2022-01-13 - EMCO: Multidomain orchestration using Terraform & ONAP CDS

Topic Leader(s)

- Vivekanandan Muthukrishnan
- Oleg Berzin

Topic Description

30m, Vivekanandan Muthukrishnan Oleg Berzin

9am ET

Integration of EMCO with Terraform, Camunda workflows & CDS, to perform multidomain orchestration

Topic Overview

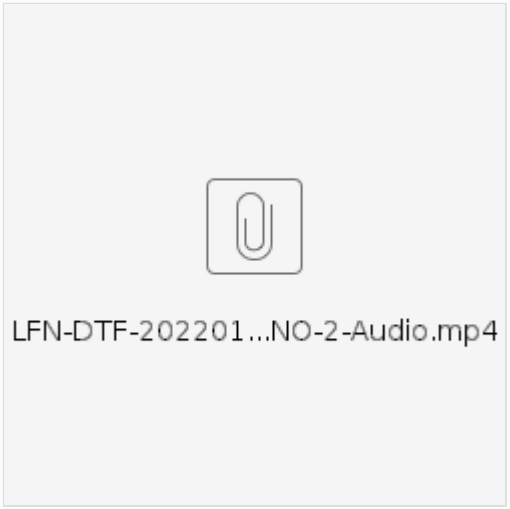
In this session, we will show how EMCO can be integrated with other open source projects: Terraform, Camunda workflow engine & ONAP CDS, to perform multidomain orchestration of cloud native functions. The demonstration will show design and dynamic creation of infrastructure in Azure Cloud, Edge Cloud (provided by Equinix) and interconnection between edge cloud and core cloud (using Equinix fabric), as well as the deployment and end-to-end operation of the Azure IoT Edge cloud-native application. We first start with the design phase by visually building the required infrastructure topology and connectivity, then the Camunda orchestration workflow is started performing the following tasks:

- Azure Cloud
    - Create ExpressRoute virtual circuit in Azure West US region
    - Create Private BGP peering on the ExpressRoute circuit
    - Connect ExpressRoute circuit to a private VNET and Private IoT Hub endpoint
- Equinix Fabric
    - Create a virtual L2 connection between Equinix DC in Dallas, TX and Azure West US
    - Connect the L2 VC to Azure ExpressRoute circuit
- Equinix Metal
    - Deploy a bare metal server in the Equinix DC in Dallas, TX
    - Install Ubuntu
    - Deploy Kubernetes
    - Automatically register the K8s cluster to EMCO
- End-to-end application deployment
    - Automatic onboarding of composite application Helm charts to EMCO (service onboarding)
    - Deployment of Azure IoT Edge app and supporting components (CRD, kube-router)
    - Verification of end-to-ens connectivity including:
        - BGP between the edge cloud server and Azure ExpressRoute Private Peering
        - IoT message processing and decoding from IoT client to IoT Edge and publishing of decoded messages to Azure cloud IoT Hub service

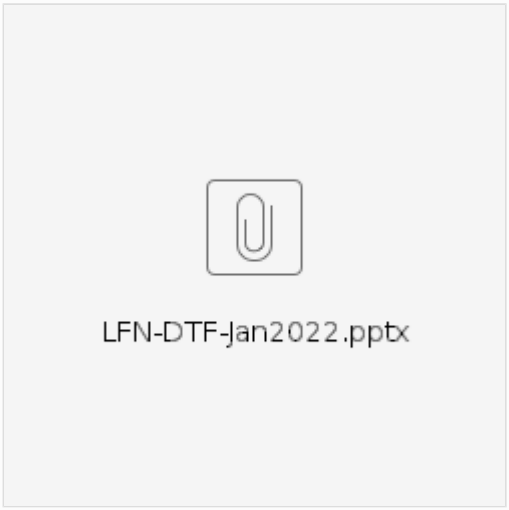
Slides & Recording

YouTube

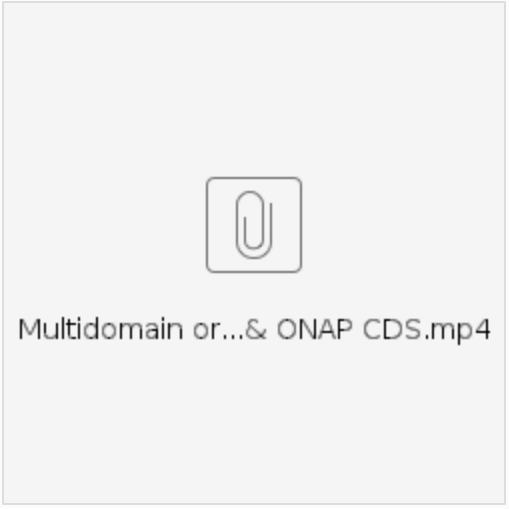
Demo video:



Slides:



Session recording:



Agenda

Minutes

Sriram Rupanagunta

Action Items

- [ ]