



Rman Don't Forget the Basics

*NYOUG Webinar
February 3, 2012*

Why Companies Trust Pythian

- **Recognized Leader:**

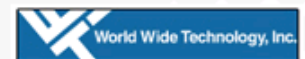
- Global industry-leader in remote database administration services and consulting for Oracle, Oracle Applications, MySQL and SQL Server
- Work with over 150 multinational companies such as Forbes.com, Fox Sports, Nordion and Western Union to help manage their complex IT deployments

- **Expertise:**

- One of the world's largest concentrations of dedicated, full-time DBA expertise. Employ 7 Oracle ACEs/ACE Directors.
- Hold 7 Specializations under Oracle Platinum Partner program, including Oracle Exadata, Oracle GoldenGate & Oracle RAC.

- **Global Reach & Scalability:**

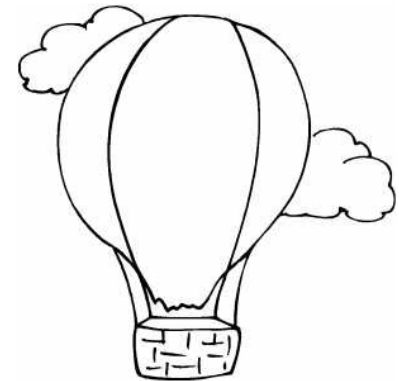
- 24/7/365 global remote support for DBA and consulting, systems administration, special projects or emergency response





Preaching to the converted

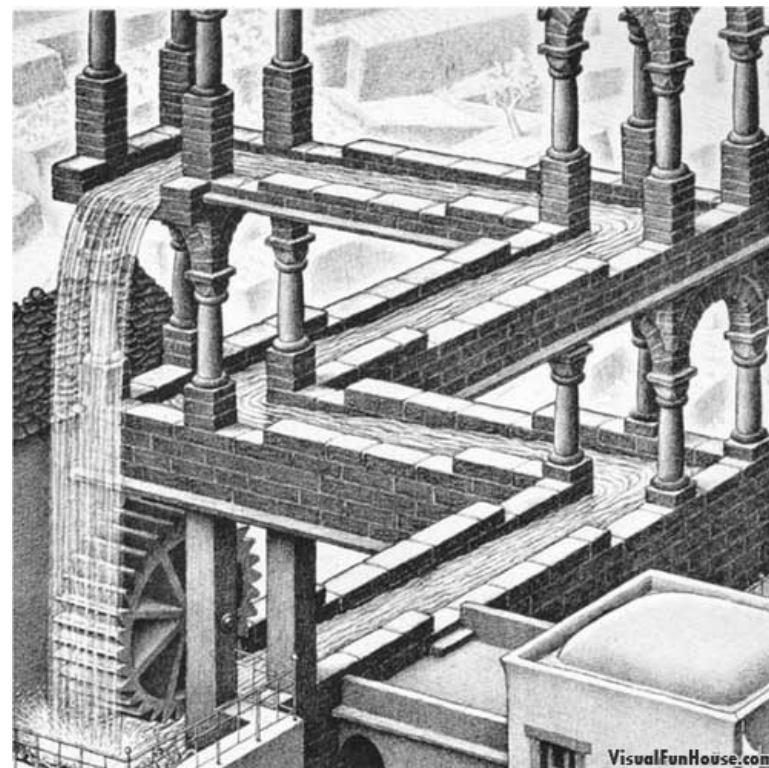
- The ultimate backup solution
- Teenager of Oracle backup solutions
- Least amount of intervention
- Simple syntax
- Redundant metadata (with catalog)
- Native compression





Approach

- Overview of the top 10
- The why
- Interactive discussion
- Summary and moving forward





Mantra

Back up and take a good look at your backup; the secret about backup is to be able to get your backup and bring your database back up ...



10 Language concerns

9 Persistent configuration

8 Naming conventions

7 Duplicate database

6 Block change tracking



5 Prep for loss of everything

4 Recovery testing

3 Catalog-based

2 `control_file_record_keep_time`

1 Controlfile autobackup



10-Language concerns

- Avoid surprises of character translation
 - raison d'être □ raison d'jtre
 - André □ Andrh
- Assist reporting using *list backup ...*;
commands [02-OCT-11 *or* 02-OCT-11
04:32:19]
- Instrumental when using restore/recovery *set
until* functionality



10-Language concerns

- Query the character set of your database using *V\$NLS_PARAMETERS*
- Set environment accordingly

```
NLS_LANG=american_america.we8iso8859p1
```

```
NLS_DATE_FORMAT='DD-MON-YYYY HH24:MI:SS'
```



9-Persistent configuration

- Default device type
- Compression preferences (10g and up)
- Channel configuration
- Recovery window (preferred to *redundancy*)
 - avoid surprises; see here (Seiler, Pythian)
 - what becomes obsolete; see here (Shedai, Pythian)
 - controls deletion of obsolete archived redo



9-Persistent configuration

```
configure default device type to disk;  
configure device type disk backup type to compressed  
backupset;  
configure channel device type disk format  
'/rman/orcl/%d_%U_bsn%s_pn%p_%T.bak';  
configure retention policy to recovery window of 14 days;  
configure maxsetsize to 8g;
```





8-Naming conventions

Wild card	Result
%d	Upper-case database name
%T	Timestamp (YYYYMMDD)
%p	Piece number within backupset
%s	Backup set number (counter incremented in control file)



7-Duplicate database

- Fluency mandatory
- Proof-of-concept on backup strategy
- Features of 11g and 9i/10g
- Build physical standby
- Nuances of doing on same server
 - db_name the same
 - lock_name_space

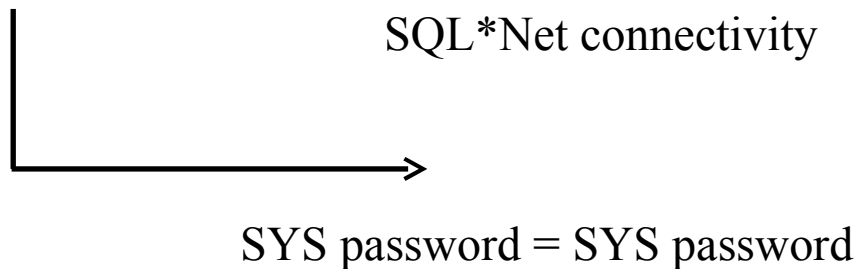
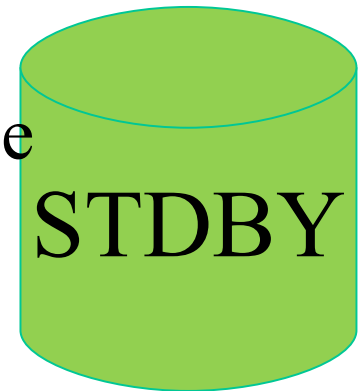


7-Duplicate database



- open "normal"
- application activities on-going

- nomount
- spfile in place





7-Duplicate database

- 10g

- Rman backup accessible to the standby site
- Restore from rman image
- Roll-forward to current point-in-time

- 11g

- No rman backup need be on standby site
- Active duplicate
- Roll-forward activities reduced



6-Block change tracking

- Huge enhancement for incremental backups
- BCT file used by rman as a roadmap to what has changed
- Discuss when turned on
 - With personnel doing backups
 - Many organizations do not backup **ANYTHING** in database directories or Oracle software locations



6-Block change tracking

```
alter database enable block  
change tracking using file  
' /database/orcl_bct.f';
```

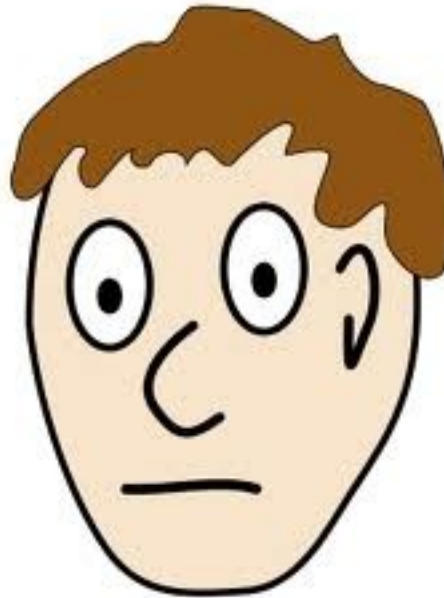
```
alter database disable block  
change tracking;
```



6-Block change tracking

18

Minimal





5-Prep for loss of everything

1. Controlfile autobackup
2. Precious DBID
3. As many level 0's as performance and storage can "tolerate"
4. Regular "show all;" to ALWAYS know where rman will find backupset pieces





4-Recovery testing

- The full gamut of scenarios
 - full database
 - point-in-time
 - cancel based
 - time based
 - change based
- Restore database validate
- Restore database preview



4-Recovery testing

- Nothing replace "the real thing"
- Same-server restore/recovery requirements

restore database preview

restore database validate

restore/recover database



```
set dbid 320066378; **  
run {  
    set controlfile autobackup  
    format for device type  
    disk to '/rman/orcl/%F';  
restore controlfile from  
    autobackup;  
}
```



3-Recovery catalog

- 2 locations for metadata
- BP object in catalog frequent target of rman reporting activities
- Mandatory to allow *master* database recovery when writing rman on physical standby
- Same server with its own standby



3-Recovery catalog

User with

- quota
- create session
- create table
- create view
- create procedure
- recovery_catalog_owner

~~DBA
RESOURCE~~



2-control_file_record_keep_time

- Specifies the minimum number of days before a reusable record in the control file can be reused
- Only applies to control file records that are circularly re-usable
- Archivelog records AND many types of backup records fall into this category



2-control_file_record_keep_time²⁶

```
alter system set  
control_file_record_keep_time =  
65;
```

```
9748480 Nov 5 cntrl1ctl  
19496960 Nov 25 cntrl1ctl
```



1-Controlfile autobackup

- The ultimate configuration
- Controlfile backup taken
 - structure change to database
 - ANY rman backup
- Restore controlfile to alternate location
- Backup (then extract) spfile



1-Controlfile autobackup

- Written when
 - a successful rman backup completes
 - a structural change is done on the database
- Facilitates recovery from loss of everything (even *spfile*)
- Contains the DBID when *%F* used as format mask



1-Controlfile autobackup

```
configure controlfile  
autobackup on;
```

```
configure controlfile  
autobackup format for device  
type disk to '/rman/orcl/%F';
```



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Q & A