How to Configure SOftware in RHEL-8 ?

Step-1 check your disk status first ?

```
[root@localhost ~]# rpm -qa  mdadm
mdadm-4.1-4.el8.x86_64
[root@localhost ~]#
[root@localhost ~]# lsblk
NAME   MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
sda      8:0    0   30G  0 disk
â”œâ”€sda1   8:1    0 1000M  0 part /boot
â”œâ”€sda2   8:2    0 14.7G  0 part /
â”œâ”€sda3   8:3    0    2G  0 part [SWAP]
â””â”€â”€sda4   8:4    0    1K  0 part
sdb      8:16   0   10G  0 disk
sr0     11:0    1  6.6G  0 rom
[root@localhost ~]#
[root@localhost ~]# fdisk -l
Disk /dev/sda: 30 GiB, 32212254720 bytes, 62914560 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
Disklabel type: dos
Disk identifier: 0xf085a991

Device     Boot    Start      End  Sectors  Size Id Type
/dev/sda1  *        2048  2050047  2048000 1000M 83 Linux
/dev/sda2        2050048 32770047 30720000 14.7G 83 Linux
/dev/sda3       32770048 36866047  4096000    2G 82 Linux swap /
Solaris
/dev/sda4       36866048 62914559 26048512 12.4G  5 Extended


Disk /dev/sdb: 10 GiB, 10737418240 bytes, 20971520 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
[root@localhost ~]#
```

Step-2 Go in to the harddisk and create the partition as per need ?

```
[root@localhost ~]# fdisk  /dev/sdb

Welcome to fdisk (util-linux 2.32.1).
Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.

Device does not contain a recognized partition table.
Created a new DOS disklabel with disk identifier 0x140ca2c2.
```

```
Command (m for help): n
Partition type
   p   primary (0 primary, 0 extended, 4 free)
   e   extended (container for logical partitions)
Select (default p): p
Partition number (1-4, default 1): 1
First sector (2048-20971519, default 2048):
Last sector, +sectors or +size{K,M,G,T,P} (2048-20971519, default
20971519): +2G

Created a new partition 1 of type 'Linux' and of size 2 GiB.

Command (m for help): n
Partition type
   p   primary (1 primary, 0 extended, 3 free)
   e   extended (container for logical partitions)
Select (default p): p
Partition number (2-4, default 2): 2
First sector (4196352-20971519, default 4196352):
Last sector, +sectors or +size{K,M,G,T,P} (4196352-20971519, default
20971519): +2G

Created a new partition 2 of type 'Linux' and of size 2 GiB.

Command (m for help): n
Partition type
   p   primary (2 primary, 0 extended, 2 free)
   e   extended (container for logical partitions)
Select (default p): p
Partition number (3,4, default 3): 3
First sector (8390656-20971519, default 8390656):
Last sector, +sectors or +size{K,M,G,T,P} (8390656-20971519, default
20971519): +2G

Created a new partition 3 of type 'Linux' and of size 2 GiB.

Command (m for help):

Command (m for help): p

Disk /dev/sdb: 10 GiB, 10737418240 bytes, 20971520 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
Disklabel type: dos
Disk identifier: 0x140ca2c2

Device     Boot   Start      End Sectors Size Id Type
/dev/sdb1          2048  4196351 4194304   2G 83 Linux
/dev/sdb2       4196352  8390655 4194304   2G 83 Linux
/dev/sdb3       8390656 12584959 4194304   2G 83 Linux
```

```
Command (m for help): t
Partition number (1-3, default 3): 1
Hex code (type L to list all codes): fd

Changed type of partition 'Linux' to 'Linux raid autodetect'.

Command (m for help): t
Partition number (1-3, default 3): 2
Hex code (type L to list all codes): fd

Changed type of partition 'Linux' to 'Linux raid autodetect'.

Command (m for help): t
Partition number (1-3, default 3): 3
Hex code (type L to list all codes): fd

Changed type of partition 'Linux' to 'Linux raid autodetect'.

Command (m for help): p
Disk /dev/sdb: 10 GiB, 10737418240 bytes, 20971520 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
Disklabel type: dos
Disk identifier: 0x140ca2c2

Device     Boot   Start      End Sectors Size Id Type
/dev/sdb1          2048  4196351 4194304   2G fd Linux raid autodetect
/dev/sdb2       4196352  8390655 4194304   2G fd Linux raid autodetect
/dev/sdb3       8390656 12584959 4194304   2G fd Linux raid autodetect

Command (m for help): w
The partition table has been altered.
Calling ioctl() to re-read partition table.
Syncing disks.

[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# partprobe  /dev/sdb
[root@localhost ~]#
[root@localhost ~]# udevadm settle



Step-3  Create Raid ....?



[root@localhost ~]# mdadm -C  /dev/md0  -a yes -l  5 -n 3
/dev/sdb{1,2,3}
mdadm: Defaulting to version 1.2 metadata
```

```
mdadm: array /dev/md0 started.

[root@localhost ~]# mkfs.xfs    /dev/md0       {Create the
FileSystems}

meta-data=/dev/md0               isize=512    agcount=8, agsize=130944
blks
         =                       sectsz=512   attr=2, projid32bit=1
         =                       crc=1        finobt=1, sparse=1,
rmapbt=0
         =                       reflink=1
data     =                       bsize=4096   blocks=1047040,
imaxpct=25
         =                       sunit=128    swidth=256 blks
naming   =version 2              bsize=4096   ascii-ci=0, ftype=1
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
[root@localhost ~]#


[root@localhost ~]# mkdir  /raid
[root@localhost ~]#
[root@localhost ~]# mount  /dev/md0    /raid
[root@localhost ~]#
[root@localhost ~]# vim  /etc/fstab


UUID=8122cb63-c8c7-4cd2-81be-4b49081bc6dc /                       xfs
defaults        0 0
UUID=1a9e8a07-533d-4f49-b547-4b21e42230b2 /boot                   xfs
defaults        0 0
UUID=362eabfd-9108-40a1-ba82-3fbdeff793ac swap                    swap
defaults        0 0
/dev/md0                                  /raid                   xfs
defaults        0 0


:wq!

root@localhost ~]# mount -a
[root@localhost ~]#
[root@localhost ~]# systemctl daemon-reload
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# df -Th
Filesystem     Type      Size  Used Avail Use% Mounted on
devtmpfs       devtmpfs  1.9G     0  1.9G   0% /dev
tmpfs          tmpfs     1.9G     0  1.9G   0% /dev/shm
tmpfs          tmpfs     1.9G   10M  1.9G   1% /run
tmpfs          tmpfs     1.9G     0  1.9G   0% /sys/fs/cgroup
```

```
/dev/sda2      xfs        15G  3.9G   11G  27% /
/dev/sda1      xfs       994M  165M  830M  17% /boot
tmpfs          tmpfs     376M   16K  376M   1% /run/user/42
tmpfs          tmpfs     376M  4.6M  372M   2% /run/user/0
/dev/md0       xfs       4.0G   62M  4.0G   2% /raid

[root@localhost ~]# mdadm  --detail  /dev/md0

                    OR

[root@localhost ~]# mdadm   -D    /dev/md0

/dev/md0:
           Version : 1.2
     Creation Time : Mon Sep  2 01:02:23 2019
        Raid Level : raid5
        Array Size : 4188160 (3.99 GiB 4.29 GB)
     Used Dev Size : 2094080 (2045.00 MiB 2144.34 MB)
      Raid Devices : 3
     Total Devices : 3
       Persistence : Superblock is persistent

       Update Time : Mon Sep  2 01:04:01 2019
             State : clean
    Active Devices : 3
   Working Devices : 3
    Failed Devices : 0
     Spare Devices : 0

            Layout : left-symmetric
        Chunk Size : 512K

Consistency Policy : resync

              Name : localhost.localdomain:0  (local to host
localhost.localdomain)
              UUID : ab2e48d6:6b1519b8:8c6df2a0:01c4b640
            Events : 18

    Number   Major   Minor   RaidDevice State
       0       8       17        0      active sync   /dev/sdb1
       1       8       18        1      active sync   /dev/sdb2
       3       8       19        2      active sync   /dev/sdb3

[root@localhost ~]# cat  /proc/mdstat
Personalities : [raid6] [raid5] [raid4]
md0 : active raid5 sdb3[3] sdb2[1] sdb1[0]
      4188160 blocks super 1.2 level 5, 512k chunk, algorithm 2 [3/3]
[UUU]

unused devices: <none>
[root@localhost ~]#
```

```
[root@localhost ~]# mdadm  --detail  --scan
ARRAY /dev/md0 metadata=1.2 name=localhost.localdomain:0
UUID=ab2e48d6:6b1519b8:8c6df2a0:01c4b640
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# mdadm  --detail  --scan  >>  /etc/mdadm.conf
[root@localhost ~]#
[root@localhost ~]# cat  /etc/mdadm.conf
ARRAY /dev/md0 metadata=1.2 name=localhost.localdomain:0
UUID=ab2e48d6:6b1519b8:8c6df2a0:01c4b640
[root@localhost ~]#
```

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How to perform Hot Swapable Process on raid ?

```
[root@localhost ~]#
[root@localhost ~]# df  -Th
Filesystem     Type      Size  Used Avail Use% Mounted on
devtmpfs       devtmpfs  1.9G     0  1.9G   0% /dev
tmpfs          tmpfs     1.9G     0  1.9G   0% /dev/shm
tmpfs          tmpfs     1.9G   10M  1.9G   1% /run
tmpfs          tmpfs     1.9G     0  1.9G   0% /sys/fs/cgroup
/dev/sda2      xfs        15G  3.9G   11G  27% /
/dev/sda1      xfs       994M  165M  830M  17% /boot
tmpfs          tmpfs     376M   16K  376M   1% /run/user/42
tmpfs          tmpfs     376M  4.6M  372M   2% /run/user/0
/dev/md0       xfs       4.0G   62M  4.0G   2% /raid
[root@localhost ~]#
[root@localhost ~]# du -sh  /etc
29M   /etc
[root@localhost ~]#
[root@localhost ~]# cp -rf  /etc   /raid
[root@localhost ~]#
[root@localhost ~]# df  -Th
Filesystem     Type      Size  Used Avail Use% Mounted on
devtmpfs       devtmpfs  1.9G     0  1.9G   0% /dev
tmpfs          tmpfs     1.9G     0  1.9G   0% /dev/shm
tmpfs          tmpfs     1.9G   10M  1.9G   1% /run
tmpfs          tmpfs     1.9G     0  1.9G   0% /sys/fs/cgroup
/dev/sda2      xfs        15G  3.9G   11G  27% /
/dev/sda1      xfs       994M  165M  830M  17% /boot
tmpfs          tmpfs     376M   16K  376M   1% /run/user/42
tmpfs          tmpfs     376M  4.6M  372M   2% /run/user/0
/dev/md0       xfs       4.0G  111M  3.9G   3% /raid
[root@localhost ~]#
[root@localhost ~]# mdadm  /dev/md0  -f   /dev/sdb3
```

```
mdadm: set /dev/sdb3 faulty in /dev/md0
[root@localhost ~]#
[root@localhost ~]# cat  /proc/mdstat
Personalities : [raid6] [raid5] [raid4]
md0 : active raid5 sdb3[3](F) sdb2[1] sdb1[0]
      4188160 blocks super 1.2 level 5, 512k chunk, algorithm 2 [3/2]
[UU_]

unused devices: <none>
[root@localhost ~]#
[root@localhost ~]# mdadm  --detail  /dev/md0
/dev/md0:
           Version : 1.2
     Creation Time : Mon Sep  2 01:02:23 2019
        Raid Level : raid5
        Array Size : 4188160 (3.99 GiB 4.29 GB)
     Used Dev Size : 2094080 (2045.00 MiB 2144.34 MB)
      Raid Devices : 3
     Total Devices : 3
       Persistence : Superblock is persistent

       Update Time : Mon Sep  2 01:11:05 2019
             State : clean, degraded
    Active Devices : 2
   Working Devices : 2
    Failed Devices : 1
     Spare Devices : 0

            Layout : left-symmetric
        Chunk Size : 512K

Consistency Policy : resync

              Name : localhost.localdomain:0  (local to host
localhost.localdomain)
              UUID : ab2e48d6:6b1519b8:8c6df2a0:01c4b640
            Events : 22

    Number   Major   Minor   RaidDevice State
       0       8       17        0      active sync   /dev/sdb1
       1       8       18        1      active sync   /dev/sdb2
       -       0        0        2      removed

       3       8       19        -      faulty   /dev/sdb3
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# mdadm  /dev/md0  -r   /dev/sdb3
mdadm: hot removed /dev/sdb3 from /dev/md0
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
```

```
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# cat  /proc/mdstat
Personalities : [raid6] [raid5] [raid4]
md0 : active raid5 sdb2[1] sdb1[0]
      4188160 blocks super 1.2 level 5, 512k chunk, algorithm 2 [3/2]
[UU_]

unused devices: <none>
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# mdadm  --detail  /dev/md0
/dev/md0:
           Version : 1.2
     Creation Time : Mon Sep  2 01:02:23 2019
        Raid Level : raid5
        Array Size : 4188160 (3.99 GiB 4.29 GB)
     Used Dev Size : 2094080 (2045.00 MiB 2144.34 MB)
      Raid Devices : 3
     Total Devices : 2
       Persistence : Superblock is persistent

       Update Time : Mon Sep  2 01:12:05 2019
             State : clean, degraded
    Active Devices : 2
   Working Devices : 2
    Failed Devices : 0
     Spare Devices : 0

            Layout : left-symmetric
        Chunk Size : 512K

Consistency Policy : resync

              Name : localhost.localdomain:0  (local to host
localhost.localdomain)
              UUID : ab2e48d6:6b1519b8:8c6df2a0:01c4b640
            Events : 27

    Number   Major   Minor   RaidDevice State
       0       8       17        0      active sync   /dev/sdb1
       1       8       18        1      active sync   /dev/sdb2
       -       0        0        2      removed



[root@localhost ~]# mdadm  /dev/md0  -a   /dev/sdb3
mdadm: added /dev/sdb3
```

```
[root@localhost ~]# mdadm  --detail  /dev/md0
/dev/md0:
           Version : 1.2
     Creation Time : Mon Sep  2 01:02:23 2019
        Raid Level : raid5
        Array Size : 4188160 (3.99 GiB 4.29 GB)
     Used Dev Size : 2094080 (2045.00 MiB 2144.34 MB)
      Raid Devices : 3
     Total Devices : 3
       Persistence : Superblock is persistent

       Update Time : Mon Sep  2 01:13:02 2019
             State : clean, degraded, recovering
    Active Devices : 2
   Working Devices : 3
    Failed Devices : 0
     Spare Devices : 1

            Layout : left-symmetric
        Chunk Size : 512K

Consistency Policy : resync

    Rebuild Status : 97% complete

              Name : localhost.localdomain:0  (local to host
localhost.localdomain)
              UUID : ab2e48d6:6b1519b8:8c6df2a0:01c4b640
            Events : 44

    Number   Major   Minor   RaidDevice State
       0       8       17        0      active sync   /dev/sdb1
       1       8       18        1      active sync   /dev/sdb2
       3       8       19        2      spare rebuilding   /dev/sdb3
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# mdadm  --detail  /dev/md0
/dev/md0:
           Version : 1.2
     Creation Time : Mon Sep  2 01:02:23 2019
        Raid Level : raid5
        Array Size : 4188160 (3.99 GiB 4.29 GB)
     Used Dev Size : 2094080 (2045.00 MiB 2144.34 MB)
      Raid Devices : 3
     Total Devices : 3
       Persistence : Superblock is persistent

       Update Time : Mon Sep  2 01:13:02 2019
             State : clean
    Active Devices : 3
```

```
   Working Devices : 3
    Failed Devices : 0
     Spare Devices : 0

            Layout : left-symmetric
        Chunk Size : 512K

Consistency Policy : resync

              Name : localhost.localdomain:0  (local to host
localhost.localdomain)
              UUID : ab2e48d6:6b1519b8:8c6df2a0:01c4b640
            Events : 46

    Number   Major   Minor   RaidDevice State
       0       8       17        0      active sync   /dev/sdb1
       1       8       18        1      active sync   /dev/sdb2
       3       8       19        2      active sync   /dev/sdb3
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# df  -Th
[root@localhost ~]# df  -Th
Filesystem     Type      Size  Used Avail Use% Mounted on
devtmpfs       devtmpfs  1.9G     0  1.9G   0% /dev
tmpfs          tmpfs     1.9G     0  1.9G   0% /dev/shm
tmpfs          tmpfs     1.9G   10M  1.9G   1% /run
tmpfs          tmpfs     1.9G     0  1.9G   0% /sys/fs/cgroup
/dev/sda2      xfs        15G  3.9G   11G  27% /
/dev/sda1      xfs       994M  165M  830M  17% /boot
tmpfs          tmpfs     376M   16K  376M   1% /run/user/42
tmpfs          tmpfs     376M  4.6M  372M   2% /run/user/0
/dev/md0       xfs       4.0G   91M  3.9G   3% /raid
[root@localhost ~]#
[root@localhost ~]# du -sh /raid
29M  /raid
[root@localhost ~]#
[root@localhost ~]# du -sh  /etc
29M  /etc
[root@localhost ~]#
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How to Remove Raid device step by step ?

[root@localhost ~]# umount   /raid
[root@localhost ~]#
[root@localhost ~]# mdadm  --stop  /dev/md0
mdadm: stopped /dev/md0
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# mdadm  --assemble    /dev/md0
```

```
mdadm: /dev/md0 has been started with 3 drives.
[root@localhost ~]#
[root@localhost ~]# umount   /raid
[root@localhost ~]#
[root@localhost ~]# mdadm  --stop  /dev/md0
mdadm: stopped /dev/md0
[root@localhost ~]#

[root@localhost ~]# vim  /etc/fstab

delete the last entry

:wq


[root@localhost ~]# vim  /etc/mdadm.conf

delete the entry..

:wq

[root@localhost ~]# fdisk /dev/sdb

Welcome to fdisk (util-linux 2.32.1).
Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.


Command (m for help): d
Partition number (1-3, default 3): 3

Partition 3 has been deleted.

Command (m for help): d
Partition number (1,2, default 2): 2

Partition 2 has been deleted.

Command (m for help): d
Selected partition 1
Partition 1 has been deleted.

Command (m for help): w
The partition table has been altered.
Calling ioctl() to re-read partition table.
Re-reading the partition table failed.: Device or resource busy

The kernel still uses the old table. The new table will be used at the
next reboot or after you run partprobe(8) or kpartx(8).

[root@localhost ~]#
```

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