Nutanix AHV Installation Screenshots on HP Servers

Nutanix AHV Cluster installation can be performed in multiple ways

- Foundation:
  - One click process for cluster creation
  - Re-Images multiple nodes
  - Assigns IP address on each node
- Manual
  - Manual Hypervisor installation
  - CVM installation using Phoenix
  - Configuring IP address

This document describes installation method with Foundation VM Image

Foundation is a Nutanix provided tool leveraged for bootstrapping, imaging and deployment of Nutanix clusters. The imaging process will install the desired version of the AOS software as well as the hypervisor of choice.

In this POC,

- 1 Laptop is used and Installed with VMware Workstation and Imported Foundation VM, this laptop will be given same IP of L2 switch for discovery and initial installation of Nutanix cluster
- Servers IP's used in installation given below (Screenshots may have different IP, take this as reference only)

Servers used:

Item	Per Server (For HP)	Total Count	Remarks
Make & Model	HPE DL 380 Gen10	3	
Rack Space available 2U Per Server	2u	6u	

Power Supply 800W * 2 PSU /Server	1600W (Platinum 100 - 240 V ac)	4800W	
Power Cables 2 per Server	2	6	
10 Gigabit Network Ports available (TOR)? 2*SFP +10 GbE ports Per Server	2	6	
No.of 1 GB ports per server	4	12	
Out of Band Management Network (IPMI or ILO) 1 per sere	1 per server	3	
Network Cables	5	15	
Connectivity to Laptop to install Nutanix			
Nutanix Foundation (Softwares)			
IP's	3 IP's Per Node ((hypervisor, CVM, remote management (e.g. IPMI, iDRAC, etc.))	12	3 CVM IP's 3 AHV IP's 3 Remote Management IP's(e.g. IPMI, iDRAC, etc) 3 additional IP for complete cluster(Prism , Data Services & 1 buffer)
NTP Server Details			
VLAN	1	1	For DRDO Single VLAN with /25 subnet (128 IP's)

Server Items	Serial #	Serial #	Serial #
	Count	Count	Count
HPE DL380 Gen10 Server	1	1	1
Intel Xeon-Gold 6138T processor	2	2	2
HPE 480GB SATA RI M.2 2280 SSD	1	1	1
HPE 32GB 2RX4 PC4-3200AA	10	10	10
HPE 1.92TB SATA MU SFF SC DS SSD	4	4	4
HPE Ethernet 10Gb 2-port 562FLR-T Adapter	1	1	1
HPE Universal SATA HH M.2 Kit	1	1	1
HPE 1600W Flex Slot Platinum Hot Plug Low Halogen Power Supply Kit	2	2	2
HPE Smart Array E208i-a SR Gen10 Controller	1	1	1
Nvidia Tesla T4	1	1	1
HPE iLO Advanced 1-server License with 1yr Support on iLO Licensed Features	1	1	1
Rack Space	2u	2u	2u
Power Supply	800W * 2 PSU	800W * 2 PSU	800W * 2 PSU

IP's & Purpose

Component	Values	Remarks
VLAN	314	Dedicated VLAN given for VDI POC As it is POC, ILO & NUtanix &citrix are all from same VLAN
IP Subnet	172.30.8.21/24	Total 254 IP addresses available
Gateway	172.30.8.254	
DNS	172.30.1.135 & 136	
NTP	NA	NTP communication is mandatory atleast after cluster configuration else cluster breaks due to communication failure after certain time(1-2 days)
L2 Switch	Ciscso Catalyst 2960 S (24 Switch Port)	For initial installation, L2 switch connected with Local PC, ILO cables & 2 NIC Network Ports from each server For testing purpose , 1- 12 connected with Access ports i.e, all 12 kept in VLAN 9 and 13-24 kept in trunk ports (Ideally, you can keep all in one VLAN for communication and whciever communicates to core can keep in TRUNK 25 & 26 ports is in TRUNK -> these will connect to core switch **In Newly Installed Config:** Network informed that they kept switch open so no config
Switch IP	172.30.8.21	used for Switch IP
Local Workstation	172.30.8.22	Used in Local PC system which is connected to Switch in Datacenter Local PC System should be in same IP address of ILO (IPMI)
Foundation VM	172.30.8.23	Foundation VM IP address Fundation VM deployed through Vmware Workstation in Local PC and used ***Bridged*** Network to have same IP connectivity
IPMI IP's	172.30.8.24 172.30.8.25 172.30.8.26	IPMI (ILO) IP's for 3 servers
AHV Host IP	172.30.8.27 -Ntx1 172.30.8.28 -Ntx2 172.30.8.29--Ntx3	3 Nodes IP
CVM IP	172.30.8.30 -Ntx1 172.30.8.31 --Ntx2 172.30.8.32--Ntx3	3 CVM IP's
Cluster Name & IP	POCNtxClus 172.30.8.36	Cluster IP
AHV Hostname	Ntx1 Ntx2 Ntx3	Nutanix Host name

Follow the KB for detailed understanding

[Foundation 4.5.x - Field Installation Guide (nutanix.com)]

Foundation is the official deployment software of Nutanix. Foundation allows you to configure a pre-imaged node, or image a node with a hypervisor and an AOS of your choice. Foundation also allows

you to form a cluster out of nodes whose hypervisor and AOS versions are the same, with or without re-imaging. Foundation is available for download at https://portal.nutanix.com/#/page/Foundation.

As this is POC, Nodes & Foundation VM are on same subnets

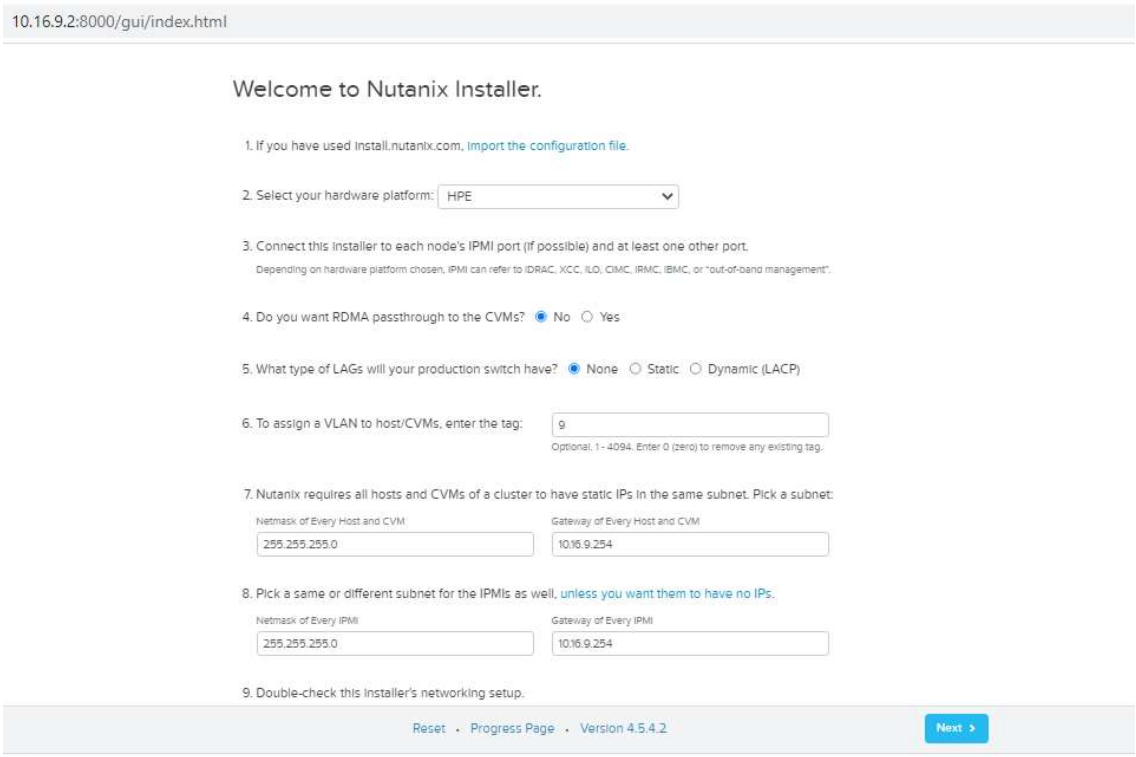
Follow KB [Foundation 4.5.x - Preparing the Workstation (nutanix.com)] to complete below steps

- Prepare the workstation by
- Install the Foundation VM
- Uploading Installation Files to the Foundation VM
- Setting up Network

Node Configuration and Foundation Launch

[Foundation 4.5.x - Node Configuration and Foundation Launch (nutanix.com)]

In a web browser inside the Foundation VM, go to the http://localhost:8000/gui/index.html URL.



In above page, VLAN tagging 9 is given, provide VLAN if it is assigned else 0 need to be given . During this POC, we experience below issue

Issue :

VM Network not reachable

Post Nutanix Cluster installation, VM network is not reachable

Observations

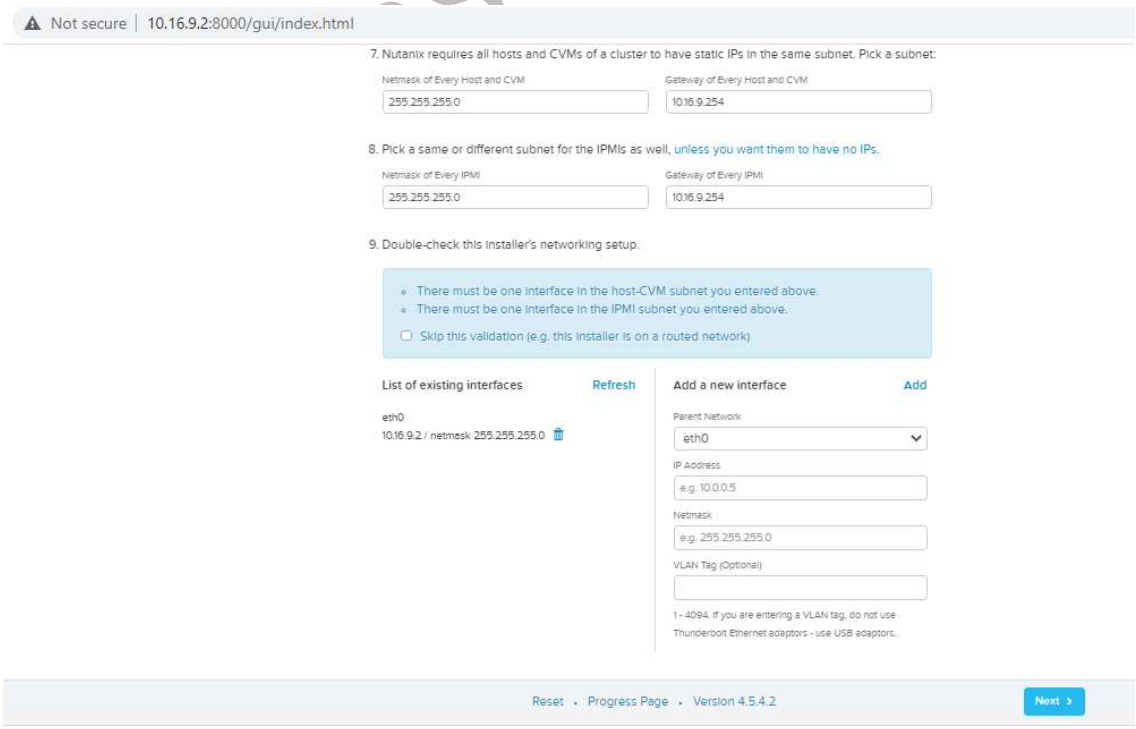
- Nutanix CVM/AHV Hosts are network reachable from outside whereas not newly created VM
- VM is not reachable even from CVM/AHV Hosts
- As CISCSO switch is dedicated to POC, <CUSTOMER NAME> made switch configuration as open and switch ports were not made as TRUNK (From Nutanix, TRUNK is recommended configuration)

Resolution

- As Switch ports were not changed to TRUNK and during Nutanix Cluster Installation, CVM/HOSTS VLAN were kept as blank i.e., “untagged”,
- To resolve VM network reachable issue, <Supplier Name> team created Virtual Networks with VLAN ID 0 which resolved VM network reachability issue.

Note:

By default, switch port is Access though it is open, however If switch ports were in TRUNK state then no need to create network with VLAN ID 0, it can be created with id assigned<Ex 314>.



1. Start **2. Nodes** 3. Cluster 4. AOS 5. Hypervisor 6. IPMI

0 nodes were discovered using IPv6 LAN broadcast. Retry Troubleshoot

Select the nodes you want to handle, and enter the IP/hostnames you want them to have. Tools

BLOCK SERIAL	NODE	NODE SERIAL	VLAN	IPMI MAC	IPMI IP	HOST IP	CVM IP	HOSTNAME OF HOST
Optional	A	Not Needed	N/N	Not Needed	10.16.9.3	10.16.9.6	10.16.9.9	ntnx-ctx-01
Optional	A	Not Needed	N/N	Not Needed	10.16.9.4	10.16.9.7	10.16.9.10	ntnx-ctx-02
Optional	A	Not Needed	N/N	Not Needed	10.16.9.5	10.16.9.8	10.16.9.11	ntnx-ctx-03

1. Start 2. Nodes **3. Cluster** 4. AOS 5. Hypervisor 6. IPMI

A cluster will be formed out of nodes selected on Page 2. Enter the cluster settings.

☐ Skip automatic cluster formation (e.g. you will use command-line)

☐ Enable CVM Network Segmentation

Cluster Name

ntnx-ctx-cluster

Alphanumerics, dots, hyphens, underscores, non-English characters.

Timezone of Every CVM

Asia/Kolkata

Applies to host too if Hyper-V or XenServer. Nutanix concluded AHV and ESX don't support host timezone.

Cluster Redundancy Factor

RF2

1-node clusters do RF2 mirroring inside the single node. RF3 mirroring isn't supported.
2-node clusters are RF4 — RF2 within each node × RF2 across the nodes. So select RF2 here, not RF3.
3+ node clusters don't do any mirroring inside any node. Also, RF4 and above are not supported.

Cluster Virtual IP (Optional)

10.16.9.12

Must be in the CVM subnet. This IP will always point to an online CVM, even in case of a node failure.

NTP Servers of Every CVM (Optional)

10.16.1.134

Comma-separated list of IPs or domains. Applies to host too if AHV or Xenserver.

‹ Prev Reset · Progress Page · Version 4.5.4.2 Next ›

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NTP Servers of Every CVM (Optional)

10.16.1.134

Comma-separated list of IPs or domains. Applies to host too if AHV or Xenserver.
For ESX, Nutanix concluded it is best to configure NTP servers in vCenter.
For Hyper-V, Nutanix concluded it is best to configure NTP servers in Active Directory.

DNS Servers of Every CVM and Host (Optional)

10.16.1.42

Comma-separated list of IPs. Required if any NTP server is a domain. Applies to host too except ESX.
For ESX, Nutanix concluded it is best to configure DNS servers in vCenter.

vRAM Allocation for Every CVM, in Gigabytes

Minimum 12, no maximum. Leave blank to use recommended defaults.

Reset · Progress Page · Version 4.5.4.2 Next >

1. Start 2. Nodes 3. Cluster **4. AOS** 5. Hypervisor 6. IPMI

Nutanix requires that all CVMs of a cluster run the same version of an operating system called AOS.

You selected nodes whose AOS version cannot be detected, so **you must provide an AOS installer**:

Select an AOS Installer Manage AOS Files

nutanix_installer_package-release-euphrates-5.19.2-stable-8e7da6324cbe5c34564ec51615b10a7737c6782a-x86_64.tar

View existing AOS version of each node...

1. Start 2. Nodes 3. Cluster 4. AOS **5. Hypervisor** 6. IPMI

Nutanix requires that all nodes of a cluster, except the AHV storage nodes, run the same hypervisor.

Due to technical reasons, when you install a new AOS, **you must install a new hypervisor as well**:

Select a hypervisor installer — Manage Whitelist · Manage AHV Files

AHV | AHV installer bundled inside the AOS installer you selected earlier

View existing hypervisor of each node, or select storage nodes...

‹ Prev — Reset · Progress Page · Version 4.5.4.2 — Next ›

1. Start 2. Nodes 3. Cluster 4. AOS 5. Hypervisor **6. IPMI**

Enter the existing IPMI credentials. Passwords won't be stored anywhere, for security. Tools

NODE	USERNAME	PASSWORD
10.16.9.3	administrator	Show
10.16.9.4	administrator	Show
10.16.9.5	admin	Show

‹ Prev — Reset · Progress Page · Version 4.5.4.2 — Start

1. Start 2. Nodes 3. Cluster 4. AOS 5. Hypervisor **6. IPMI**

Enter the existing IP

Checking if the host/CVM IPs of your manually added nodes are already occupied...

Tools

Not secure | 10.16.9.2:8000/gui/index.html

Installation in progress Abort this installation

Node Progress

IPMI IP	HOST IP	CVM IP	PROGRESS	LOG
10.16.9.3	10.16.9.6	10.16.9.9	Running validations	Log
10.16.9.4	10.16.9.7	10.16.9.10	Running validations	Log
10.16.9.5	10.16.9.8	10.16.9.11	Running validations	Log

Cluster Formation Progress Will start after all nodes are done.

CLUSTER NAME	PROGRESS	LOG
ntnx-ctx-cluster	Idle	Log

Installation in progress Abort this installation

Node Progress

IPMI IP	HOST IP	CVM IP	PROGRESS	LOG
10.16.9.3	10.16.9.6	10.16.9.9	fatal: Preparing installer image	Log
10.16.9.4	10.16.9.7	10.16.9.10	fatal: Preparing installer image	Log
10.16.9.5	10.16.9.8	10.16.9.11	Waiting for installer to boot up	Log

Cluster Formation Progress Will start after all nodes are done.

CLUSTER NAME	PROGRESS	LOG
ntnx-ctx-cluster	Idle	Log

Once the cluster is created it can be configured through the Prism Web console. A storage pool and a container are provisioned automatically when the cluster is created, but many other options require user input. The following are common cluster configuration tasks performed soon after creating a cluster. (All the sections cited in the following steps can also be found *Prism Web Console Guide*.)