

Practice 18

Handling Corrupted Blocks

Practice Target

In this practice you will use the Data Recovery Advisor to discover and repair a corrupted block in a data file.

Practice Overview

In this practice, you will implement the following recovery tasks:

- Simulate having a corrupted block
- Use the Data Recovery Advisor to troubleshoot and repair the corrupted block

Assumptions

This practice assumes the `srv1` appliance is up and running and its database `ORADB` is running in `OPEN` state.

Pre-requisites

Take a **snapshot** of `srv1` appliance. Name the snapshot "**Practice 18 Start**".

Caution!

Because the practice involves destruction action on the data, do not go on with implementing the practice without creating the snapshot for the appliance first, as instructed by the previous step.

Using Data Recovery Advisor

Preparing for the Scenario

1. Start Putty and connect to `srv1` as `oracle`

2. Invoke RMAN and login to `ORADB` as `target`

```
rman target ''/ as SYSBACKUP''
```

3. Take backup of the database then exit from RMAN

```
BACKUP DATABASE TAG 'FULL_DB';  
ALTER SYSTEM SWITCH LOGFILE;
```

Simulating Block Corruption

In the following steps, you will corrupt a block in `SOETBS` tablespace.

4. Start SQL*Plus and login as `sysdba` to the local instance.

```
sqlplus / as sysdba
```

5. Obtain the block header number of `SOE.ORDERS` table. Add a small number (any number between 3 and 9) to the obtained number and take a note of the result.

The query returns the block header. You will later corrupt a block that is a few blocks away from this block. For example, if the query returns the number 100, you may corrupt the block number 105.

```
SELECT HEADER_BLOCK FROM DBA_SEGMENTS WHERE OWNER='SOE' AND SEGMENT_NAME='ORDERS';
```

6. Obtain the fullname of `soetbs` datafile. Take a note of it.

```
SELECT NAME FROM V$DATAFILE WHERE TS#=(SELECT T.TS# FROM V$TABLESPACE T WHERE  
NAME='SOETBS');
```

7. Exit from SQL*Plus

8. Use the `dd` utility to make a corruption in the named block.

Substitute the `<datafile full name>` with the datafile full name obtained above.

Substitute the `<block# to corrupt>` with the block number that you noted earlier.

When you execute the command, it will prompt you to enter data. Type any word, like "test" for example, then press [Enter]. After that, type "EOF" (without the quotes) then press [Enter].

```
dd of=<datafile full name> bs=8192 conv=notrunc seek=<block# to corrupt> << EOF
```

9. Connect as `soe` user and issue the following query to select the data from the `SOE.ORDERS`.

The query should report the corruption.

```
ORA-01578: ORACLE data block corrupted (file # n, block # m)
```

```
sqlplus soe/soe
SELECT * FROM ORDERS;
```

Using the Data Recovery Advisor to Repair the Corruption

In the following steps, you will use the Data Recovery Advisor to repair the corruption made above.

10. Invoke RMAN and login to `ORADB` as target

```
rman target ''/ as SYSBACKUP''
```

11. Use the Data Recovery Advisor to check for failures.

```
LIST FAILURE;
```

12. Use the Data Recovery Advisor to obtain the solution options.

You can review the generated repair script, if you want to.

```
ADVISE FAILURE;
```

13. Use the Data Recovery Advisor to recover the corrupted block.

```
REPAIR FAILURE;
```

14. Confirm that no more failures are still there.

```
LIST FAILURE;
```

15. Scan the datafile to make sure no further corruption is there.

```
VALIDATE CHECK LOGICAL DATAFILE '<datafile full name>';
```

Note: In real life scenario, recovering a corrupted block is usually not the end of the repair solution. You need to perform further investigation in levels outside of the database to know the root cause. This usually involves communicating with the system administrator to check on the storage system.

Clean Up

16. Restore `srv1` to the snapshot **"Practice 18 Start"** and start `srv1`.
17. Delete that snapshot.

Summary

The Data Recovery Advisor simplifies the process of detecting and repairing data block corruptions.

