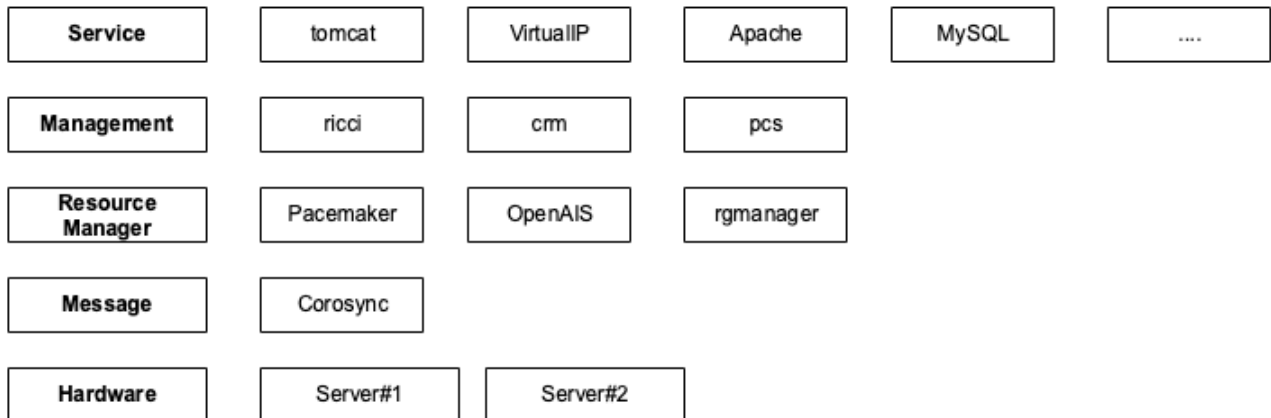


corosync / pacemaker? ??? HA??

1. HA stack



1. Hardware : □□□□

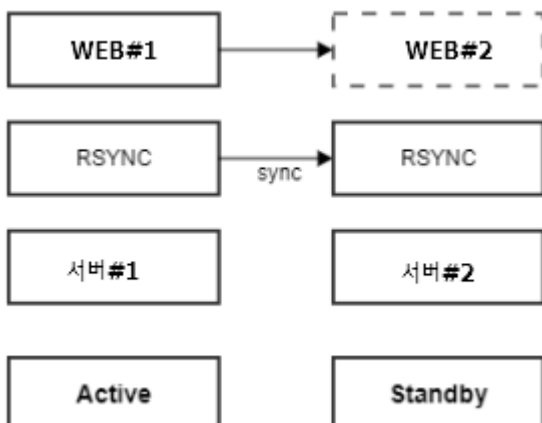
2. Message : Clustering □□□ □□□□ □□

3. Resource Manager : failover / failback □□ □□

4. Management : HA□ □□□□ □□□□ Tool

5. Service : HA□ □□□

2. Service Architecture (Active / Standby)



?? ?? (?? ??)

1. 安装

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

1. HA 环境搭建 (pcs 工具 (corosync pacemaker pcs 工具))

```
$> 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. 配置 (pcs 工具 master or slave 1 节点)

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

2. 配置

```
$> 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. 启动集群并检查状态

```
$> 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. 配置系统服务 (systemctl enable)

```
# systemctl enable pacemaker
# systemctl enable corosync
```

???(crmsh) ??

1. crmsh 安装及依赖

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

2. crmsh 编译安装

```
$> ./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 `crmsync` `crmd`

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

4. `crmd` `crmsync`

```
# /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 `crmd` corosync `crmd` `crmd` `crmd` .
- `crmd` `crmd` pacemaker → corosync `crmd` `crmd`

5. 111 1111 11

```
$> crm_mon -l
```

6. HA 111 11

```
##### 111 111 1111 Auto-Failback 1111 #####
```

```
>#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 11 VIP 11 #####
```

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

```
##### DRBD 11 #####
```

```
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 1111, 111 11 11 11 #####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
```

```
##### 111 111 11 #####
```

```
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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