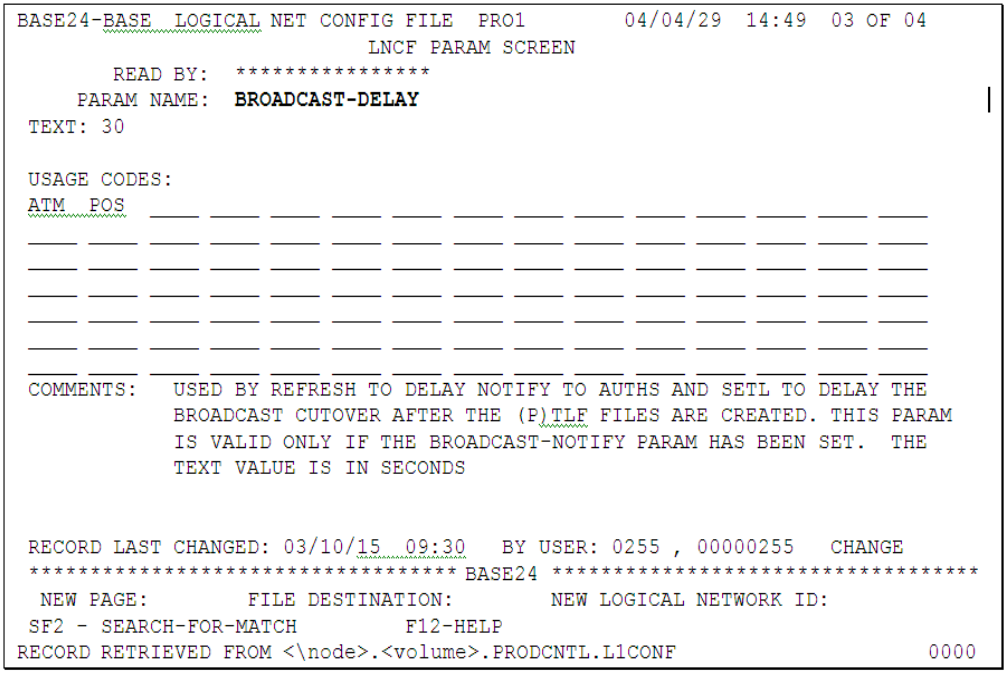
Figure 13 Assign REMOTE-PMON

```
BASE24-BASE  LOGICAL NET CONFIG FILE  PRO1        04/04/29  14:46  02 OF 04
                             LNCF ASSIGN SCREEN
                    READ BY: ****************
                ASSIGN NAME: REMOTE-PMON
                LOCATION/ID: <\remote node>.$PPMN
              TEMPLATE FILE:
 USAGE CODES:
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 COMMENTS:   PATHMON FOR THE REMOTE PATHWAY



 USER FIELD:
 RECORD LAST CHANGED: 03/11/04  15:41   BY USER: 0255 , 00000255   CHANGE
 *********************************** BASE24 ***********************************
  NEW PAGE:        FILE DESTINATION:       NEW LOGICAL NETWORK ID:
 SF2 - SEARCH-FOR-MATCH         F12-HELP
RECORD RETRIEVED FROM <\node>.<volume>.PRODCNTL.L1CONF                     0000
```

Param BROADCAST-DELAY

Used by Settlement to control the delay period after creating (P)TLF and prior to sending notify messages to enable the creation of Oracle GoldenGate copies of the file to complete. Used by Refresh to control delay after sending of notify messages to completion of impacting.

Figure 14 Param BROADCAST-DELAY



Param BROADCAST-NOTIFY

Used by Settlement and Refresh to control broadcast of notify messages.

Figure 15 Param BROADCAST-NOTIFY

```
BASE24-BASE  LOGICAL NET CONFIG FILE  PRO1        04/04/29  14:54  03 OF 04
                              LNCF PARAM SCREEN
       READ BY:  ****************
    PARAM NAME:  BROADCAST-NOTIFY
 TEXT: 2

 USAGE CODES:
 ATM  POS  ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 COMMENTS:   USED FOR BROADCASTING NOTIFY MESSAGES TO SERVICE PROVIDERS.
             OPTION 1: BROADCAST TO ALL KNOWN SERVICE PROVIDERS.
             OPTION 2: BROADCAST TO ALL ACTIVE SERVICE PROVIDERS


 RECORD LAST CHANGED: 03/10/12  20:35   BY USER: 0255 , 00000255   CHANGE
 ********************************** BASE24 **********************************
  NEW PAGE:        FILE DESTINATION:        NEW LOGICAL NETWORK ID:
 SF2 - SEARCH-FOR-MATCH         F12-HELP
RECORD RETRIEVED FROM <\node>.<volume>.PRODCNTL.L1CONF                    0000
```

Param DUAL-SITE-DISPLAY

Used by Server-TLF and Server-PTLF to control identification of remote records on detail display.

Figure 16 Param DUAL-SITE-DISPLAY

```
BASE24-BASE  LOGICAL NET CONFIG FILE  PRO1        04/04/29  14:55  03 OF 04
                          LNCF PARAM SCREEN
       READ BY:  ****************
    PARAM NAME:  DUAL-SITE-DISPLAY
 TEXT: Y

 USAGE CODES:
 ATM
 COMMENTS:   DUAL-SITE TRANSACTIONS CAN BE FLAGGED IF THIS PARAM SET TO 'Y'.
             'N' OR THE NON EXISTENCE OF THIS PARAM SWITCH THE DISPLAY OFF.
             N.B.   YOU MUST SET A SPECIFIC TLF ASSIGN FOR SERVER-TLF


 RECORD LAST CHANGED: 03/12/18  12:27   BY USER: 0255 , 00000255   ADD
 ********************************** BASE24 **********************************
  NEW PAGE:        FILE DESTINATION:        NEW LOGICAL NETWORK ID:
 SF2 - SEARCH-FOR-MATCH         F12-HELP
RECORD RETRIEVED FROM <\node>.<volume>.PRODCNTL.L1CONF                    0000
```

Param DUAL-SITE-MODE

Used by Settlement, Extract, Refresh and DCT to control access to and management of local and remote records.

Figure 17 Param DUAL-SITE-MODE

```
BASE24-BASE  LOGICAL NET CONFIG FILE  PRO1        04/04/29  14:57  03 OF 04
                             LNCF PARAM SCREEN
        READ BY:  ****************
     PARAM NAME:  DUAL-SITE-MODE
 TEXT: L

 USAGE CODES:
 ATM_ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 COMMENTS:   DUAL-SITE TRANSACTIONS CAN BE FLAGGED 'L'OCAL OR 'R'EMOTE
             THIS PARAM CONTROLS SETL/REFR/EXTR AS TO WHICH MODE TO OPERATE
             IN. NB THIS PARAM CAN BE SPECIFIC TO EACH OR AS HERE GENERAL


 RECORD LAST CHANGED: 03/12/22  09:59   BY USER: 0255 , 00000255   CHANGE
 *********************************** BASE24 ***********************************
  NEW PAGE:        FILE DESTINATION:        NEW LOGICAL NETWORK ID:
 SF2 - SEARCH-FOR-MATCH         F12-HELP
RECORD RETRIEVED FROM <\node>.<volume>.PRODCNTL.L1CONF                      0000
```

If Dual Site is configured for a single combined file (that is combine Site A and Site B) for TLF and a combined file for PTLF on each site, no changes are required. The standard POS-PTLF and TLF LCONF assign records are used (all asterisks in the READ BY: field).

Figure 18 Assign POS-PTLF record for the Authorization processes (Local and Combined PTLFs or Combined Only)

```
BASE24-BASE  LOGICAL NET CONFIG FILE  PRO1        04/04/29  14:27  02 OF 04
                          LNCF ASSIGN SCREEN
                     READ BY: ****************
                  ASSIGN NAME: POS-PTLF
                  LOCATION/ID: <\node>.<volume>.PRO1PTLF.POYYMMDD
                TEMPLATE FILE: <\node>.<volume>.PRO1TPLT.POYYMMDD
 USAGE CODES:
 POS  ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 COMMENTS:   POS TRANSACTION LOG FILE


 USER FIELD:
 RECORD LAST CHANGED: 99/07/13  15:09   BY USER: 0000 , 00000000   ADD
 ********************************** BASE24 **********************************
  NEW PAGE:        FILE DESTINATION:        NEW LOGICAL NETWORK ID:
 SF2 - SEARCH-FOR-MATCH         F12-HELP
RECORD RETRIEVED FROM <\node>.<volume>.PRODCNTL.L1CONF
```

Figure 19 Assign TLF record for the Authorization processes (Local and Combined TLFs or Combined Only)

```
BASE24-BASE  LOGICAL NET CONFIG FILE  PRO1        04/04/29  14:47  02 OF 04
                             LNCF ASSIGN SCREEN
                    READ BY: ****************
                ASSIGN NAME: TLF
                LOCATION/ID: <\node>.<volume>.PRO1ATLF.TLYYMMDD
              TEMPLATE FILE: <\node>.<volume>.PRO1TPLT.TLYYMMDD
 USAGE CODES:
 ATM ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 COMMENTS:   TRANSACTION LOG FILE



 USER FIELD:
 RECORD LAST CHANGED: 03/08/23  21:49   BY USER: 0255 , 00000255   CHANGE
 *********************************** BASE24 ***********************************
  NEW PAGE:        FILE DESTINATION:       NEW LOGICAL NETWORK ID:
 SF2 - SEARCH-FOR-MATCH         F12-HELP
RECORD RETRIEVED FROM <\node>.volume>.PRODCNTL.L1CONF                        0000
```

The following screens are used when each site uses a local transaction file for its Authorization processes and a combined file for the other processes and servers.

Figure 20 Assign POS-PTLF record for the Master POS Settlement (Local and Combined PTLFs)

```
BASE24-BASE  LOGICAL NET CONFIG FILE  PRO1        04/04/29  14:27  02 OF 04
                          LNCF ASSIGN SCREEN
                    READ BY: P1A^PSETLM
                ASSIGN NAME: POS-PTLF
                LOCATION/ID: <\node>.<volume>.D24LOGS.POYYMMDD
              TEMPLATE FILE: <\node>.<volume>.PRO1TPLT.POYYMMDD
 USAGE CODES:
 POS  ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 COMMENTS:   POS TRANSACTION LOG FILE



 USER FIELD:
 RECORD LAST CHANGED: 99/07/13  15:09   BY USER: 0000 , 00000000   ADD
 ********************************** BASE24 **********************************
  NEW PAGE:        FILE DESTINATION:        NEW LOGICAL NETWORK ID:
 SF2 - SEARCH-FOR-MATCH         F12-HELP
RECORD RETRIEVED FROM <\node>.<volume>.PRODCNTL.L1CONF
```

Figure 21 Assign POS-PTLF record for the Slave POS Settlement (Local and Combined PTLFs)

```
BASE24-BASE  LOGICAL NET CONFIG FILE  PRO1        04/04/29  14:27  02 OF 04
                          LNCF ASSIGN SCREEN
                   READ BY: P1A^PSETLS
                 ASSIGN NAME: POS-PTLF
                 LOCATION/ID: <\node>.<volume>.D24LOGS.POYYMMDD
               TEMPLATE FILE: <\node>.<volume>.PRO1TPLT.POYYMMDD
 USAGE CODES:
 POS  ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 COMMENTS:   POS TRANSACTION LOG FILE



 USER FIELD:
 RECORD LAST CHANGED: 99/07/13  15:09   BY USER: 0000 , 00000000   ADD
 ********************************** BASE24 **********************************
  NEW PAGE:        FILE DESTINATION:        NEW LOGICAL NETWORK ID:
 SF2 - SEARCH-FOR-MATCH         F12-HELP
RECORD RETRIEVED FROM <\node>.<volume>.PRODCNTL.L1CONF
```

Figure 22 Assign POS-PTLF record for the POS Extract (Local and Combined PTLFs)

```
BASE24-BASE  LOGICAL NET CONFIG FILE  PRO1        04/04/29  14:27  02 OF 04
                          LNCF ASSIGN SCREEN
                   READ BY: P1A^EXTR
                 ASSIGN NAME: POS-PTLF
                 LOCATION/ID: <\node>.<volume>.D24LOGS.POYYMMDD
               TEMPLATE FILE: <\node>.<volume>.PRO1TPLT.POYYMMDD
 USAGE CODES:
 POS  ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 COMMENTS:   POS TRANSACTION LOG FILE



 USER FIELD:
 RECORD LAST CHANGED: 99/07/13  15:09   BY USER: 0000 , 00000000   ADD
 ********************************** BASE24 **********************************
  NEW PAGE:        FILE DESTINATION:        NEW LOGICAL NETWORK ID:
 SF2 - SEARCH-FOR-MATCH         F12-HELP
RECORD RETRIEVED FROM <\node>.<volume>.PRODCNTL.L1CONF
```

Figure 23 Assign POS-PTLF record for the Refresh process (Local and Combined PTLFs)

```
BASE24-BASE  LOGICAL NET CONFIG FILE  PRO1        04/04/29  14:27  02 OF 04
                          LNCF ASSIGN SCREEN
                    READ BY: P1A^REFR
                ASSIGN NAME: POS-PTLF
                LOCATION/ID: <\node>.<volume>.D24LOGS.POYYMMDD
              TEMPLATE FILE: <\node>.<volume>.PRO1TPLT.POYYMMDD
 USAGE CODES:
 POS  ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 COMMENTS:   POS TRANSACTION LOG FILE



 USER FIELD:
 RECORD LAST CHANGED: 99/07/13  15:09   BY USER: 0000 , 00000000   ADD
 ********************************** BASE24 **********************************
  NEW PAGE:        FILE DESTINATION:        NEW LOGICAL NETWORK ID:
 SF2 - SEARCH-FOR-MATCH         F12-HELP
RECORD RETRIEVED FROM <\node>.<volume>.PRODCNTL.L1CONF
```

Figure 24 Assign POS-PTLF record for the pos Server-PTLF process (Local and Combined PTLFs)

```
BASE24-BASE  LOGICAL NET CONFIG FILE  PRO1        04/04/29  14:27  02 OF 04
                          LNCF ASSIGN SCREEN
                   READ BY: SERVER-PTLF
                 ASSIGN NAME: POS-PTLF
                 LOCATION/ID: <\node>.<volume>.D24LOGS.POYYMMDD
               TEMPLATE FILE: <\node>.<volume>.PRO1TPLT.POYYMMDD
 USAGE CODES:
 POS_____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 COMMENTS:   POS TRANSACTION LOG FILE



 USER FIELD:
 RECORD LAST CHANGED: 99/07/13  15:09   BY USER: 0000 , 00000000   ADD
 ********************************** BASE24 **********************************
  NEW PAGE:        FILE DESTINATION:        NEW LOGICAL NETWORK ID:
 SF2 - SEARCH-FOR-MATCH         F12-HELP
RECORD RETRIEVED FROM <\node>.<volume>.PRODCNTL.L1CONF
```

Figure 25 Assign TLF record for the ATM Settlement process (Local and Combined TLFs)

```
BASE24-BASE  LOGICAL NET CONFIG FILE  PRO1        04/04/29  14:47  02 OF 04
                          LNCF ASSIGN SCREEN
                    READ BY: P1A^SETL
                ASSIGN NAME: TLF
                LOCATION/ID: <\node>.<volume>D24LOGS.TLYYMMDD
              TEMPLATE FILE: <\node>.<volume>.PRO1TPLT.TLYYMMDD
 USAGE CODES:
 ATM
 COMMENTS:   TRANSACTION LOG FILE


 USER FIELD:
 RECORD LAST CHANGED: 03/08/23  21:49   BY USER: 0255 , 00000255   CHANGE
 ********************************* BASE24 *********************************
  NEW PAGE:        FILE DESTINATION:        NEW LOGICAL NETWORK ID:
 SF2 - SEARCH-FOR-MATCH         F12-HELP
RECORD RETRIEVED FROM <\node>.volume>.PRODCNTL.L1CONF                    0000
```

Figure 26 Assign TLF record for the Extract process (Local and Combined TLFs)

```
BASE24-BASE  LOGICAL NET CONFIG FILE  PRO1        04/04/29  14:47  02 OF 04
                          LNCF ASSIGN SCREEN
                    READ BY: P1A^EXTR
                ASSIGN NAME: TLF
                LOCATION/ID: <\node>.<volume>.D24LOGS.TLYYMMDD
              TEMPLATE FILE: <\node>.<volume>.PRO1TPLT.TLYYMMDD
 USAGE CODES:
 ATM
 COMMENTS:   TRANSACTION LOG FILE

 USER FIELD:
 RECORD LAST CHANGED: 03/08/23  21:49   BY USER: 0255 , 00000255   CHANGE
 ********************************** BASE24 ***********************************
  NEW PAGE:        FILE DESTINATION:        NEW LOGICAL NETWORK ID:
 SF2 - SEARCH-FOR-MATCH         F12-HELP
RECORD RETRIEVED FROM <\node>.volume>.PRODCNTL.L1CONF                    0000
```

Figure 27 Assign TLF record for the ATM Refresh process (Local and Combined TLFs)

```
BASE24-BASE  LOGICAL NET CONFIG FILE  PRO1        04/04/29  14:47  02 OF 04
                             LNCF ASSIGN SCREEN
                   READ BY: P1A^REFR
               ASSIGN NAME: TLF
               LOCATION/ID: <\node>.<volume>D24LOGS.TLYYMMDD
             TEMPLATE FILE: <\node>.<volume>.PRO1TPLT.TLYYMMDD
 USAGE CODES:
 ATM_ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 COMMENTS:   TRANSACTION LOG FILE



 USER FIELD:
 RECORD LAST CHANGED: 03/08/23  21:49   BY USER: 0255 , 00000255   CHANGE
 *********************************** BASE24 ***********************************
  NEW PAGE:        FILE DESTINATION:        NEW LOGICAL NETWORK ID:
 SF2 - SEARCH-FOR-MATCH         F12-HELP
RECORD RETRIEVED FROM <\node>.volume>.PRODCNTL.L1CONF                     0000
```

Figure 28 Assign TLF record for the ATM Server-TLF process (Local and Combined TLFs)

```
BASE24-BASE  LOGICAL NET CONFIG FILE  PRO1        04/04/29  14:47  02 OF 04
                            LNCF ASSIGN SCREEN
                   READ BY: SERVER-TLF
               ASSIGN NAME: TLF
               LOCATION/ID: <\node>.<volume>D24LOGS.TLYYMMDD
             TEMPLATE FILE: <\node>.<volume>.PRO1TPLT.TLYYMMDD
 USAGE CODES:
 ATM  ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 COMMENTS:   TRANSACTION LOG FILE



 USER FIELD:
 RECORD LAST CHANGED: 03/08/23  21:49   BY USER: 0255 , 00000255   CHANGE
 *********************************** BASE24 ***********************************
  NEW PAGE:         FILE DESTINATION:        NEW LOGICAL NETWORK ID:
 SF2 - SEARCH-FOR-MATCH         F12-HELP
RECORD RETRIEVED FROM <\node>.volume>.PRODCNTL.L1CONF                        0000
```

APPENDIX 4:
Oracle GoldenGate for D24 Utilities

This appendix explains utility programs that can be used with Oracle GoldenGate for D24 Dual Site. These utilities include:

Contents

FILEPRG file purge macro

A dual site may be configured with both local files and combined PLF and TPLF files on each site. The combined transaction log files are created by BASE24 Settlement and used by Settlement, Super Extract, Refresh, and the TLF/PTLF Pathway server. The local transaction files are created by Oracle GoldenGate and are used only for authorization. They do not contain alternate key files, so the overall response time for authorization is reduced.

Older combined files are purged by Settlement during its normal processing. The FILEPRG Macro can be used to purge local TLF/PTLF files created by Oracle GoldenGate.

New elements include the FILEPRG macro and the FILEPSEG segment for optional EMS logging. The FILEPSEG segment file attaches to the FILPRG macro to provide processing needed to log messages to EMS. There are optional variables that can be attached before running the macro.

FILEPRG Macro

The FILEPRG macro selects files based on an input file name that may include wildcards. If the last modification date of a selected file is equal or greater than the current date adjusted for the number of days files are to be retained, it is purged.

Syntax `RUN FILEPRG <days retention> <filename>`

Option	Description
`<days retention>`	The number of days that files are to be retained. If the last modification date of a selected file is equal or greater than the current date adjusted for the the <days retention>, it is purged.
`<filename>`	The fully qualified name of the file to purge if the retention period has been exceeded. Wildcards can be used.

Example The following example purges all of the files in the $DATA01.YYYY subvolume because the retention days are zero.

```
RUN FILEPRG 0 $DATA01.YYYY.*
```

Example The next example purges all files in the $DATA01.YYYY subvolume that are 10 days or older based on the last modification date.

```
RUN FILEPRG 10 $DATA01.YYYY.*
```

Optional variables

The following optional variables can be set before the macro is executed to change or enhance the output options. If the value entered for the variable is not valid based on the criteria outlined below, or if nothing is entered, the default will be used.

Variable	Description
`:spooler <process/filename>`	A valid spooler location to use as the destination for all application messages.
`:ems <process>`	A valid EMS collector <process> to receive critical output. The default is $0.
`:corrective <process/filename>`	A valid file or process name to receive output if there is an error on the file purge. The purge command and name of the file are written to the output. The default is to create a file named CO<yymmdd> using the last two digits of the current year and a two digit month and day.
`:openinfo`	Triggers writing of error detail when a file open fails.
`:spooler^only`	Output is directed only to the spooler location <:spooler>. Application messages are not logged to the terminal or a process. The default is to log application messages to all devices specified.

Variable	Description
`:bydate <YYMMDD>`	This option works only when the file name is in the format XXYYMMDD. It triggers processing that uses the date <YYMMDD> of the file name when testing against the days to retain files. The default is to purge files based on the modification date of the file
:dayoweek	A valid day of the week number: ◆ 0 – Sunday ◆ 1 – Monday ◆ 2 – Tuesday ◆ 3 – Wednesday ◆ 4 – Thursday ◆ 5 – Friday ◆ 6 – Saturday This variable causes the macro to interrogate the YYMMDD of the file name and only select those that fall on the indicated day of the week.

Alternative methods for running FILEPRG

NonStop TACL OBEY files can be created to run the file purge macro. These can contain multiple RUN FILEPRG statements.

The following example runs FILEPRG using the OBEY file PRGOBEY. It sets the spooler location to $s.#testing and writes open errors to $DATA01.PRO1TACL.CO060307. Because the :EMS variable has no value, it will default to $0. All variables that are not set will assume their default value.

```
1> #push :spooler :ems :corrective
2> #set :spooler $s.#testing
3> #set :corrective $data01.pro1tacl.CO060307
4> RUN FILEPRG PRGOBEY
```

The macro can also be run from the shared segment as shown below. This might be used with NETBATCH, for example.

```
1> attachseg shared filepseg :cln
2> #push #uselist
3> #set #uselist [#uselist] :cln
4> FILEPRG PRGOBEY
5> #unframe
```

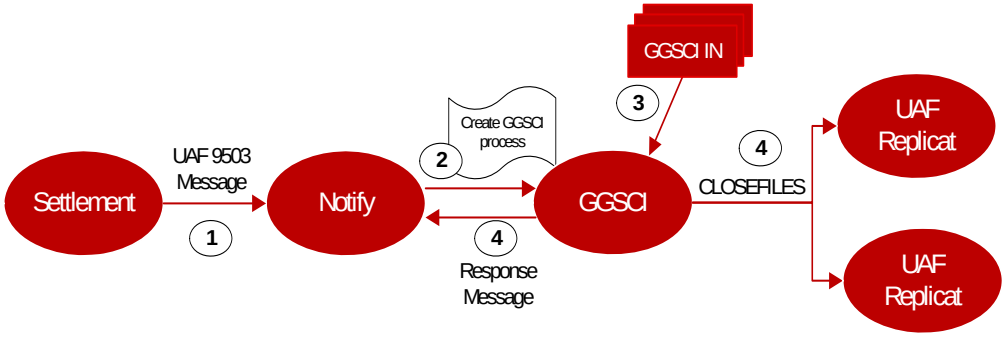
GGSCIIN file rename notify

A dual site may be configured to run the Settlement on both nodes simultaneously. In this environment Logger is not set up to capture the operations of Settlement, so when Settlement is used to rename the old UAF file and create a new one, the close and reopen of the files is not triggered.

Setting up to use the GGSCIIN obey file ensures that the local Replicat processes are notified when the Settlement process runs locally in this environment. This obey file alerts Replicat to close its open files and begin using the new UAF file that was created during Settlement.

Overview of bi-directional flow using GGSCIIN

Both sites should be performing the processing illustrated in the diagram and steps outlined below it. The UAF cutover processes on the two sites are independent of each other.



1. Settlement cuts over a UAF file. It sends a 9503 message requesting close and reopen of the UAF to all of the processes on the notify list. The Oracle GoldenGate Notify process is included in the list.
2. The Notify process receives the 9503 message and creates a GGSCI process and sends it the location of the GGSCIIN file.
3. GGSCI reads the GGSCIIN file and executes its commands.
4. The CLOSEFILES command is sent to all the UAF Replicats.

5. The Notify process receives the response message from GGSCI. If there is an error this will be sent to the NonStop Event Message System (EMS).

Note All GGSCI output is logged to the GGSCI-OUT-FILE or the PRI_COLL that is specified.

BASE24 Institution file setup

The Persistent UAF field on the Base Institution File window should be set to *"Yes, with SETL support"* as shown in the following illustrations.

```
BASE24-BASE  INSTITUTION FILE        PRO1  BNK1  06/09/11  08:19  03 OF 42

            FIID: BNK1       FI-NAME: TEST BANK 1- ABC



                PROCESSING CONTROL PARAMETERS

           FIELD CUTOVER: 2    (PURGE UAF, CLEAR CAF AT MIDNIGHT)
         PERSISTENT UAF: 1    (YES, WITH SETL SUPPORT)
       HOST ADJ. PROCESSING: 00   (MANUAL ADJUSTMENTS)
         CURRENCY CODE: 840  (USD)




 RECORD LAST CHANGED: 05/11/11  11:28   BY USER: 0255 , 00000255   CHANGE
********************************** BASE24 ***********************************
 NEW PAGE:       FILE DESTINATION:       NEW LOGICAL NETWORK ID:
                F12-HELP
DATA O.K.
```

```
BASE24-BASE  INSTITUTION FILE        PRO1  BNK1  06/09/11  08:19  03 OF 42

              FIID: BNK1       FI-NAME: TEST BANK 1- ABC




                   PROCESSING CONTROL PARAMETERS

              FIELD CUTOVER: 0    (NO UAF PURGE)
             PERSISTENT UAF: 1    (YES, WITH SETL SUPPORT)
          HOST ADJ. PROCESSING: 00   (MANUAL ADJUSTMENTS)
             CURRENCY CODE: 840  (USD)




 RECORD LAST CHANGED: 05/11/11  11:28   BY USER: 0255 , 00000255   CHANGE
********************************** BASE24 **********************************
 NEW PAGE:       FILE DESTINATION:       NEW LOGICAL NETWORK ID:
                  F12-HELP
DATA O.K.
```

BASE24 LCONF setup

The following assignments should be made within the BASE24 LCONF setup for the bi-directional UAF processing.

Assign LCONF for GGSCI records

1. GGSCI record

Assign the GGSCI record for the Notify process (UAF bi-directional and Settlement for RENAMES only.)

```
BASE24-BASE LOGICAL NET CONFIG FILE PRO1 04/04/19 05:11 02 OF 04
                           LNCF ASSIGN SCREEN
                     READ BY: ****************
                  ASSIGN NAME: GGSCI
                  LOCATION/ID: <\system>.<GGS vol>.<GGS subvol>.GGSCI
                TEMPLATE FILE:
USAGE CODES:
BASE ATM POS ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
COMMENTS: LOCATION OF THE GOLDENGATE GGSCI OBJECT PROGRAM. TO BE USED FOR
          ALL REPLICATS TO CLOSE THEIR FILES AFTER UAF CUTOVER
USER FIELD:
RECORD LAST CHANGED: 04/04/05 06:46 BY USER: 0255 , 00000255 CHANGE
********************************* BASE24 *********************************
   NEW PAGE:       FILE DESTINATION:    NEW LOGICAL NETWORK ID:
SF2 - SEARCH-FOR-MATCH F12-HELP
RECORD RETRIEVED FROM <\node>.<volume>.DVLPDATA.L1CONF                    0000
```

2. GGSCI-IN-FILE record

Assign the GGSCI-IN-FILE record for the Notify process (UAF bi-directional and Settlement for RENAMES only.)

```
BASE24-BASE LOGICAL NET CONFIG FILE PRO1 04/04/19 05:11 02 OF 04
                            LNCF ASSIGN SCREEN
                     READ BY: ****************
                  ASSIGN NAME: GGSCI-IN-FILE
                  LOCATION/ID: <\system>.<GGS vol>.<GGS subvol>.GGSCIIN
                TEMPLATE FILE:
USAGE CODES:
BASE ATM POS ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
COMMENTS: LOCATION OF THE GOLDENGATE GGSCI INPUT EDIT OBEYFILE. TO BE USED FOR
          ALL REPLICATS TO CLOSE THEIR FILES AFTER UAF CUTOVER.
          EX: SEND REPLICAT REPD24* CLOSEFILES
USER FIELD:
RECORD LAST CHANGED: 04/04/05 06:46 BY USER: 0255 , 00000255 CHANGE
********************************** BASE24 **********************************
   NEW PAGE:       FILE DESTINATION:    NEW LOGICAL NETWORK ID:
SF2 - SEARCH-FOR-MATCH F12-HELP
RECORD RETRIEVED FROM <\node>.<volume>.DVLPDATA.L1CONF                    0000
```

3. GGSCI out file record

Assign the GGSCI-OUT-FILE record that is optional for all output and logging for the Notify process (UAF bi-directional and Settlement for RENAMES only.)

```
BASE24-BASE LOGICAL NET CONFIG FILE PRO1 04/04/19 05:11 02 OF 04
                            LNCF ASSIGN SCREEN
                       READ BY: ****************
                   ASSIGN NAME: GGSCI-OUT-FILE
                   LOCATION/ID: <\system>.$0
                  TEMPLATE FILE:
USAGE CODES:
BASE ATM POS ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
COMMENTS: LOCATION OF THE GOLDENGATE GGSCI OUTPUT. TO BE USED TYPICALLY FOR EMS
          TO LOG ALL OUTPUT RESULTS CLOSING THEIR FILES AFTER UAF CUTOVER.
          DEFAULTS: PRI-COLL or $0
USER FIELD:
RECORD LAST CHANGED: 04/04/05 06:46 BY USER: 0255 , 00000255 CHANGE
********************************** BASE24 **********************************
   NEW PAGE:       FILE DESTINATION:    NEW LOGICAL NETWORK ID:
SF2 - SEARCH-FOR-MATCH F12-HELP
RECORD RETRIEVED FROM <\node>.<volume>.DVLPDATA.L1CONF                    0000
```

Assign the LCONF Notify process

Assign Settlement Notify

Assign the POS-SETL-NOTIFY-100 record that is used by Settlement to send the Notify 9503 message in the broadcast of Notify messages (UAF bi-directional and Settlement for RENAMES only.)

```
BASE24-BASE  LOGICAL NET CONFIG FILE  PRO1        04/04/29  14:54  03 OF 04
                          LNCF PARAM SCREEN
        READ BY:  ****************
     PARAM NAME:  BROADCAST-NOTIFY
 TEXT: 2

 USAGE CODES:
 ATM  POS  ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 COMMENTS:   USED FOR BROADCASTING NOTIFY MESSAGES TO SERVICE PROVIDERS.
             OPTION 1: BROADCAST TO ALL KNOWN SERVICE PROVIDERS.
             OPTION 2: BROADCAST TO ALL ACTIVE SERVICE PROVIDERS


 RECORD LAST CHANGED: 03/10/12  20:35   BY USER: 0255 , 00000255   CHANGE
 ********************************** BASE24 ***********************************
  NEW PAGE:        FILE DESTINATION:        NEW LOGICAL NETWORK ID:
 SF2 - SEARCH-FOR-MATCH         F12-HELP
RECORD RETRIEVED FROM <\node>.<volume>.PRODCNTL.L1CONF                    0000
```

Assign Settlement Midnight Notify

If the optional midnight cutover is used, assign the POS-SETL-MIDNIGHT-NOTIFY-100 record that is used by Settlement to send the Notify 9503 message in the broadcast of Notify messages. UAF bi-directional and Settlement are used for RENAMES only.

```
BASE24-BASE  LOGICAL NET CONFIG FILE  PR01        04/04/29  14:55  03 OF 04
                          LNCF PARAM SCREEN
        READ BY:  ****************
     PARAM NAME:  POS-SETL-MIDNIGHT-NOTIFY-100
           TEXT:  P1A^NOTIFY

 USAGE CODES:
 ATM  POS  ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ ____
 COMMENTS:   ADD THE NOTIFY PROCESS TO THE MIDNIGHT SETL LIST. TO BE USED FOR
             NOTIFYING ALL REPLICATS TO CLOSE THEIR FILES AFTER UAF CUTOVER
             THIS WILL CAUSE ALL REPLICATS TO OPEN THE NEW UAF FILE.


 RECORD LAST CHANGED: 03/12/18  12:27   BY USER: 0255 , 00000255   ADD
 ********************************** BASE24 ***********************************
  NEW PAGE:        FILE DESTINATION:        NEW LOGICAL NETWORK ID:
 SF2 - SEARCH-FOR-MATCH         F12-HELP
 RECORD RETRIEVED FROM <\node>.<volume>.PRODCNTL.L1CONF                    0000
```

Modify the GGSCIIN obey file

For bi-directional UAF processing, both sites must have the edit obey file GGSCIIN. This is used by the Notify process on each site. GGSCIIN may need to be changed as follows to match your local sites.

1. Check the local LCONF assignment for the <volume>.<subvolume> where the file is located and then edit the file.

   ```
   TEDIT <volume>.<subvolume>.GGSCIIN
   ```

2. Change the following statement to the Replicat naming convention that is used on your site.

```
SEND REPLCIAT RPD24* CLOSEFILES
```