Microservices

On parle de docker, kubernetes et tous les services liés aux microservices

- Déploiement de rancher avec k3s sur du baremetal
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Déploiement de rancher avec k3s sur du baremetal

Voici un descriptif de la procédure a suivre pour l'installation de rancher sur un cluster k3s.

Les pré-requis:

- proxmox (6.3.x)
- 5 vms (3 pour le cluster et 2 pour les workload)
  - centos 7.x, 4 CPU, 8G RAM, 32G disc
- rancher 2.5.7
- k3s version

The upgrade rancher dilemna

OK.

It's been awhile since I have not upgraded Rancher and the K3S cluster infra and I think it's maybe thge good time to upgrade my infra to be up to date.

Problem is that I fear this upgrade because I went in the past into some big issues like the rancher webgui not accessible and haf to restore back all the vms of the infra.

But well, that's not a good reason to not to upgrade!

So, I have decided to make it more clean and have a way to:

1. Backup
2. Plan
3. Test
4. Do
5. Validate

the update tasks.

This time I really be organized and do this update once for all!

So, my initial plan is to use rancher 2.7.5 because the 2.7.6 and the 2.7.7 seems to be in RC with and not sure exactly what is the difference between the 2...

Anyway!

Let's have a look at my current setup:

- 3 master nodes (centos 7.9)
- 3 workers (centos 7.9)
- kube-vip used as the VIP manager
- curent version of rancher 2.6.9 (to date, 2.6.13 is the latest of the 2.6.x serie)

Current version of K3s (I used k3sup to install it)

```
[root@node-1 ~]# kubectl get nodes -o wide
NAME       STATUS   ROLES                       AGE      VERSION         INTERNAL-IP
EXTERNAL-IP   OS-IMAGE               KERNEL-VERSION               CONTAINER-RUNTIME
node-1     Ready    control-plane,etcd,master   2y142d   v1.21.12+k3s1   192.168.2.100
<none>        CentOS Linux 7 (Core)   3.10.0-1160.88.1.el7.x86_64   containerd://1.4.13-k3s1
node-2     Ready    control-plane,etcd,master   442d     v1.21.12+k3s1   192.168.2.101
<none>        CentOS Linux 7 (Core)   3.10.0-1160.49.1.el7.x86_64   containerd://1.4.13-k3s1
node-3     Ready    control-plane,etcd,master   431d     v1.21.12+k3s1   192.168.2.102
<none>        CentOS Linux 7 (Core)   3.10.0-1160.88.1.el7.x86_64   containerd://1.4.13-k3s1
worker-1   Ready    <none>                      2y142d   v1.21.12+k3s1   192.168.2.103
<none>        CentOS Linux 7 (Core)   3.10.0-1160.49.1.el7.x86_64   containerd://1.4.13-k3s1
worker-2   Ready    <none>                      2y142d   v1.21.12+k3s1   192.168.2.104
<none>        CentOS Linux 7 (Core)   3.10.0-1160.88.1.el7.x86_64   containerd://1.4.13-k3s1
worker-3   Ready    <none>                      356d     v1.21.12+k3s1   192.168.2.105
<none>        CentOS Linux 7 (Core)   3.10.0-1160.49.1.el7.x86_64   containerd://1.4.13-k3s1
```

Now we need to check what is que OS, K3S requirements to do the upgade to 2.7.5.

There is a website that describe the support matrix for rancher: https://www.suse.com/suse-rancher/support-matrix/all-supported-versions/rancher-v2-7-5/

So we we look at what we want vs what we got:

Rancher Version	Low	High
2.7.5	1.23	1.26
2.6.9	1.20	1.24
2.6.13	1.20	1.24

And in the K/S section of the page you can check what K3S version is supported per OS version:

Let say that we want to stick with Centos or Rocky linux:

K3S Version	Low	High
v1.24.15+k3s1	Centos 7.9	Rocky Linux 8.4/8.5/8.6

v1.26.6+k3s1	N/A	Rocky Linux 8.7/8.8/8.9/9.0/9.1/9.2
v1.21.12+k3s1	??	??

So it seems to be pretty clear that if I want to go to 1.26, I will will to go with Rocky 9. Or switch to Ubuntu...

I honestly prefer Debian so I guess I will go with an upgrade to Rocky linux. Which mean than the upgrade plan will be a little more complex as we have to move from Centos To Rocky..

My first thoughts about this is it could be pretty simple even if it's going to take some times:

1. Add 3 more masters with Rocky Linux 8.4 to have v1.21.12+k3s1 (sse here https://www.suse.com/assets/EN-2.6.5SupportMatrix-300422-0116-26.pdf)
2. Add 3 more workers with Rocky Linux 8.4
3. Remove the Centos workers
4. Remove the Centos masters
5. Make sure the vip with KUBE-VIP is configured properly.

Once all is migrated to Rocky Linux, then I can think about migrating to 1.24 for k3s.

1. Upgrade k3s to v1.24.15+k3s1
2. Upgrade rancher to 2.6.13 (not sure if it is needed)

Then

- Should I take the risk to upgrade RL to 8.9 and upgrade k3s to 1.26 at the same time and hope that I can upgrade to Rancher 2.7.5 at the end?
- Any option option?

Well, another option could be this one:

1. Create 3 masters, 3 workers with RL 9.2
2. Install K3S 1.26
3. Install Rancher 2.7.5
4. Install KUBe-VIP with a new vip
5. Configure pretty much the same settings
6. Copy/Paste all the deployments to the new cluster

I meam that could be an option too! We just have to be sure the app that I will copy paste will not access their config (most of them are stored on NFS) at the same time.

Since we have this situation with RHEL and the fact that we do not know if Rocky Linux, Alma and now even OpenSuse will be able to provide the same level of stability and security to any rhel clone like, I am not sure that I will keep Rocky Linux in my K3S setup. Maybe at this point the most stable solution will be to go with Ubuntu 22.04 (LTS) even if I am not a big fan of Ubuntu (mostly because

they try to push you to use their own stuff when installing so apps).

So it's go to this:

- Use Rocky Linux because I like it and the risk to have it not get security updates or packages stability is going up until the situation is not clear
- Use Ubuntu even if it's not by prefered option.

The good news is that if I found my receipe to move the components from one cliuster to the other then if I change my mind, I can still apply whatever I am going to use Ubuntu or Rocky.