RAW PARTITIONS FOR OCR AND VOTING FILES : CREATION AND CONFIGURATION GUIDE

Inderpal S. Johal

INTRODUCTION

We are using Raw devices storage for Oracle Clusterware OCR and Voting disks Files. OCR and Voting disk files are not supported on ASM as ASM configured files are only available after the ASM instance is started and Oracle Clusterware needs these file before ASM instance startup.

STEPS FOR CREATING AND CONFIGURING RAW DEVICES

1. List the Available Raw Devices and Disk Partition
2. Create the Partition for OCR and Voting disk Files
3. Add the Raw devices information in the /etc/sysconfig/rawdevices file
4. Bind the Partitions to the Raw Devices
5. Set the Owner, group and Permissions on the Device file
6. Repeat step 2 through step 4 on each node in the cluster.

LIST THE AVAILABLE RAW DEVICES AND DISK PARTITION

Starting with the 2. 6 Linux kernel distributions, raw devices are not supported automatically. To confirm that raw devices are enabled, enter the following command:

```
# chkconfig --list | grep rawdevices
rawdevices      0:off   1:off   2:off   3:on    4:on    5:on    6:off
```

CREATE THE PARTITION FOR OCR AND VOTING DISK FILES

Check the Disk Partition created on available Disk. I have created 2 partition on /dev/sde to accomadate Voting and OCR files. Their Sizes are as follows

```
/dev/sde1          -          500M       -          OCR
/dev/sde2          -          500M       -          Voting disk
# fdisk -l /dev/sde
Disk /dev/sde: 268.4 GB, 268435456000 bytes
255 heads, 63 sectors/track, 32635 cylinders
Units = cylinders of 16065 * 512 = 8225280 bytes

   Device Boot      Start         End      Blocks   Id  System
/dev/sde1               1          62      497983+  83  Linux
/dev/sde2              63         124      498015   83  Linux
/dev/sde3             125       25024   200009250   83  Linux
/dev/sde4           25025       32635    61135357+  83  Linux
```

ADD THE RAW DEVICES INFORMATION IN THE /etc/sysconfig/rawdevices *FILE*

```
[root@db02pn ASM]# vi /etc/sysconfig/rawdevices
/dev/raw/raw1 /dev/sde1
/dev/raw/raw2 /dev/sde2
```

BIND THE PARTITIONS TO THE RAW DEVICES

To determine what raw devices are already bound to other devices, enter the following command on every node:

```
[root@db02pn]#  /usr/bin/raw -qa
```

Now Bind the partitions to raw devices, enter the following command

```
[root@db02pn]# /sbin/service rawdevices restart
Assigning devices:
        /dev/raw/raw1  -->   /dev/sde1
/dev/raw/raw1:  bound to major 8, minor 65
        /dev/raw/raw2  -->   /dev/sde2
/dev/raw/raw2:  bound to major 8, minor 66
done
```

SET THE OWNER, GROUP AND PERMISSIONS ON THE DEVICE FILE

After you confirm that the raw devices service is running, you should change the default ownership of raw devices.

```
# ls -ltr /dev/raw/*
crw-rw----  1 root disk 162, 2 Jul 23 15:24 /dev/raw/raw2
crw-rw----  1 root disk 162, 1 Jul 23 15:24 /dev/raw/raw1

# chown root:oinstall /dev/raw/raw1
# chmod 640 /dev/raw/raw1
# chown oracle:oinstall /dev/raw/raw2
# chmod 644 /dev/raw/raw2
```

By making the oinstall group the owner of the OCR, this permits the OCR to be read by multiple Oracle homes, including those with different OSDBA groups.

```
[root@db02pn ASM]# ls -ltr /dev/raw/*
crw-r-----  1 root oinstall 162, 2 Jul 23 15:24 /dev/raw/raw2
crw-r-----  1 oracle oinstall 162, 1 Jul 23 15:24 /dev/raw/raw1
```

ENSURE OWNERSHIP OF RAWDEVICES ON SYSTEM REBOOT

To ensure correct ownership of these devices when the operating system is restarted, create a new file named oracle.permissions in the /etc/udev/permissions.d directory and enter the raw device permissions information.

```
raw/raw1:root:oinstall:0660
raw/raw2:oracle:oinstall:0644
```

After adding the permissions.d/oracle.permissions file, If you prefer to avoid restarting the raw device service or the operating system, then you can modify /etc/rc.d/rc.local to force ownership changes to take effect immediately, as shown in the following example:

```
# OCR
chown root:oinstall /dev/raw/raw1
chmod 660 /dev/raw/raw1

# Voting Disks
chown oracle:oinstall /dev/raw/raw2
chmod 644 /dev/raw/raw2

# /usr/bin/raw -qa
/dev/raw/raw1:  bound to major 8, minor 65
/dev/raw/raw2:  bound to major 8, minor 66
```