

R4 - Test Documentation of Enterprise Applications on Lightweight 5G Telco Edge (EALTEdge)

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Introduction

This document covers Test Deployment Environment and Test Case Result for Enterprise Applications on Lightweight 5G Telco edge (EALTEdge) Gateway Blueprint.

The topology in this release for this version includes 3 Ubuntu 18.04 Virtual Machine nodes and 1 CentOS 7.8 Virtual Machine node which are OCD Host, Center Node/ MECM and MEC Hosts.

Akraino Test Group Information

Not Applicable

Overall Test Architecture

Test Topology

The Test Environment for EALTEdge Blueprint is a Virtual Machine Environment hosted on Huawei Public Cloud.

Four Virtual Machines are being used:

OCD Host - Virtual Machine Details

Architecture	aarch64
CPU(s)	8
Online CPU	0-7
Thread per Core	1
Core(s) per socket	8
Operating System	Ubuntu 18.04

MECM Virtual Machine Details

Architecture	aarch64
CPU(s)	8
Online CPU	0-7

Thread per Core	1
Core(s) per socket	8
Operating System	Ubuntu 18.04

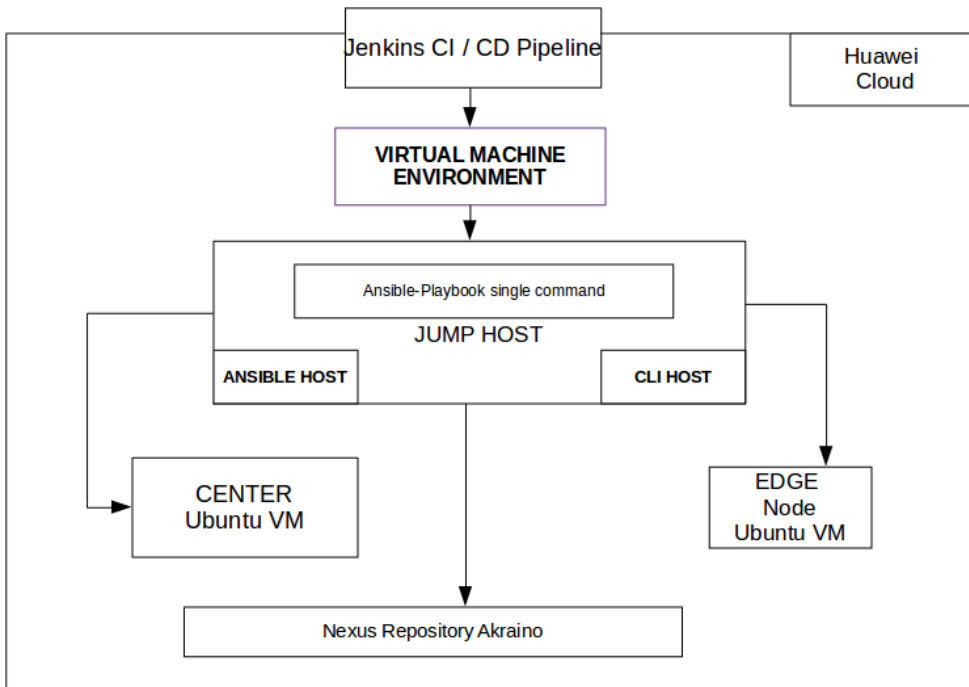
MEC Host Node 1 Virtual Machine Details

Architecture	aarch64
CPU(s)	8
Online CPU	0-7
Thread per Core	1
Core(s) per socket	8
Operating System	Ubuntu 18.04

MEC Host Node 2 Virtual Machine Detail

Architecture	x86_64
CPU(s)	4
Online CPU	0-3
Thread per Core	2
Core(s) per socket	2
Operating System	CentOS 7.8

Test Environment



CI / CD Details

For CI , EALTEdge Blueprint is using Akraino Community Jenkins Server.

For CD, EALTEdge Blueprint is using Private Huawei Lab Jenkins Server. Daily deployment build gets executed and logs are uploaded to nexus repository.

CI Jobs

- Triggered by gerrit patch creation/update, the job runs verify.sh under ealt-edge project.
- Upload the job log to Nexus server in post-build actions.

CD Jobs

- Triggered daily automatically , can also be executed manually.
- Executes an Ansible-Playbook single command to install the complete the environment and executes verify script to check the MECM and MEC Host cluster.
- Upload the job log to Nexus server in post-build actions.

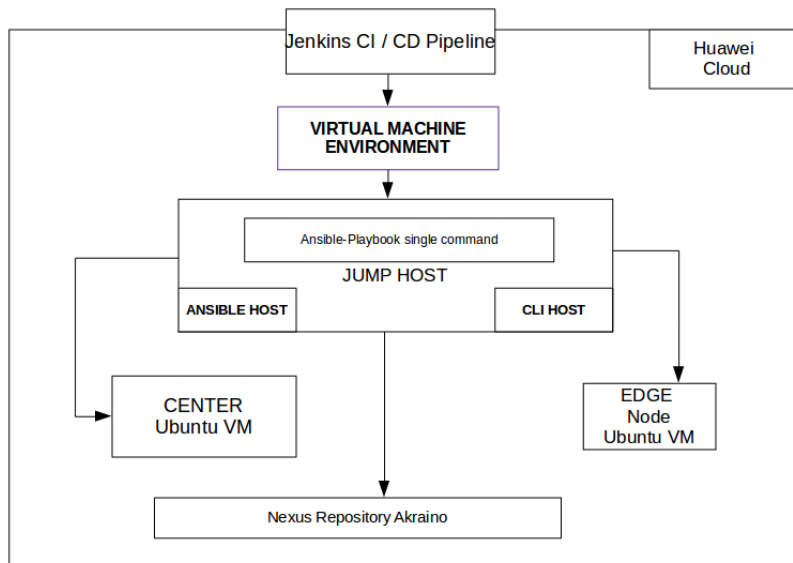
Test Bed

Node 1 : Jump Host (Deployment Controller Node) Ubuntu VM 18.04

Node 2 : CENTER Ubuntu VM 18.04

Node 3 : EDGE Node Ubuntu VM 18.04

Node 4: EDGE Node CentOS VM 7.8



Test Cases

Platform Test:

Test case to verify successful deployment of EALTEdge Components - MECM and MEC Host , two cases are being executed.

Test Case 1 : Verifies whether the kubernetes cluster is installed properly in the MECM Component , by executing kubectl commands and verifying the result.

Test Case 2 : Deploying nginx on the CENTER Node k8s cluster and on the EDGE Node K3S cluster. The test cases is included in the CI and the logs are pushed along with the deployment logs in the nexus repository.

CI / CD Logs:

Nexus Repository Path

<https://nexus.akraino.org/content/sites/logs/huawei/blueprints/ealt-edge/job/ealt-edge-blual-daily-master/237/results/>

Blu-Val Tests

Integrated with Blu-Val validation tools

1. For K8S layer

- Kube-Hunter

2. For OS Layer

- Vuls
- Lyns

K8S Layer Mandatory Tests:

1.1 Kube-hunter

Test Execution Step :

Blu-Val Validation test suite kube-hunter test case is executed on EALTEDGE Platform

Test Result :

All critical Test cases are passed.

CI / CD Logs :

Logs are pushed in nexus repo:-

<https://nexus.akraino.org/content/sites/logs/huawei/blueprints/ealt-edge/job/ealt-edge-bluval-daily-master/237/results/k8s/kube-hunter/>

OS LAYER MANDATORY TESTS

2.1 Lynis

(New Test Case)

Test Execution Step :

Blu-Val Validation test suite Lynis test case is executed on EALTEDGE Platform

Test Result :

All critical Test cases are passed.

CI / CD Logs :

Logs are pushed in nexus repo:-

<https://nexus.akraino.org/content/sites/logs/huawei/blueprints/ealt-edge/job/ealt-edge-bluval-daily-master/237/results/os/lynis/>

2.2 Vuls

(New Test Case)

Test Execution Step :

Blu-Val Validation test suite Lynis test case is executed on EALTEDGE Platform

Test Result :

All critical Test cases are passed.

CI / CD Logs :

Logs are pushed in nexus repo:-

<https://nexus.akraino.org/content/sites/logs/huawei/blueprints/ealt-edge/job/ealt-edge-bluval-daily-master/237/results/os/vuls/>

Test Framework

Not Applicable

Traffic Generator

Not Applicable

Test API description

N/A

Blueprint extension tests

Not Applicable

Feature Project Tests

Not Applicable

Test Dashboards

Single pane view of how the test score looks like for the Blue print.

Total Tests	Test Executed	Pass	Fail	In Progress
3	3	3	0	0

Additional Testing

Bottlenecks/Errata

Not Applicable