

CREATING A NON-MANAGED STANDBY DATABASE

This document will provide a basic step-by-step instructions on how to create a *Non-Managed Standby Database on Oracle 8i and Windows*.

You can set up a standby database in several different ways, depending on the method for example:

Oracle's managed standby environment allows the primary database to automatically archive redo logs to the standby database site as long as the standby instance is started.

Oracle's non-managed standby environment, you must continually and manually transfer and apply archived redo logs to the standby database to keep it synchronized with the primary database.

Even if you setup remote, automatic archiving, there may be occasions where manual shipment of archive logs is necessary.

If you are planning to open the standby database in read only mode, I recommend that you create locally managed temporary tablespaces with tempfiles. If you do not, disk based sorts will be prohibited since you cannot write to data files once the database is in "read only" mode.

The following table explains the possible configurations depending on the environment that you choose, but please keep in mind that my document talks about *Non-Managed Standby Databases*.

Environment	Method of Transfer	Standby Database Modes	Network requirements
Managed	Automatic or manual if necessary	Managed Recovery Manual Recovery Read-Only	Net8
Non-Managed	Manual Only	Manual Recovery Read-Only	None

For more information, see the Standby Database Concepts and Administration Book from Oracle.

This is a basic step-by-step instructions document that does not get into all details of an Oracle Standby databases

1) Create OFA Directory Structure on the Standby Server

```
E:\>md oracle
E:\>cd oracle

E:\oracle>md oradata
E:\oracle>cd oradata

E:\oracle\oradata>md dmprod

F:\>md oracle
F:\>cd oracle

F:\oracle>md oraadmin
F:\oracle>cd oraadmin

F:\oracle\oraadmin>md dmprod
F:\oracle\oraadmin>cd dmprod

F:\oracle\oraadmin\dmprod>md udump
F:\oracle\oraadmin\dmprod>md create
F:\oracle\oraadmin\dmprod>md pfile
F:\oracle\oraadmin\dmprod>md bdump
```

2) Install the Oracle Software:

Install Oracle8i to the following location: E:\oracle\orcl817

3) Ensure the Primary Database is in ARCHIVELOG Mode:

```
C:\>sqlplus /nolog
```

```
SQL>connect as sysdba
SQL> archive log list
```

```
Database log mode           Archive Mode
Automatic archival         Enabled
Archive destination         G:\Archive\DMPROD
Oldest online log sequence  x
Next log sequence to archive y
Current log sequence        y
```

4) Create a full Backup (coldbackup) of the Primary Database:

Create a backup of all datafiles and online redo logs using an OS command or utility.
A backup of the online redo logs is necessary to facilitate switchover.

From the Primary Database Server:

MAP a drive to the STANNDBY Database Server:

```
C:\>Net Use Z: \\PHLORCL5\E$
```

Shutdown the Database:

```
C:\>sqlplus /nolog
```

```
SQL>connect / as sysdba  
SQL>shutdown immediate  
SQL>exit
```

Copy the files to the Standby Host: (From the Primary Database Server:)

```
C:\>XCOPY F:\ORACLE\ORADATA\DMPRO\*. * Z:\ORACLE\ORADATA\DMPRO /D  
C:\>XCOPY G:\ORACLE\ORADATA\DMPRO\*. * Z:\ORACLE\ORADATA\DMPRO /D  
C:\>XCOPY I:\ORACLE\ORADATA\DMPRO\*. * Z:\ORACLE\ORADATA\DMPRO /D
```

Once complete startup the Primary/Production instance:

```
C:\>sqlplus /nolog
```

```
SQL>connect / as sysdba  
SQL> STARTUP PFILE=F:\Oracle\OraAdmin\DMPROD\PFFile\initDMPROD.ora  
SQL>exit
```

5) From the STANDBY DATABASE delete all control files:

```
E:\ ORACLE\ORADATA\DMPRO >DEL *.CTL
```

6) Connect to your Primary Database and create the Stanby Controlfile:

```
C:\>sqlplus /nolog
```

```
SQL>connect / as sysdba  
SQL> alter database create standby controlfile as 'E:\TEMP\stbyprod.ctl';  
SQL>exit
```

7) Transfer the Stanby Controlfile to the Standby Host: (do not edit this file!!)

```
C:\>XCOPY E:\TEMP\stbyprod.ctl Z:\ORACLE\ORADATA\DMPRO /D
```

8) Copy the following files from the Primary Database Server to the Standby Database Server:

From the Primary Database Server map a drive to the STANNDBY Database Server:

```
C:>Net Use X: \\PHLORCL5\F$
```

```
C:>XCOPY F:\oracle\oraadmin\dmprod\pfile\initdmprod.ora X:\oracle\oraadmin\dmprod\pfile /D
C:>XCOPY E:\oracle\orcl817\Network\Admin\tnsnames.ora X:\oracle\orcl817\Network\Admin /D
C:>XCOPY E:\oracle\orcl817\Network\Admin\sqlnet.ora X:\oracle\orcl817\Network\Admin /D
C:>XCOPY E:\oracle\orcl817\Network\Admin\listener.ora X:\oracle\orcl817\Network\Admin /D
```

At this point we have all we need to create the STANDBY Database.

Please, keep in mind that the Standby Database Server has one RAID5 Drive E and one RAID1 Drive F, so we will have to do some renaming of the files.

If the standby has the same directory structure as the primary database then we do not have to do any conversion or renaming of the files.

Our Standby Database has a different directory structure than the Primary Database, so we must rename the files in the Standby Database

This can be done using the `db_file_name_convert` and `log_file_name_convert` INIT.ORA-parameters or by manually using the ALTER DATABASE statements.

In our case, we will use both options.

9) Configure the INIT.ORA file:

On the Primary Database we do not have to do anything.

On the Standby Database we have to do the following:

9.1. Remove all entries for the Control Files

9.2. Make sure that UDUMP, BDUMP, PFile are pointing to the correct PATH

```
F:\oracle\oraadmin\dmprod\bdump
```

```
F:\oracle\oraadmin\dmprod\udump
```

```
F:\oracle\oraadmin\dmprod\pfile
```

9.3. Check entries for Archiving:

Primary INIT.ORA:

```
log_archive_start=true
```

```
log_archive_dest=G:\Archive\DMPROD
```

```
log_archive_format=arch%s.arc
```

Standby INIT.ORA:

```
log_archive_start=true
log_archive_dest=E:\Archive\DMPROD
log_archive_format=arch%s.arc (MUST be the same as on Primary !!)
```

9.4 Add the entry for the Control File

```
control_files=E:\oracle\ORADATA\DMPROD\STBYPROD.CTL
```

9.5 Add the entry for the renaming of the files:

```
#convert ALL data files from G location to E Location
db_file_name_convert="G:\ORACLE\ORADATA\DMPROD", "E:\ORACLE\ORADATA\DMPROD"
#
#convert ALL log files from G location to E Location
log_file_name_convert="G:\ORACLE\ORADATA\DMPROD", "E:\ORACLE\ORADATA\DMPROD"
```

10) Configure Networking Components:

TNSNAMES.ORA File Configuration:

On the Primary Database we do not have to do anything.

TNSNAMES.ORA (on Primary Host):

```
DMPROD.scirex.com =
(DESCRIPTION =
(SOURCE_ROUTE = OFF)
(ADDRESS_LIST =
(AADDRESS = (PROTOCOL = TCP)(HOST =PHORCL6)(PORT = 1521))
)
(CONNECT_DATA=(SERVICE_NAME = DMPROD))
)
```

On the Standby Database: make sure you update the Host Name

TNSNAMES.ORA (on Standby Host):

```
DMPROD.scirex.com =
(DESCRIPTION =
(SOURCE_ROUTE = OFF)
(ADDRESS_LIST =
(AADDRESS = (PROTOCOL = TCP)(HOST =PHLORCL5)(PORT = 1521))
)
(CONNECT_DATA=(SERVICE_NAME = DMPROD))
)
```

LISTENER.ORA File Configuration:

On the Primary Database we do not have to do anything.

LISTENER.ORA (on Primary Host):

```
LISTENER =
  (DESCRIPTION =
    (ADDRESS = (PROTOCOL = TCP)(HOST = PHORCL6)(PORT = 1521))
  )

SID_LIST_LISTENER =
  (SID_LIST =
    (SID_DESC =
      (GLOBAL_DBNAME = DMPROD)
      (ORACLE_HOME = e:\oracle\orcl817)
      (SID_NAME = DMPROD)
    )
  )
)
```

On the Standby Database: make sure you update the Host Name

LISTENER.ORA (on Standby Host):

```
LISTENER =
  (DESCRIPTION =
    (ADDRESS = (PROTOCOL = TCP)(HOST = PHLORCL5)(PORT = 1521))
  )

SID_LIST_LISTENER =
  (SID_LIST =
    (SID_DESC =
      (GLOBAL_DBNAME = DMPROD)
      (ORACLE_HOME = e:\oracle\orcl817)
      (SID_NAME = DMPROD)
    )
  )
)
```

11) WINDOWS NT/2000 only: Create a Windows Service for the new Standby Database
Before you startup the Standby instance, you have to

create and start a Windows Service for this Standby Database. You can create this
Service using the ORADIM-utility:

```
C:\>ORADIM -NEW -SID DMPROD -INTPWD my_password -STARTMODE MANUAL -PFILE
F:\Oracle\OraAdmin\DMPROD\pfile\initDMPROD.ora
```

12) Start the Standby Instance and mount the Standby Database:

```
C:\>set oracle_sid=DMPROD
C:\>net start "OracleServiceDMPROD"
```

```
C:\>sqlplus /nolog
```

```
SQL>connect / as sysdba
SQL>STARTUP NOMOUNT PFILE=F:\Oracle\OraAdmin\DMPROD\PFfile\initDMPROD.ora
SQL>alter database mount standby database;
```

13) Adjust Filenames:

```
SQL>spool f:\temp\ren_files.log
```

```
SQL>ALTER DATABASE RENAME FILE 'I:\ORACLE\ORADATA\DMPROD\EDMCLIN01.DBF'
TO 'E:\ORACLE\ORADATA\DMPROD\EDMCLIN01.DBF';
```

```
SQL>ALTER DATABASE RENAME FILE 'I:\ORACLE\ORADATA\DMPROD\EDMCLIN02.DBF'
TO 'E:\ORACLE\ORADATA\DMPROD\EDMCLIN02.DBF';
```

```
SQL>ALTER DATABASE RENAME FILE 'I:\ORACLE\ORADATA\DMPROD\EDMIDX01.DBF'
TO 'E:\ORACLE\ORADATA\DMPROD\EDMIDX01.DBF';
```

```
SQL>ALTER DATABASE RENAME FILE 'I:\ORACLE\ORADATA\DMPROD\EDMIDX02.DBF'
TO 'E:\ORACLE\ORADATA\DMPROD\EDMIDX02.DBF';
```

```
SQL>ALTER DATABASE RENAME FILE 'I:\ORACLE\ORADATA\DMPROD\RBS01.DBF' TO
'E:\ORACLE\ORADATA\DMPROD\RBS01.DBF';
```

```
SQL>ALTER DATABASE RENAME FILE 'I:\ORACLE\ORADATA\DMPROD\RBS12.DBF' TO
'E:\ORACLE\ORADATA\DMPROD\RBS12.DBF';
```

```
SQL>ALTER DATABASE RENAME FILE 'I:\ORACLE\ORADATA\DMPROD\USER01.DBF' TO
'E:\ORACLE\ORADATA\DMPROD\USER01.DBF';
```

```
SQL>ALTER DATABASE RENAME FILE 'F:\ORACLE\ORADATA\DMPROD\LOG1A.ORA'
TO 'E:\ORACLE\ORADATA\DMPROD\LOG1A.ORA';
```

```
SQL>ALTER DATABASE RENAME FILE 'F:\ORACLE\ORADATA\DMPROD\LOG2B.ORA'
TO 'E:\ORACLE\ORADATA\DMPROD\LOG2B.ORA';
```

```
SQL>ALTER DATABASE RENAME FILE 'F:\ORACLE\ORADATA\DMPROD\LOG3A.ORA'
TO 'E:\ORACLE\ORADATA\DMPROD\LOG3A.ORA';
```

```
SQL>ALTER DATABASE RENAME FILE 'F:\ORACLE\ORADATA\DMPROD\LOG4B.ORA'
TO 'E:\ORACLE\ORADATA\DMPROD\LOG4B.ORA';
```

```
SQL>spool off
```

14) Start Listener:

Perform a LSNRCTL STOP and LSNRCTL START on Standby Site to make the Changes take effect.

15) Bounce Primary Database for Change of INIT.ORA-Parameters to take effect.

16) Keep Standby database Current:

To keep the standby current, manually copy archived redo logs as they are generated on the primary, then apply them to the standby.

(This can be accomplished best by a batch job).

17) Apply any logs already archived to the standby host:

```
C:\>set oracle_sid=DMPROD
C:\>net start "OracleServiceDMPROD"
```

```
C:\>sqlplus /nolog
```

```
SQL>connect / as sysdba
```

```
SQL>spool F:\temp\startDMPROD.log
```

```
SQL>STARTUP NOMOUNT PFILE=F:\Oracle\OraAdmin\DMPROD\PFile\initDMPROD.ora
```

```
SQL>ALTER DATABASE MOUNT STANDBY DATABASE;
```

```
SQL>RECOVER STANDBY DATABASE;
```

```
ORA-00279: change 277355 generated at ....
```

```
ORA-00289: suggestion : ....
```

```
ORA-00280: change 277355 ....
```

```
Specify log: {<RET>=suggested | filename | AUTO | CANCEL }
```

When prompted, type AUTO. All archived logs will be applied. As soon as Oracle fails to find a log, the recovery session will be terminated, and the user will be returned to the SVRMGR prompt:

```
ORA-00308: cannot open archived log ....
```

```
ORA-27041: unable to open file
```

```
OSD-04002: unable to open file
```

```
OS Error: (OS 2) The system cannot find the file specified
```

```
SQL>shutdown immediate
```

```
SQL>exit
```

18) At this stage, the standby database is ready