

## BeeGFS File System Installation and Configuration Guide for CentOS 8 VMs

### 1. General Configuration (All Nodes):

- Install nano and wget:

```
yum install -y nano wget && cd /etc/yum.repos.d/ && wget  
https://www.beegfs.io/release/beegfs\_7.4.2/dists/beegfs-rhel8.repo
```

- Edit hosts file:

```
nano /etc/hosts  
  
192.168.1.20 beegfs-mgmt-meta-srv-01  
  
192.168.1.40 beegfs-storage-01  
  
192.168.1.41 beegfs-storage-02  
  
192.168.1.42 beegfs-client-01
```

### 2. Configuration on Meta and Mgmt Node:

- Format and mount drive:

```
mkfs.ext4 /dev/sda  
  
mkdir /mnt/sda1/  
  
mount /dev/sda /mnt/sda1/
```

- Install management daemon:

```
yum install -y beegfs-mgmd
```

- Generate connection auth file:

```
dd if=/dev/random of=/etc/beegfs/connauthfile bs=128 count=1  
  
chown root:root /etc/beegfs/connauthfile  
  
chmod 400 /etc/beegfs/connauthfile
```

- Securely copy connection auth file to other nodes:

scp /etc/beegfs/connauthfile to beegfs-storage-01 beegfs-storage-02 client-node to /etc/beegfs directory

- Configure management daemon:

```
nano /etc/beegfs/beegfs-mgmt.conf
```

```
[define /etc/beegfs/connauthfile path in config file]
```

```
cd /opt/beegfs/sbin/
```

```
mkdir -p /data/beegfs/beegfs_mgmtd
```

```
./beegfs-setup-mgmtd -p /data/beegfs/beegfs_mgmtd
```

```
systemctl start beegfs-mgmtd && systemctl status beegfs-mgmtd
```

- Install and configure metadata service:

```
yum install -y beegfs-meta
```

```
./beegfs-setup-meta -p /mnt/sda1/ -s 1 -m beegfs-mgmt-srv-01 -f
```

```
systemctl start beegfs-meta && systemctl status beegfs-meta
```

### 3. Configuration on Storage Nodes (Node-01 and Node-02):

- Install storage service:

```
yum install beegfs-storage
```

- Prepare storage devices:

```
lsblk
```

```
mkfs.xfs /dev/nvme0n2
```

```
mkfs.xfs /dev/nvme0n3
```

```
mkdir /mnt/raid1
```

```
mkdir /mnt/raid2
```

```
mount /dev/nvme0n2 /mnt/raid1
```

```
mount /dev/nvme0n3 /mnt/raid2
```

```
df -h
```

- Configure storage service:

```
nano /etc/beegfs/beegfs-storage.conf
```

```
[define /etc/beegfs/connauthfile path in config file]
```

- For Node-01:

```
./beegfs-setup-storage -p /mnt/raid1/ -s 3 -i 301 -m beegfs-mgmt-meta-srv-01
```

```
./beegfs-setup-storage -p /mnt/raid2/ -s 3 -i 302 -m beegfs-mgmt-meta-srv-01
```

- For Node-02:

```
./beegfs-setup-storage -p /mnt/raid1/ -s 4 -i 401 -m beegfs-mgmt-meta-srv-01
```

```
./beegfs-setup-storage -p /mnt/raid2/ -s 4 -i 402 -m beegfs-mgmt-meta-srv-01
```

- Start and verify storage service:

```
systemctl start beegfs-storage && systemctl status beegfs-storage
```

#### 4. Configuration on Client Node:

- Disable SELinux:

```
nano /etc/selinux/config [set disabled]
```

```
setenforce 0
```

- Install client and helper daemon:

```
yum install -y kernel-devel beegfs-helperd
```

- Rebuild and configure client:

```
/etc/init.d/beegfs-client rebuild
```

```
./beegfs-setup-client -m beegfs-mgmt-meta-srv
```