**Install the targetcli package on the server.**

# yum install targetcli -y

Once you installed the package, enter below command to get a iSCSI CLI for an interactive prompt.

[root@server ~]# targetcli

Warning: Could not load preferences file /root/.targetcli/prefs.bin.

targetcli shell version 2.1.fb41

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For help on commands, type 'help'.

>

Now use an existing logical volume (**/dev/vg\_iscsi/lv\_iscsi**) as a block-type backing store for storage object **“scsi\_disk1\_server**“.

/> **cd backstores/block**

/backstores/block> **create scsi\_disk1\_server /dev/vg\_iscsi/lv\_iscsi**

Created block storage object scsi\_disk1\_server using /dev/vg\_iscsi/lv\_iscsi.

**Create a target.**

/backstores/block> cd /iscsi

/iscsi> create iqn.2016-02.local.cdac.server:disk1

Created target iqn.2016-02.local.cdac.server:disk1.

Created TPG 1.

Global pref auto\_add\_default\_portal=true

Created default portal listening on all IPs (0.0.0.0), port 3260.

/iscsi>

Create ACL for client machine (It’s the IQN which clients use to connect).

/iscsi> cd /iscsi/iqn.2016-02.local.cdac.server:disk1/tpg1/acls

/iscsi/iqn.20...sk1/tpg1/acls> create iqn.2016-02.local.cdac.server:node1node2(nodesname)

Created Node ACL for iqn.2016-02.local.cdac.server:node1node2

By default authentication is enabled, disable it.

/iscsi/iqn.20...sk1/tpg1/acls> cd /iscsi/iqn.2016-02.local.cdac.server:disk1/tpg1/

/iscsi/iqn.20...er:disk1/tpg1> set attribute authentication=0

Parameter authentication is now '0'.

/iscsi/iqn.20...er:disk1/tpg1> set attribute generate\_node\_acls=1

Parameter generate\_node\_acls is now '1'.

/iscsi/iqn.20...e930cf09/tpg1> set attribute demo\_mode\_write\_protect=0

Create a LUN under the target, The LUN should use the previously mentioned backing storage object named “**scsi\_disk1\_server**”

/iscsi/iqn.20...er:disk1/tpg1> **cd /iscsi/iqn.2016-02.local.cdac.server:disk1/tpg1/luns**

/iscsi/iqn.20...sk1/tpg1/luns> **create /backstores/block/scsi\_disk1\_server**

Created LUN 0.

Created LUN 0->0 mapping in node ACL iqn.2016-02.local.cdac.server:node1node2

Verify the target server configuration.

/iscsi/iqn.20.../tpg1/portals> **cd /**

/> **ls**

o- / ......................................................................................................................... [...]

  o- backstores .............................................................................................................. [...]

  | o- block .................................................................................................. [Storage Objects: 1]

  | | o- scsi\_disk1\_server .................................................. [/dev/vg\_iscsi/lv\_iscsi (5.0GiB) write-thru activated]

  | o- fileio ................................................................................................. [Storage Objects: 0]

  | o- pscsi .................................................................................................. [Storage Objects: 0]

  | o- ramdisk ................................................................................................ [Storage Objects: 0]

  o- iscsi ............................................................................................................ [Targets: 1]

  | o- iqn.2016-02.local.cdac.server:disk1 ............................................................................ [TPGs: 1]

  |   o- tpg1 .................................................................................................. [gen-acls, no-auth]

  |     o- acls .......................................................................................................... [ACLs: 1]

  |     | o- iqn.2016-02.local.cdac.server:node1node2 .......................................................... [Mapped LUNs: 1]

  |     |   o- mapped\_lun0 ..................................................................... [lun0 block/scsi\_disk1\_server (rw)]

  |     o- luns .......................................................................................................... [LUNs: 1]

  |     | o- lun0 ............................................................... [block/scsi\_disk1\_server (/dev/vg\_iscsi/lv\_iscsi)]

  |     o- portals .................................................................................................... [Portals: 1]

  |       o- 0.0.0.0:3260 ..................................................................................................... [OK]

  o- loopback ......................................................................................................... [Targets: 0]Save and exit from target CLI.

/> **saveconfig**

Last 10 configs saved in /etc/target/backup.

Configuration saved to /etc/target/saveconfig.json

/> **exit**

Global pref auto\_save\_on\_exit=true

Last 10 configs saved in /etc/target/backup.

Configuration saved to /etc/target/saveconfig.json

Enable and restart the target service.

[root@server ~]# systemctl enable target.service

[root@server ~]# systemctl restart target.service

Configure the firewall to allow iSCSI traffic.

[root@server ~]# firewall-cmd --permanent --add-port=3260/tcp

[root@server ~]# firewall-cmd --reload

**Configure Initiator:**

Now it’s the time to configure a client machine to use this target as a storage, install below package on the client machine (**node1**).

[root@node1 ~]# yum install iscsi-initiator-utils -y

Edit below file and add iscsi initiator name.

[root@node1 ~]# vi /etc/iscsi/initiatorname.iscsi

**InitiatorName=iqn.2016-02.local.cdac.server:node1node2**

Discover the target using below command.

[root@node1 ~]# iscsiadm -m discovery -t st -p 192.168.12.20

192.168.12.20:3260,1 iqn.2016-02.local.cdac.server:disk1

Restart and enable the initiator service.

[root@node1 ~]# systemctl restart iscsid.service

[root@node1 ~]# systemctl enable iscsid.service

Login to the discovered target.

[root@node1 ~]# iscsiadm -m node -T iqn.2016-02.local.cdac.server:disk1 -p 192.168.12.20 -l

Logging in to [iface: default, target: iqn.2016-02.local.cdac.server:disk1, portal: 192.168.12.20,3260] (multiple)

Login to [iface: default, target: iqn.2016-02.local.cdac.server:disk1, portal: 192.168.12.20,3260

**Creating File System:**

After login (connecting) to discovered target, have a look at messages file. You would find similar output like below, from where you can find a name of the disk.

[root@node1 ~]# cat /var/log/messages

Feb 23 14:54:47 node2 kernel: sd 34:0:0:0: [sdb] 10477568 512-byte logical blocks: (5.36 GB/4.99 GiB)

Feb 23 14:54:47 node2 kernel: sd 34:0:0:0: [sdb] Write Protect is off

Feb 23 14:54:47 node2 kernel: sd 34:0:0:0: [sdb] Write cache: disabled, read cache: enabled, doesn't support DPO or FUA

Feb 23 14:54:48 node2 kernel: sdb: unknown partition table

Feb 23 14:54:48 node2 kernel: sd 34:0:0:0: [sdb] Attached SCSI disk

Feb 23 14:54:48 node2 iscsid: Could not set session2 priority. READ/WRITE throughout and latency could be affected.

Feb 23 14:54:48 node2 iscsid: Connection2:0 to [target: iqn.2016-02.local.cdac.server:disk1, portal: 192.168.12.20,3260] through [iface: default] is operational now

List down the attached disks.

[root@node1 ~]# cat /proc/partitions

major minor  #blocks  name

   8        0  104857600 sda

   8        1     512000 sda1

   8        2  104344576 sda2

  11        0    1048575 sr0

 253        0    2113536 dm-0

 253        1   52428800 dm-1

 253        2   49799168 dm-2

   8       16    5238784 sdb

Format the new disk (for sake of article, I have formated whole disk instead of creating partition)

root@node1 ~]# mkfs.xfs /dev/sdb

meta-data=/dev/sdb               isize=256    agcount=8, agsize=163712 blks

         =                       sectsz=512   attr=2, projid32bit=1

         =                       crc=0

data     =                       bsize=4096   blocks=1309696, imaxpct=25

         =                       sunit=0      swidth=0 blks

naming   =version 2              bsize=4096   ascii-ci=0 ftype=0

log      =internal log           bsize=4096   blocks=2560, version=2

         =                       sectsz=512   sunit=0 blks, lazy-count=1

realtime =none                   extsz=4096   blocks=0, rtextents=0

**Mount the disk.**

[root@node1 ~]# mount /dev/sdb /mnt

verify the disk is mounted using below command.

[root@node1 ~]# df -hT

Filesystem              Type      Size  Used Avail Use% Mounted on

/dev/mapper/centos-root xfs        50G  955M   50G   2% /

devtmpfs                devtmpfs  908M     0  908M   0% /dev

tmpfs                   tmpfs     914M   54M  861M   6% /dev/shm

tmpfs                   tmpfs     914M  8.5M  905M   1% /run

tmpfs                   tmpfs     914M     0  914M   0% /sys/fs/cgroup

/dev/mapper/centos-home xfs        48G   33M   48G   1% /home

/dev/sda1               xfs       497M   97M  401M  20% /boot

/dev/sdb                xfs       5.0G   33M  5.0G   1% /mnt

In case you want to de-attach the added disk, please follow the procedure (unmount and logout).

[root@node1 ~]# umount /mnt/

[root@node1 ~]# iscsiadm -m node -T iqn.2016-02.local.cdac.server:disk1 -p 192.168.12.20 -u

Logging out of session [sid: 1, target: iqn.2016-02.local.cdac.server:disk1, portal: 192.168.12.20,3260]

Logout of [sid: 1, target: iqn.2016-02.local.cdac.server:disk1, portal: 192.168.12.20,3260] successful.