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Configure Oracle Cluster File System (OCFS2)

Create the OCFS2 configuration file. As the root user on rac1, execute
- on VNC session

ocfs2console

File Cluster Tasks Help

Mount Unmount Refresh Filter:

Device	Mountpoint
--------	------------

General File Listing

Version: N/A
Label: N/A
UUID: N/A
Maximum Nodes: N/A
Cluster Size: N/A
Block Size: N/A
Free Space: N/A
Total Space: N/A

Cluster - Configure Nodes

Information

The cluster stack has been started. It needs to be running for any clustering functionality to happen. Please run `"/etc/init.d/o2cb enable"` to have it started upon bootup.

Close

/etc/init.d/o2cb enable

Cluster - Configure Nodes

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Add Node

Name: rac1

IP Address: 192 .168 .15 .120

IP Port: 7777

Cancel OK

Node Configuration

Nodes:

Active	Name	Node	IP Address	IP Port
	rac1	102	168 15 7777	

Buttons: Add, Edit, Remove

Add Node (overlaid dialog):

Name: rac2

IP Address: 192 .168 .15 .121

IP Port: 7777

Buttons: Cancel, OK

Buttons: Apply, Close

```
cat /etc/ocfs2/cluster.config
```

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```
[root@rac1 bin]# cat /etc/ocfs2/cluster.conf
node:
    ip_port = 7777
    ip_address = 192.168.15.120
    number = 0
    name = rac1
    cluster = ocfs2

node:
    ip_port = 7777
    ip_address = 192.168.15.121
    number = 1
    name = rac2
    cluster = ocfs2

cluster:
    node_count = 2
    name = ocfs2
```

While configuring the nodes for OCFS2 using `ocfs2console`, it is possible to run into the error:

```
o2cb_ctl: Unable to access cluster service while creating node
```

This error does not show up when you startup `ocfs2console` for the first time. This message comes up when there is a problem with the cluster configuration or if you do not *save* the cluster configuration initially while setting it up using `ocfs2console`. This is a bug!

The work-around is to exit from the `ocfs2console`, unload the `o2cb` module and remove the `ocfs2` cluster configuration file `/etc/ocfs2/cluster.conf`. I also like to remove the `/config` directory. After removing the `ocfs2` cluster configuration file, restart the `ocfs2console` program.

For example:

```
# /etc/init.d/o2cb offline ocfs2
# /etc/init.d/o2cb unload
Unmounting ocfs2_dlmfs filesystem: OK
Unloading module "ocfs2_dlmfs": OK
Unmounting configfs filesystem: OK
Unloading module "configfs": OK

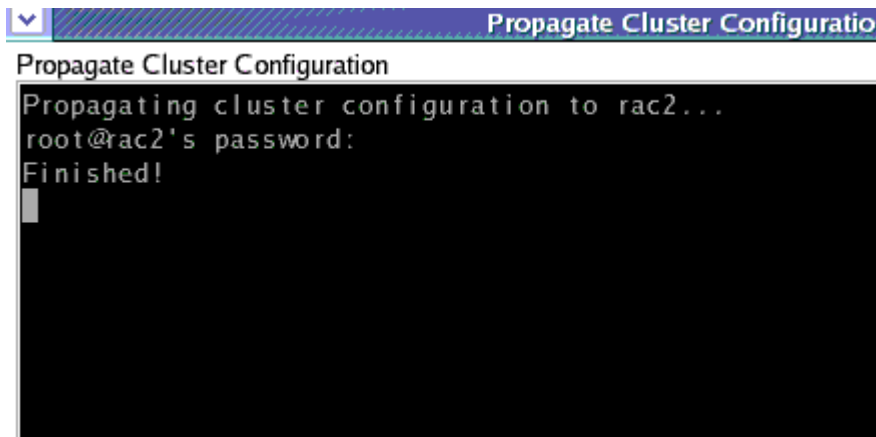
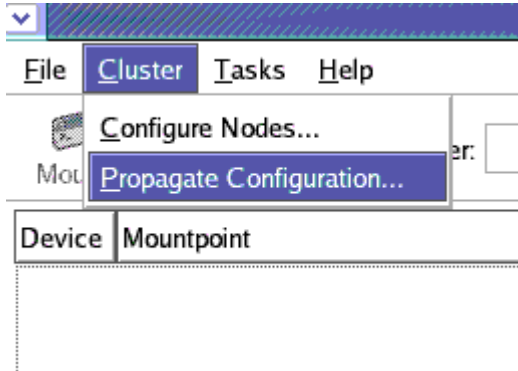
# rm -f /etc/ocfs2/cluster.conf
# rm -rf /config

# ocfs2console &
```

This time, it will add the nodes!

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Propagate the changes to rac2



Configure the O2CB driver - both nodes as root user

```
/etc/init.d/o2cb unload
```

```
/etc/init.d/o2cb configure
```

```
/etc/init.d/o2cb status
```

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```
[root@rac1 bin]# /etc/init.d/o2cb unload
Stopping O2CB cluster ocfs2: OK
Unmounting ocfs2_dlmfs filesystem: OK
Unloading module "ocfs2_dlmfs": OK
Unmounting configfs filesystem: OK
Unloading module "configfs": OK
[root@rac1 bin]# /etc/init.d/o2cb configure
Configuring the O2CB driver.
```

This will configure the on-boot properties of the O2CB driver. The following questions will determine whether the driver is loaded on boot. The current values will be shown in brackets ('[]'). Hitting <ENTER> without typing an answer will keep that current value. Ctrl-C will abort.

```
Load O2CB driver on boot (y/n) [n]: y
Cluster to start on boot (Enter "none" to clear) [ocfs2]:
Specify heartbeat dead threshold (>=7) [7]: 61
Specify network idle timeout in ms (>=5000) [10000]:
Specify network keepalive delay in ms (>=1000) [5000]:
Specify network reconnect delay in ms (>=2000) [2000]:
Writing O2CB configuration: OK
Loading module "configfs": OK
Mounting configfs filesystem at /config: OK
Loading module "ocfs2_nodemanager": OK
Loading module "ocfs2_dlm": OK
Loading module "ocfs2_dlmfs": OK
Mounting ocfs2_dlmfs filesystem at /dlm: OK
Starting O2CB cluster ocfs2: OK
```

```
[root@rac1 bin]# /etc/init.d/o2cb status
Module "configfs": Loaded
Filesystem "configfs": Mounted
Module "ocfs2_nodemanager": Loaded
Module "ocfs2_dlm": Loaded
Module "ocfs2_dlmfs": Loaded
Filesystem "ocfs2_dlmfs": Mounted
Checking O2CB cluster ocfs2: Online
  Heartbeat dead threshold: 61
  Network idle timeout: 10000
  Network keepalive delay: 5000
  Network reconnect delay: 2000
Checking O2CB heartbeat: Not active
```

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format - only on one node
osfs2console

Tasks - Format

The screenshot shows the OCFs2 Console interface. At the top, there is a menu bar with 'File', 'Cluster', 'Tasks', and 'Help'. Below the menu bar are icons for 'Mount', 'Unmount', and 'Refresh', along with a 'Filter:' text box. The main area contains a table with two columns: 'Device' and 'Mountpoint'. A 'Format' dialog box is open in the foreground, displaying the following settings:

- Available devices: /dev/sdb1 (unknown)
- Volume label: oracle
- Cluster size: Auto
- Number of node slots: 4
- Block size: Auto

Buttons for 'Cancel' and 'OK' are visible at the bottom of the dialog box. In the background, the 'Format' dialog is partially obscured by a 'General' tab showing file listing information:

- Version: N/A
- Label: N/A
- UUID: N/A
- Maximum Nodes: N/A
- Cluster Size: N/A
- Block Size: N/A
- Free Space: N/A

```
mount -t ocfs2 -o datavolume,nointr /dev/sdb1 /ocfs
```

```
[root@rac1 bin]# mount -t ocfs2 -o datavolume,nointr /dev/sdb1 /ocfs
[root@rac1 bin]# df -h
Filesystem                Size      Used Avail Use% Mounted on
/dev/sda1                  6.9G    2.1G    4.5G  33% /
none                       345M         0   345M   0% /dev/shm
/dev/sda3                   11G     60M    11G   1% /u01
/dev/hdc                     637M    637M     0 100% /media/cdrom
192.168.15.112:/software   39G     37G     0 100% /software
/dev/sdb1                   102M    19M    84M  19% /ocfs
```

Mount on rac2

```
[root@rac2 ~]# mount -t ocfs2 -o datavolume,nointr /dev/sdb1 /ocfs
```

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To mount the file system on boot, add the following line in /etc/fstab on both nodes.

```
vi /etc/fstab - on both nodes  
/dev/sdb1 /ocfs ocfs2 _netdev,datavolume,nointr 0 0
```

```
# This file is edited by fstab-sync - see 'man fstab-sync' for details  
LABEL=/ / ext3 defaults 1 1  
none /dev/pts devpts gid=5,mode=620 0 0  
none /dev/shm tmpfs defaults 0 0  
none /proc proc defaults 0 0  
none /sys sysfs defaults 0 0  
LABEL=/u01 /u01 ext3 defaults 1 2  
LABEL=SWAP-sda2 swap swap defaults 0 0  
/dev/hdc /media/cdrom auto pamconsole,fscontext=system_u:objec  
t_r:removable_t,exec,noauto,managed 0 0  
/dev/fd0 /media/floppy auto pamconsole,fscontext=system_u:objec  
t_r:removable_t,exec,noauto,managed 0 0  
/dev/sdb1 /ocfs ocfs2 _netdev,datavolume,nointr 0 0  
~  
~  
~
```

Create Oracle Clusterware directory - on both nodes

```
mkdir -p /ocfs/clusterware  
chown -R oracle:dba /ocfs
```