Building Cluster of 2 nodes ProxmoxV4

This method is an adaptation of https://pve.proxmox.com/wiki/Proxmox_VE_4.x_Cluster in order to avoid having a block "Waiting of quorum…" during the "pvecm add" of the second node.
The problem occurs when the nodes don't have a multicast connection (it is the case with a non configurable cheap switch).
Therefore the connection must be configured as unicast.

on Proxmox1:

- Install of "omping" (not necessary)

```
aptitude install omping
```

- config /etc/hosts as follow (replacing "proxmox1&2" by the real host name, "domain.tld" by the real domain and with their real IPs) and reboot:

```
127.0.0.1       localhost.localdomain    localhost
192.168.2.160   proxmox1.domain.tld       proxmox1     pvelocalhost

192.168.2.150   proxmox2.domain.tld        proxmox2

# The following lines are desirable for IPv6 capable hosts
::1     localhost ip6-localhost ip6-loopback
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters
```

- Build the cluster

```
  root@proxmox1:~# pvecm create cluster-GuedeL
Corosync Cluster Engine Authentication key generator.
Gathering 1024 bits for key from /dev/urandom.
Writing corosync key to /etc/corosync/authkey.
```

- Have a check: /etc/corosync isn't empty any more

```
root@proxmox-miniitx:~# ls /etc/corosync/
authkey  corosync.conf
```

and nano /etc/corosync/corosync.conf and /etc/pve/corosync.conf give the same:

```
totem {
  version: 2
  secauth: on
  cluster_name: cluster-GuedeL
  config_version: 1
  ip_version: ipv4
  interface {
    ringnumber: 0
```

```
    bindnetaddr: 192.168.2.160
  }
}

nodelist {
  node {
    ring0_addr: proxmox-miniitx
    name: proxmox-miniitx
    nodeid: 1
    quorum_votes: 1
  }
}

quorum {
  provider: corosync_votequorum
}

logging {
  to_syslog: yes
  debug: off
}
```

- Configure transmission unicast (see
  https://forum.proxmox.com/threads/proxmox4-cluster-2-nodes-problem-with-quorum.25445/):
    - check that /etc/pve/corosync.conf is writable (see
      https://www.guedel.eu/dokuwiki/doku.php?id=Welcome:Proxmox:Cluster#Delete%20the%20cluster%20config%20of%20the%20removed%20node)

      ```
      ls -l /etc/pve
      ```

    - save a copy of /etc/pve/corosync

      ```
      cp /etc/corosync/corosync.conf /etc/pve/corosync.conf.orig
      ```

    - create a modified file

      ```
      cp /etc/corosync/corosync.conf /etc/pve/corosync.conf.modif
      nano /etc/pve/corosync.conf.modif
      ```

      and add "expected_votes: 1" and "two_node: 1" into the section "quorum" and
      "transport: udpu" into the section "totem" in order to obtain:

      ```
      logging {
        debug: off
        to_syslog: yes
      }

      nodelist {
        node {
          name: proxmox-miniitx
      ```

```
      nodeid: 1
      quorum_votes: 1
      ring0_addr: proxmox-miniitx
    }

    node {
      name: proxmox-asrock
      nodeid: 2
      quorum_votes: 1
      ring0_addr: proxmox-asrock
    }

}

quorum {
  expected_votes: 1
  provider: corosync_votequorum
  two_node: 1
}

totem {
  cluster_name: cluster-GuedeL
  config_version: 2
  ip_version: ipv4
  secauth: on
  transport: udpu
  version: 2
  interface {
    bindnetaddr: 192.168.2.160
    ringnumber: 0
  }

}
```

Don't forget to increment each time /etc/pve/corosync.conf is modified the value of "config_version" into the section "totem"

○ activate the modified file:

```
cp /etc/pve/corosync.conf.modif /etc/pve/corosync.conf
```

and reboot.

on Proxmox2:

- Install of "omping" (not necessary)

```
aptitude install omping
```

- config /etc/hosts as follow (replacing "proxmox1&2" by the real host name, "domain.tld" by the real domain and with their real IPs) and reboot:

```
127.0.0.1        localhost.localdomain    localhost
192.168.2.150    proxmox2.domain.tld        proxmox2     pvelocalhost

192.168.2.160    proxmox1.domain.tld         proxmox1

# The following lines are desirable for IPv6 capable hosts
::1     localhost ip6-localhost ip6-loopback
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters
```

- add this machine to the cluster (replace by the IP of Proxmox1):

```
pvecm add 192.168.2.160
```

Troubleshooting / general infos

Links

- proxmox cluster: https://pve.proxmox.com/wiki/Proxmox_VE_4.x_Cluster
- Multicast (for proxmoxV3):
  https://pve.proxmox.com/wiki/Multicast_notes#Use_unicast_instead_of_multicast_.28if_all_else_fails.29
- Cluster file system: http://pve.proxmox.com/wiki/Proxmox_Cluster_file_system_%28pmxcfs%29
- Manpage of corosync:
  http://manpages.ubuntu.com/manpages/maverick/man5/corosync.conf.5.html

Configure broadcast instead of multicast

This method
https://forum.proxmox.com/threads/waiting-for-quorum-in-proxmox-ve-4-0-beta-2.23551/page-2 Post
#27 didn't work by me: I had further a "waiting for quorum…".

Remove a node from the cluster

Shutdown the node to be removed and from another node staying into the cluster:

```
pvecm delnode node_to:be_removed
```

Delete the cluster config of the removed node

- Delete the ssh-keys and hosts from /root/.ssh.

```
rm /root/.ssh/*
```

works if all can be deleted.

- Delete the key of corosync:

```
rm /etc/corosync/authkey
```

- Delete /etc/pve/corosync.conf:
  - if /etc/pve/corosync is writable, simply delete it
  - if /etc/pve/corosync is not writable
    (http://pve.proxmox.com/wiki/Proxmox_Cluster_file_system_%28pmxcfs%29)

```
service pve-cluster stop
pmxcfs -l
rm  /etc/pve/corosync.conf
service pve-cluster stop
service pve-cluster start   ## some errors can occur!!
service pvedaemon restart
service pveproxy restart
service pvestatd restart
restart
systemctl status pve-cluster.service     ## should be without
errors now
```

> modifying or deleting /etc/corosync/corosync.conf seems to have no influence on /etc/pve/corosync.conf

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Permanent link:
https://wiki.guedel.eu/doku.php?id=welcome:proxmox:building_a_cluster_of_2_nodes

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