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```
root@discos:~# parted /dev/sdc
```

GNU Parted 3.2

Using /dev/sdc

Welcome to GNU Parted! Type 'help' to view a list of commands.

```
(parted) mklabel msdos
```

```
(parted) mkpart primary 1M 100%
```

```
(parted) set 1 raid on
```

```
(parted) quit
```

```
root@discos:~# parted /dev/sdd
```

GNU Parted 3.2

Using /dev/sdd

Welcome to GNU Parted! Type 'help' to view a list of commands.

```
(parted) mklabel msdos
```

```
(parted) mkpart primary 1M 100%
```

```
(parted) set 1 raid on
```

```
(parted) quit
```

```
root@discos:~# parted /dev/sdeparted /dev/sde
```

GNU Parted 3.2

Using /dev/sde

Welcome to GNU Parted! Type 'help' to view a list of commands.

```
(parted) mklabel msdos
```

```
(parted) mkpart primary 1M 100%
```

```
(parted) set 1 raid on
```

```
(parted) quit
```

```
root@discos:~# parted /dev/sdf
```

GNU Parted 3.2

Using /dev/sdf

Welcome to GNU Parted! Type 'help' to view a list of commands.

(parted) mklabel msdos

(parted) mkpart primary 1M 100%

(parted) set 1 raid on

(parted) quit

```
root@discos:~# mdadm --create /dev/md/md_RAID5 --level=5 --raid-devices=4 /dev/sdc  
/dev/sdd /dev/sde /dev/sdf
```

mdadm: /dev/sdc appears to be part of a raid array:

level=raid0 devices=0 ctime=Thu Jan 1 01:00:00 1970

mdadm: partition table exists on /dev/sdc but will be lost or
meaningless after creating array

mdadm: /dev/sdd appears to be part of a raid array:

level=raid0 devices=0 ctime=Thu Jan 1 01:00:00 1970

mdadm: partition table exists on /dev/sdd but will be lost or
meaningless after creating array

mdadm: /dev/sde appears to be part of a raid array:

level=raid0 devices=0 ctime=Thu Jan 1 01:00:00 1970

mdadm: partition table exists on /dev/sde but will be lost or
meaningless after creating array

mdadm: /dev/sdf appears to be part of a raid array:

level=raid0 devices=0 ctime=Thu Jan 1 01:00:00 1970

mdadm: partition table exists on /dev/sdf but will be lost or
meaningless after creating array

Continue creating array? y

mdadm: Defaulting to version 1.2 metadata

mdadm: array /dev/md/md_RAID5 started.

```
root@discos:~# mdadm --detail --scan
```

```
ARRAY /dev/md/md_RAID5 metadata=1.2 name=discos.cda.net:md_RAID5  
UUID=346739a1:b31eb756:32bd17d4:5eac656b
```

root@discos:~# parted -l

Model: ATA VBOX HARDDISK (scsi)

Disk /dev/sda: 17,2GB

Sector size (logical/physical): 512B/512B

Partition Table: msdos

Disk Flags:

Number	Start	End	Size	Type	File system	Flags
1	1049kB	17,2GB	17,2GB	primary	ext3	boot

Model: ATA VBOX HARDDISK (scsi)

Disk /dev/sdb: 1074MB

Sector size (logical/physical): 512B/512B

Partition Table: msdos

Disk Flags:

Number	Start	End	Size	Type	File system	Flags
1	1049kB	1073MB	1072MB	primary	linux-swap(v1)	

Model: ATA VBOX HARDDISK (scsi)

Disk /dev/sdc: 105MB

Sector size (logical/physical): 512B/512B

Partition Table: msdos

Disk Flags:

Number	Start	End	Size	Type	File system	Flags
1	1049kB	105MB	104MB	primary		raid

Model: ATA VBOX HARDDISK (scsi)

Disk /dev/sdd: 105MB

Sector size (logical/physical): 512B/512B

Partition Table: msdos

Disk Flags:

Number	Start	End	Size	Type	File system	Flags
1	1049kB	105MB	104MB	primary		raid

Model: ATA VBOX HARDDISK (scsi)

Disk /dev/sde: 105MB

Sector size (logical/physical): 512B/512B

Partition Table: msdos

Disk Flags:

Number	Start	End	Size	Type	File system	Flags
1	1049kB	105MB	104MB	primary		raid

Model: ATA VBOX HARDDISK (scsi)

Disk /dev/sdf: 105MB

Sector size (logical/physical): 512B/512B

Partition Table: msdos

Disk Flags:

Number	Start	End	Size	Type	File system	Flags
1	1049kB	105MB	104MB	primary		raid

Error: /dev/md127: unrecognised disk label

Model: Linux Software RAID Array (md)

Disk /dev/md127: 311MB

Sector size (logical/physical): 512B/512B

Partition Table: unknown

Disk Flags:

root@discos:~# mdadm --detail /dev/md/md_RAID5

/dev/md/md_RAID5:

Version : 1.2

Creation Time : Sat Oct 20 16:35:42 2018

Raid Level : raid5

Array Size : 304128 (297.00 MiB 311.43 MB)

Used Dev Size : 101376 (99.00 MiB 103.81 MB)

Raid Devices : 4

Total Devices : 4

Persistence : Superblock is persistent

Update Time : Sat Oct 20 16:35:45 2018

State : clean

Active Devices : 4

Working Devices : 4

Failed Devices : 0

Spare Devices : 0

Layout : left-symmetric

Chunk Size : 512K

Name : discos.cda.net:md_RAID5 (local to host discos.cda.net)

UUID : 346739a1:b31eb756:32bd17d4:5eac656b

Events : 18

Number	Major	Minor	RaidDevice	State
0	8	32	0	active sync /dev/sdc
1	8	48	1	active sync /dev/sdd
2	8	64	2	active sync /dev/sde
4	8	80	3	active sync /dev/sdf

```
root@discos:~# mkfs.ext3 /dev/md/md_RAID5
```

```
mke2fs 1.43.4 (31-Jan-2017)
```

Se está creando un sistema de ficheros con 304128 bloques de 1k y 76304 nodos-i

UUID del sistema de ficheros: 62c316bb-878e-4f51-b13e-9be9435d0e54

Respaldo del superbloque guardado en los bloques:

8193, 24577, 40961, 57345, 73729, 204801, 221185

Reservando las tablas de grupo: hecho

Escribiendo las tablas de nodos-i: hecho

Creando el fichero de transacciones (8192 bloques): hecho

Escribiendo superbloques y la información contable del sistema de ficheros: 0/3hecho

```
root@discos:~# pvcreate /dev/md/md_RAID5
```

WARNING: ext3 signature detected on /dev/md/md_RAID5 at offset 1080. Wipe it? [y/n]: y

Wiping ext3 signature on /dev/md/md_RAID5.

Physical volume "/dev/md/md_RAID5" successfully created.

```
root@discos:~# pvdisplay
```

"/dev/md127" is a new physical volume of "297,00 MiB"

--- NEW Physical volume ---

PV Name /dev/md127

VG Name

PV Size 297,00 MiB

Allocatable	NO
PE Size	0
Total PE	0
Free PE	0
Allocated PE	0
PV UUID	osBqeO-ta17-qpQ5-hM3C-eSXZ-X9nl-jlofRe

root@discos:~# pvs

PV	VG	Fmt	Attr	PSize	PFree
/dev/md127	lvm2	---		297,00m	297,00m

root@discos:~# vgcreate vg_RAID /dev/md/md_RAID5

Volume group "vg_RAID" successfully created

root@discos:~# lvcreate --size 50M --name UNO --verbose vg_RAID

Rounding up size to full physical extent 52,00 MiB

Archiving volume group "vg_RAID" metadata (seqno 1).

Creating logical volume UNO

Creating volume group backup "/etc/lvm/backup/vg_RAID" (seqno 2).

Activating logical volume vg_RAID/UNO.

activation/volume_list configuration setting not defined: Checking only host tags for vg_RAID/UNO.

Creating vg_RAID-UNO

Loading vg_RAID-UNO table (253:0)

Resuming vg_RAID-UNO (253:0)

Wiping known signatures on logical volume "vg_RAID/UNO"

Initializing 4,00 KiB of logical volume "vg_RAID/UNO" with value 0.

Logical volume "UNO" created.

root@discos:~# lvcreate --size 50M --name DOS --verbose vg_RAID

Rounding up size to full physical extent 52,00 MiB

Archiving volume group "vg_RAID" metadata (seqno 2).

Creating logical volume DOS

Creating volume group backup "/etc/lvm/backup/vg_RAID" (seqno 3).

Activating logical volume vg_RAID/DOS.

activation/volume_list configuration setting not defined: Checking only host tags for vg_RAID/DOS.

Creating vg_RAID-DOS

Loading vg_RAID-DOS table (253:1)

Resuming vg_RAID-DOS (253:1)

Wiping known signatures on logical volume "vg_RAID/DOS"

Initializing 4,00 KiB of logical volume "vg_RAID/DOS" with value 0.

Logical volume "DOS" created.

```
root@discos:~# lvcreate --size 50M --name COMPARTIDO --verbose vg_RAID
```

Rounding up size to full physical extent 52,00 MiB

Archiving volume group "vg_RAID" metadata (seqno 3).

Creating logical volume COMPARTIDO

Creating volume group backup "/etc/lvm/backup/vg_RAID" (seqno 4).

Activating logical volume vg_RAID/COMPARTIDO.

activation/volume_list configuration setting not defined: Checking only host tags for vg_RAID/COMPARTIDO.

Creating vg_RAID-COMPARTIDO

Loading vg_RAID-COMPARTIDO table (253:2)

Resuming vg_RAID-COMPARTIDO (253:2)

Wiping known signatures on logical volume "vg_RAID/COMPARTIDO"

Initializing 4,00 KiB of logical volume "vg_RAID/COMPARTIDO" with value 0.

Logical volume "COMPARTIDO" created.

```
root@discos:~# mkfs.ext3 /dev/vg_RAID/UNO
```

mke2fs 1.43.4 (31-Jan-2017)

Se está creando un sistema de ficheros con 53248 bloques de 1k y 13328 nodos-i

UUID del sistema de ficheros: d7679368-6a93-4a31-bba0-c4c3e07f1cb6

Respaldo del superbloque guardado en los bloques:

8193, 24577, 40961

Reservando las tablas de grupo: hecho

Escribiendo las tablas de nodos-i: hecho

Creando el fichero de transacciones (4096 bloques): hecho

Escribiendo superbloques y la información contable del sistema de ficheros: hecho

root@discos:~# mkfs.ext3 /dev/vg_RAID/DOS

mke2fs 1.43.4 (31-Jan-2017)

Se está creando un sistema de ficheros con 53248 bloques de 1k y 13328 nodos-i

UUID del sistema de ficheros: 33f9b9bb-d83f-41a4-a9b4-ee641e875df7

Respaldo del superbloque guardado en los bloques:

8193, 24577, 40961

Reservando las tablas de grupo: hecho

Escribiendo las tablas de nodos-i: hecho

Creando el fichero de transacciones (4096 bloques): hecho

Escribiendo superbloques y la información contable del sistema de ficheros: hecho

root@discos:~# mkfs.ext3 /dev/vg_RAID/COMPARTIDO

mke2fs 1.43.4 (31-Jan-2017)

Se está creando un sistema de ficheros con 53248 bloques de 1k y 13328 nodos-i

UUID del sistema de ficheros: 2fad98ed-11a6-49ed-af98-0654ee112779

Respaldo del superbloque guardado en los bloques:

8193, 24577, 40961

Reservando las tablas de grupo: hecho

Escribiendo las tablas de nodos-i: hecho

Creando el fichero de transacciones (4096 bloques): hecho

Escribiendo superbloques y la información contable del sistema de ficheros: hecho

```
root@discos:~# mkdir /mnt/uno
```

```
root@discos:~# mkdir /mnt/dos
```

```
root@discos:~# mkdir /mnt/compartido
```

```
root@discos:~# mount /dev/vg_RAID/UNO /mnt/uno
```

```
root@discos:~# mount /dev/vg_RAID/DOS /mnt/dos
```

```
root@discos:~# mount /dev/vg_RAID/COMPARTIDO /mnt/compartido
```

```
root@discos:~# df -hT
```

S.ficheros	Tipo	Tamaño	Usados	Disp	Uso%	Montado en
udev	devtmpfs	109M	0	109M	0%	/dev
tmpfs	tmpfs	25M	2,1M	23M	9%	/run
/dev/sda1	ext3	16G	2,0G	13G	14%	/
tmpfs	tmpfs	121M	52M	69M	44%	/dev/shm
tmpfs	tmpfs	5,0M	0	5,0M	0%	/run/lock
tmpfs	tmpfs	121M	0	121M	0%	/sys/fs/cgroup
tmpfs	tmpfs	25M	0	25M	0%	/run/user/0
/dev/mapper/vg_RAID-UNO	ext3	47M	859K	43M	2%	/mnt/uno
/dev/mapper/vg_RAID-DOS	ext3	47M	859K	43M	2%	/mnt/dos
/dev/mapper/vg_RAID-COMPARTIDO	ext3	47M	859K	43M	2%	/mnt/compartido

```
root@discos:~# tgtadm --lld iscsi --mode target --op new --tid=1 --targetname iqn.2018-09.net.cda.discos:pruebas
```

```
root@discos:~# tgtadm --lld iscsi --mode target --op show
```

```
Target 1: iqn.2018-09.net.cda.discos:pruebas
```

```
System information:
```

```
Driver: iscsi
```

```
State: ready
```

I_T nexus information:

LUN information:

LUN: 0

Type: controller

SCSI ID: IET 00010000

SCSI SN: beaf10

Size: 0 MB, Block size: 1

Online: Yes

Removable media: No

Prevent removal: No

Readonly: No

SWP: No

Thin-provisioning: No

Backing store type: null

Backing store path: None

Backing store flags:

Account information:

ACL information:

```
root@discos:~# tgtadm --lld iscsi --mode logicalunit --op new --tid 1 --lun 1 --backing-store /dev/md/md_RAID5
```

```
root@discos:~# tgtadm --lld iscsi --mode target --op showTarget 1: iqn.2018-09.net.cda.discos:pruebas
```

System information:

Driver: iscsi

State: ready

I_T nexus information:

LUN information:

LUN: 0

Type: controller

SCSI ID: IET 00010000

SCSI SN: beaf10

Size: 0 MB, Block size: 1

Online: Yes

Removable media: No

Prevent removal: No

Readonly: No

SWP: No

Thin-provisioning: No

Backing store type: null

Backing store path: None

Backing store flags:

LUN: 1

Type: disk

SCSI ID: IET 00010001

SCSI SN: beaf11

Size: 311 MB, Block size: 512

Online: Yes

Removable media: No

Prevent removal: No

Readonly: No

SWP: No

Thin-provisioning: No

Backing store type: rdwr

Backing store path: /dev/md/md_RAID5

Backing store flags:

Account information:

ACL information:

```
root@discos:~# tgtadm --lld iscsi --mode target --op bind --tid 1 --initiator-address  
192.168.100.22
```

```
root@discos:~# tgtadm --lld iscsi --mode target --op bind --tid 1 --initiator-address  
192.168.100.33
```

```
root@discos:~# tgtadm --lld iscsi --mode account --op new --user cda --password cdapass
```

```
root@discos:~# tgtadm --lld iscsi --mode target --op show
```

Target 1: iqn.2018-09.net.cda.discos:pruebas

System information:

Driver: iscsi

State: ready

I_T nexus information:

LUN information:

LUN: 0

Type: controller

SCSI ID: IET 00010000

SCSI SN: beaf10

Size: 0 MB, Block size: 1

Online: Yes

Removable media: No

Prevent removal: No

Readonly: No

SWP: No

Thin-provisioning: No

Backing store type: null

Backing store path: None

Backing store flags:

LUN: 1

Type: disk

SCSI ID: IET 00010001

SCSI SN: beaf11

Size: 311 MB, Block size: 512

Online: Yes

Removable media: No

Prevent removal: No

Readonly: No

SWP: No

Thin-provisioning: No

Backing store type: rdwr

Backing store path: /dev/md/md_RAID5

Backing store flags:

Account information:

ACL information:

192.168.100.22

192.168.100.33

```
root@cliente1:~# nano /etc/iscsi/iscsid.conf
```

```
--- CONTENIDO A EDITAR ----
```

```
...
```

```
# *****
```

```
# CHAP Settings
```

```
# *****
```

```
node.session.auth.authmethod = CHAP
```

```
node.session.auth.username = cda
```

```
node.session.auth.password = cdapass
```

```
root@cliente1:~# systemctl restart iscsid.service
```

```
root@cliente2:~# nano /etc/iscsi/iscsid.conf
```

```
--- CONTENIDO A EDITAR ----
```

```
...
```

```
# *****
```

```
# CHAP Settings
```

```
# *****
```

```
node.session.auth.authmethod = CHAP
```

```
node.session.auth.username = cda
```

```
node.session.auth.password = cdapass
```

```
root@cliente2:~# systemctl restart iscsid.service
```

```
root@cliente1:~# iscsiadm --mode discovery --type sendtargets --portal 192.168.100.11
```

```
192.168.100.11:3260,1 iqn.2018-09.net.cda.discos:pruebas
```

```
root@cliente1:~# iscsiadm --m node --targetname iqn.2018-09.net.cda.discos:pruebas --portal 192.168.100.11 --login
```

```
Logging in to [iface: default, target: iqn.2018-09.net.cda.discos:pruebas, portal: 192.168.100.11,3260] (multiple)
```

```
Login to [iface: default, target: iqn.2018-09.net.cda.discos:pruebas, portal: 192.168.100.11,3260] successful.
```

```
root@cliente1:~# lsblk
```

NAME	MAJ:MIN	RM	SIZE	RO	TYPE	MOUNTPOINT
sda	8:0	0	16G	0	disk	
+sda1	8:1	0	16G	0	part	/
sdb	8:16	0	1G	0	disk	
+sdb1	8:17	0	1022M	0	part	[SWAP]
sdc	8:32	0	297M	0	disk	
+vg_RAID-UNO	253:0	0	52M	0	lvm	
+vg_RAID-DOS	253:1	0	52M	0	lvm	
+vg_RAID-COMPARTIDO	253:2	0	52M	0	lvm	

```
root@cliente1:~# ls -l /dev/sdc
```

```
brw-rw---- 1 root disk 8, 32 oct 20 18:59 /dev/sdc
```

```
root@cliente2:~# iscsiadm --mode discovery --type sendtargets --portal 192.168.100.11
```

```
192.168.100.11:3260,1 iqn.2018-09.net.cda.discos:pruebas
```

```
root@cliente2:~# iscsiadm --m node --targetname iqn.2018-09.net.cda.discos:pruebas --portal 192.168.100.11 --login
```

```
Logging in to [iface: default, target: iqn.2018-09.net.cda.discos:pruebas, portal: 192.168.100.11,3260] (multiple)
```

```
Login to [iface: default, target: iqn.2018-09.net.cda.discos:pruebas, portal: 192.168.100.11,3260] successful.
```

```
root@cliente2:~# lsblk
```

NAME	MAJ:MIN	RM	SIZE	RO	TYPE	MOUNTPOINT
sda	8:0	0	16G	0	disk	
+sda1	8:1	0	16G	0	part	/
sdb	8:16	0	1G	0	disk	
+sdb1	8:17	0	1022M	0	part	[SWAP]
sdc	8:32	0	297M	0	disk	
+vg_RAID-UNO	253:0	0	52M	0	lvm	
+vg_RAID-DOS	253:1	0	52M	0	lvm	
+vg_RAID-COMPARTIDO	253:2	0	52M	0	lvm	