Upgrade Downstream RKE Clusters

Lab 20

What are you Learning?

In this lab you'll upgrade your downstream Kubernetes cluster, that was provisioned and is managed by Rancher.
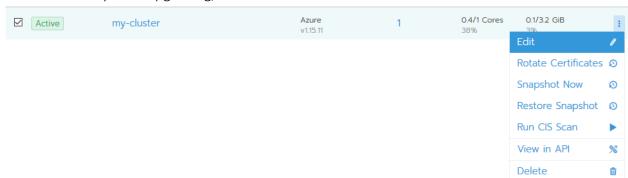
Why is it important?

New versions of Kubernetes come with new features, and new APIs. The Kubernetes project version policy, mandates that the project / community will only support the three current minor versions of Kubernetes. A minor version of Kubernetes launches every 3 months, so each minor release branch is maintained for approximately 9 months. This means having the ability to upgrade Kubernetes regularly and seamlessly is key to smooth operations.

Upgrade Kubernetes from Rancher

1. Review version release notes, and paying careful attention to the urgent upgrade notes.
2. Review how upgrades work.
3. Backup your Kubernetes cluster, where Rancher is installed. Note, that the process in the UI is different than that of an RKE-CLI provisioned cluster.
4. Review the recommended best practices and the configuration options for upgrades.
5. To upgrade your Kubernetes version. Navigate to Global.
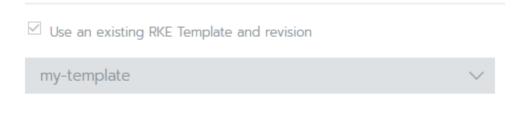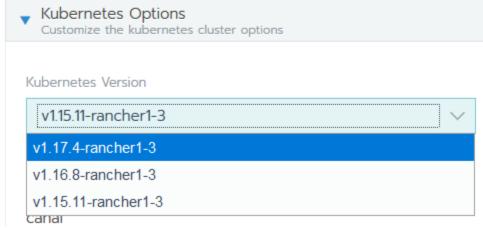

6. For the cluster you're upgrading, select Edit

7. Under Cluster Options, change the Kubernetes Version.

Cluster Options

☑ Use an existing RKE Template and revision

my-template ⌄

▼ **Kubernetes Options**
Customize the kubernetes cluster options

Kubernetes Version

v1.15.11-rancher1-3 ⌄

v1.17.4-rancher1-3

v1.16.8-rancher1-3

v1.15.11-rancher1-3

canal

8. Scroll to the bottom and click Save.

Save

9. As the cluster updates, you'll see its progress.

ⓘ This cluster is currently **Updating**.
[certificates] Deploying kubernetes certificates to Cluster nodes

Dashboard: my-cluster   ≥ Launch kubectl   📄 Kubeconfig File   ⋮

10. As the cluster upgrades, components may be unhealthy temporarily.

| ⚠ Etcd | ✔ Controller Manager | ✔ Scheduler | ✔ Nodes |

⚠ Alert: Component etcd-0 is unhealthy.

Testing That It Works

1. Once the upgrade has completed, your cluster status, will change from Updating, back to Active

☐ Active   my-cluster   Azure   1   0.4/1 Cores   0.1/3.2 GiB   ⋮
                                       v1.17.4   38%   3%

2. Notice the change in version number, in this case from 1.15.11 to 1.17.4.

Consider what you would do if something failed. This is why it's important you take a backup prior to performing an upgrade. Troubleshoot the upgrade, and if all else fails considering rolling back.

References

- Kubernetes Version and Version Skew Support Policy - https://kubernetes.io/docs/setup/release/version-skew-policy/
- Backing up a Cluster - https://rancher.com/docs/rancher/v2.x/en/cluster-admin/backing-up-etcd/
- How Upgrades Work - https://rancher.com/docs/rke/latest/en/upgrades/how-upgrades-work/