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Pacemaker - 2 node cluster 구성하기

fence-xvm을 사용하지 않고 vBMC통해 실제 많이 작업하는 구성인 ipmilan 환경을 libvirt위에 구현했습니다. 참고하여 진행하시기 바랍니다.

ENV Version 정보

1. CentOS Linux release 7.9.2009 (Core)
2. pcs-0.9.169-3.el7.centos.1.x86_64

vBMC 구성

참고 : https://yjwang.tistory.com/181

pacemaker vbmc (host)

```
# vbmc add --username admin --password testtest --port 6161 --libvirt-uri
qemu:///system virt-go-c79-161
# vbmc add --username admin --password testtest --port 6162 --libvirt-uri
qemu:///system virt-go-c79-162
# vbmc start virt-go-c79-161
# vbmc start virt-go-c79-162
```

vbmc list (host)

```
# vbmc list
+-----------------+---------+---------+------+
| Domain name     | Status  | Address | Port |
+-----------------+---------+---------+------+
| virt-go-c79-161 | running | ::      | 6161 |
| virt-go-c79-162 | running | ::      | 6162 |
+-----------------+---------+---------+------+
```

Pacemaker Cluster 구성

- /etc/hosts (both)

```
# cat << EOF >> /etc/hosts
192.168.123.161        node1
192.168.123.162        node2
```

```
EOF
```

- [option] /etc/hosts (both) if use rrp

```
# cat << EOF >> /etc/hosts
192.168.123.161        node1
192.168.123.162        node2
192.168.123.163     node1-rrp
192.168.123.164        node2-rrp
EOF
```

- install package (both)

```
# yum install -y pcs fence-agents-ipmilan vim
```

- start pcsd service for authentication (both)

```
# systemctl enable pcsd --now
```

- Set cluster user password (both)

```
# echo "testtest" |passwd --stdin hacluster
```

- Auth cluster

```
# pcs cluster auth node1 node2 -u hacluster -p testtest
node1: Authorized
node2: Authorized
```

- [option] if use rrp

```
# pcs cluster auth node1 node2 node1-rrp node2-rrp -u hacluster -p testtest
```

- setup pacemaker cluster

```
# pcs cluster setup --start --enable --name test-pacemaker node1 node2
```

- [option] if use rrp

```
# pcs cluster setup --start --enable --name test-pacemaker node1,node1-rrp
node2,node2-rrp
```

- Check cluster status

```
# pcs status
Cluster name: test-pacemaker

WARNINGS:
No stonith devices and stonith-enabled is not false

Stack: corosync
Current DC: node1 (version 1.1.23-1.el7_9.1-9acf116022) - partition with
quorum
Last updated: Fri Jul 16 08:02:53 2021
Last change: Fri Jul 16 08:01:50 2021 by hacluster via crmd on node1

2 nodes configured
0 resource instances configured

Online: [ node1 node2 ]

No resources


Daemon Status:
  corosync: active/enabled
  pacemaker: active/enabled
  pcsd: active/enabled
```

- Create ipmi fence device

위에서 설정한 vBMC내용을 참고하여 아래와 같이 추가합니다. 2node로 구성할 것이기에 split-brain을 방지하기 위하여 delay option을 추가해줍니다.

```
# pcs stonith create fence-node1 fence_ipmilan delay=10 ipaddr=192.168.123.1
ipport=6161 lanplus=1 login=admin passwd=testtest pcmk_host_list=node
# pcs stonith create fence-node2 fence_ipmilan ipaddr=192.168.123.1
ipport=6162 lanplus=1 login=admin passwd=testtest pcmk_host_list=node2
```

fence-device 상태를 확인합니다.

```
# pcs stonith show
 fence-node1    (stonith:fence_ipmilan):    Started node1
 fence-node2    (stonith:fence_ipmilan):    Started node2
```

fence device를 추가한 후에는 resource 등록 후 잘 동작하는지 꼭 확인해야합니다.

node2부터 reboot 시켜봅니다.

```
# pcs stonith fence node2
Node: node2 fenced
```

node2에 접속하니 잘 reboot 됐네요 반대도 당연히 테스트가 끝나야 합니다.

```
[node2]# uptime
 08:13:01 up 0 min,  1 user,  load average: 0.19, 0.05, 0.02
```

fence node1

```
# pcs stonith fence node1
Node: node1 fenced
```

이후 dummy resource와 vip resource를 등록해줍니다.

```
# pcs resource create vip ipaddr2 ip=192.168.123.160 cidr_netmask=24

# pcs resource create dummy1 ocf:pacemaker:Dummy
# pcs resource create dummy2 ocf:pacemaker:Dummy
# pcs resource create dummy3 ocf:pacemaker:Dummy
```

cluster status

```
# pcs status
Cluster name: test-pacemaker
Stack: corosync
Current DC: node1 (version 1.1.23-1.el7_9.1-9acf116022) - partition with
quorum
Last updated: Fri Jul 16 08:19:49 2021
Last change: Fri Jul 16 08:19:26 2021 by root via cibadmin on node1

2 nodes configured
6 resource instances configured

Online: [ node1 node2 ]

Full list of resources:
```

```
 fence-node1    (stonith:fence_ipmilan):    Started node1
 fence-node2    (stonith:fence_ipmilan):    Started node2
 vip    (ocf::heartbeat:IPaddr2):    Started node1
 dummy1    (ocf::pacemaker:Dummy):    Started node2
 dummy2    (ocf::pacemaker:Dummy):    Started node1
 dummy3    (ocf::pacemaker:Dummy):    Started node2

Daemon Status:
  corosync: active/enabled
  pacemaker: active/enabled
  pcsd: active/enabled
```

vip status

```
# ip -o -4 a
1: lo    inet 127.0.0.1/8 scope host lo\       valid_lft forever
preferred_lft forever
2: eth0    inet 192.168.123.161/24 brd 192.168.123.255 scope global dynamic
eth0\       valid_lft 3340sec preferred_lft 3340sec
2: eth0    inet 192.168.123.160/24 brd 192.168.123.255 scope global
secondary eth0\       valid_lft forever preferred_lft forever
```

만약 각 resource가 같은 node에서 실행되거나 하는 제한 사항이 있다면 constaint를 설정해보시기 바라며

resource를 group으로 묶을 수도 있으니 여러 실습을 통해 사용해보시기 바랍니다.

참조링크

- https://yjwang.tistory.com/182

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