CONFIGURATION

Database servers

Oracle installation

<Version> (ex. Oracle 10g ver. 10.2.0.1.0 32bit)
Database Character Set: AL32UTF8
NLS: UTF8
Language: US English

<Hostname production server>
SID: vizrtdb
Alias: vizrtdb1
Initial role: **Production**

<Hostname standby server>
SID: vizrtdb
Alias: vizrtdb2
Initial role: **Standby**

Global Service name: vizrtdb

Location of Important files (both servers)

C:\scripts (administrative scripts)

C:\Oracle\product\10.2.0\db-1 (Oracle Home)
C:\Oracle\product\10.2.0\db-1\NETWORK\ADMIN (tnsnames.ora, listener.ora & sqlnet.ora)
C:\Oracle\product\10.2.0\admin\VIZRTDB\bdump\Alert (Alert log)
C:\Oracle\product\10.2.0\admin\VIZRTDB (Dump files)
C:\Oracle\product\10.2.0\db-1\flash_recover_area (online archive logs)
C:\Scripts\oracle\logs (recover log file location)

D:\Oracle\Archivelogs (archivelog files)
D:\Oracle\Backups (backup files)
D:\Oracle\Oradata\VIZRTDB (Control, Redo, Data files)

Network

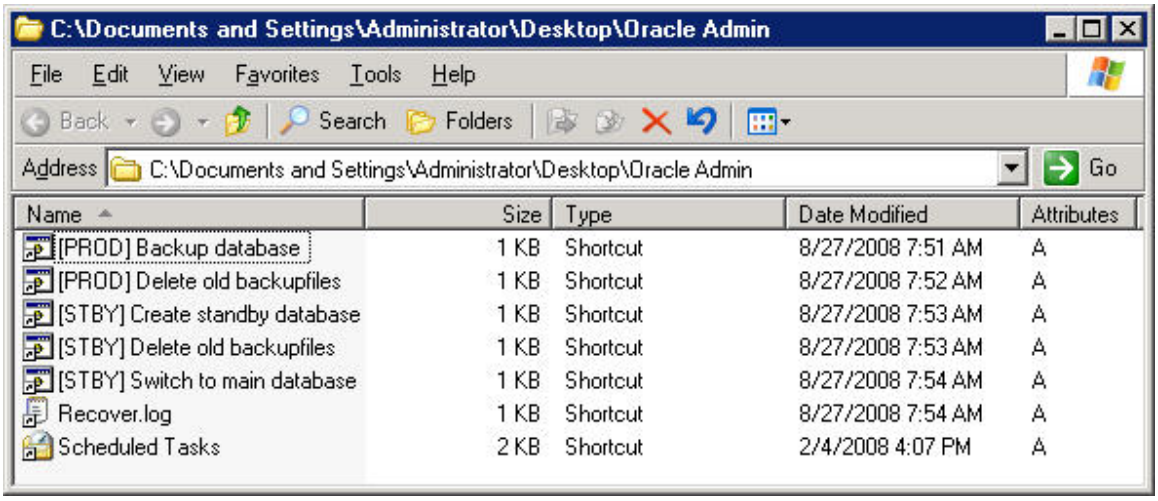
Each server has two shares that are mapped to drives on the other server. These shares facilitate the sharing of backup and archive log files.

Physical location	Shared as	Mapped to drive on opposite server
D:\Oracle\Backups	backups	X:\
D:\Oracle\Archivelogs	archivelogs	Z:\

Oracle Admin folder

The Oracle admin folder (on the desktop of both servers) contains shortcuts to batch files that manage the failover process, backup the production database, and creation of a standby server.

It also contains a shortcut to the scheduled tasks folder, and standby recover log file.



Shortcuts to failover batch/sql files

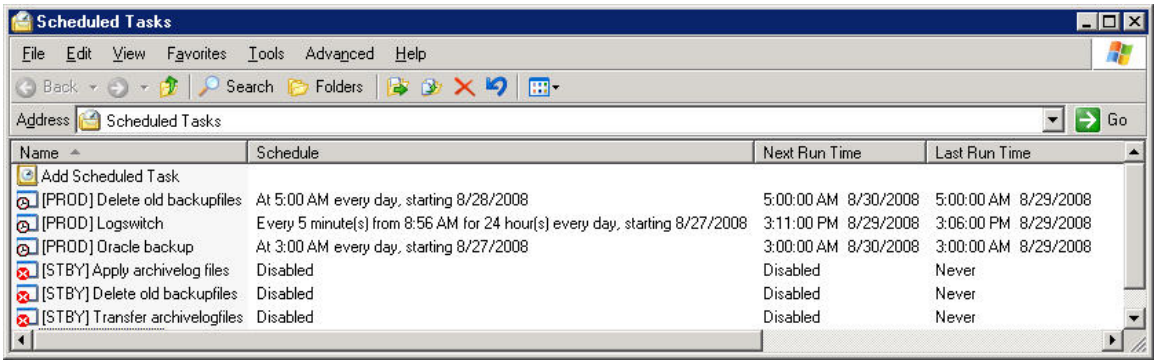
Run these shortcuts to failover the database, and recreate the standby server on the previous main server. The batch files generally activate SQL scripts, stored in C:\scripts.

On current standby database (new main database)
-> [STBY] Delete old backup files
On current standby database (new main database)
-> [STBY] Switch to main database

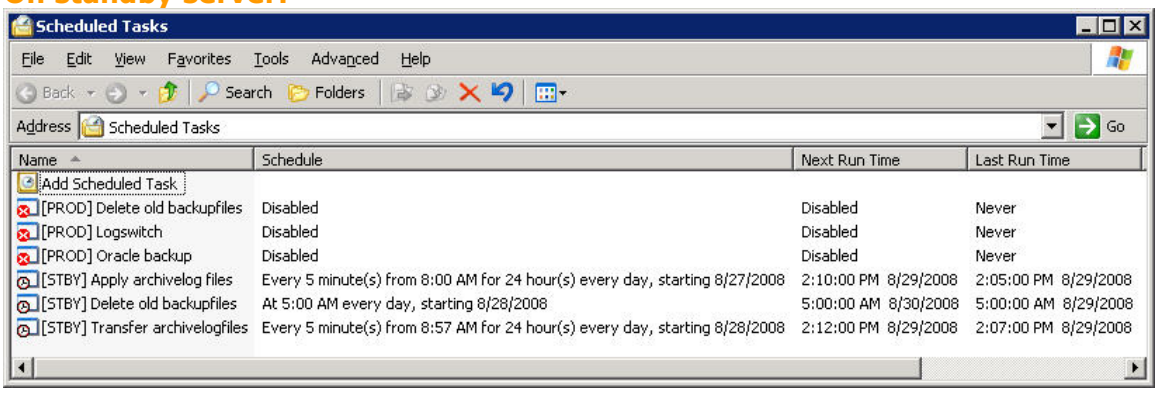
On previous main database (new standby database)
-> [STBY] Create standby database
On previous main database (new standby database)
-> [STBY] Delete old backup files

Scheduled tasks:

On main server:



On standby server:



The scheduled tasks folder contains operations for backup of the production server, applying changes from the production server to the standby server, purging old archivelog files and backup files on the servers.

[PROD] are tasks that should only run on the production server. These need to be disabled on the standby server.

[STBY] are tasks that should only run on the standby server. These need to be disabled on the production server.

The synchronization of archivelogs is set to run once every 5 minutes, while the backup is scheduled at 0300 every day. Old backup files are deleted at 0500.

Scheduled tasks typical config

- **<Hostname production server>** in production mode
    - [**PROD**] Backup database=enabled
    - [**PROD**] Delete old backupfiles=enabled
    - [**PROD**] logswitch=enabled
    - [**STBY**] apply archivelog files=disabled
    - [**STBY**] transfer archivelog files=disabled
    - [**STBY**] Delete old backupfiles=disabled

- **<Hostname standby server>** in standby mode
    - [**STBY**] transfer archivelog files=enabled
    - [**STBY**] Delete old backupfiles=enabled
    - [**STBY**] apply archivelog files=enabled
    - [**PROD**] Backup database=disabled
    - [**PROD**] Delete old backupfiles=disabled
    - [**PROD**] logswitch=disabled

Replication overview

Under normal circumstances, the production service will write archivelog files to disk every 5 minutes. Also, every 5 minutes, the standby server collects those archivelog files (via the mapped drive) and applies them to itself.

This ensures the standby database is always approximately 5 minutes behind the production server. These times can be changed if desired.

If the standby database needs to be rebuilt, it will backup the production database and transfer the backup files to standby server. Then, standby server will duplicate itself against the production server.

Failover overview

If the production server goes down or crashes, the standby server must be opened for access. The clients will fail over to the standby server as soon it is opened. When you open the standby server (to become the production server) it cannot be put back to standby mode. You will have to create the standby server from scratch (by running the "create standby server" batch file).

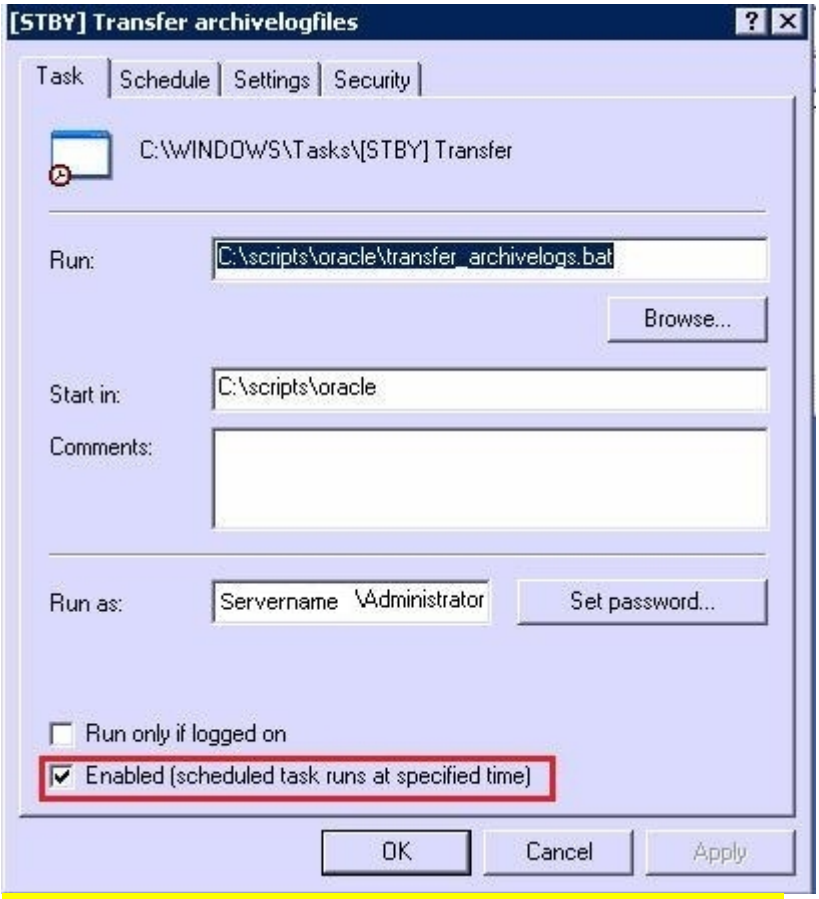
To open the database for production use, double-click the "[**STBY**] **Switch to main database**" shortcut in the VIZ Oracle Admin folder on the desktop. After a couple of minutes, the server will be accessible and made the production server. The previous production server is now available for creating as a standby server, and should be set as standby server as soon as possible (after confirming the new production server is running successfully). Always disable scheduled tasks on both servers whenever you perform this action.

Failover procedure

Once you have made the decision to failover (i.e., determined the fault lies with the database server, or taking it down for maintenance) do the following:

On the production server (if still running):

- Disable the PROD scheduled tasks. (right click on each scheduled task, choose properties, uncheck "enable", click apply, then OK.)



Example: disabling a scheduled task: Transfer archivelogs

- Cleanly shut down the database. Open a command prompt and issue the following:

```
CMD> sqlplus / as sysdba
SQL> SHUTDOWN IMMEDIATE
```

- Stop and disable the TNS listener service

- Shutdown the server

On the standby server:

- Disable the STBY scheduled tasks (right click on each scheduled task, choose properties, uncheck "enable", click apply, then OK.)

- Open VIZ Oracle Admin folder on the desktop and double-click the "[STBY] Switch to main database" shortcut and follow the on screen messages in the CMD window.

- When you get the message in the command window: "**THIS DATABASE IS THE MAIN DATABASE - Press any key to continue**….", you could leave this window open as a visual reminder this is now the production database.

- Enable the PROD scheduled tasks.

Testing the new server:

Run a quick test to check that you are able to connect to the new database.

```
cmd> sqlplus / as sysdba
SQL> conn pilot/pilot (message should be "Connected")
```

Restarting servers

Viz Gateway and Media Sequencer Engines should re-connect automatically. However, it is a good idea to restart everything.

- Close all Content Pilot clients

- Stop and restart all Viz Gateway and Media Sequencer Engine services

- Re-open all Content Pilot clients

Testing clients

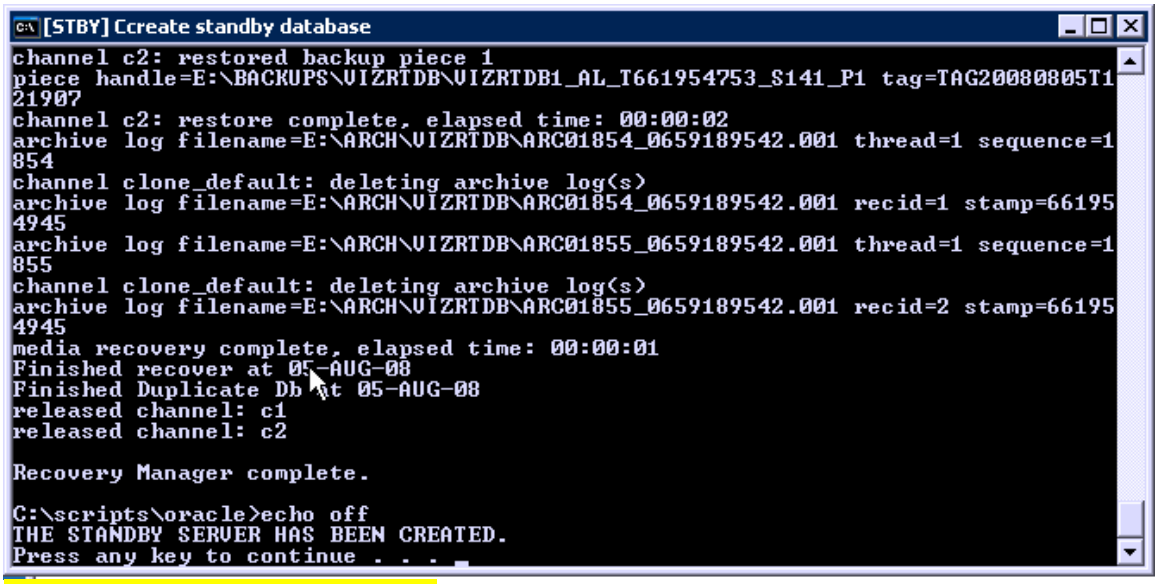
- Go to a Content Pilot client and open a recent running order - All templates that have been lost between database syncs will be flagged red and have a little 'no-entry' sign next to them. Try to open a template in a running order, or a data element, and play it out to a Viz Engine.

- Restart the Content Pilot ActiveX interface running in ENPS desktops. It is a good idea to send a broadcast message to all ENPS users that they should restart the Pilot active x interface.

Recreating the standby server

After determining the new production server is up to date and running correctly, you can turn the old production server into a standby server.

- Restart the old production server
- Check the TNS Listener service is off, and no scheduled tasks are enabled.
- Temporarily disable all scheduled tasks on the production server, meaning all tasks marked as [PROD].
- Run the "**Create Standby database**" batch file. Pay attention to the messages on the CMD window.



Example: Create standby server

- When you get the message in the command window: "**THE STANDBY SERVER HAS BEEN CREATED - Press any key to continue**….", you could leave this window open as a visual reminder this is now the standby database.
- Start all the STBY scheduled tasks on standby server and PROD scheduled tasks on main server.

This server will now be acting as the standby server.

Finishing up

- Check TNS Listener is on on the standby server
- Check TNS Listener is on on the production server
- Check the STBY tasks are enabled on the standby server, and the PROD tasks are enabled on the production server
- Check the mapped drives are functioning on both servers.

Administration

Tnsnames.ora

The tnsnames.ora file on the servers is located in D:\oracle\product\10.2.0\db_1\NETWORK\ADMIN folder.
Tnsnames.ora file for the clients should look like this:

```
VIZRTDB =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = TCP)(HOST = <Hostname production server>)(PORT = 1521))
      (ADDRESS = (PROTOCOL = TCP)(HOST = <Hostname standby server>)(PORT = 1521))
    )
    (CONNECT_DATA =
      (SERVICE_NAME = vizrtdb)
    )
  )
```

Quick database sync

On Main server

- Run [PROD] *logswitch* scheduled task

On standby server

- Run [STBY] *transferlogs* scheduled task
- Run [STBY] *apply* scheduled task

This assumes the database has been updating reliably previously. If in doubt, do a full database resync.

Full database resync

This should be done while production database is as idle as possible (night time and not in use for broadcasting)

On standby server: Disable all scheduled tasks server on both servers before performing a full sync.

- Run [STBY] Create standby database
- After a full sync enabled the scheduled task earlier disabled.

Backup the database

To backup the database, run "Backup database" found in the Oracle Admin folder on the desktop. This is added to a scheduler process, and is run every night at 3:00am. The backup files are placed in D:\Oracle\Backups. This can only be run on the production server.

Monitoring

The administrator should monitor the following:

1. The logfile **recover.log** in the Oracle admin folder on **standby server**. See if it reports the file sequence after the last imported archivelog file. If it does, it's working correctly.

2. The scheduled tasks must be monitored to make sure they are happening. Shared drives X:\ and Z:\ must be monitored.

3. Both servers must remain logged in at all times for the replication process to occur. The logged-in user must have the correct permissions to accomplish all the required tasks.

4. Ensure the TNS listener service is on for the production server and on for the standby server.

Notes

1 **If the production server has not been able to copy archivelog files to the standby server within the retention time set (default 1 day)**, the standby server will have to be recreated by pressing the "create standby database" button on the standby server. The reason for this is that the archivelog files on the production server has gone out of retention time and is purged. Remember to disable the scheduler tasks temporarily on the standby server while doing this operation.

2 **Retention is by default set to 1 day**. If you want to increase it, open rman (cmd> rman target /), and enter the following command:

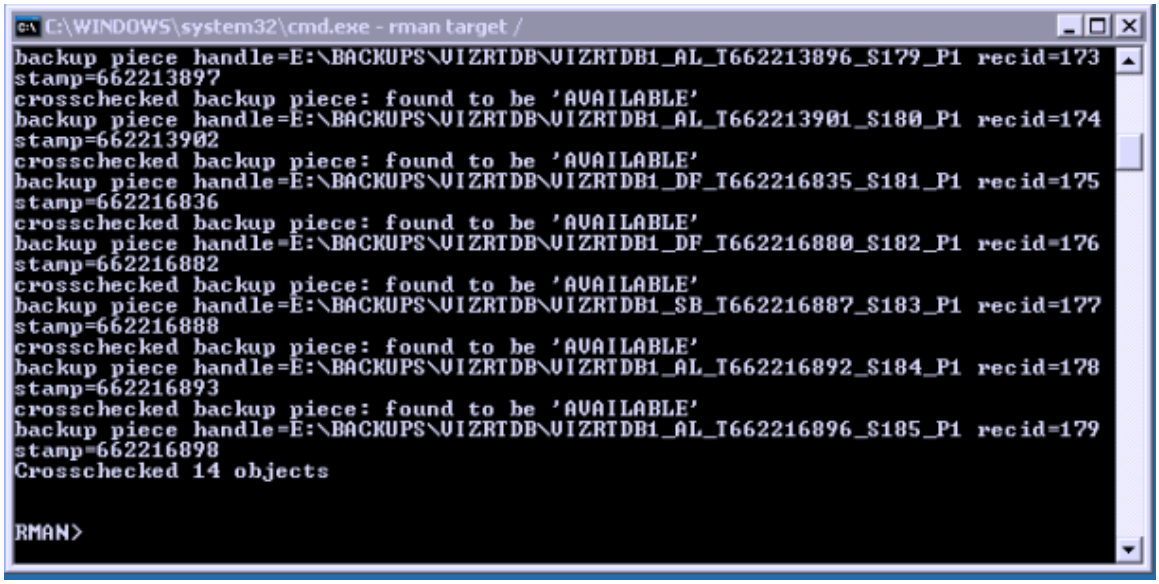
```
configure retention policy to redundancy X
```

(where X is days wanted to keep backups and archivelog files). Make sure you have disk space to keep the files. To check your current retention time:

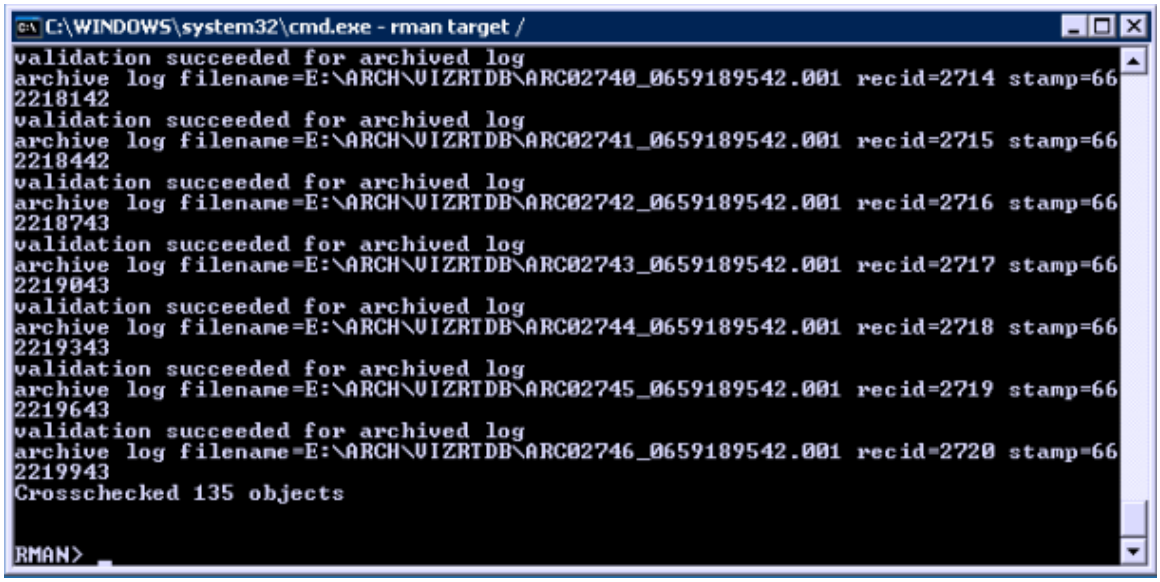
```
cmd> rman target /
rman> show all;
```

3 **To check if you have valid backups and the file exists for Oracle, production server**
open rman (cmd> rman target /), and enter the following command:

```
rman> crosscheck backup;
```



```
rman> crosscheck archivelog all;
```



(should return **Available** or **Succeed**.)

TEST DATABASE BACKUPS

Once in a while, you should test a check if RMAN is capable of restoring database/tablespace using existing backups.

You can not go further back than your retention time. Example: If you have a retention of 1 day, you can restore your database back to your last backup)

A recovery test can be done in two ways:
First connect RMAN from the server console (main server) -> rman target /

Restore until last backup was made:
RMAN> restore database validate;

Restore until a certain time:
RMAN> restore database validate until time "to_date(2001-04-09:14:30:00','yyyy-dd-mm:hh24:mi:ss')";