Practice

Upgrading Oracle Grid Infrastructure

Practice Target

In this practice, you will upgrade the Oracle Grid Infrastructure configured in `srv1-asm` from 19c to 21c.

Assumption

The practice assumes that you have `srv1-asm` in VirtualBox up and running.

Reference

The reference for upgrading Oracle Grid Infrastructure is the following documentation:

"**Grid Infrastructure Installation and Upgrade Guide**"

Introduction

`AutoUpgrade` upgrades Oracle databases but not Oracle Grid Infrastructure. If Oracle databases is running in a system with Oracle Grid Infrastructure (as is the case with Oracle Restart, RAC, and RAC One Node), and you want to upgrade the entire system, you need to upgrade the Grid Infrastructure first then upgrade the database. You learnt in the previous lecture about upgrading Oracle databases. In this lecture, you will learn about upgrading the Oracle Gird Infrastructure.

Upgrading Oracle Grid Infrastructure

In this section of the practice, you will perform upgrade Oracle Grid Infrastructure in `srv1-asm` from release 19c to 21c.

1. Download Oracle Grid Infrastructure 21c software for Linux x86-64. You can download it from this link or this link. The file name is `LINUX.X64_213000_grid_home.zip` and its size is nearly 2.3G.

2. Copy or move the downloaded file to the sharing folder.

3. In OracleVritualBox, create a snapshot for the `srv1-asm`. Give it a name like "**before upgrading to 21c**"

4. Open Putty and login to `srv1` as `grid`

```
su - grid
```

5. Create Oracle new grid home directory.

```
mkdir -p /u01/app/21.0.0/grid
```

6. Extract the installation zip file into the new Oracle grid home directory.

```
unzip /media/sf_staging/LINUX.X64_213000_grid_home.zip -d /u01/app/21.0.0/grid
>/dev/null
```

7. Change the current directory to the new Grid home.

```
cd /u01/app/21.0.0/grid/
```

8. Run the following command to verify that the system is ready for upgrading.

   The `runcluvfy.sh` script is called CVU. We use it over here to verify that all the requirements for upgrade apply in our environment.

   The utility should report only one issue. That is about the insufficient Physical Memory in the system. In our case, we can ignore this issue because it requires 8G RAM and the amount of memory seen by the system is very close to this figure. The utility should not report another issue in our case.

```
./runcluvfy.sh stage -pre crsinst -upgrade -rolling -src_crshome
/u01/app/19.0.0/grid -dest_crshome /u01/app/21.0.0/grid -dest_version 21.0.0.0.0
-fixup -verbose
```

As the Grid Infrastructure is ready for the upgrade, we need to shut down the databases that are registered in the Grid Infrastructure software. Observe that we shut down the database but not the Grid resources.

9. Shutdown the database.

```
srvctl stop database -d oradb -o immediate
```

10. In the VirtualBox window of the vm, login to the vm as `grid` user. Open a terminal window.

11. Unset the Grid environment variables.

```
unset ORACLE_HOME
unset ORACLE_BASE
unset ORACLE_SID
```

12. Run the installer from the new Grid home directory.

```
cd /u01/app/21.0.0/grid
./gridSetup.sh
```

13. Respond to the installer as follows:

Window	Response
Configuration Option	Upgrade Oracle Grid Infrastructure
Management Options	Click on **Next** button
Installation Location	The shown base and home directories should be correct. Click on **Next** button
Root Script Execution	Mark the checkbox "**Automatically Run Configuration Scripts**" Enter the `root` password
Prerequisites Checks	It should complain about the memory size only. Mark the checkbox "Ignore All" and click on **Next** button
Summary	click on Submit button
Install Product	At 11%, you will prompted to run root scripts, click on **Yes** button
Finish	Click on **Close** button

14. Verify the Clusterware resources are online.

```
crsctl status resource -t
```

Now the Grid Infrastructure is upgraded and running. We need to take some post-upgrade actions.

15. Open the `.bash_profile` file and fix the `ORACLE_HOME` value variable in it.

```
vi ~/.bash_profile

export ORACLE_HOME=/u01/app/21.0.0/grid
```

16. Source the `.bash_profile` file so that the changes take effect.

```
source ~/.bash_profile

# to verify:
echo $ORACLE_HOME
```

17. As the old Gird Infrastructure is no longer needed, we can detach it from the Oracle Inventory file. Run the following command to achieve this task.

```
$ORACLE_HOME/oui/bin/runInstaller -detachHome -silent
ORACLE_HOME=/u01/app/19.0.0/grid

# verify:
cat /u01/app/oraInventory/ContentsXML/inventory.xml |grep grid
```

18. Upgrade the `COMPATIBLE` attribute of the disk groups to 21.

```
sqlplus / as sysasm

ALTER DISKGROUP data SET ATTRIBUTE 'compatible.asm' = '21.0.0.0.0';
ALTER DISKGROUP ocrdisk SET ATTRIBUTE 'compatible.asm' = '21.0.0.0.0';
```

Now the Grid Infrastructure is fully upgraded. Technically speaking, we do not have to upgrade Oracle database. It should work fine with the upgraded version of Grid Infrastructure. However, Oracle recommends to have the same release and patch release numbers for both the database and the Grid Infrastructure.

19. Start the database.

The database should successfully start.

```
srvctl start database -d oradb
```

After upgrading the Grid Infrastructure, we can now proceed with upgrading the Oracle database using the same procedure that you learnt in the previous lecture. You can go ahead and implement the database upgrade or stop this practice at this stage.

20. Shutdown the vm

21. Restore the vm from the snapshot taken in the beginning of the lecture. Delete the snapshot afterwards.

Summary

Oracle Grid Infrastructure can be upgraded using the installer itself. The procedure is easy and straightforward.