

TP : Déploiement K8s 3 noeuds avec NFS

Source :

- <https://akylson.com/kubernetes-cluster-on-debian-12-34d7d0ef5e92>
- <https://computingforgeeks.com/configure-nfs-as-kubernetes-persistent-volume-storage/>

Lien pour avoir des ressources K8s à gogo :

- <https://killercoda.com/playgrounds/scenario/kubernetes>
- <https://labs.play-with-k8s.com/>

Périmètre de test

- Workers K8s inet 192.168.1.184/24 brd 192.168.1.255 scope global dynamic enp0s3
- Workers K8s inet 192.168.1.84/24 brd 192.168.1.255 scope global dynamic enp0s3
- Workers K8s inet 192.168.1.175/24 brd 192.168.1.255 scope global dynamic enp0s3
- 1 Control Plane K8s : inet 192.168.1.27/24 brd 192.168.1.255 scope global dynamic enp0s3
- 1 serveurs NFS : inet 192.168.1.82/24 brd 192.168.1.255 scope global dynamic enp0s3

Mise en place d'un cluster k8s 3 noeuds

- <https://akylson.com/kubernetes-cluster-on-debian-12-34d7d0ef5e92>

```
root@ctrl:~# apt -y install containerd iptables apt-transport-https gnupg2 curl sudo
root@ctrl:~# cat > /etc/sysctl.d/99-k8s-cri.conf <<EOF
net.bridge.bridge-nf-call-iptables=1
net.bridge.bridge-nf-call-ip6tables=1
net.ipv4.ip_forward=1
EOF
root@ctrl:~# sysctl --system
root@ctrl:~# modprobe overlay; modprobe br_netfilter
root@ctrl:~# echo -e overlay\nbr_netfilter > /etc/modules-load.d/k8s.conf
# needs [iptables-legacy] for iptables backend
# if nftables is enabled, change to [iptables-legacy]
root@ctrl:~# update-alternatives --config iptables
```

There are 2 choices for the alternative iptables (providing /usr/sbin/iptables).

Selection	Path	Priority	Status

* 0	/usr/sbin/iptables-nft	20	auto mode
1	/usr/sbin/iptables-legacy	10	manual mode
2	/usr/sbin/iptables-nft	20	manual mode

Press <enter> to keep the current choice[*], or type selection number: 1

update-alternatives: using /usr/sbin/iptables-legacy to provide /usr/sbin/iptables (iptables) in manual mode

disable swap

root@ctrl:~# swapoff -a

root@ctrl:~# vi /etc/fstab

comment out

#/dev/mapper/debian--vg-swap_1 none swap sw 0 0

switch to Cgroup v1 (v2 is the default)

root@ctrl:~# vi /etc/default/grub

line 10 : add

GRUB_CMDLINE_LINUX="systemd.unified_cgroup_hierarchy=0"

root@ctrl:~# update-grub

root@ctrl:~# reboot

Configurer le serveur NFS

- <https://computingforgeeks.com/configure-nfs-as-kubernetes-persistent-volume-storage/>

Configurer le pool de stockage

```
apt install lvm2
```

```
fdisk /dev/sdb
```

```
pvccreate /dev/sdb1
```

```
vgcreate data /dev/sdb1
```

```
lvcreate -n k8s_data -L 50G data
```

```
mkfs.ext4 /dev/data/k8s_data
```

```
mkdir -p /data/k8s
```

/etc/fstab :

```
/dev/data/k8s_data    /data/k8s ext4 defaults 0 0
```

```
mount /data/k8s/
root@k8snfs:~# lsblk
sdb                8:16    0   50G    0 disk
└─sdb1             8:17    0   50G    0 part
   └─data-k8s_data 254:0    0   45G    0 lvm   /data/k8s
```

Configure NFS

```
apt update
apt install nfs-kernel-server

/etc/idmapd.conf :
[General]
Domain = zayad.k8s

/etc/exports :
/data/k8s/ 192.168.1.0/24(rw,no_root_squash)

systemctl restart nfs-server
systemctl daemon-reload
```

Installer helm : <https://helm.sh/docs/intro/install/>

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