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# Oracle Rdb Support Interesting SRs

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# Program Agenda

- “Suppressed” After-Image Journal files
- Hot Standby documentation issues
- Connection Refused
- RDB-F-IO\_ERROR
- Helping Oracle Rdb support help you

# **“Suppressed” After-Image Journal Files**

# “Suppressed” After-Image Journal Files

- Received severity 1 SR
  - Just converted from 7.2 to 7.3
  - Cannot perform AIJ backup
  - AIJ files filling up
  - RMU/SHOW STAT shows an AIJ is “Suppressed”
  - How do we fix this?

# “Suppressed” After-Image Journal Files

## RMU/SHOW STAT “AIJ Journal Information” Screen

Node: NODEA (1/1/16)      Oracle Rdb V7.3-110 Perf. Monitor      5-SEP-2014 14:53:13.39  
Rate: 3.00 Seconds                      AIJ Journal Information                      Elapsed: 00:00:41.73  
Page: 1 of 2                              DISK:[DIRECTORY]FOO.RDB;1                      Mode: Online

---

Journaling: enabled    Shutdown:    60    Notify: disabled    State: Accessible  
ALS: Manual            ABS: disabled                      FC: disabled    CTJ: disabled  
ARB.Count:   300 ARB.Avail:   300 SwtchSched:   0 NxtSwtch:  
After-Image.Journal.Name..... SeqNum    AIJsize    CurrEOF   Status.   State.....  
AIJ01                                      2            2000       Unknown   Current   Accessible  
AIJ02                                      1       \*BACKUP    NEEDED\*   Written   Suppressed  
AIJ03                                      Unused       2000       Empty   Latent   Accessible  
Available AIJ slot 1  
Available AIJ slot 2  
Available AIJ slot 3  
Available AIJ slot 4  
Available AIJ slot 5  
Available AIJ slot 6  
Available AIJ slot 7

# “Suppressed” After-Image Journal Files

## How to Reproduce

- Under Oracle Rdb 7.2
  - Create a database (a few storage areas, a couple tables, indexes)
  - Add some AIJs and enable (this example has 3)
  - Backup database
  - Open database
  - Insert a row and commit
  - Backup AIJ, database
  - Perform an update (insert or update, commit or rollback)
  - Close database



# “Suppressed” After-Image Journal Files

## How to Reproduce

- Under Oracle Rdb 7.3
  - Perform RMU/CONVERT
  - Backup database
  - Open database
  - Use RMU/SHOW STAT to look at “AIJ Journal Information” screen

# “Suppressed” After-Image Journal Files

## A Little Background

- The Oracle RMU Reference Manual documents
  - RMU/Set After\_Journal/Suppress=(Name=name) rootfile
  - RMU/Set After\_Journal/Alter=(Name=name) rootfile
- But why?
  - Allows one to take journals offline for disk maintenance
  - Oracle Rdb will not try to use a suppressed journal
  - Oracle Rdb will want to backup a non-empty suppressed journal in AIJ sequence order

# “Suppressed” After-Image Journal Files

## A Little Background

- How does one use it?
  - If the journal is in use, /Switch\_Journal
  - If the journal contains data, perform journal backup
  - Manually suppress
  - Do with the disk as you wish, when done
  - Manually unsuppress

# “Suppressed” After-Image Journal Files

## How to Fix It

- Tried and true method
  - Close database
  - RMU/Set After\_Journal/Alter=(Name=AIJ02) FOO
  - RMU/Set After\_Journal/Disable FOO
  - RMU/Set After\_Journal/Drop=(Name=AIJ02) FOO
  - RMU/Set After\_Journal/Add=(Name=...
  - RMU/Set After\_Journal/Enable FOO
  - Backup database

# “Suppressed” After-Image Journal Files

## How to Fix It

- Another method found during post-mortem testing
  - RMU/Set After\_Journal/Alter=(Name=AIJ02) FOO
  - RMU/Backup/After\_Journal FOO ...

# “Suppressed” After-Image Journal Files

## What Oracle Rdb Engineering Is Doing

- Adding clarification on /NoConfirm qualifier of /Convert
- Adding example of using /Alter to the Installation Guide
- Adding specific tests in regression suite

# “Suppressed” After-Image Journal Files

## Asides

- /Convert from 7.0 to 7.1 or 7.2 produces an error not seen in 7.2 to 7.3

```
%RMU-E-BADVERAIJ, after-image journal version is incompatible with the DBCS  
                  expected: 7110, found: 7011  
%RMU-W-ROOERRORS,      1 error encountered in root verification
```

- Because the AIJ versions between 7.0 and 7.1 or 7.2 are different
- AIJ versions between 7.2 and 7.3 are the same
- Adding check in root verification to report this

# Hot Standby Documentation Issues



# Hot Standby Documentation Issues

## TCP/ip

- Customer attempting to set up Hot Standby using TCP/ip
  - Getting errors when trying to start master replication

```
%RDMS-F-CANTSTARTLCS, error starting AIJ Log Catch-Up Server process  
-COSI-F-NOSUCHSRV, network service is unknown at remote node  
%RMU-F-FATALRDB, Fatal error while accessing Oracle Rdb.  
%RMU-F-FTL_RMU, Fatal error for RMU operation at 22-AUG-2014 01:02:37.38
```

- Perfectly followed the Hot Standby manual

```
$ UCX SET SERVICE RDMAIJSRV  
/PORT=n  
/USER_NAME=RDMAIJSERVER  
/PROCESS_NAME=RDMAIJSERVER  
/FILE=SYS$SYSTEM:rdmaijserver_ucx.com  
/LIMIT=nn
```

# Hot Standby Documentation Issues

## TCP/ip

- Unfortunately this is a place where the manual hasn't kept up
  - It should be

```
$ UCX SET SERVICE RDMAIJ72  
/PORT=n  
/USER_NAME=RDMAIJ72  
/PROCESS_NAME=RDMAIJ72  
/FILE=SYS$SYSTEM:rdmaijserver72.com  
/LIMIT=nn
```

# Hot Standby Documentation Issues

TCP/ip

- Customer accepted this
  - But reported a new error when starting replication on the master

`%COSI-F-ENDOFFILE, end of file`

`%RMU-F-FATALOSI, Fatal error from the Operating System Interface.`

`%RMU-F-FTL_RMU, Fatal error for RMU operation at 22-AUG-2014 16:56:22.13`

- There is a note that matches the symptoms exactly
  - RDBPROD: Cannot Get Hot Standby to Start ([Doc ID 820346.1](#))
  - Asked for more information to prove this was the cause
  - It was and ...

# Hot Standby Documentation Issues

TCP/ip

- It wasn't
  - The note tells us that we need to set privileges correctly on the account
  - But, you also need to spell the user name correctly
  - Yes, it was privileges ... the account did not exist
- Problem solved when customer noticed and corrected the typo

# Hot Standby Documentation Issues

## How to Perform Journal Backups

- Hot Standby manual tells us to configure database to use ABS
- “We” tell customers to perform manual AIJ backups
  - Without regard to whether Hot Standby is in use
- All of my test scripts setting up Hot Standby used ABS as manual says
  - Tried not using ABS ... it worked
- RDBPROD: How to configure Hot Standby logicals ([Doc ID 311997.1](#))
  - “Note: ABS is NOT required. It is used on the standby side whether it is turned on or not - it is transparent to the user if they specified not to use it.”

# Hot Standby Documentation Issues

## How to Perform Journal Backups

- Backup your Hot Standby master journals as you wish
  - Manual
  - ABS
- Recognize that manual journal backup while Hot Standby is inactive can “hide” journals needed for replication to be restarted

# Connection Refused

# Connection Refused

- Received severity 1 SR
- Generally what does “connection refused” mean?
  - Nothing listening on port
  - Firewall issue
- Error reported

```
FAILED: Service Connection test  
rc=-1  
SQLState=08S01  
[Oracle][ODBC][Rdb] Connect Ret -1 Err#10061 WSAECONNREFUSED Connection refused
```



# Connection Refused

- We have a note that talks about this error
  - RDBPROD: Oracle ODBC Driver for Rdb "Test Connection" Errors ([Doc ID 1138699.1](#))
- Used OWC session with the customer
  - Showed GENERIC service
  - Service had SQL version set to 7.0
  - Since Oracle Rdb database version was 7.1, changed it
  - Now he could connect
  - Something's fishy

# Connection Refused

- Wrong SQL version doesn't cause "connection refused"
- Customer has more servers
  - All had SQL/Services 7.2 installed
  - Server we just changed was running SQL/Services 7.0
  - Second server we looked at was like the first
  - Third server we looked at had \*no\* version of SQL/Services installed
  - Also true for fourth and fifth servers
  - Aha!

# RDB-F-IO\_ERROR

# RDB-F-IO\_ERROR

- Another severity 1 SR
  - Application getting RDB-F-IO\_ERROR
  - But, application doesn't display secondary error messages
  - Asked for

```
$ SHOW ERROR
$ RMU/DUMP/HEADER rootfile
$ RMU/VERIFY/ALL rootfile
```

- Both nodes showed 1 error on each of 3 disk devices
- All 6 of those devices did not exist

SYSTEM-W-NOSUCHDEV

# RDB-F-IO\_ERROR

- Also asked for monitor log file
- Dump header showed
  - Single file database
  - Empty corrupt page table
  - Users accessing database
  - Since he uploaded three dump headers, could see TSNs increasing
  - Database creation was just a couple days earlier
- Database verification was clean

# RDB-F-IO\_ERROR

- Asked for monitor log file again
- Monitor log file showed
  - More than one database being used
  - All information provided to this point was for one database
- Customer expressed concern about one table in particular
  - Table name was curiously similar to name of database just “discovered”
  - Verify the “new” database
  - Boom!

# Helping Oracle Rdb Support Help You

# Helping Oracle Rdb Support Help You

- It is helpful if we are given
  - The information we ask for in a timely fashion
  - Information that is not overly filtered
  - Information that is not overwhelming
  - Information that is accurate
- If a request is unclear, ask what we mean
  - More or less experience with OpenVMS and/or Oracle Rdb
  - Language might be an issue



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