

# HOW TO

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## Switchover/Failover Oracle DataGuard 10gR2

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### 1 Einleitung

Dieses Dokument gibt einen Überblick über die Schritte, die notwendig sind, um im Fehlerfall von der Primary Database PRDDB1 auf die physical Standby-Database STBDB1 umzuschalten.

Man unterscheidet in diesem Zusammenhang zwischen Switchover und Failover:

Unter **Switchover** versteht man das Umschalten von Primary zur Standby, wobei die Primary Database physikalisch noch zur Verfügung steht.

Beim **Failover** steht die Primary Database aufgrund von Netzwerk-Störungen oder Daten-Korruption nicht mehr zur Verfügung. In diesem Fall ist nur bei einer synchronen Daten-Übertragung das Risiko von Datenverlust ausgeschlossen.

### 2 Switchover via Broker

#### 2.1 Switchover von PRDDB1 -> STBDB1

Beim Switchover muss die Primary Database zur Verfügung stehen. Deshalb wird zuerst der Status der DataGuard Konfiguration sowie der beteiligten Datenbanken abgefragt. Erst wenn alle 3 Punkte „SUCCESS“ zeigen, ist es möglich den Switchover durchzuführen.

Das Kommando „dgmgrl“ wird auf der derzeitigen Primary Database abgesetzt.

```
$dgmgrl  
connect sys/<password>  
  
DGMGRL> show configuration verbose;
```

## Configuration

```
Name: MD_DATAGUARD
Enabled: YES
Protection Mode: MaxAvailability
Fast-Start Failover: DISABLED
Databases:
  PRDDb1 - Primary database
  STBDB1 - Physical standby database
```

Current status for "MD\_DATAGUARD":  
SUCCESS

## Check der Primary

DGMGR> **show database verbose 'PRDDb1'**

### Database

```
Name: PRDDb1
Role: PRIMARY
Enabled: YES
Intended State: ONLINE
Instance(s):
  PRDDb1
```

### Properties:

```
InitialConnectIdentifier = 'PRDDb1_dataguard'
LogXptMode = 'SYNC'
Dependency = ''
DelayMins = '0'
Binding = 'OPTIONAL'
MaxFailure = '0'
MaxConnections = '1'
ReopenSecs = '60'
NetTimeout = '10'
LogShipping = 'ON'
PreferredApplyInstance = ''
ApplyInstanceTimeout = '0'
ApplyParallel = 'AUTO'
StandbyFileManagement = 'auto'
ArchiveLagTarget = '0'
LogArchiveMaxProcesses = '2'
LogArchiveMinSucceedDest = '1'
DbFileNameConvert = ''
LogFileNameConvert = ''
FastStartFailoverTarget = ''
StatusReport = '(monitor)'
InconsistentProperties = '(monitor)'
InconsistentLogXptProps = '(monitor)'
SendQEntries = '(monitor)'
LogXptStatus = '(monitor)'
RecvQEntries = '(monitor)'
HostName = 'dbhost1'
SidName = 'PRDDb1'
LocalListenerAddress = '(ADDRESS=(PROTOCOL=tcp) (HOST=
10.0.0.1) (PORT=1521))'
StandbyArchiveLocation = '/oracle/PRDDb1/oraarch'
AlternateLocation = ''
LogArchiveTrace = '384'
LogArchiveFormat = 'PRDDb1_%t_%s_%r.arch'
LatestLog = '(monitor)'
TopWaitEvents = '(monitor)'
```

Current status for "PRDDb1":  
SUCCESS

## Check der Standby: (auch über dgmgrl von der Primary)

DGMGR> **show database verbose 'STBDB1';**

### Database

```
Name: STBDB1
Role: PHYSICAL STANDBY
Enabled: YES
Intended State: ONLINE
```

Instance(s):  
STBDB1

```

Properties:
  InitialConnectIdentifier      = 'STBDB1_dataguard'
  LogXptMode                   = 'SYNC'
  Dependency                   = ''
  DelayMins                    = '0'
  Binding                      = 'OPTIONAL'
  MaxFailure                   = '0'
  MaxConnections               = '1'
  ReopenSecs                   = '300'
  NetTimeout                   = '10'
  LogShipping                  = 'ON'
  PreferredApplyInstance      = ''
  ApplyInstanceTimeout        = '0'
  ApplyParallel                = 'AUTO'
  StandbyFileManagement       = 'auto'
  ArchiveLagTarget             = '0'
  LogArchiveMaxProcesses      = '2'
  LogArchiveMinSucceedDest    = '1'
  DbFileNameConvert           = ''
  LogFileNameConvert          = ''
  FastStartFailoverTarget     = ''
  StatusReport                 = '(monitor)'
  InconsistentProperties       = '(monitor)'
  InconsistentLogXptProps     = '(monitor)'
  SendQEntries                 = '(monitor)'
  LogXptStatus                 = '(monitor)'
  RecvQEntries                 = '(monitor)'
  HostName                     = 'dbhost2'
  SidName                      = 'STBDB1'
  LocalListenerAddress        = ''
' (ADDRESS=(PROTOCOL=tcp) (HOST=10.0.0.129) (PORT=1521)) '
  StandbyArchiveLocation      = '/oracle/PRDDB1/oraarch'
  AlternateLocation           = ''
  LogArchiveTrace              = '384'
  LogArchiveFormat             = 'PRDDB1_%t_%s_%r.arch'
  LatestLog                   = '(monitor)'
  TopWaitEvents                = '(monitor)'

```

Current status for "STBDB1":  
SUCCESS

```

DGMGRL> switchover to 'STBDB1'
Performing switchover NOW, please wait...
Operation requires shutdown of instance "PRDDB1" on database "PRDDB1"
Shutting down instance "PRDDB1"...
ORA-01109: database not open

```

```

Database dismounted.
ORACLE instance shut down.
Operation requires shutdown of instance "STBDB1" on database "STBDB1"
Shutting down instance "STBDB1"...
ORA-01109: database not open

```

```

Database dismounted.
ORACLE instance shut down.
Operation requires startup of instance "PRDDB1" on database "PRDDB1"
Starting instance "PRDDB1"...
ORACLE instance started.
Database mounted.
Operation requires startup of instance "STBDB1" on database "STBDB1"
Starting instance "STBDB1"...
ORACLE instance started.
Database mounted.
Switchover succeeded, new primary is "STBDB1"

```

DGMGRL> show configuration verbose;

```

Configuration
Name: MD_DATAGUARD
Enabled: YES
Protection Mode: MaxAvailability
Fast-Start Failover: DISABLED
Databases:
  PRDDB1 - Physical standby database

```

STDB1 - Primary database

Current status for "MD\_DATAGUARD":  
SUCCESS

auf neuer Primary:

evtl. Vergrößern der SGA Sizings

```
alter system set db_block_checking = TRUE;
```

auf neuer Standby:

evtl. Verringern der SGA Sizings

```
alter system set db_block_checking = FALSE;
```

alert\_PRDD1.log:

```
Tue Sep 12 14:18:54 2008
LGWR: Standby redo logfile selected to archive thread 1 sequence 384
LGWR: Standby redo logfile selected for thread 1 sequence 384 for destination
LOG_ARCHIVE_DEST_2
Beginning log switch checkpoint up to RBA [0x180.2.10], SCN: 21007601
Thread 1 advanced to log sequence 384
  Current log# 4 seq# 384 mem# 0: /oracle/PRDD1/origlogA/redo04_01.log
  Current log# 4 seq# 384 mem# 1: /oracle/PRDD1/origlogB/redo04_02.log
Tue Sep 12 14:18:54 2008
ALTER DATABASE COMMIT TO SWITCHOVER TO PHYSICAL STANDBY WITH SESSION SHUTDOWN
Tue Sep 12 14:18:54 2008
ALTER DATABASE COMMIT TO SWITCHOVER TO PHYSICAL STANDBY (PRDD1)
*****
LGWR: Resetting 'active' archival for destination LOG_ARCHIVE_DEST_2
*****
Tue Sep 12 14:18:58 2008
Destination LOG_ARCHIVE_DEST_2 no longer supports SYNCHRONIZATION
Beginning log switch checkpoint up to RBA [0x181.2.10], SCN: 21007604
Thread 1 advanced to log sequence 385
  Current log# 1 seq# 385 mem# 0: /oracle/PRDD1/origlogA/redo01_01.log
  Current log# 1 seq# 385 mem# 1: /oracle/PRDD1/origlogB/redo01_02.log
Tue Sep 12 14:18:58 2008
SMON: disabling tx recovery
Tue Sep 12 14:18:58 2008
Stopping background process CJQ0
Tue Sep 12 14:18:58 2008
Stopping background process QMNC
Tue Sep 12 14:19:00 2008
Stopping Job queue slave processes
Tue Sep 12 14:19:08 2008
Waiting for Job queue slaves to complete
Tue Sep 12 14:19:17 2008
Job queue slave processes stopped
Tue Sep 12 14:19:17 2008
Completed checkpoint up to RBA [0x181.2.10], SCN: 21007604
Completed checkpoint up to RBA [0x180.2.10], SCN: 21007601
Tue Sep 12 14:19:19 2008
All dispatchers and shared servers shutdown
Tue Sep 12 14:19:19 2008
SMON: disabling cache recovery
Tue Sep 12 14:19:19 2008
Shutting down archive processes
Archiving is disabled
Tue Sep 12 14:19:24 2008
ARCH shutting down
ARC1: Archival stopped
Tue Sep 12 14:19:29 2008
ARCH shutting down
ARC0: Archival stopped
Tue Sep 12 14:19:30 2008
Thread 1 closed at log sequence 385
Successful close of redo thread 1
Tue Sep 12 14:19:30 2008
ARCH: Noswitch archival of thread 1, sequence 385
ARCH: End-Of-Redo Branch archival of thread 1 sequence 385
ARCH: Archiving is disabled due to current logfile archival
```

```

Clearing standby activation ID 2661954794 (0x9eaa34ea)
The primary database controlfile was created using the
'MAXLOGFILES 16' clause.
There is space for up to 12 standby redo logfiles
Use the following SQL commands on the standby database to create
standby redo logfiles that match the primary database:
ALTER DATABASE ADD STANDBY LOGFILE 'srl1.f' SIZE 209715200;
ALTER DATABASE ADD STANDBY LOGFILE 'srl2.f' SIZE 209715200;
ALTER DATABASE ADD STANDBY LOGFILE 'srl3.f' SIZE 209715200;
ALTER DATABASE ADD STANDBY LOGFILE 'srl4.f' SIZE 209715200;
ALTER DATABASE ADD STANDBY LOGFILE 'srl5.f' SIZE 209715200;
Archivelog for thread 1 sequence 385 required for standby recovery
MRP0 started with pid=13, OS id=3035
Tue Sep 12 14:19:30 2008
MRP0: Background Managed Standby Recovery process started (PRDDB1)
Managed Standby Recovery not using Real Time Apply
parallel recovery started with 3 processes
Online logfile pre-clearing operation disabled by switchover
Media Recovery Log /oracle/PRDDB1/oraarch/PRDDB1_1_385_600354858.arch
Identified End-Of-Redo for thread 1 sequence 385
Tue Sep 12 14:19:36 2008
Media Recovery End-Of-Redo indicator encountered
Tue Sep 12 14:19:36 2008
Media Recovery Applied until change 21007628
Tue Sep 12 14:19:36 2008
MRP0: Media Recovery Complete: End-Of-REDO (PRDDB1)
Resetting standby activation ID 2661954794 (0x9eaa34ea)
Tue Sep 12 14:19:38 2008
MRP0: Background Media Recovery process shutdown (PRDDB1)
Tue Sep 12 14:19:38 2008
Switchover: Complete - Database shutdown required (PRDDB1)
Tue Sep 12 14:19:38 2008
Completed: ALTER DATABASE COMMIT TO SWITCHOVER TO PHYSICAL STANDBY WITH SESSION
SHUTDOWN
Using STANDBY_ARCHIVE_DEST parameter default value as USE_DB_RECOVERY_FILE_DEST
Tue Sep 12 14:19:38 2008
ALTER SYSTEM SET log_archive_dest_2='' SCOPE=BOTH;
Tue Sep 12 14:19:38 2008
ALTER SYSTEM SET log_archive_dest_state_2='ENABLE' SCOPE=BOTH;
Tue Sep 12 14:19:57 2008
Shutting down instance: further logons disabled
Tue Sep 12 14:19:57 2008
Stopping background process MMNL
Tue Sep 12 14:19:58 2008
Stopping background process MMON
Tue Sep 12 14:19:59 2008
Shutting down instance (immediate)
License high water mark = 5
Waiting for shared server 'S001' to die
All dispatchers and shared servers shutdown
Tue Sep 12 14:20:05 2008
alter database CLOSE NORMAL
ORA-1109 signalled during: alter database CLOSE NORMAL...
Tue Sep 12 14:20:05 2008
alter database DISMOUNT
Completed: alter database DISMOUNT
ARCH: Archival disabled due to shutdown: 1089
Shutting down archive processes
Archiving is disabled
Archive process shutdown avoided: 0 active
Shutting down Data Guard Broker processes
Tue Sep 12 14:20:08 2008
Completed: Data Guard Broker shutdown
Tue Sep 12 14:20:10 2008
ARCH: Archival disabled due to shutdown: 1089
Shutting down archive processes
Archiving is disabled
Archive process shutdown avoided: 0 active
Tue Sep 12 14:20:43 2008
Starting ORACLE instance (normal)
LICENSE_MAX_SESSION = 0
LICENSE_SESSIONS_WARNING = 0
Picked latch-free SCN scheme 3
Autotune of undo retention is turned on.
IMODE=BR
ILAT =30
LICENSE_MAX_USERS = 0

```

```

SYS auditing is disabled
ksdpec: called for event 13740 prior to event group initialization
Starting up ORACLE RDBMS Version: 10.2.0.2.0.
System parameters with non-default values:
  processes                = 250
  sga_max_size              = 1073741824
  __shared_pool_size       = 130023424
  __large_pool_size        = 4194304
  __java_pool_size         = 159383552
  java_pool_size           = 159383552
  __streams_pool_size      = 0
  sga_target                = 1073741824
  control_files             = /oracle/PRDDB1/origlogA/control01.ctl,
/oracle/PRDDB1/origlogB/control02.ctl
  db_block_size             = 8192
  __db_cache_size          = 771751936
  db_writer_processes       = 4
  compatible                = 10.2.0.2.0
  log_archive_config        = DG_CONFIG=(PRDDB1,STBDB1)
  log_archive_dest_1        = location="/oracle/PRDDB1/oraarch",
valid_for=(ONLINE_LOGFILE,ALL_ROLES)
  log_archive_dest_2        =
  log_archive_dest_state_1 = ENABLE
  log_archive_dest_state_2 = ENABLE
  log_archive_max_processes= 2
  log_archive_min_succeed_dest= 1
  standby_archive_dest      =
  log_archive_trace         = 384
  log_archive_format        = PRDDB1_%t_%s_%r.arch
  fal_client                = PRDDB1_DATAGUARD
  fal_server                 = STBDB1_DATAGUARD
  archive_lag_target        = 0
  db_file_multiblock_read_count= 16
  db_recovery_file_dest     = /oracle/PRDDB1/flash_recovery_area
  db_recovery_file_dest_size= 268435456000
  standby_file_management   = auto
  fast_start_mttr_target    = 300
  log_checkpoints_to_alert  = TRUE
  undo_management           = AUTO
  undo_tablespace           = UNDOTBS1
  remote_login_passwordfile= EXCLUSIVE
  db_domain                 =
  dispatchers               = (PROTOCOL=TCP) (SERVICE=PRDDB1XDB)
  local_listener            = PRDDB1_DATAGUARD
  job_queue_processes       = 10
  parallel_execution_message_size= 4096
  background_dump_dest      = /oracle/PRDDB1/oratrace/bdump
  user_dump_dest            = /oracle/PRDDB1/oratrace/udump
  core_dump_dest            = /oracle/PRDDB1/oratrace/cdump
  audit_file_dest           = /oracle/PRDDB1/oratrace/adump
  db_name                   = PRDDB1
  db_unique_name            = PRDDB1
  open_cursors              = 1000
  optimizer_index_cost_adj  = 1
  pga_aggregate_target      = 418381824
  dg_broker_start           = TRUE
PMON started with pid=2, OS id=3112
PSP0 started with pid=3, OS id=3114
MMAN started with pid=4, OS id=3116
DBW0 started with pid=5, OS id=3118
DBW1 started with pid=6, OS id=3120
DBW2 started with pid=7, OS id=3122
DBW3 started with pid=8, OS id=3124
LGWR started with pid=9, OS id=3126
CKPT started with pid=10, OS id=3128
SMON started with pid=11, OS id=3130
RECO started with pid=12, OS id=3132
CJQ0 started with pid=13, OS id=3134
MMON started with pid=14, OS id=3136
Tue Sep 12 14:20:44 2008
starting up 1 dispatcher(s) for network address
'(ADDRESS=(PARTIAL=YES)(PROTOCOL=TCP))'...
MMNL started with pid=15, OS id=3138
Tue Sep 12 14:20:44 2008
starting up 1 shared server(s) ...
DMON started with pid=18, OS id=3144
Tue Sep 12 14:20:44 2008

```

```
alter database mount
Tue Sep 12 14:20:48 2008
Setting recovery target incarnation to 1
ARCH: STARTING ARCH PROCESSES
ARC0 started with pid=20, OS id=3148
Tue Sep 12 14:20:48 2008
ARC0: Archival started
ARC1: Archival started
ARCH: STARTING ARCH PROCESSES COMPLETE
Tue Sep 12 14:20:48 2008
ARC0: Becoming the 'no FAL' ARCH
ARC0: Becoming the 'no SRL' ARCH
ARC0: Thread not mounted
ARC1 started with pid=21, OS id=3150
ARC1: Becoming the heartbeat ARCH
ARC1: Thread not mounted
Tue Sep 12 14:20:48 2008
Successful mount of redo thread 1, with mount id 2662595836
Tue Sep 12 14:20:48 2008
Allocated 3981120 bytes in shared pool for flashback generation buffer
Starting background process RVWR
RVWR started with pid=22, OS id=3152
Tue Sep 12 14:20:48 2008
Physical Standby Database mounted.
Completed: alter database mount
Tue Sep 12 14:20:52 2008
Starting Data Guard Broker (DMON)
NSV1 started with pid=19, OS id=3154
INSV started with pid=24, OS id=3160
RSM0 started with pid=25, OS id=3162
Using STANDBY_ARCHIVE_DEST parameter default value as USE_DB_RECOVERY_FILE_DEST
Tue Sep 12 14:21:11 2008
ALTER SYSTEM SET
log_archive_dest_1='location="/oracle/PRDDB1/oraarch"', 'valid_for=(ALL_LOGFILES,ALL
_ROLES)' SCOPE=BOTH SID='PRDDB1';
Tue Sep 12 14:21:11 2008
ALTER SYSTEM SET log_archive_dest_state_1='ENABLE' SCOPE=BOTH SID='PRDDB1';
Tue Sep 12 14:21:11 2008
ALTER SYSTEM SET standby_archive_dest='/oracle/PRDDB1/oraarch' SCOPE=BOTH
SID='PRDDB1';
Tue Sep 12 14:21:11 2008
ALTER SYSTEM SET log_archive_trace=384 SCOPE=BOTH SID='PRDDB1';
Tue Sep 12 14:21:11 2008
ALTER SYSTEM SET log_archive_format='PRDDB1_%t_%s_%r.arch' SCOPE=SPFILE
SID='PRDDB1';
Tue Sep 12 14:21:12 2008
ALTER SYSTEM SET standby_file_management='auto' SCOPE=BOTH SID='*';
Tue Sep 12 14:21:12 2008
ALTER SYSTEM SET archive_lag_target=0 SCOPE=BOTH SID='*';
Tue Sep 12 14:21:12 2008
ALTER SYSTEM SET log_archive_max_processes=2 SCOPE=BOTH SID='*';
Tue Sep 12 14:21:12 2008
ALTER SYSTEM SET log_archive_min_succeed_dest=1 SCOPE=BOTH SID='*';
Tue Sep 12 14:21:12 2008
ALTER SYSTEM SET
fal_server='(DESCRIPTION=(ADDRESS_LIST=(ADDRESS=(PROTOCOL=tcp)(HOST=10.0.0.129)(POR
T=1521)))(CONNECT_DATA=(SERVICE_NAME=STBDB1_XPT)(SERVER=dedicated)))' SCOPE=BOTH;
Tue Sep 12 14:21:12 2008
ALTER SYSTEM SET
fal_client='(DESCRIPTION=(ADDRESS_LIST=(ADDRESS=(PROTOCOL=tcp)(HOST=
10.0.0.1)(PORT=1521)))(CONNECT_DATA=(SERVICE_NAME=PRDDB1_XPT)(INSTANCE_NAME=PRDDB1)
(SERVER=dedicated)))' SCOPE=BOTH;
Tue Sep 12 14:21:12 2008
ALTER DATABASE RECOVER MANAGED STANDBY DATABASE THROUGH ALL SWITCHOVER DISCONNECT
USING CURRENT LOGFILE
Tue Sep 12 14:21:12 2008
Attempt to start background Managed Standby Recovery process (PRDDB1)
MRP0 started with pid=26, OS id=3164
Tue Sep 12 14:21:12 2008
MRP0: Background Managed Standby Recovery process started (PRDDB1)
Tue Sep 12 14:21:13 2008
Redo Shipping Client Connected as PUBLIC
-- Connected User is Valid
RFS[1]: Assigned to RFS process 3166
RFS[1]: Identified database type as 'physical standby'
Primary database is in MAXIMUM AVAILABILITY mode
Standby controlfile consistent with primary
```

```

Primary thread 1 already marked as open; setting 'closed'
Tue Sep 12 14:21:13 2008
RFS LogMiner: Client disabled from further notification
Tue Sep 12 14:21:17 2008
Managed Standby Recovery starting Real Time Apply
  parallel recovery started with 3 processes
Clearing online redo logfile 1 /oracle/PRDDB1/origlogA/redo01_01.log
Clearing online log 1 of thread 1 sequence number 386
Tue Sep 12 14:21:18 2008
Completed: ALTER DATABASE RECOVER MANAGED STANDBY DATABASE THROUGH ALL SWITCHOVER
DISCONNECT USING CURRENT LOGFILE
Tue Sep 12 14:21:20 2008
Redo Shipping Client Connected as PUBLIC
-- Connected User is Valid
RFS[2]: Assigned to RFS process 3174
RFS[2]: Identified database type as 'physical standby'
Primary database is in MAXIMUM AVAILABILITY mode
Standby controlfile consistent with primary
Tue Sep 12 14:21:23 2008
Clearing online redo logfile 1 complete
Clearing online redo logfile 2 /oracle/PRDDB1/origlogA/redo02_01.log
Clearing online log 2 of thread 1 sequence number 382
Tue Sep 12 14:21:23 2008
Primary database is in MAXIMUM AVAILABILITY mode
Standby controlfile consistent with primary
RFS[2]: Successfully opened standby log 6: '/oracle/PRDDB1/origlogA/standby_01.log'
Tue Sep 12 14:21:23 2008
Redo Shipping Client Connected as PUBLIC
-- Connected User is Valid
RFS[3]: Assigned to RFS process 3176
RFS[3]: Identified database type as 'physical standby'
RFS[3]: Successfully opened standby log 7: '/oracle/PRDDB1/origlogA/standby_02.log'
Tue Sep 12 14:21:29 2008
Clearing online redo logfile 2 complete
Clearing online redo logfile 3 /oracle/PRDDB1/origlogA/redo03_01.log
Clearing online log 3 of thread 1 sequence number 383
Clearing online redo logfile 3 complete
Clearing online redo logfile 4 /oracle/PRDDB1/origlogA/redo04_01.log
Clearing online log 4 of thread 1 sequence number 384
Tue Sep 12 14:21:36 2008
Redo Shipping Client Connected as PUBLIC
-- Connected User is Valid
RFS[4]: Assigned to RFS process 3184
RFS[4]: Identified database type as 'physical standby'
Primary database is in MAXIMUM AVAILABILITY mode
Standby controlfile consistent with primary
Tue Sep 12 14:21:40 2008
Clearing online redo logfile 4 complete
Tue Sep 12 14:21:40 2008
Primary database is in MAXIMUM AVAILABILITY mode
Standby controlfile consistent with primary
RFS[4]: Successfully opened standby log 6: '/oracle/PRDDB1/origlogA/standby_01.log'
Tue Sep 12 14:21:40 2008
Media Recovery Log /oracle/PRDDB1/oraarch/PRDDB1_1_386_600354858.arch
Media Recovery Log /oracle/PRDDB1/oraarch/PRDDB1_1_387_600354858.arch
Media Recovery Waiting for thread 1 sequence 388 (in transit)
Tue Sep 12 14:21:40 2008
Recovery of Online Redo Log: Thread 1 Group 6 Seq 388 Reading mem 0
  Mem# 0 errs 0: /oracle/PRDDB1/origlogA/standby_01.log
Tue Sep 12 14:22:15 2008
Redo Shipping Client Connected as PUBLIC
-- Connected User is Valid
RFS[5]: Assigned to RFS process 3212
RFS[5]: Identified database type as 'physical standby'

```

## alert\_STBDB1.log:

```

Tue Sep 12 14:19:35 2008
Media Recovery Log /oracle/PRDDB1/oraarch/PRDDB1_1_385_600354858.arch
Identified End-Of-Redo for thread 1 sequence 385
Tue Sep 12 14:19:35 2008
Media Recovery End-Of-Redo indicator encountered
Tue Sep 12 14:19:35 2008
Media Recovery Continuing
Media Recovery Waiting for thread 1 sequence 386
Tue Sep 12 14:19:39 2008

```



```
ALTER DATABASE RECOVER MANAGED STANDBY DATABASE CANCEL
MRP0: Background Media Recovery cancelled with status 16037
Tue Sep 12 14:19:40 2008
Errors in file /oracle/PRDDb1/oratrace/bdump/STBDB1_mrp0_8931.trc:
ORA-16037: user requested cancel of managed recovery operation
Managed Standby Recovery not using Real Time Apply
Recovery interrupted!
Tue Sep 12 14:19:40 2008
Errors in file /oracle/PRDDb1/oratrace/bdump/STBDB1_mrp0_8931.trc:
ORA-16037: user requested cancel of managed recovery operation
Tue Sep 12 14:19:40 2008
MRP0: Background Media Recovery process shutdown (STBDB1)
Tue Sep 12 14:19:41 2008
Managed Standby Recovery Canceled (STBDB1)
Tue Sep 12 14:19:41 2008
Completed: ALTER DATABASE RECOVER MANAGED STANDBY DATABASE CANCEL
Tue Sep 12 14:19:41 2008
ALTER DATABASE COMMIT TO SWITCHOVER TO PRIMARY WAIT WITH SESSION SHUTDOWN
Tue Sep 12 14:19:41 2008
ALTER DATABASE SWITCHOVER TO PRIMARY (STBDB1)
If media recovery active, switchover will wait 900 seconds
SwitchOver after complete recovery through change 21007628
Tue Sep 12 14:19:41 2008
Errors in file /oracle/PRDDb1/oratrace/bdump/STBDB1_rsm0_8902.trc:
ORA-00313: open failed for members of log group 1 of thread 1
ORA-00312: online log 1 thread 1: '/oracle/PRDDb1/origlogB/redo01_02.log'
ORA-27037: unable to obtain file status
Linux-x86_64 Error: 2: No such file or directory
Additional information: 3
ORA-00312: online log 1 thread 1: '/oracle/PRDDb1/origlogA/redo01_01.log'
ORA-27037: unable to obtain file status
Linux-x86_64 Error: 2: No such file or directory
Additional information: 3
Tue Sep 12 14:19:45 2008
Errors in file /oracle/PRDDb1/oratrace/bdump/STBDB1_rsm0_8902.trc:
ORA-00313: open failed for members of log group 2 of thread 1
ORA-00312: online log 2 thread 1: '/oracle/PRDDb1/origlogB/redo02_02.log'
ORA-27037: unable to obtain file status
Linux-x86_64 Error: 2: No such file or directory
Additional information: 3
ORA-00312: online log 2 thread 1: '/oracle/PRDDb1/origlogA/redo02_01.log'
ORA-27037: unable to obtain file status
Linux-x86_64 Error: 2: No such file or directory
Additional information: 3
Tue Sep 12 14:19:49 2008
Errors in file /oracle/PRDDb1/oratrace/bdump/STBDB1_rsm0_8902.trc:
ORA-00313: open failed for members of log group 3 of thread 1
ORA-00312: online log 3 thread 1: '/oracle/PRDDb1/origlogB/redo03_02.log'
ORA-27037: unable to obtain file status
Linux-x86_64 Error: 2: No such file or directory
Additional information: 3
ORA-00312: online log 3 thread 1: '/oracle/PRDDb1/origlogA/redo03_01.log'
ORA-27037: unable to obtain file status
Linux-x86_64 Error: 2: No such file or directory
Additional information: 3
Tue Sep 12 14:19:53 2008
Errors in file /oracle/PRDDb1/oratrace/bdump/STBDB1_rsm0_8902.trc:
ORA-00313: open failed for members of log group 4 of thread 1
ORA-00312: online log 4 thread 1: '/oracle/PRDDb1/origlogB/redo04_02.log'
ORA-27037: unable to obtain file status
Linux-x86_64 Error: 2: No such file or directory
Additional information: 3
ORA-00312: online log 4 thread 1: '/oracle/PRDDb1/origlogA/redo04_01.log'
ORA-27037: unable to obtain file status
Linux-x86_64 Error: 2: No such file or directory
Additional information: 3
Tue Sep 12 14:19:57 2008
Standby became primary SCN: 21007626
Converting standby mount to primary mount.
Tue Sep 12 14:19:57 2008
Switchover: Complete - Database mounted as primary (STBDB1)
Completed: ALTER DATABASE COMMIT TO SWITCHOVER TO PRIMARY WAIT WITH SESSION
SHUTDOWN
Tue Sep 12 14:19:57 2008
ARC0: STARTING ARCH PROCESSES
ARC2: Archival started
ARC0: STARTING ARCH PROCESSES COMPLETE
```

```

ARC0: Becoming the 'no SRL' ARCH
ARC2 started with pid=25, OS id=14792
Tue Sep 12 14:20:11 2008
Shutting down instance: further logons disabled
Tue Sep 12 14:20:11 2008
Stopping background process CJQ0
Tue Sep 12 14:20:11 2008
Stopping background process MMNL
Tue Sep 12 14:20:12 2008
Stopping background process MMON
Tue Sep 12 14:20:13 2008
Shutting down instance (immediate)
License high water mark = 9
Tue Sep 12 14:20:13 2008
Stopping Job queue slave processes
Tue Sep 12 14:20:13 2008
Job queue slave processes stopped
Waiting for dispatcher 'D000' to shutdown
All dispatchers and shared servers shutdown
Tue Sep 12 14:20:17 2008
ARC2: Archival disabled due to shutdown: 1089
Shutting down archive processes
Archiving is disabled
Tue Sep 12 14:20:20 2008
alter database CLOSE NORMAL
Tue Sep 12 14:20:20 2008
ORA-1109 signalled during: alter database CLOSE NORMAL...
Tue Sep 12 14:20:20 2008
alter database DISMOUNT
Tue Sep 12 14:20:27 2008
ARCH shutting down
ARC1: Archival stopped
Tue Sep 12 14:20:32 2008
ARCH shutting down
ARC0: Archival stopped
Tue Sep 12 14:20:37 2008
ARCH shutting down
ARC2: Archival stopped
Tue Sep 12 14:20:37 2008
Completed: alter database DISMOUNT
ARCH: Archival disabled due to shutdown: 1089
Shutting down archive processes
Archiving is disabled
Archive process shutdown avoided: 0 active
Shutting down Data Guard Broker processes
Tue Sep 12 14:20:40 2008
Completed: Data Guard Broker shutdown
Tue Sep 12 14:20:42 2008
ARCH: Archival disabled due to shutdown: 1089
Shutting down archive processes
Archiving is disabled
Archive process shutdown avoided: 0 active
Tue Sep 12 14:20:48 2008
Starting ORACLE instance (normal)
LICENSE_MAX_SESSION = 0
LICENSE_SESSIONS_WARNING = 0
Picked latch-free SCN scheme 3
Autotune of undo retention is turned on.
IMODE=BR
ILAT =30
LICENSE_MAX_USERS = 0
SYS auditing is disabled
ksdpec: called for event 13740 prior to event group initialization
Starting up ORACLE RDBMS Version: 10.2.0.2.0.
System parameters with non-default values:
  processes                = 250
  sga_max_size              = 1073741824
  __shared_pool_size        = 222298112
  __large_pool_size         = 4194304
  __java_pool_size          = 159383552
  java_pool_size            = 159383552
  __streams_pool_size       = 0
  sga_target                = 1073741824
  control_files              = /oracle/PRDDDB1/origlogA/control01.ctl,
/oracle/PRDDDB1/origlogB/control02.ctl
  db_block_size              = 8192
  __db_cache_size           = 679477248
    
```

```

db_writer_processes      = 4
compatible               = 10.2.0.2.0
log_archive_config       = DG_CONFIG=(PRDDb1,STBDB1)
log_archive_dest_1       = location="/oracle/PRDDb1/oraarch",
valid_for=(ALL_LOGFILES,ALL_ROLES)
log_archive_dest_2       = SERVICE=PRDDb1_DATAGUARD LGWR SYNC AFFIRM
VALID_FOR=(ONLINE_LOGFILES,PRIMARY_ROLE) DB_UNIQUE_NAME=PRDDb1
log_archive_dest_state_1 = ENABLE
log_archive_dest_state_2 = DEFER
log_archive_max_processes= 2
log_archive_min_succeed_dest= 1
standby_archive_dest     = /oracle/PRDDb1/oraarch
log_archive_trace        = 384
log_archive_format       = PRDDb1_%t_%s_%r.arch
fal_client               =
(DESCRIPTION=(ADDRESS_LIST=(ADDRESS=(PROTOCOL=tcp)(HOST=10.0.0.129)(PORT=1521))) (CONNECT_DATA=(SERVICE_NAME=STBDB1_XPT)(INSTANCE_NAME=STBDB1)(SERVER=dedicated)))
fal_server               =
(DESCRIPTION=(ADDRESS_LIST=(ADDRESS=(PROTOCOL=tcp)(HOST=10.0.0.1)(PORT=1521))) (CONNECT_DATA=(SERVICE_NAME=PRDDb1_XPT)(SERVER=dedicated)))
archive_lag_target       = 0
db_file_multiblock_read_count= 16
db_recovery_file_dest    = /oracle/PRDDb1/flash_recovery_area
db_recovery_file_dest_size= 262144000
standby_file_management  = auto
fast_start_mttr_target   = 600
log_checkpoints_to_alert = TRUE
undo_management          = AUTO
undo_tablespace          = UNDOTBS1
db_block_checking        = FALSE
remote_login_passwordfile= EXCLUSIVE
db_domain                =
dispatchers              = (PROTOCOL=TCP) (SERVICE=PRDDb1XDB)
local_listener           = STBDB1_DATAGUARD
job_queue_processes      = 10
parallel_execution_message_size= 4096
background_dump_dest     = /oracle/PRDDb1/oratrace/bdump
user_dump_dest           = /oracle/PRDDb1/oratrace/udump
core_dump_dest           = /oracle/PRDDb1/oratrace/cdump
audit_file_dest          = /oracle/PRDDb1/oratrace/adump
db_name                  = PRDDb1
db_unique_name           = STBDB1
open_cursors              = 1000
optimizer_index_cost_adj = 1
pga_aggregate_target     = 418381824
dg_broker_start          = TRUE
PMON started with pid=2, OS id=14888
PSP0 started with pid=3, OS id=14890
MMAN started with pid=4, OS id=14892
DBW0 started with pid=5, OS id=14894
DBW1 started with pid=6, OS id=14896
DBW2 started with pid=7, OS id=14898
DBW3 started with pid=8, OS id=14900
LGWR started with pid=9, OS id=14902
CKPT started with pid=10, OS id=14904
SMON started with pid=11, OS id=14906
RECO started with pid=12, OS id=14908
CJQ0 started with pid=13, OS id=14910
MMON started with pid=14, OS id=14912
Tue Sep 12 14:20:49 2008
starting up 1 dispatcher(s) for network address
'(ADDRESS=(PARTIAL=YES)(PROTOCOL=TCP))'...
MMNL started with pid=15, OS id=14914
Tue Sep 12 14:20:49 2008
starting up 1 shared server(s) ...
DMON started with pid=18, OS id=14920
Tue Sep 12 14:20:49 2008
alter database mount
Tue Sep 12 14:20:53 2008
Setting recovery target incarnation to 1
Tue Sep 12 14:20:53 2008
Successful mount of redo thread 1, with mount id 2662545921
Tue Sep 12 14:20:53 2008
Database mounted in Exclusive Mode
Completed: alter database mount
Tue Sep 12 14:20:57 2008
Starting Data Guard Broker (DMON)

```

```

INSV started with pid=21, OS id=14928
NSVO started with pid=22, OS id=14930
RSMO started with pid=23, OS id=14934
Tue Sep 12 14:21:10 2008
ALTER SYSTEM SET standby_archive_dest='' SCOPE=BOTH SID='STBDB1';
Tue Sep 12 14:21:10 2008
ALTER SYSTEM SET
log_archive_dest_1='location="/oracle/PRDDB1/oraarch"', 'valid_for=(ONLINE_LOGFILE,A
LL_ROLES)' SCOPE=BOTH SID='STBDB1';
Tue Sep 12 14:21:10 2008
ALTER SYSTEM SET log_archive_dest_state_1='ENABLE' SCOPE=BOTH SID='STBDB1';
Tue Sep 12 14:21:10 2008
ALTER SYSTEM SET
log_archive_dest_2='service="(DESCRIPTION=(ADDRESS_LIST=(ADDRESS=(PROTOCOL=tcp) (HOS
T=
10.0.0.1) (PORT=1521))) (CONNECT_DATA=(SERVICE_NAME=PRDDB1_XPT) (INSTANCE_NAME=PRDDB1)
(SERVER=dedicated)))"', ' LGWR SYNC AFFIRM delay=0 OPTIONAL max_failure=0
max_connections=1 reopen=60 db_unique_name="PRDDB1" register net_timeout=10
valid_for=(online_logfile,primary_role)' SCOPE=BOTH;
Tue Sep 12 14:21:10 2008
ALTER SYSTEM SET log_archive_dest_state_2='ENABLE' SCOPE=BOTH;
Tue Sep 12 14:21:10 2008
ALTER DATABASE OPEN
Tue Sep 12 14:21:10 2008
Assigning activation ID 2662545921 (0x9eb33a01)
LGWR: STARTING ARCH PROCESSES
ARC0 started with pid=24, OS id=14936
Tue Sep 12 14:21:10 2008
ARC0: Archival started
ARC1: Archival started
LGWR: STARTING ARCH PROCESSES COMPLETE
ARC1 started with pid=25, OS id=14938
Tue Sep 12 14:21:10 2008
LGWR: Primary database is in MAXIMUM AVAILABILITY mode
Tue Sep 12 14:21:10 2008
Destination LOG_ARCHIVE_DEST_2 is SYNCHRONIZED
LGWR: Destination LOG_ARCHIVE_DEST_1 is not serviced by LGWR
LNSb started with pid=26, OS id=14940
Tue Sep 12 14:21:17 2008
*****
LGWR: Setting 'active' archival for destination LOG_ARCHIVE_DEST_2
*****
LNSb started with pid=26, OS id=14942
Tue Sep 12 14:21:23 2008
LGWR: Standby redo logfile selected to archive thread 1 sequence 387
LGWR: Standby redo logfile selected for thread 1 sequence 387 for destination
LOG_ARCHIVE_DEST_2
Thread 1 advanced to log sequence 387
LGWR: Waiting for ORLs to be archived...
Tue Sep 12 14:21:23 2008
ARC1: STARTING ARCH PROCESSES
Tue Sep 12 14:21:23 2008
ARC0: Becoming the 'no FAL' ARCH
ARC0: Becoming the 'no SRL' ARCH
ARC0: LGWR is actively archiving destination LOG_ARCHIVE_DEST_2
Tue Sep 12 14:21:23 2008
ARC2: Archival started
ARC1: STARTING ARCH PROCESSES COMPLETE
ARC1: Becoming the heartbeat ARCH
ARC2 started with pid=27, OS id=14944
Tue Sep 12 14:21:23 2008
ARC0: Standby redo logfile selected for thread 1 sequence 386 for destination
LOG_ARCHIVE_DEST_2
Tue Sep 12 14:21:26 2008
LGWR: ORLs successfully archived
Thread 1 opened at log sequence 387
Current log# 2 seq# 387 mem# 0: /oracle/PRDDB1/origlogA/redo02_01.log
Current log# 2 seq# 387 mem# 1: /oracle/PRDDB1/origlogB/redo02_02.log
Successful open of redo thread 1
Tue Sep 12 14:21:26 2008
SMON: enabling cache recovery
Tue Sep 12 14:21:26 2008
Successfully onlined Undo Tablespace 1.
Dictionary check beginning
Dictionary check complete
Tue Sep 12 14:21:26 2008
SMON: enabling tx recovery

```

```

Tue Sep 12 14:21:26 2008
Database Characterset is AL32UTF8
Threshold validation cannot be done before catproc is loaded.
*****
WARNING: Files may exists in db_recovery_file_dest
that are not known to the database. Use the RMAN command
CATALOG RECOVERY AREA to re-catalog any such files.
One of the following events caused this:
1. A backup controlfile was restored.
2. A standby controlfile was restored.
3. The controlfile was re-created.
4. db_recovery_file_dest had previously been enabled and
   then disabled.
*****
replication_dependency_tracking turned off (no async multimaster replication found)
Starting background process QMNC
QMNC started with pid=28, OS id=14946
Tue Sep 12 14:21:28 2008
LOGSTDBY: Validating controlfile with logical metadata
Tue Sep 12 14:21:28 2008
LOGSTDBY: Validation complete
Tue Sep 12 14:21:28 2008
Incremental checkpoint up to RBA [0x183.3.0], current log tail at RBA [0x183.28d.0]
Tue Sep 12 14:21:28 2008
Completed: ALTER DATABASE OPEN
Tue Sep 12 14:21:28 2008
ALTER SYSTEM SET log_archive_trace=384 SCOPE=BOTH SID='STBDB1';
Tue Sep 12 14:21:28 2008
ALTER SYSTEM SET log_archive_format='PRDDB1_%t_%s_%r.arch' SCOPE=SPFILE
SID='STBDB1';
Tue Sep 12 14:21:28 2008
ALTER SYSTEM SET standby_archive_dest='' SCOPE=BOTH SID='STBDB1';
Tue Sep 12 14:21:28 2008
ALTER SYSTEM SET standby_file_management='auto' SCOPE=BOTH SID='*';
Tue Sep 12 14:21:28 2008
ALTER SYSTEM SET archive_lag_target=0 SCOPE=BOTH SID='*';
Tue Sep 12 14:21:28 2008
ALTER SYSTEM SET log_archive_max_processes=2 SCOPE=BOTH SID='*';
Tue Sep 12 14:21:28 2008
ALTER SYSTEM SET log_archive_min_succeed_dest=1 SCOPE=BOTH SID='*';
Tue Sep 12 14:21:28 2008
ALTER SYSTEM SET
log_archive_dest_2='service="(DESCRIPTION=(ADDRESS_LIST=(ADDRESS=(PROTOCOL=tcp)(HOST=
T=
10.0.0.1)(PORT=1521)))(CONNECT_DATA=(SERVICE_NAME=PRDDB1_XPT)(INSTANCE_NAME=PRDDB1)
(SERVER=dedicated)))", ' LGWR SYNC AFFIRM delay=0 OPTIONAL max_failure=0
max_connections=1 reopen=60 db_unique_name="PRDDB1" register net_timeout=10
valid_for=(online_logfile,primary_role)' SCOPE=BOTH;
Tue Sep 12 14:21:28 2008
db_recovery_file_dest_size of 2500 MB is 0.00% used. This is a
user-specified limit on the amount of space that will be used by this
database for recovery-related files, and does not reflect the amount of
space available in the underlying filesystem or ASM diskgroup.
Tue Sep 12 14:21:28 2008
ALTER SYSTEM SET log_archive_dest_state_2='ENABLE' SCOPE=BOTH;
Tue Sep 12 14:21:28 2008
Thread 1 cannot allocate new log, sequence 388
Private strand flush not complete
Current log# 2 seq# 387 mem# 0: /oracle/PRDDB1/origlogA/redo02_01.log
Current log# 2 seq# 387 mem# 1: /oracle/PRDDB1/origlogB/redo02_02.log
*****
LGWR: Setting 'active' archival for destination LOG_ARCHIVE_DEST_2
*****
LNSb started with pid=26, OS id=14956
Tue Sep 12 14:21:40 2008
LGWR: Standby redo logfile selected to archive thread 1 sequence 388
LGWR: Standby redo logfile selected for thread 1 sequence 388 for destination
LOG_ARCHIVE_DEST_2
Beginning log switch checkpoint up to RBA [0x184.2.10], SCN: 21008240
Thread 1 advanced to log sequence 388
Current log# 3 seq# 388 mem# 0: /oracle/PRDDB1/origlogA/redo03_01.log
Current log# 3 seq# 388 mem# 1: /oracle/PRDDB1/origlogB/redo03_02.log
Tue Sep 12 14:22:10 2008
Shutting down archive processes
Tue Sep 12 14:22:15 2008
ARCH shutting down
ARC2: Archival stopped

```

### 3 Switchover ohne Broker

Achtung: Wenn DataGuard Broker aktiv ist, muss er zuerst disabled werden und nach dem Switchover neu konfiguriert werden.

Primary:

#### Step 1 Verify it is possible to perform a switchover.

```
sqlplus "/as sysdba"
SQL> SELECT SWITCHOVER_STATUS FROM V$DATABASE;
SWITCHOVER_STATUS
-----
SESSIONS ACTIVE

alter system set job_queue_processes = 0;

SQL> SELECT SWITCHOVER_STATUS FROM V$DATABASE;
SWITCHOVER_STATUS
-----
TO STANDBY
```

#### Step 2 Initiate the switchover on the primary database.

```
SQL> ALTER DATABASE COMMIT TO SWITCHOVER TO PHYSICAL STANDBY;
Database altered.
```

#### Step 3 Shut down and restart the former primary instance.

```
SQL> SHUTDOWN IMMEDIATE;
ORA-01507: database not mounted

ORACLE instance shut down.
SQL> STARTUP MOUNT;
ORACLE instance started.

Total System Global Area 1073741824 bytes
Fixed Size                  2076688 bytes
Variable Size               293605360 bytes
Database Buffers            771751936 bytes
Redo Buffers                 6307840 bytes
Database mounted.
SQL>
```

#### Step 4 Verify the switchover status in the V\$DATABASE view on former standby.

```
SQL> SELECT SWITCHOVER_STATUS FROM V$DATABASE;
SWITCHOVER_STATUS
-----
TO PRIMARY
```

#### Step 5 Switch the target physical standby database role to the primary role.

```
SQL> ALTER DATABASE COMMIT TO SWITCHOVER TO PRIMARY;
```

Database altered.

### Step 6 Finish the transition of the standby database to the primary role.

```
SQL> ALTER DATABASE OPEN;
```

Database altered.

### Step 7 If necessary, restart log apply services on the standby databases.

```
SQL> alter database recover managed standby database using current logfile  
disconnect from session parallel 4
```

### Step 8 Begin sending redo data to the standby databases.

```
SQL> ALTER SYSTEM SWITCH LOGFILE;
```

### Step 9 Configure TNS and Connect Strings on Application Servers

## 4 Failover

Bei synchronem Übertragungsmodus ist das Risiko von Datenverlust ausgeschlossen.

### 4.1 Failover mit DataGuard Broker

Connect mit dgmgrl von neuer Primary Database:

```
DGMGRL> CONNECT SYS  
DGMGRL> FAILOVER TO 'STBASSB1';
```

Backup the new primary database.

### 4.2 Failover ohne DataGuard Broker

Achtung: Wenn DataGuard Broker aktiv ist, muss er zuerst disabled werden und nach dem Failover neu konfiguriert werden.

#### Step 1 Initiate a failover on the target physical standby database.

```
SQL> ALTER DATABASE RECOVER MANAGED STANDBY DATABASE FINISH FORCE;
```

#### Step 2 Convert the physical standby database to the primary role.

```
SQL> ALTER DATABASE COMMIT TO SWITCHOVER TO PRIMARY;
```

#### Step 3 Finish the transition of the standby database to the primary database role.

```
SQL> SHUTDOWN IMMEDIATE;  
SQL> startup nomount;  
SQL> alter system set DB_BLOCK_CHECKING=TRUE;  
SQL> alter system set log_archive_dest_state_2 = defer;  
SQL> alter database mount;  
SQL> alter database open;
```

#### Step 4 Back up the new primary database.

## 5 Nacharbeiten

### 5.1 Connect-Strings

Nach dem Switchover/Failover müssen die Client Connect Strings in Siebel und Batch geändert werden.

Alter Connect String:

```
PRDDB1 =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = TCP)(Host = 10.128.0.1)(Port = 1521))
    )
    (CONNECT_DATA =
      (SID = PRDDB1)
    )
  )
```

Neuer Connect String:

```
STBDB1 =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = TCP)(Host = 10.128.0.129)(Port = 1521))
    )
    (CONNECT_DATA =
      (SID = STBDB1)
    )
  )
```

### 5.2 Monitoring

Auf dem Standby-Host muss nun Oracle Enterprise Manager - Grid/DB Control konfiguriert und gestartet werden. Anschließend müssen die gewünschten Schwellwerte konfiguriert werden.

### 5.3 Backup

Nach dem Switchover/Failover muss evtl. die Backup-Konfiguration angepasst werden.