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 lsof (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 'F1r3B²11\nF1r3B²11\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
```