Renew RCM Kubernetes Certificates

Contents

Introduction

This document describes the procedure to renew Kubernetes certificates in Cisco 5G RCM(Redundancy Configuration Manager).

Prerequisite

If it is RCM High Availability setup, the procedure must be executed on standby RCM first, then perform a switchover, and run the procedure on new standby RCM. If no RCM High Availability is available, UP redundancy is not available during RCM reboot which is part of certificates renewal process.

Check if the certificates are expired

To make sure if certificates are expired, run **sudo kubeadm alpha certs check-expiration**.

```
ubuntu@rcm:~$ sudo kubeadm alpha certs check-expiration
CERTIFICATE EXPIRES RESIDUAL TIME EXTERNALLY MANAGED
admin.conf Oct 31, 2024 03:34 UTC <invalid> no
apiserver Oct 31, 2024 03:34 UTC <invalid> no
apiserver-etcd-client Oct 31, 2024 03:34 UTC <invalid> no
apiserver-kubelet-client Oct 31, 2024 03:34 UTC <invalid> no
controller-manager.conf Oct 31, 2024 03:34 UTC <invalid> no
etcd-healthcheck-client Oct 31, 2024 03:34 UTC <invalid> no
etcd-peer Oct 31, 2024 03:34 UTC <invalid> no
etcd-server Oct 31, 2024 03:34 UTC <invalid> no
front-proxy-client Oct 31, 2024 03:34 UTC <invalid> no
scheduler.conf Oct 31, 2024 03:34 UTC <invalid> no
```

Renew the certificates

Run **sudo kubeadm alpha certs renew all** to renew the certificates.

```
ubuntu@rcm:~$ sudo kubeadm alpha certs renew all
certificate embedded in the kubeconfig file for the admin to use and for kubeadm itself renewed
certificate for serving the Kubernetes API renewed
certificate the apiserver uses to access etcd renewed
certificate for the API server to connect to kubelet renewed
certificate embedded in the kubeconfig file for the controller manager to use renewed
certificate for liveness probes to healtcheck etcd renewed
certificate for etcd nodes to communicate with each other renewed
certificate for serving etcd renewed
certificate for the front proxy client renewed
certificate embedded in the kubeconfig file for the scheduler manager to use renewed
```

Check again if the certificates are renewed

Run **sudo kubeadm alpha certs check-expiration** to check if the certificates are renewed.

```
ubuntu@rcm:~$ sudo kubeadm alpha certs check-expiration
CERTIFICATE EXPIRES RESIDUAL TIME EXTERNALLY MANAGED
admin.conf Nov 01, 2025 03:34 UTC 364d no
apiserver Nov 01, 2025 03:34 UTC 364d no
apiserver-etcd-client Nov 01, 2025 03:34 UTC 364d no
apiserver-kubelet-client Nov 01, 2025 03:34 UTC 364d no
controller-manager.conf Nov 01, 2025 03:34 UTC 364d no
etcd-healthcheck-client Nov 01, 2025 03:34 UTC 364d no
etcd-peer Nov 01, 2025 03:34 UTC 364d no
etcd-server Nov 01, 2025 03:34 UTC 364d no
front-proxy-client Nov 01, 2025 03:34 UTC 364d no
scheduler.conf Nov 01, 2025 03:34 UTC 364d no
```

Modify kubelet.conf

Prior to kubeadm version 1.17, there is a need to manually modify kubelet.conf. Replace client-certificate-data and client-key-data with this.

/etc/kubernetes/kubelet.conf

```
client-certificate:/var/lib/kubelet/pki/kubelet-client-current.pem
client-key: /var/lib/kubelet/pki/kubelet-client-current.pem
```

Copy admin.conf

Copy admin.conf to overwrite .kube/config.

```
sudo cp /etc/kubernetes/admin.conf ~/.kube/config
```

Reboot the system

```
sudo reboot
```

Make sure if kubectl command works

After the reboot, make sure if kubectl command works fine.

```
ubuntu@rcm:~$ kubectl get node
NAME STATUS ROLES AGE VERSION
rcm Ready master,oam 16d v1.15.12
```