



ONAP - Automating ONAP deployment using Ansible

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Agenda

- Bare Metal Deployment Models
- Cloud Deployment Models
- Challenges

Problem Statement

- 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)

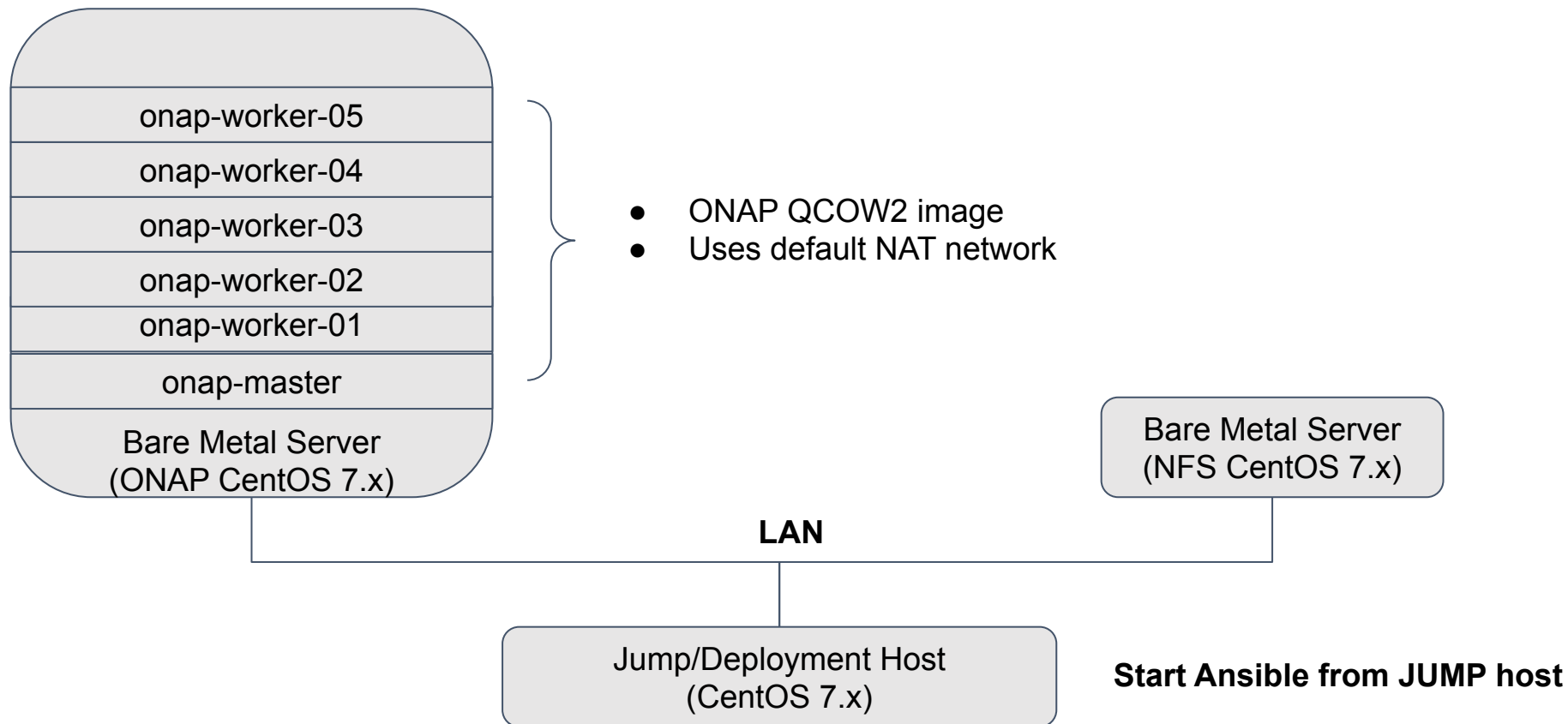
Bare Metal deployment Models

- 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

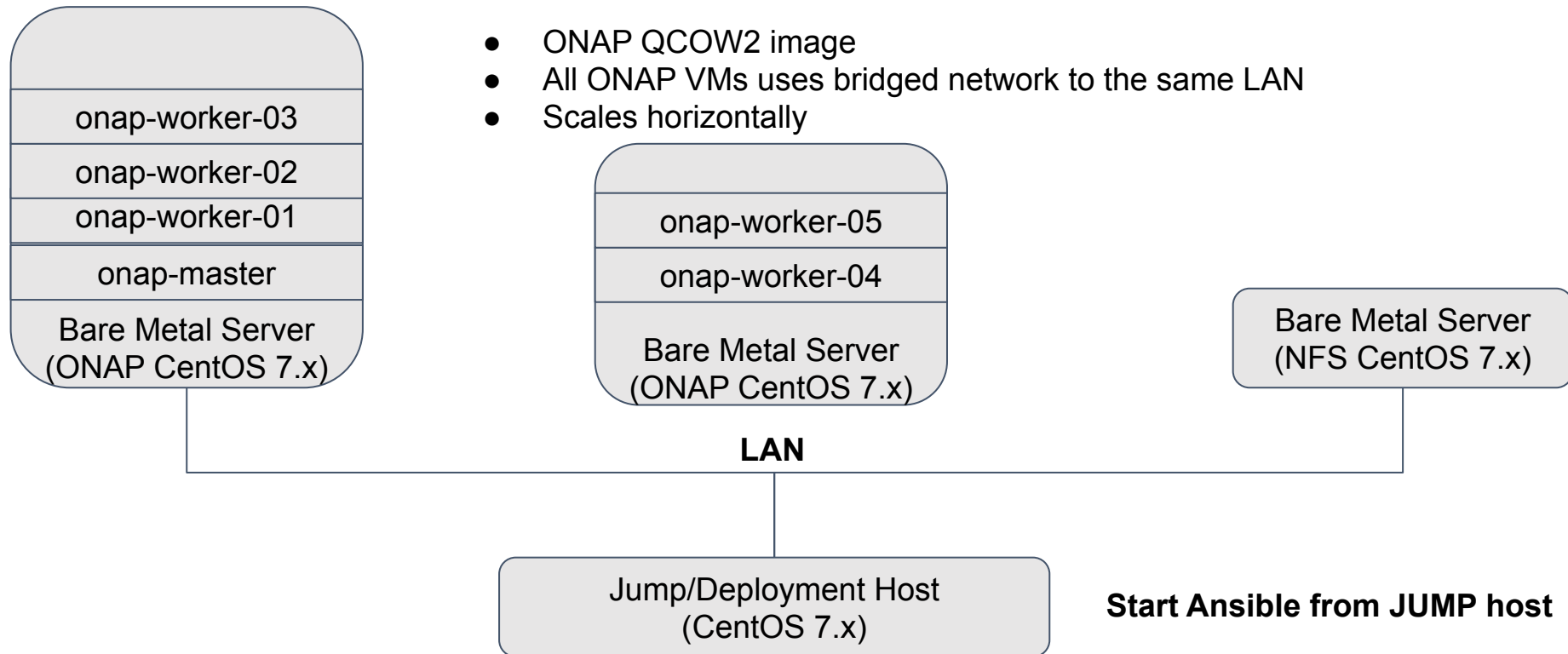
Bare Metal deployment Models - Contd..

- 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



Bare Metal - Distributed Deployment Model



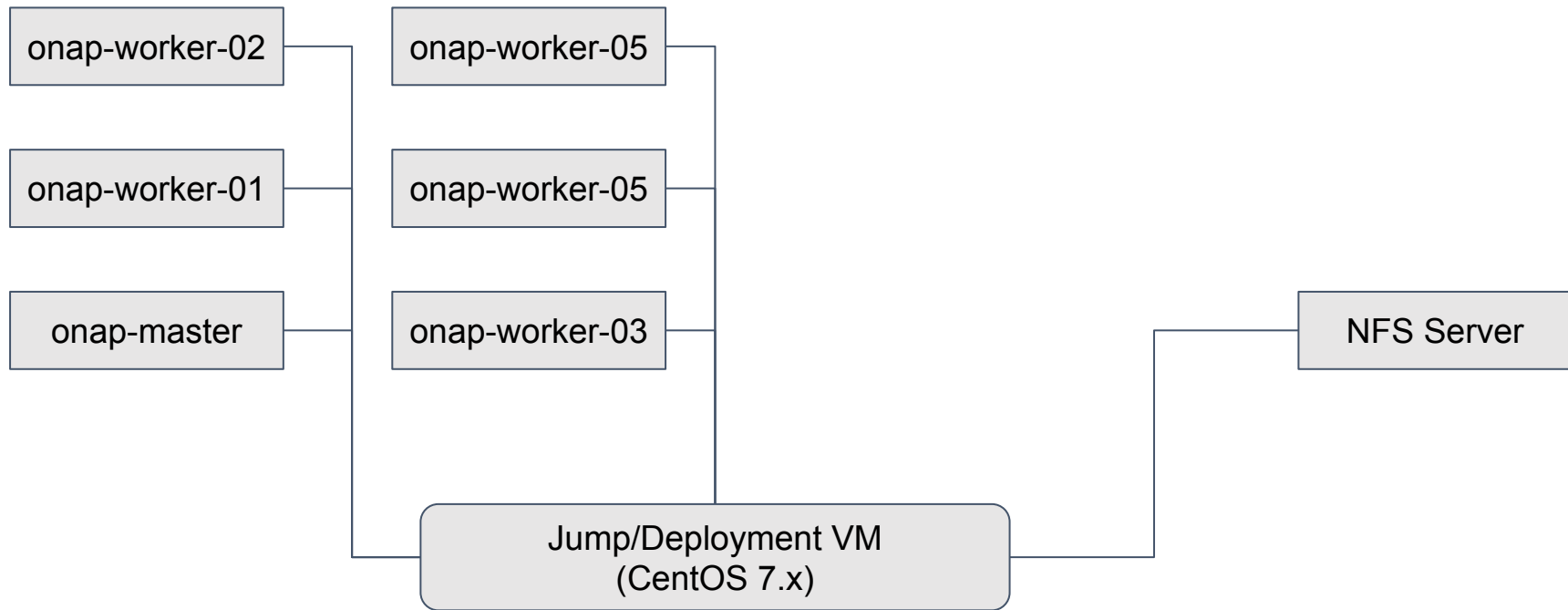
Cloud deployment Model - Openstack

- 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

Ansible Playbooks for deployment

- 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 !