

How to Set Up the 5G Cloud Native Network Demo

Note: This page refers to the version of the demo shown at the Open Networking & Edge Summit, September 28-30, 2020. Further How Tos and Playbooks will be developed after the Open Networking and Edge Summit, October 11-12, 2021 and as part of the 5G Super Blueprint Initiative.

The 5G Cloud Native Network Demo has been shown at several Linux Foundation and industry events over the years. The latest version of the demo was shown at the Open Networking & Edge Summit event, September 28-30, 2020. See the [keynote video here](#) (31:00 - 51:00). A goal of the demo is to make it replicable for ecosystem participants to recreate some or all of it in their own labs to help validate this approach to leveraging open source software components.

Listed below are the steps required to recreate this latest version of the demo. Note: The demo working group is now developing a new version that will be shown in Q2/Q3 2021. Please send any questions to lfn-demo@lists.lfnetworking.org.

Clone the EMCO repository

```
git clone https://git.onap.org/multicloud/k8s
```

Deploy the EMCO and EMCO UI Modules

1. Create onap4k8s namespace.
 - a. `kubectl create namespace onap4k8s`
2. EMCO modules deployment.
 - a. `cd k8s/deployment/kubernetes`
 - b. Open the `onap4k8s.yaml` and replace the image path 'emcov2/emco:stable' with 'amcop/emco:1.3.0' for all the five modules.
 - c. Deploy the DB: `kubectl apply -f onap4k8sdb.yaml -n onap4k8s`
 - d. Deploy the modules: `kubectl apply -f onap4k8s.yaml -n onap4k8s`
3. EMCOUI deployment.
 - a. `cd k8s/src/tools/emcoui/helm`
 - b. Open the `values.yaml` and replace the image path 'emcov2/emcoui:stable' with 'emcov2/emcoui'.
 - c. Deploy the UI: `helm install emcoui --name emcoui --namespace onap4k8s`
4. Access the UI: Open your browser and access `http://<EMCO node IP>:30480/app`

Deploy OpenShift Cluster

Openshift Kubernetes cluster is used for orchestrating the CNFs.

ALTRAN 5G Core preparation

ALTRAN 5G core CNFs are used for the demo.

Deploy gNB simulator

The gNB simulator from Rebaca is used for the demo.

ALTRAN 5G Core & A10 NGFW Orchestration Using EMCO

Link to the demo recording:

This recording can be referred to for the orchestration of 5G core. However the sequence of Adding cluster and Controller is not complete in the Video. The steps to add cluster and Controller are documented below.

NOTE: NGFW instructions are yet to be added.

EMCO UI Cluster and Controller Registration Flow

Onboard K8s cluster

Before onboarding a K8s cluster, register a cluster provider by clicking on the 'Register Cluster Provider'.[blocked URL](#)

For adding a cluster under the cluster provider, click on the cluster provider drop down and then click on the 'Add Cluster' button.

[blocked URL](#)

Fill the above form, upload the kube config of the cluster and click create. In case of OpenShift, specify the username/password in the 'User Data' section in a format as shown in the following example,

```
{
  "cloud-region" : "oc",
  "cloud-owner" : "mtl",
  "other-connectivity-list" : {
    "connectivity-records": [{
      "ssl-initiator": "false",
      "user-name": "kubeadmin",
      "password": <password>
    }]
  }
}
```

Once a cluster is added add labels to it by clicking in the plus icon in the labels column. No need to add networks for this DEMO.

Register Controllers

Click on the Controllers from the panel on the left and add Rsync controller,

host: *rsync*

port: *9041*

type: *< leave blank, not required.>*

priority: *< leave blank, not required>*

[blocked URL](#)

Specs Used During Placement Intent Specification

The placement intents are specified as blobs in the Spec section. Following is the format of the information to be specified,

1. Generic Placement intent spec, (use the exact same json).
2. For the App Placement intent following is the format,

```
{ "allOf":[{"provider-name":"<cluster provider name>", "cluster-label-name":" <label of the cluster">}]}
```