

# How to ADD/REMOVE/REPLACE/MOVE Oracle Cluster Registry (OCR) and Voting Disk

## Purpose

To provide step to add, remove, replace or move an OCR or voting disk in Oracle Real Application Clusters (RAC) 10g Release 2 (10.2.0.1 and later) environments.

## SCOPE & APPLICATION

This article is intended for DBAs and Support Engineers who need to modify, or move OCR and voting disk locations. Customers, who have an existing clustered environment deployed on a storage array, might want to migrate to a new storage array, with minimal downtime. Typically, one would simply cp or dd the files once the new storage has been presented to the hosts. In this case, it is a little more difficult because,

1. The clusterware has the OCR and voting disks open and is actively using them. (Both the primary and the mirrors)
2. There is a "cluster api" provided for this function (ocrconfig, and crsctl), which is a better interface than typical cp and/or dd commands.

It is highly recommended to take a backup of the voting disk, and OCR device before making any changes.

Examples are included at the end of OCR and voting disk command.

## ADD/REMOVE/REPLACE OCR Device

Note: You must be logged in as the root user, because root own the OCR files.

Make sure there is a recent copy of the OCR file before making any changes:

```
ocrconfig -showbackup
```

If there is not a recent backup copy of the OCR file, an export can be taken for the current OCR file. Use the following command to generate a an export of the online OCR file:

```
ocrconfig -export <OCR export_filename> -s online
```

If you need to recover using this file, the following command can be used:

```
ocrconfig import <OCR export_filename>
```

### 1. To add an OCR device:

To add an OCR device, provide the full path including file name.

```
ocrconfig -replace ocr <filename>
```

To add an OCR mirror device, provide the full path including file name.

```
ocrconfig -replace ocrmirror <filename>
```

### 2. To remove an OCR device:

To remove an OCR device:

```
ocrconfig -replace ocr
```

To remove an OCR mirror device  
ocrconfig -replace ocrmirror

### **3. To replace or move the location of an OCR device:**

To replace the OCR device with <filename>, provide the full path including file name.

```
ocrconfig -replace ocr <filename>
```

To replace the OCR mirror device with <filename>, provide the full path including file name.

```
ocrconfig -replace ocrmirror <filename>
```

### **Example moving OCR file from OCFS to raw devices**

The OCR disk must be owned by root, must be in the oinstall group, and must have permissions set to 640. Provide at least 100 MB disk space for the OCR.

In this example the OCR file are located in the ocfs2 file system:

```
/ocfs2/ocr1  
/ocfs2/ocr2
```

Create raw device files of at least 100 MB. In this example the new OCR file will be on the following devices:

```
/dev/raw/raw1  
/dev/raw/raw2
```

Once the raw devices are created, use the dd command to zero out the device and make sure no data is written to the raw devices:

```
dd if=/dev/zero of=/dev/raw/raw1  
dd if=/dev/zero of=/dev/raw/raw2
```

Note: Use UNIX man pages for additional information on the dd command.

Now you are ready to move/replace the OCR file to the new storage location.

Move/Replace the OCR device  
ocrconfig -replace ocr /dev/raw/raw1

Add /dev/raw/raw2 as OCR mirror device  
ocrconfig -replace ocr /dev/raw/raw2

### **Example of adding an OCR device file**

If you have upgraded your environment from a previous version, where you only had 1 OCR device file, you can use the following step to add an additional OCR file.

**In this example a second OCR device file is added:**

Add /dev/raw/raw2 as OCR mirror device  
ocrconfig -replace ocr /dev/raw/raw2

## ADD/DELETE/MOVE Voting Disk

Note: Shutdown the Oracle Clusterware (crsctl stop crs as root) on all nodes before making any modification to the voting disk. Determine the current voting disk location using:

```
crsctl query css votedisk
```

Take a backup of all voting disk:

```
dd if=voting_disk_name of=backup_file_name
```

Note: Use UNIX man pages for additional information on the dd command.

The following can be used to restore the voting disk from the backup file created.

```
dd if=backup_file_name of=voting_disk_name
```

**1. To add a Voting Disk**, provide the full path including file name.:

```
crsctl add votedisk css <RAW_LOCATION> -force
```

**2. To delete a Voting Disk**, provide the full path including file name.:

```
crsctl delete votedisk css <RAW_LOCATION> -force
```

**3. To move a Voting Disk**, provide the full path including file name.:

```
crsctl delete votedisk css <OLD_LOCATION> -force
```

```
crsctl add votedisk css <NEW_LOCATION> -force
```

After modifying the voting disk, start the Oracle Clusterware stack on all nodes

```
crsctl start crs
```

Verify the voting disk location using

```
crsctl query css votedisk
```

### Example moving Voting Disk from OCFS to raw devices

**The voting disk is a partition that Oracle Clusterware uses to verify cluster node membership and status.**

**The voting disk must be owned by the oracle user, must be in the dba group, and must have permissions set to 644. Provide at least 20 MB disk space for the voting disk.**

In this example the Voting Disks are located in the ocfs2 file system:

```
/ocfs2/voting1
```

```
/ocfs2/voting2
```

```
/ocfs2/voting3
```

Create raw device files of at least 20 MB. In this example the new voting disks will be on the following devices:

```
/dev/raw/raw3
```

```
/dev/raw/raw4
```

```
/dev/raw/raw5
```

Once the raw devices are created, use the dd command to zero out the device and make sure no data is written to the raw devices:

```
dd if=/dev/zero of=/dev/raw/raw3
```

```
dd if=/dev/zero of=/dev/raw/raw4
```

```
dd if=/dev/zero of=/dev/raw/raw5
```

Note: Use UNIX man pages for additional information on the dd command.

Now you are ready to move/replace the voting disks to the new storage location.

**To move a Voting Disk to new storage location:**

```
crsctl delete votedisk css /ocfs2/voting1 -force
crsctl add votedisk css /dev/raw/raw3 -force
crsctl delete votedisk css /ocfs2/voting2 -force
crsctl add votedisk css /dev/raw/raw4 -force
crsctl delete votedisk css /ocfs2/voting3 -force
crsctl add votedisk css /dev/raw/raw5 -force
```

**Example of adding Voting Disks**

If you have upgraded your environment from a previous version, where you only had 1 voting disk, you can use the following steps to add additional voting disk.

**In this example 2 additional Voting Disks are added:**

```
crsctl add votedisk css /dev/raw/raw4 -force
crsctl add votedisk css /dev/raw/raw5 -force
```

After modifying the voting disk, start the Oracle Clusterware stack on all nodes

```
crsctl start crs
```

Verify the voting disk location using

```
crsctl query css votedisk
```