Cluster

Different nodes configuration

Cluster is using ONE shared content of `/etc/pve`. Content of this directory is synchronized on all cluster nodes. **IMPACT**:

- storage configuration is one for whole cluster. To create local node storage, storage should be limited only own node.
- Joining pure Debian based node (BTRFS FS) to cluster will result with "local-zfs" storage visible on Debian BTRFS node with ? sign. To prevent creation unusable storage, storage can be limited to some nodes. Please edit storage and limit it to own node.
- Custom storage config on nodes can disappear because only one shared config is used
    - Storage removed due to cluster joining can be added manually under another name and then restricted to specific node.
    - [create "local-zfs"](#)

NOTE: make copy of `/etc/pve/storage.cfg` from each node before joining to cluster. **NOTE**: create all custom mounts or ZFS pools before joining cluster.

local-ZFS replication

It is possible to schedule replication of containers/VMs to another node. It makes periodic snapshot on remote local storage. It gives data redundancy and reduces downtime when container is moved between local storage on each node.

shared storage

- it is recommended to use shared storage available from all nodes.
    - for file pool types (iso, backups) easiest is to use NFS/CIFS share.

Live migration

- It is only possible if VM disc resides on shared network storage (available from all nodes)

Preparation

Second network interface with separate internal IP network is recommended for redundancy and shared storage bandwidth.

Creation

From Proxmox 6.0 it is possible to use GUI t ocreate and join cluster.

`Datacenter –> Cluster –> Create cluster`

Joining

Joining other nodes

Join can stuck when there is problem with iSCSI connection from newly added node. Check journal on joining node;

```
kernel: scsi host9: iSCSI Initiator over TCP/IP
pvestatd[2097]: command '/usr/bin/iscsiadm --mode node --targetname
iqn.2020-04.com.zyxel:nas326-iscsi-pve1-isos-target.tjlintux --login'
failed: exit code 24
iscsid[1060]: conn 0 login rejected: initiator failed authorization with
target
iscsid[1060]: Connection135:0 to [target: iqn.2020-04.com.zyxel:nas326-
iscsi-pve1-isos-target.tjlintux, portal: 192.168.28.150,3260] through
[iface: default] is shutdown.
```

Joining process will be waiting infinitely until iSCSI device will be connected. During this time it is possible to disable CHAP authentication in remote iSCSI target, or provide common credentials for Target Portal Group.

iSCSI issue with CHAP

When CHAP is used for iSCSI (manually configured from Debian console), joined node wants to connect to the same iSCSI target using own initiator name and own local configuration. Of coruse NAS326 is configured with only one CHAP login and passwod, so joining is not possible.

Is it possible to add new acl for target on NAS326 using `targetcli` command, or disable CHAP.