

# Role STORE - DRBD File System (Redundant no LVM)

## Notes

It is not trivial to resize this configuration, it is recommended to use [Role STORE - DRBD File System \(Redundant with LVM\)](#).

## Create DRBD Partitions on disk (Both Nodes)

The commands below assume that **/dev/sdb** will be used for the DRBD partition.

```
device=/dev/sdb
dd if=/dev/zero of=${device} obs=512 count=100
dd if=/dev/zero of=${device} obs=512 count=100 seek=$(( $(blockdev --getsz ${device}) -100 ))
parted ${device} "mklabel gpt"
parted ${device} "mkpart primary 0% 100%"
```

Verify that the partition is created:

```
fdisk -l /dev/sdb

-->

WARNING: fdisk GPT support is currently new, and therefore in an experimental phase. Use at your own discretion.

Disk /dev/sdb: 274.9 GB, 274877906944 bytes, 536870912 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk label type: gpt
Disk identifier: E7FF3D92-84BB-44E1-B0B0-26150DB80639


#           Start          End      Size  Type           Name
# 1         2048      536868863    256G  Microsoft basic primary
```

## Install DRBD Repos (Both Nodes)

```
rpm --import https://www.elrepo.org/RPM-GPG-KEY-elrepo.org
rpm -Uvh http://www.elrepo.org/elrepo-release-7.0-3.el7.elrepo.noarch.rpm
```

## Install DRBD Modules (Both Nodes)

```
yum -y install drbd84-utils kmod-drbd84
```

## Configure Firewall (Both Nodes)

```
firewall-cmd --zone=public --add-port=7788-7799/tcp --permanent  
firewall-cmd --reload
```

## Configure DRBD (Both Nodes)

NOTE: The following commands requires the hostname of both machines and the IP Address. These are obtained as follows:

```
ip addr  
hostname
```

Create a DRBD config file for jtelshared on /dev/sdb

#### /etc/drbd.d/jtelshared.res

```
cat <<EOFF > /etc/drbd.d/jtelshared.res
resource jtelshared {
    protocol C;
    meta-disk internal;
    device /dev/drbd1;
    syncer {
        verify-alg sha1;
    }
    net {
        allow-two-primaries;
    }
    on acd-store1 {
        disk /dev/sdb1;
        address 10.4.8.71:7789;
    }
    on acd-store2 {
        disk /dev/sdb1;
        address 10.4.8.171:7789;
    }
    startup {
        become-primary-on both;
    }
}
EOFF
```

**Note: it has been observed, that the fully qualified host name is required in the configuration file. If the first step below fails, then try with the fully qualified host name.**

## Create Metadata and start (Both Nodes)

```
drbdadm create-md jtelshared
drbdadm up jtelshared
```

## Make one node primary (First Node)

```
drbdadm primary jtelshared --force
```

## Tune the transfer (Second Node)

```
drbdadm disk-options --c-plan-ahead=0 --resync-rate=110M jtelshared
```

## Create filesystem (First Node)

```
mkfs.xfs -L data /dev/drbd1
```

## Create fstab entry for file system (Both Nodes)

Add the following line to **/etc/fstab**

```
/dev/drbd/by-res/jtelshared/0 /srv/jtel/shared xfs noauto,noatime,nodiratime 0 0
```

## Mount the file system (First Node)

```
mkdir /srv/jtel  
mkdir /srv/jtel/shared  
chown -R jtel:jtel /srv/jtel  
mount /srv/jtel/shared
```

## Wait for initial sync to complete (Any Node)

```
cat /proc/drbd

-->

# When not yet done:

version: 8.4.10-1 (api:1/proto:86-101)
GIT-hash: a4d5de01fffd7e4cde48a080e2c686f9e8cebf4c build by mockbuild@, 2017-09-15 14:23:22

1: cs:SyncTarget ro:Secondary/Primary ds:Inconsistent/UpToDate C r-----
   ns:0 nr:3955712 dw:3950592 dr:0 al:8 bm:0 lo:5 pe:0 ua:5 ap:0 ep:1 wo:f oos:264474588
      [>.....] sync'ed: 1.5% (258272/262132)M
      finish: 2:08:08 speed: 34,388 (25,652) want: 112,640 K/sec

-->

# When done:

version: 8.4.10-1 (api:1/proto:86-101)
GIT-hash: a4d5de01fffd7e4cde48a080e2c686f9e8cebf4c build by mockbuild@, 2017-09-15 14:23:22

1: cs:Connected ro:Secondary/Primary ds:UpToDate/UpToDate C r-----
   ns:0 nr:15626582 dw:284051762 dr:0 al:8 bm:0 lo:0 pe:0 ua:0 ap:0 ep:1 wo:f oos:0
```

## Untune the transfer (Second Node)

```
drbdadm adjust jtelshared
```

## Make second node primary and mount the file system (Second node)

```
mkdir /srv/jtel
mkdir /srv/jtel/shared
chown -R jtel:jtel /srv/jtel
drbdadm primary jtelshared
mount /srv/jtel/shared
```

## Install Samba and Isof (Both Nodes)

#### Install SAMBA

```
yum -y install samba samba-client lsof
```

## Configure Samba (Both Nodes)

#### Configure SAMBA

```
cat <<EOFF > /etc/samba/smb.conf
[global]
    workgroup = SAMBA
    security = user
    passdb backend = tdbsam
    printing = cups
    printcap name = cups
    load printers = yes
    cups options = raw
    min protocol = NT1
    ntlm auth = yes

[homes]
    comment = Home Directories
    valid users = %S, %D%w%S
    browseable = No
    read only = No
    inherit acls = Yes

[printers]
    comment = All Printers
    path = /var/tmp
    printable = Yes
    create mask = 0600
    browseable = No

[print$]
    comment = Printer Drivers
    path = /var/lib/samba/drivers
    write list = root
    create mask = 0664
    directory mask = 0775

[shared]
    comment = jtel ACD Shared Directory
    read only = no
    public = yes
    writable = yes
    locking = yes
    path = /srv/jtel/shared
    guest ok = yes
    create mask = 0644
    directory mask = 0755
    force user = jtel
    force group = jtel
    acl allow execute always = True

EOFF
```

## Setup SeLinux, jtel User access and Firewall for Samba (Both Nodes)

Replace <password> with the actual password for the jtel user:

### SeLinux, jtel User, Firewall

```
setsebool -P samba_enable_home_dirs=on samba_export_all_rw=on use_samba_home_dirs=on use_nfs_home_dirs=on
printf '<password>\n<password>\n' | smbpasswd -a -s jtel
firewall-cmd --zone=public --add-port=445/tcp --add-port=139/tcp --add-port=138/udp --add-port=137/udp --permanent
firewall-cmd --reload
```

If necessary, add further users to samba:

### More SAMBA users

```
useradd -m Administrator
printf 'Flr3B²1l\nFlr3B²1l\n' | smbpasswd -a -s Administrator
```

## Test SAMBA (Both Nodes)

This test should be performed on the node which currently has /srv/jtel/shared mounted:

### Test SAMBA

```
mount /srv/jtel/shared
service nmb start
service smb start

# Now check access to the SMB share via (for example) one of the windows machines.

service smb stop
service nmb stop
umount /srv/jtel/shared

# do same again on other node
```

## Unmount and disable SAMBA (Both Nodes)



#### Unmount

```
service smb stop
service nmb stop
umount /srv/jtel/shared
systemctl disable smb
```

## Install PCS Services (Both Nodes)

See [Redundancy - Installing PCS Cluster](#).

## Setup virtual IP (One Node Only!)

Change the following to set the virtual IP which should be shared between the nodes.

#### Set virtual IP

```
KE_VIP=10.4.8.22
```

## Configure PCS Resources (One Node Only!)

Configure the PCS resources with the following commands:

#### Configure PCS Resources

```
pcs resource create ClusterDataJTELSharedMount ocf:heartbeat:Filesystem device="/dev/drbd/by-res/jtelshared/0" directory="/srv/jtel/shared" fstype="xfs" --group=jtel_portal_group
pcs resource create ClusterIP ocf:heartbeat:IPaddr2 ip=${KE_VIP} cidr_netmask=32 op monitor interval=30s --group=jtel_portal_group
pcs resource create samba systemd:smb op monitor interval=30s --group=jtel_portal_group
pcs constraint order start ClusterDataJTELSharedMount then ClusterIP
pcs constraint order start ClusterIP then samba
```

## Test

Test as follows:

### Test pcs status

pcs status

--> shows the status of the newly created resources on both nodes, one node should be active.

Cluster name: portal  
Stack: corosync  
Current DC: uk-acd-store2 (version 1.1.16-12.el7\_4.8-94ff4df) - partition with quorum  
Last updated: Mon Mar 19 15:40:24 2018  
Last change: Mon Mar 19 15:40:16 2018 by root via cibadmin on uk-acd-store1

2 nodes configured  
3 resources configured

Online: [ uk-acd-store1 uk-acd-store2 ]

Full list of resources:

Resource Group: jtel\_portal\_group  
ClusterDataJTELSharedMount (ocf::heartbeat:Filesystem): Started uk-acd-store1  
ClusterIP (ocf::heartbeat:IPaddr2): Started uk-acd-store1  
samba (systemd:smb): Started uk-acd-store1

Daemon Status:  
corosync: active/enabled  
pacemaker: active/enabled  
pcsd: active/enabled

Test the file mount:

### Test file mount

# From the windows machines:

dir \\uk-acd-store\shared

Test manual failover:

### Test file mount

```
# Failover to node 2
pcs cluster standby uk-acd-store1

# ... (wait)

pcs status

# Then test the availability of the files from the windows machines.
# Create a new file before failing back (to make sure DRBD working ok).

# Fail back to node 1
pcs cluster unstandby uk-acd-store1
pcs cluster standby uk-acd-store2

# ... (wait)

pcs status

# Then test the availability of the files from the windows machines.
# Check that the new file created above is available.

# Unstandby node 2

pcs cluster unstandby uk-acd-store2
```

## Manually link /home/jtel/shared (Both Nodes)

### link /home/jtel/shared

```
ln -s /srv/jtel/shared /home/jtel/shared
```