

### Convenciones:

```
# En todos los nodos como 'sudo su'.  
[root@srv1 ~]# Solo en servidor 'srv1' → como 'sudo su'.  
[root@srv2 ~]# Solo en servidor 'srv2' → como 'sudo su'.
```

### # lsblk

```
NAME      MAJ:MIN RM  SIZE RO  TYPE MOUNTPOINT  
sda        8:0    0  40G  0  disk  
└─sda1     8:1    0  40G  0  part /  
sdb        8:16   0  40G  0  disk
```

### → Paqueteria previa.

```
# yum install lvm2-lockd -y  
# yum install gcc gcc-c++ make automake autoconf help2man libxslt libxslt-devel  
flex rpm-build kernel-devel -y
```

### → DRBD (Linbit).

```
# rpm --import https://www.elrepo.org/RPM-GPG-KEY-elrepo.org  
# rpm -Uvh https://www.elrepo.org/elrepo-release-7.0-3.el7.elrepo.noarch.rpm  
# yum update -y
```

```
# yum install drbd90-utils kmod-drbd90.x86_64 policycoreutils-python -y
```

```
# firewall-cmd --permanent --add-port=6996-7800/tcp  
# firewall-cmd --reload
```

```
[root@srv1 ~]# firewall-cmd --permanent --add-rich-rule='rule family="ipv4"  
source address="192.168.10.161" port port="7789" protocol="tcp" accept'
```

```
[root@srv2 ~]# firewall-cmd --permanent --add-rich-rule='rule family="ipv4"  
source address="192.168.10.151" port port="7789" protocol="tcp" accept'
```

```
# firewall-cmd --reload
```

```
# modprobe drbd  
# lsmod |grep drbd  
drbd                541356  0  
libcrc32c           12644   3 drbd,nf_nat,nf_conntrack
```

```
# echo drbd > /etc/modules-load.d/drbd.conf
```

### → DRBD → drbdmanage.

```
# yum install wget pygobject2 -y  
# wget http://www.linbit.com/downloads/drbdmanage/drbdmanage-0.99.18.tar.gz  
# tar -xvzf drbdmanage-0.99.18.tar.gz -C /opt/  
# cd /opt/drbdmanage-0.99.18/  
# ./setup.py build  
# ./setup.py install  
# cd
```

### # drbdmanage ping

```
pong → Respuesta OK.
```

→ Creación de los Blocks Devices:

```
# pvcreate /dev/sdb
# vgcreate drbdpool /dev/sdb 1 Nota.

# cat /etc/drbdmanaged.cfg
[LOCAL]
# Allowed options (with their default value)
# loglevel = INFO
# colors = yes
# utf8 = no
# extend-path = /sbin:/usr/sbin:/bin:/usr/bin
# drbdctrl-vg = drbdpool
# drbd-conf-path = /var/lib/drbd.d
# ctrl-volume-access-mode = # no default value, determined by server, can be
forced to "controlnode" or "satellite"
```

```
[root@srv1 ~]# drbdmanage init 192.168.10.151
You are going to initialize a new drbdmanage cluster.
CAUTION! Note that:
* Any previous drbdmanage cluster information may be removed
* Any remaining resources managed by a previous drbdmanage installation
that still exist on this system will no longer be managed by drbdmanage
```

Confirm:

```
yes/no: yes
Empty drbdmanage control volume initialized on '/dev/drbd0'.
Empty drbdmanage control volume initialized on '/dev/drbd1'.
Waiting for server: .
Operation completed successfully
```

```
[root@srv1 ~]# lsblk
NAME                                MAJ:MIN RM SIZE RO TYPE MOUNTPOINT
sda                                  8:0    0 40G  0 disk
└─sda1                               8:1    0 40G  0 part /
sdb                                  8:16   0 40G  0 disk
├─drbdpool--drbdctrl_0              253:0   0  4M  0 lvm
├─┬─drbd0                           147:0   0  4M  0 disk
└─┬─drbdpool--drbdctrl_1            253:1   0  4M  0 lvm
   └─┬─drbd1                         147:1   0  4M  0 disk
```

```
[root@srv1 ~]# drbdmanage list-nodes
```

```
+-----+
| Name | Pool Size | Pool Free | | State |
+-----+-----+-----+-----+
| srv1 |    40956 |    40956 | |   ok  |
+-----+-----+-----+-----+
```

```
[root@srv1 ~]# drbdmanage add-node srv2 192.168.10.152
Operation completed successfully
Operation completed successfully
```

---

**1** **Recomendable el nombre estandar → 'drbdpool'.**



Executing join command using ssh.  
IMPORTANT: The output you see comes from srv2  
IMPORTANT: Your input is executed on srv2  
You are going to join an existing drbdmanage cluster.  
CAUTION! Note that:  
\* Any previous drbdmanage cluster information may be removed  
\* Any remaining resources managed by a previous drbdmanage installation that still exist on this system will no longer be managed by drbdmanage

Confirm:

yes/no: yes  
Waiting for server to start up (can take up to 1 min)  
Operation completed successfully  
Give leader time to contact the new node  
Operation completed successfully  
Operation completed successfully

# drbdmanage list-nodes

Name	Pool Size	Pool Free	State
srv1	40956	40948	online/quorum vote ignored
srv2	40956	40948	ok

[root@srv1 ~]# drbdadm status

.drbdctrl role:Primary  
volume:0 disk:UpToDate  
volume:1 disk:UpToDate  
srv2 role:Secondary  
volume:0 peer-disk:UpToDate  
volume:1 peer-disk:UpToDate

[root@srv1 ~]# drbdmanage add-resource pgsq1

[root@srv1 ~]# drbdmanage add-resource odoo

# drbdmanage list-resources

Name	State
odoo	ok
pgsql	ok

[root@srv1 ~]# drbdmanage add-volume pgsq1 15G

[root@srv1 ~]# drbdmanage add-volume odoo 15G

[root@srv1 ~]# drbdmanage list-volumes

Name	Vol ID	Size	Minor	State
odoo	0	15 GiB	101	ok
pgsql	0	15 GiB	100	ok

[root@srv1 ~]# drbdmanage deploy-resource pgsq1 2

[root@srv1 ~]# drbdmanage deploy-resource odoo 2

# drbdmanage list-resources

```

+-----+-----+
| Name | | State |
+-----+-----+
| odoo | | ok |
| pgsq1 | | ok |
+-----+-----+

```

[root@srv1 ~]# drbdadm status <sup>2</sup> Nota.

```

.drbdctrl role:Primary
  volume:0 disk:UpToDate
  volume:1 disk:UpToDate
srv2 role:Secondary
  volume:0 peer-disk:UpToDate
  volume:1 peer-disk:UpToDate

odoo role:Secondary
  disk:UpToDate
  srv2 role:Secondary
    replication:SyncSource peer-disk:Inconsistent done:3.52

pgsq1 role:Secondary
  disk:UpToDate
  srv2 role:Secondary
    replication:SyncSource peer-disk:Inconsistent done:5.72

```

[root@srv1 ~]# drbdadm status

```

.drbdctrl role:Primary
  volume:0 disk:UpToDate
  volume:1 disk:UpToDate
srv2 role:Secondary
  volume:0 peer-disk:UpToDate
  volume:1 peer-disk:UpToDate

odoo role:Secondary
  disk:UpToDate
  srv2 role:Secondary
    peer-disk:UpToDate

pgsq1 role:Secondary
  disk:UpToDate
  srv2 role:Secondary
    peer-disk:UpToDate

```

# lsblk

```

NAME                                MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT
sda                                  8:0    0  40G  0 disk
└─sda1                               8:1    0  40G  0 part /
sdb                                  8:16   0  40G  0 disk
├─drbdpool-.drbdctrl_0             253:0   0    4M  0 lvm
│ └─drbd0                          147:0   0    4M  0 disk
├─drbdpool-.drbdctrl_1             253:1   0    4M  0 lvm
│ └─drbd1                          147:1   0    4M  0 disk
├─drbdpool-pgsq1_00                 253:2   0   15G  0 lvm
│ └─drbd100                        147:100 0   15G  1 disk
├─drbdpool-odoo_00                 253:3   0   15G  0 lvm
│ └─drbd101                        147:101 0   15G  1 disk

```

**2 La sincronización se tomará su tiempo. Se paciente hasta conseguir la Consistencia de Datos.**

```
[root@srv1 ~]# mkfs.xfs /dev/drbd100
[root@srv1 ~]# mkdir -p /pgsql/data
[root@srv2 ~]# mkdir -p /pgsql/data

[root@srv1 ~]# mount /dev/drbd100 /pgsql/data/
[root@srv1 ~]# drbdadm primary pgsql
[root@srv2 ~]# drbdadm secondary pgsql
```

```
[root@srv1 ~]# mkfs.xfs /dev/drbd101
[root@srv1 ~]# mkdir /odoo
[root@srv2 ~]# mkdir /odoo
```

```
[root@srv1 ~]# mount /dev/drbd101 /odoo
[root@srv1 ~]# drbdadm primary odoo
[root@srv2 ~]# drbdadm secondary odoo
```

```
[root@srv1 ~]# lsblk
NAME                                MAJ:MIN RM  SIZE RO  TYPE MOUNTPOINT
sda                                  8:0     0  40G  0   disk
└─sda1                               8:1     0  40G  0   part /
sdb                                  8:16    0  40G  0   disk
├─drbdpool-.drbdctrl_0             253:0    0    4M  0   lvm
│ └─drbd0                          147:0    0    4M  0   disk
├─drbdpool-.drbdctrl_1             253:1    0    4M  0   lvm
│ └─drbd1                          147:1    0    4M  0   disk
├─drbdpool-pgsql_00                253:2    0   15G  0   lvm
│ └─drbd100                       147:100  0   15G  0   disk /pgsql/data
├─drbdpool-odoo_00                 253:3    0   15G  0   lvm
│ └─drbd101                       147:101  0   15G  0   disk /odoo
```

```
[root@srv1 ~]# drbdmon
DRBD DrbdMon v9.6.0 | Node srv1
```

```
◦RES: .drbdctrl_0                 ●Primary   ◎   0:   Page:   1
1                                ◎   0:   0 ◎   1:
    ◦⇒ srv2
◦RES: odoo                        ●Primary   ◎   0:   101
    ◦⇒ srv2
◦RES: pgsql                        ●Primary   ◎   0:   100
    ◦⇒ srv2
```

```
[root@srv2 ~]# drbdmon
DRBD DrbdMon v9.6.0 | Node srv2
```

```
◦RES: .drbdctrl_1                 Secondary ◎   0:   Page:   1
1                                ◎   0:   0 ◎   1:
    ◦⇒●srv1
◦RES: odoo                        Secondary ◎   0:   101
    ◦⇒●srv1
◦RES: pgsql                        Secondary ◎   0:   100
    ◦⇒●srv1
```

→ [drbdtop.](#)

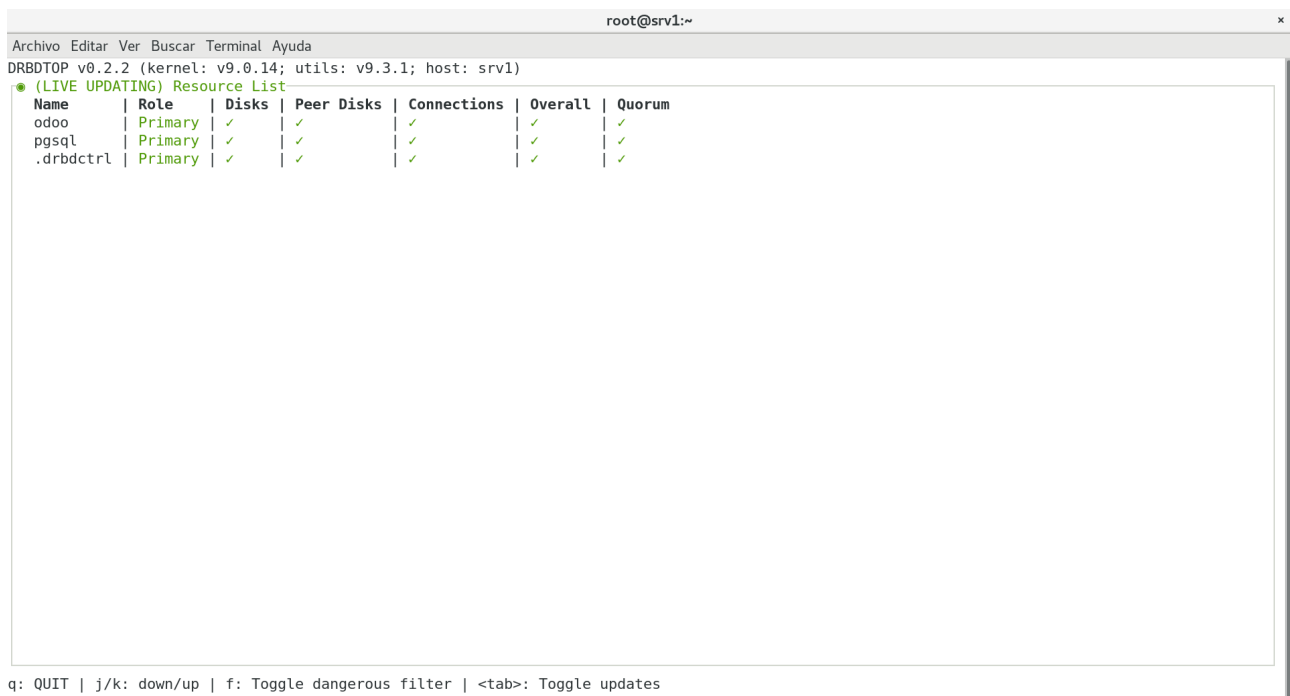
[https://github.com/hdjr/install\\_drbdtop/blob/master/install\\_drbdtop.sh](https://github.com/hdjr/install_drbdtop/blob/master/install_drbdtop.sh)

```
# yum install git -y
# git clone https://github.com/hdjr/install_drbdtop.git
# sh install_drbdtop/install_drbdtop.sh
...
go build -ldflags "-X main.Version=`git describe --tags --always --dirty`"
drbdtop is now installed. You can start it by running the drbdtop command.
You may have to logout and log back in to reload you PATH.
```

```
# logout
```

```
$ su -
```

```
# drbdtop
```



```
root@srv1:~
Archivo Editar Ver Buscar Terminal Ayuda
DRBDTOP v0.2.2 (kernel: v9.0.14; utils: v9.3.1; host: srv1)
● (LIVE UPDATING) Resource List
Name | Role | Disks | Peer Disks | Connections | Overall | Quorum
odoo | Primary | ✓ | ✓ | ✓ | ✓ | ✓
pgsql | Primary | ✓ | ✓ | ✓ | ✓ | ✓
.drbdctrl | Primary | ✓ | ✓ | ✓ | ✓ | ✓

q: QUIT | j/k: down/up | f: Toggle dangerous filter | <tab>: Toggle updates
```

```
root@srv2:~  
Archivo Editar Ver Buscar Terminal Ayuda  
DRBDTOP v0.2.2 (kernel: v9.0.14; utils: v9.3.1; host: srv2)  
● (LIVE UPDATING) Resource List  
Name      | Role      | Disks | Peer Disks | Connections | Overall | Quorum  
odoo      | Secondary | ✓     | ✓           | ✓           | ✓       | ✓  
pgsql    | Secondary | ✓     | ✓           | ✓           | ✓       | ✓  
.drbdctrl | Secondary | ✓     | ✓           | ✓           | ✓       | ✓  
  
q: QUIT | j/k: down/up | f: Toggle dangerous filter | <tab>: Toggle updates
```

→ [Split Brain:](#)

↘ [after-sb-0pri](#)

```
[root@srv1 ~]# drbdmanage net-options --after-sb-0pri discard-zero-changes --resource pgsql
```

```
[root@srv1 ~]# drbdmanage net-options --after-sb-0pri discard-zero-changes --resource odoo
```

↘ [after-sb-1pri](#)

```
[root@srv1 ~]# drbdmanage net-options --after-sb-1pri discard-secondary --resource pgsql
```

```
[root@srv1 ~]# drbdmanage net-options --after-sb-1pri discard-secondary --resource odoo
```

↘ [after-sb-2pri](#)

```
[root@srv1 ~]# drbdmanage net-options --after-sb-2pri disconnect --resource pgsql
```

```
[root@srv1 ~]# drbdmanage net-options --after-sb-2pri disconnect --resource odoo
```

### ↘ handlers notify's

```
[root@srv1 drbd]# drbdmanage handlers --split-brain notify-split-brain.sh --resource pgsq1
```

```
[root@srv1 drbd]# drbdmanage handlers --split-brain notify-split-brain.sh --resource odoo
```

### → Comprobación en ambos servidores:

```
# cat /var/lib/drbd.d/drbdmanage_pgsq1.res
```

```
# cat /var/lib/drbd.d/drbdmanage_odoo.res
```

```
...
```

```
net {
```

```
    after-sb-1pri discard-secondary;
```

```
    after-sb-2pri disconnect;
```

```
    after-sb-0pri discard-zero-changes;
```

```
...
```

```
handlers {
```

```
    split-brain notify-split-brain.sh;
```

```
...
```

### → Procedimiento de sincronización en 3 pasos (Split Brain):

Step 1: Start drbd manually on both nodes

Step 2: Define one node as secondary and discard data on this → **VÍCTIMA**

```
drbdadm secondary all
drbdadm disconnect all
drbdadm -- --discard-my-data connect all
```

Step 3: Define another node as primary and connect → **SUPERVIVIENTE**

```
drbdadm primary all
drbdadm disconnect all
drbdadm connect all
```

### → Desmontaje de Stmas. De Ficheros → La administración será a cargo de Pacemaker.

```
[root@srv1 ~]# umount /pgsql/data/
[root@srv1 ~]# umount /odoo/
```



**REFERENCIAS :**

[https://www.server-world.info/en/note?os=CentOS\\_7&p=drbd9&f=1](https://www.server-world.info/en/note?os=CentOS_7&p=drbd9&f=1)

[https://www.server-world.info/en/note?os=CentOS\\_7&p=drbd9&f=2](https://www.server-world.info/en/note?os=CentOS_7&p=drbd9&f=2)

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[https://wiki.clusterlabs.org/wiki/DRBD\\_PgSQL\\_HowTo](https://wiki.clusterlabs.org/wiki/DRBD_PgSQL_HowTo)

<https://linbit.github.io/drbdtop/guides/resolving-splitbrain/>

<https://www.ipserverone.info/dedicated-server/linux-2/how-to-fix-drbd-recovery-from-split-brain/>

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