



1. HA ( )

1. HA

```
$> yum install corosync pacemaker pcs automake -y
```

1. HA pcsd ( )

```
$> passwd hacluster
Changing password for user hacluster.
New password:
BAD PASSWORD: it is based on a dictionary word
Retype new password:
passwd: all authentication tokens updated successfully.
$> systemctl start pcsd
```

1. ( master or slave 1 )

```
$> pcs cluster auth master slave
Username: hacluster
Password:
master: Authorized
slave: Authorized
```

2.

```
$> pcs cluster setup --name cluster master slave
Destroying cluster on nodes: master, slave...
master: Stopping Cluster (pacemaker)...
slave: Stopping Cluster (pacemaker)...
slave: Successfully destroyed cluster
master: Successfully destroyed cluster

Sending 'pacemaker_remote authkey' to 'master', 'slave'
slave: successful distribution of the file 'pacemaker_remote authkey'
master: successful distribution of the file 'pacemaker_remote authkey'
Sending cluster config files to the nodes...
master: Succeeded
```

slave: Succeeded

Synchronizing pcsd certificates on nodes master, slave...

master: Success

slave: Success

Restarting pcsd on the nodes in order to reload the certificates...

master: Success

slave: Success

### 3. `pcs` `cluster` `start` `--all`

```
$> pcs cluster start --all
```

```
# pcs status corosync
```

Membership information

-----

Nodeid	Votes	Name
1	1	master (local)
2	1	slave

```
#pcs property set stonith-enabled=false
```

### 4. `systemctl` `enable` `pacemaker` `corosync`

```
# systemctl enable pacemaker
```

```
# systemctl enable corosync
```

## `crmsh` (crmsh)

### 1. `crmsh` `OS` `install`

```
$> yum install -y python-lxml pacemaker-libs-devel asciidoc python-dateutil python-yaml --skip-broken
```

```
$> yum install python-devel python-setuptools -y
```

### 2. `crmsh` `autoconf` `GNU` `Autoconf`

```
$> ./autogen.sh
```

```
autoconf: autoconf (GNU Autoconf) 2.63
```

```

automake:      automake (GNU automake) 1.11.1
aclocal
automake --add-missing --include-deps --copy
configure.ac:33: installing `./install-sh'
configure.ac:33: installing `./missing'
autoconf
Now run ./configure

># ./configure
checking for a BSD-compatible install... /usr/bin/install -c
checking whether build environment is sane... yes
checking for a thread-safe mkdir -p... /bin/mkdir -p
checking for gawk... gawk
checking whether make sets $(MAKE)... yes
checking for python... /usr/bin/python
checking for python version... 2.6
checking for python platform... linux2
checking for python script directory... ${prefix}/lib/python2.6/site-packages
checking for python extension module directory... ${exec_prefix}/lib64/python2.6/site-packages
checking for asciidoc... no
configure: creating ./config.status
config.status: creating Makefile
config.status: creating hb_report/hb_report
config.status: creating crm.conf
config.status: creating version
># make; make install
...

```

### 3. CRM `crmd` `crm`

```
# ln -s /usr/local/lib/python2.6/site-packages/crmsh /usr/lib/python2.6/site-packages/
```

### 4. `crmd` `crm`

```

# /etc/init.d/corosync start
># /etc/init.d/pacemaker start
># chkconfig corosync on
># chkconfig pacemaker on

```

- `crmd` : Pacemaker/Corosync `crmd` HA `corosync` `crmd` `crmd` `crmd`  
pacemaker `corosync` `crmd` `crmd` `crmd` .

- `pacemaker → corosync`

5. `crm_mon -l`

```
$> crm_mon -l
```

6. HA `crm`

```
##### Auto-Failback #####
>#crm configure
crm(configure)# property stonith-enabled=false
crm(configure)# property no-quorum-policy=ignore
crm(configure)# rsc_defaults resource-stickiness=100
crm(configure)# commit

##### HA VIP #####
crm(configure)# primitive TEST_STOR_VIP ocf:heartbeat:IPaddr2 params ip={HA VIP}
cidr_netmask=24 op monitor interval=10s

##### DRBD #####
crm(configure)# primitive TEST_STOR_DRBD ocf:linbit:drbd params drbd_resource="drbd0" op
monitor interval="20s" role="Master" op monitor interval="20s" role="Slave"
crm(configure)# ms MS_TEST_STOR_DRBD TEST_STOR_DRBD meta master-max="1" master-node-
max="1" clone-max="2" clone-node-max="1" notify="true"
crm(configure)# primitive TEST_STOR_FS ocf:heartbeat:Filesystem params device="/dev/drbd0"
directory="/data" fstype="xfs"

##### DRBD , , 3 #####
crm(configure)# group TEST_STOR_GP TEST_STOR_FS TEST_STOR_VIP meta migration-threshold="5"
crm(configure)# colocation DRBD_on_HA inf: TEST_STOR_GP MS_TEST_STOR_DRBD:Master
crm(configure)# order DRBD_after_HA inf: MS_TEST_STOR_DRBD:promote TEST_STOR_GP:start

#####  #####
crm(configure)# commit
```

## 7. HA

# crm\_mon -l

Stack: classic openais (with plugin)

Current DC: TEST-STOR#1 (version 1.1.18-3.el6-bfe4e80420) - partition with quorum

Last updated: Wed Dec 18 18:29:46 2019

Last change: Mon Sep 2 19:26:34 2019 by root via crm\_resource on TEST-STOR#1

2 nodes configured (2 expected votes)

5 resources configured

Online: [ TEST-STOR#1 TEST-STOR#2 ]

Active resources:

Master/Slave Set: MS\_TEST\_STOR\_DRBD [TEST\_STOR\_DRBD]

Masters: [ TEST-STOR#1 ]

Slaves: [ TEST-STOR#2 ]

Resource Group: TEST\_STOR\_GP

TEST\_STOR\_FS (ocf::heartbeat:Filesystem): Started TEST-STOR#1

TEST\_STOR\_APACHE (lsb:httpd): Started TEST-STOR#1

TEST\_STOR\_VIP (ocf::heartbeat:IPaddr): Started TEST-STOR#1

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Revision #4

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