DRBD

: <https://docs.linbit.com/docs/users-guide-9.0/>

DRBD

DRBD

DRBD   (,   ,   )
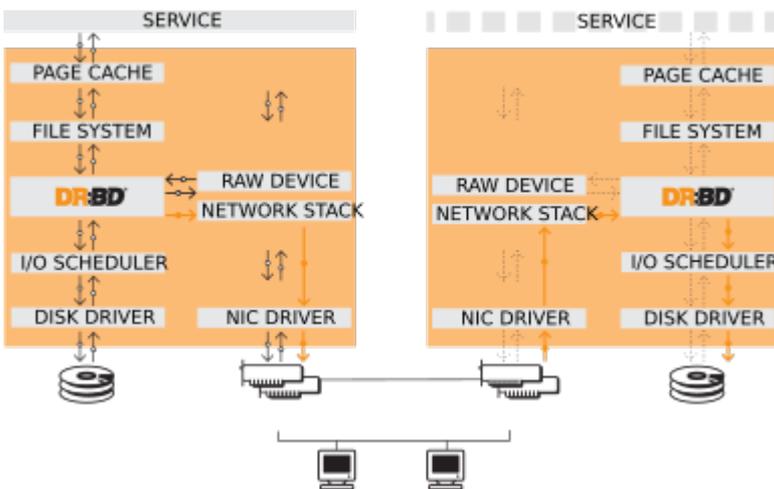   . DRBD   .

- 　　　　　　　　　.   .
- 　　　　　　　.
　　　　.
- 　　　　　　　　　.   (   )
　　　　　　　　　　　.
　　　　　　　　　.   .

DRBD   Linux   . 　　　, DRBD
　　　　　DRBD   I / O   .   DRBD
                                                                                        .

DRBD   Linux   .
DRBD   . 　　　，
DRBD   ext3   XFS   -
　　　　　　　　　.

DRBD

Last
update:
2018/05/31
00:59

drbd_
사용자_
안내서

https://atl.kr/dokuwiki/doku.php/drbd_%EC%82%AC%EC%9A%A9%EC%9E%90_%EC%95%88%EB%82%B4%EC%84%9C?rev=1527728377

Single-primary mode :   :

                                                                                        .
                                                                                (ext3,
ext4, XFS   )   .

                              DRBD   (   )
         .

Dual-primary mode :   :

                                                                                        .

                        .   GFS   OCFS2   .

                        DRBD
                                         (:
                                DRBD   .

                                                                                              .


```
    ⚠    DRBD-9.0
                         (                                        ). DRBD-9.1
              2                                                    .
```


DRBD   3   3   .

A : Async

                                        .
    TCP   .   (failover)
                    .   .
                                        .   A
                        . DRBD   .
DRBD   .

B : Semi-Async

              (   )
                                                                .   (failover)

                                                           .

                                                                                        .

         C : Sync

                                      .
                                              .
         .   (   )
                                          .

         DRBD   C   .
                                                                    .
                                      .

DRBD

SLES   (HAE)   DRBD   . SLES   DRBD   YaST2
                                    .   .
                                          .

```
# yast -i drbd
```



```
# zypper install drbd
```

CentOS

CentOS   5   DRBD 8   . DRBD 9   EPEL, ELRepo
          . DRBD   yum(
).

```
# yum install drbd kmod-drbd
```


Ubuntu LTS   LINBIT
https://launchpad.net/~linbit/+archive/ubuntu/linbit-drbd9-stack   PPA
            .   PPA   .

```
# apt-get install drbd-utils python-drbdmanage drbd-dkms
```

DRBD

- DRBD

```
global {
  usage-count yes;
}
common {
  net {
    protocol C;
  }
}
```

- DRBD

```
resource r0 {
  on alice {
    device    /dev/drbd1;
    disk      /dev/sda7;
    address   10.1.1.31:7789;
    meta-disk internal;
  }
  on bob {
    device    /dev/drbd1;
    disk      /dev/sda7;
    address   10.1.1.32:7789;
    meta-disk internal;
  }
}
```

- DRBD

```
resource r0 {
  volume 0 {
    device    /dev/drbd1;
    disk      /dev/sda7;
    meta-disk internal;
  }
  volume 1 {
    device    /dev/drbd2;
    disk      /dev/sda8;
    meta-disk internal;
  }
```

```
  on alice {
    address   10.1.1.31:7789;
  }
  on bob {
    address   10.1.1.32:7789;
  }
}
```

global

/etc/drbd.d/global_common.conf

usage-count

DRBD   DRBD   DRBD
            HTTP   .
usage-count no;.   usage-count ask; DRBD
    .

DRBD   (http://usage.drbd.org   ).

common

/etc/drbd.d/global_common.conf   .

common
            .   .

                common   net { protocol C; }   .
                                        .   resource
            .   .

resource

        /etc/drbd.d/<resource>.res   . /etc/drbd.conf
        *.res   .   DRBD
            .   ,   .

                        on host   (   )
    .   common   (   ) DRBD
        .

                                    resource   .
                                    .

```
resource r0 {
```

```
  device    /dev/drbd1;
  disk      /dev/sda7;
  meta-disk internal;
  on alice {
    address   10.1.1.31:7789;
  }
  on bob {
    address   10.1.1.32:7789;
  }
}
```

initial device synchronization :

.

.

.

```
# drbdadm primary --force <resource>
```

Using truck based replication :

,

.

.

.

```
# drbdadm new-current-uuid --clear-bitmap <resource>/<volume>
```

```
# drbdsetup new-current-uuid --clear-bitmap <minor>
```

.   RAID1   1
          dd   . (file-copy   .)

.

```
# drbdadm new-current-uuid <resource>
```

—clear-bitmap   .
                                                                        .
                                        .
                        .   r0   0   2   1
            .

```
V=r0/0
NODE_FROM=2
NODE_TO=1

drbdadm -- --force dump-md $V > /tmp/md_orig.txt
sed -e "s/node-id $NODE_FROM/node-id $NODE_TO/" \
    -e "s/^peer.$NODE_FROM. /peer-NEW /" \
    -e "s/^peer.$NODE_TO. /peer[$NODE_FROM] /" \
    -e "s/^peer-NEW /peer[$NODE_TO] /" \
    < /tmp/md_orig.txt > /tmp/md.txt

drbdmeta --force $(drbdadm sh-minor $V) v09 $(drbdadm sh-ll-dev $V) internal
restore-md /tmp/md.txt
```

                                        .

```
# drbdadm up <resource>
```

            .

4

            4   .

```
resource r0 {
  device      /dev/drbd0;
  disk        /dev/vg/r0;
  meta-disk   internal;

  on store1 {
    address   10.1.10.1:7100;
    node-id   1;
  }
  on store2 {
    address   10.1.10.2:7100;
    node-id   2;
  }
```

```
  on store3 {
    address   10.1.10.3:7100;
    node-id   3;
  }
  on store4 {
    address   10.1.10.4:7100;
    node-id   4;
  }

  # All connections involving store1
  connection {
    host store1  port 7012;
    host store2  port 7021;
  }
  connection {
    host store1  port 7013;
    host store3  port 7031;
  }
  connection {
    host store1  port 7014;
    host store4  port 7041;
  }

  # All remaining connections involving store2
  connection {
    host store2  port 7023;
    host store3  port 7032;
  }
  connection {
    host store2  port 7024;
    host store4  port 7042;
  }

  # All remaining connections involving store3
  connection {
    host store3  port 7034;
    host store4  port 7043;
  }

  # store4 already done.
}
```

4   Full-mesh   1-2, 1-3, 1-4, 2-3, 2-4, 3-4

   .

                                                      .

```
resource r0 {
```

```
  device     /dev/drbd0;
  disk       /dev/vg/r0;
  meta-disk  internal;

  on store1 {
    address   10.1.10.1:7100;
    node-id   1;
  }
  on store2 {
    address   10.1.10.2:7100;
    node-id   2;
  }
  on store3 {
    address   10.1.10.3:7100;
    node-id   3;
  }
  on store4 {
    address   10.1.10.4:7100;
    node-id   4;
  }

  connection-mesh {
    hosts     store1 store2 store3 store4;
  }
}
```

NIC   IP

.

```
resource r0 {
  ...

  # store1 has crossover links like 10.99.1x.y
  connection {
    host store1  address 10.99.12.1 port 7012;
    host store2  address 10.99.12.2 port 7021;
  }
  connection {
    host store1  address 10.99.13.1  port 7013;
    host store3  address 10.99.13.3  port 7031;
  }
  connection {
    host store1  address 10.99.14.1  port 7014;
    host store4  address 10.99.14.4  port 7041;
  }

  # store2 has crossover links like 10.99.2x.y
  connection {
    host store2  address 10.99.23.2  port 7023;
    host store3  address 10.99.23.3  port 7032;
```

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00:59

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```
  }
  connection {
    host store2  address 10.99.24.2  port 7024;
    host store4  address 10.99.24.4  port 7042;
  }

  # store3 has crossover links like 10.99.3x.y
  connection {
    host store3  address 10.99.34.3  port 7034;
    host store4  address 10.99.34.4  port 7043;
  }
}
```

(/etc/drbd.d/*.conf)

.

```
# drbdadm create-md <resource>
```

DRBD

DRBD   drbd-overview

```
nina# drbd-overview
  0:r0/0  Connected(*) Seco(*)/Prim(nina) UpTo(*)/Disk(nono)
          /mnt ext3 1008M 18M 940M 2%
  1:r1/0  Connected(*) Secondary(*)       UpTo(*)/Disk(nono)
  5:r2/0  Connected(*) Seco(*)/Prim(nini) UpTo(*)/Disk(nono)
  6:r2/1  Connected(*) Seco(*)/Prim(nini) UpTo(*)/Disk(nono)
```

- r0   0   nina(   ) Primary   ext3   /mnt
  .
  -     nono   .(DRBD   )
  -                                 UpToDate   .
- r1   .   .
- r2   nini   .

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