

Atividade 1 - RAID0

1. Verifique os HDs do servidor

a. ls -l /dev | grep sd

```
root@servidordebiana:~# ls -l /dev | grep sd
lrwxrwxrwx 1 root root          4 Out  2 16:03 root -> sda2
brw-rw----T 1 root disk        8,  0 Out  2 16:03 sda
brw-rw----T 1 root disk        8,  1 Out  2 16:03 sda1
brw-rw----T 1 root disk        8,  2 Out  2 16:03 sda2
brw-rw----T 1 root disk        8,  5 Out  2 16:03 sda5
brw-rw----T 1 root disk        8, 16 Out  2 16:03 sdb
brw-rw----T 1 root disk        8, 32 Out  2 16:03 sdc
root@servidordebiana:~#
```

2. Através do programa mdadm, verifique que as partições sdb e sdc não estão configuradas

a. mdadm --examine /dev/sd[b-c]

```
root@servidordebiana:~# mdadm --examine /dev/sd[b-c]
mdadm: No md superblock detected on /dev/sdb.
mdadm: No md superblock detected on /dev/sdc.
root@servidordebiana:~#
```

3. Crie as partições nos dois HDs (sdb e sdc). Ao final de cada comando, aperte enter.

a. fdisk /dev/sdb

b. n

c. p

d. 1

e. (aperte enter)

f. (aperte enter, novamente)

g. t

h. fd

i. w

```
root@servidordebiana:~# fdisk /dev/sdb

Command (m for help): n
Partition type:
   p   primary (0 primary, 0 extended, 4 free)
   e   extended
Select (default p): p
Partition number (1-4, default 1): 1
First sector (2048-16777215, default 2048):
Using default value 2048
Last sector, +sectors or +size[K,M,G] (2048-16777215, default 16777215):
Using default value 16777215

Command (m for help): t
Selected partition 1
Hex code (type L to list codes): fd
Changed system type of partition 1 to 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@servidordebiana:~#
```

j. Repita o processo 3, agora para /dev/sdc

4. Após a configuração, verifique novamente as partições /dev/sdb e /dev/sdc

a. mdadm --examine /dev/sd[b-c]

```
root@servidordebiana:~# mdadm --examine /dev/sd[b-c]
/dev/sdb:
  MBR Magic : aa55
Partition[0] :    16775168 sectors at          2048 (type fd)
/dev/sdc:
  MBR Magic : aa55
Partition[0] :    16775168 sectors at          2048 (type fd)
root@servidordebiana:~#
```

5. Feito isso, criaremos as partições para que funcionem em RAID0

a. mdadm -C /dev/md0 -l raid0 -n 2 /dev/sd[b-c]1

```
root@servidordebiana:~# mdadm -C /dev/md0 -l raid0 -n 2 /dev/sd[b-c]1
mdadm: Defaulting to version 1.2 metadata
mdadm: array /dev/md0 started.
root@servidordebiana:~#
```

6. Para verificar o status, digite:

a. `cat /proc/mdstat`

```
root@servidordebian:~# cat /proc/mdstat
Personalities : [raid0]
md0 : active raid0 sdc1[1] sdb1[0]
      16774144 blocks super 1.2 512k chunks

unused devices: <none>
```

7. Para verificar detalhadamente os HDs, digite:

a. `mdadm -E /dev/sd[b-c]1`

```
root@servidordebian:~# mdadm -E /dev/sd[b-c]1
/dev/sdb1:
  Magic : a92b4efc
  Version : 1.2
  Feature Map : 0x0
  Array UUID : 7369b8d4:8999b021:7100d57e:b84df4cb
  Name : servidordebian:0 (local to host servidordebian)
  Creation Time : Fri Oct 2 16:21:03 2015
  Raid Level : raid0
  Raid Devices : 2

  Avail Dev Size : 16775152 (8.00 GiB 8.59 GB)
  Data Offset : 16 sectors
  Super Offset : 8 sectors
  State : clean
  Device UUID : 267d4fe3:fe2c5195:a4f6118d:71514eef

  Update Time : Fri Oct 2 16:21:03 2015
  Checksum : efbdecc - correct
  Events : 0

  Chunk Size : 512K

  Device Role : Active device 0
  Array State : AA ('A' == active, '.' == missing)
/dev/sdc1:
  Magic : a92b4efc
  Version : 1.2
  Feature Map : 0x0
  Array UUID : 7369b8d4:8999b021:7100d57e:b84df4cb
  Name : servidordebian:0 (local to host servidordebian)
  Creation Time : Fri Oct 2 16:21:03 2015
  Raid Level : raid0
  Raid Devices : 2

  Avail Dev Size : 16775152 (8.00 GiB 8.59 GB)
  Data Offset : 16 sectors
  Super Offset : 8 sectors
  State : clean
  Device UUID : 702b903f:93d2ff1c:c88b25a0:4c0c3246

  Update Time : Fri Oct 2 16:21:03 2015
  Checksum : 5ce282a9 - correct
  Events : 0

  Chunk Size : 512K

  Device Role : Active device 1
  Array State : AA ('A' == active, '.' == missing)
root@servidordebian:~# █
```

8. Para verificar detalhadamente o RAID0 criado, digite:

a. `mdadm --detail /dev/md0`

```
root@servidordebian:~# mdadm --detail /dev/md0
/dev/md0:
  Version : 1.2
  Creation Time : Fri Oct 2 16:21:03 2015
  Raid Level : raid0
  Array Size : 16774144 (16.00 GiB 17.18 GB)
  Raid Devices : 2
  Total Devices : 2
  Persistence : Superblock is persistent

  Update Time : Fri Oct 2 16:21:03 2015
  State : clean
  Active Devices : 2
  Working Devices : 2
  Failed Devices : 0
  Spare Devices : 0

  Chunk Size : 512K

  Name : servidordebian:0 (local to host servidordebian)
  UUID : 7369b8d4:8999b021:7100d57e:b84df4cb
  Events : 0

  Number Major Minor RaidDevice State
     0      8     17         0 active sync  /dev/sdb1
     1      8     33         1 active sync  /dev/sdc1
root@servidordebian:~# █
```

9. Feito os passos acima, precisaremos deixar a partição formatada

a. `mkfs.ext4 /dev/md0`

```
root@servidordebian:~# mkfs.ext4 /dev/md0
mke2fs 1.42.5 (29-Jul-2012)
Filesystem label=
OS type: Linux
Block size=4096 (log=2)
Fragment size=4096 (log=2)
Stride=128 blocks, Stripe width=256 blocks
1048576 inodes, 4193536 blocks
209676 blocks (5.00%) reserved for the super user
First data block=0
Maximum filesystem blocks=4294967296
128 block groups
32768 blocks per group, 32768 fragments per group
8192 inodes per group
Superblock backups stored on blocks:
    32768, 98304, 163840, 229376, 294912, 819200, 884736, 1605632,
654208,
    4096000

Allocating group tables: done
Writing inode tables: done
Creating journal (32768 blocks): done
Writing superblocks and filesystem accounting information: done

root@servidordebian:~# █
```

10. Depois de formatar a partição `/dev/md0`, precisamos montar e exibi-la

a. `mkdir /mnt/raid0`

b. `mount /dev/md0 /mnt/raid0`

c. `df -h`

```
root@servidordebian:~# mkdir /mnt/raid0
root@servidordebian:~# mount /dev/md0 /mnt/raid0
root@servidordebian:~# df -h
Sist. Arq.          Tam Usad Dispon. Uso% Montado em
rootfs             7,3G 1,1G  5,9G  15% /
udev               10M   0   10M   0% /dev
tmpfs              50M 264K   50M   1% /run
/dev/disk/by-uuid/d7508a41-aebe-468b-a0b2-fd4311892f1b 7,3G 1,1G  5,9G  15% /
tmpfs              5,0M   0   5,0M   0% /run/lock
tmpfs              231M   0  231M   0% /run/shm
/dev/md0           16G 172M   15G   2% /mnt/raid0
root@servidordebian:~# █
```

11. Por fim, deixaremos que esta configuração inicie automaticamente a cada reboot do servidor

a. `echo "/dev/md0 /mnt/raid0 ext4 defaults 0 0" >> /etc/fstab`

b. `mdadm -E -s -v >> /etc/mdadm.conf`