ONAP - Automating ONAP deployment using Ansible

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Agenda

- Bare Metal Deployment Models
- Cloud Deployment Models
- Challenges
Despite all the simplifications, users tell us that it is difficult to install the full ONAP and bring it to usable state.

There is also a perception that the resources required are prohibitive.

This is barrier to more widespread use of ONAP, especially amongst those that are new to ONAP (both VNF vendors and CSPs).
Bare Metal deployment Models

- **All-in One**
  - ONAP Master and Worker nodes on a *single* physical server (as VMs)
    - CentOS 7.x with 80 vCPUs, 250GB RAM with 1TB disk space
    - Nested VMs leverages virsh network
  - Dedicated External NFS server for /docker data-nfs
    - Dedicated CentOS 7.x with 8 vCPUs, 18GB RAM with 1TB disk space

- **Distributed**
  - ONAP Master and Worker Nodes distributed across multiple servers
    - CentOS 7.x with 16 vCPUs, 64 GB RAM with 1 TB disk space
    - Uses Linux bridged networking
    - Horizontal scalability with k8s HA
Bare Metal deployment Models - Contd..

- QCOW2 disk image
  - Ubuntu 18.04
  - Prebuilt image with ONAP components and utility scripts
- External Openstack with Ocata or later releases
  - No automation for this one
- One dedicated jump host / deployment server to start Ansible
  - 2 vCPU, 4GB RAM with 40GB disk space
Bare Metal - All-in one Model

- onap-master
- onap-worker-01
- onap-worker-02
- onap-worker-03
- onap-worker-04
- onap-worker-05

Bare Metal Server (ONAP CentOS 7.x)

- ONAP QCOW2 image
- Uses default NAT network

LAN

Jump/Deployment Host (CentOS 7.x)

Bare Metal Server (NFS CentOS 7.x)

Start Ansible from JUMP host
Bare Metal - Distributed Deployment Model

- ONAP QCOW2 image
- All ONAP VMs uses bridged network to the same LAN
- Scales horizontally

Start Ansible from JUMP host
Cloud deployment Model - Openstack

- Openstack Ubuntu 18.04 QCOW2 Glance image
  - Prebuilt image with ONAP components and utility scripts
- Minimum VMs required
  - 1 Master + 5 Worker + 1 Dedicated NFS VMs
- Openstack flavors
  - Master: Flavor - 4 vCPU, 8GB RAM with 250GB Disk
  - Worker: Flavor - 10 vCPU, 32GB RAM with 250GB Disk
  - NFS server: Flavor - 8 vCPU, 16GB RAM with 250GB Disk (SSD / high speed disk)
- One dedicated jump VM to start Ansible
  - CentOS 7.x with 2 vCPU, 4GB RAM with 40GB disk space
Cloud deployment Model - Gcloud

- GCloud Ubuntu 18.04 cloud image
  - Prebuilt image with ONAP components and utility scripts
- Minimum VMs required
  - 1 Master + 5 Worker + 1 Dedicated NFS VMs
- GCP flavors
  - Master: n1-standard-4 with 250 GB disk
  - Worker: n1-standard-16 with 250 GB disk
  - NFS server: n1-standard-8 with 250 GB disk (SSD / high speed disk)
- One dedicated jump VM to start Ansible
  - CentOS 7.x with 2 vCPU, 4GB RAM with 40GB disk space
Cloud Deployment Model

Start Ansible from JUMP host
Download ANOD QCOW images to ONAP servers
Set up the images to run as VM cluster
Set up Kubernetes cluster across the nodes
Set up NFS across all the nodes
Create Openstack resources for ONAP
Create templates for Onboarding Network services
Run ONAP deployment using helm
Run post-deployment configuration
Run health checks and any necessary workarounds
Challenges

- NEXUS Docker image Download
- K8s Host volume /dockerdata-nfs IO issues
- Applying patches / Backporting patches
THANK YOU!