



Cisco Compute Hyperconverged with Nutanix

Installation, Configuration, Expansion and Lifecycle Manager Field Guide

Document Information

Access the latest version of this document at Cisco Communities: <https://community.cisco.com/t5/unified-computing-system-knowledge-base/cisco-compute-hyperconverged-with-nutanix-field-guide/ta-p/4982563>

Revision History

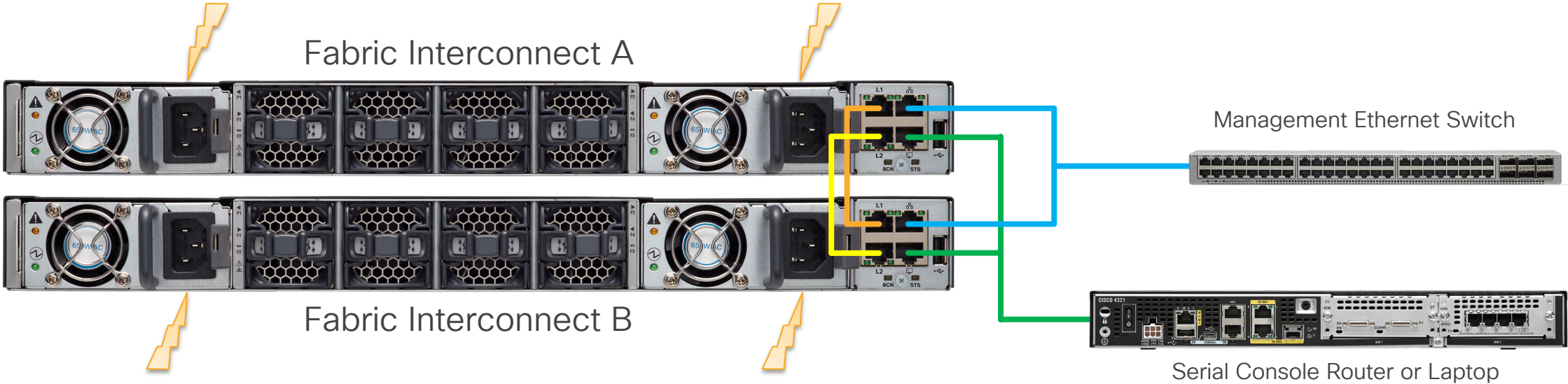
Version	Date	Foundation VM version	Foundation Central version	AOS LTS version	AOS STS version	LCM Version	Notes
1.0	Dec 2023	5.5	N/A	6.5.4.5	6.7.1	2.7	Initial Release for FI based deployments with M6 generation servers.

Contents

- [Cisco UCS Initial Configuration](#)
- [Nutanix Installation](#)
- [Initial Nutanix Configurations](#)
- [Guest VM Networking](#)
- [Prism Central Installation](#)
- [Nutanix Cluster Expansion](#)
- [Nutanix Lifecycle Manager](#)

Cisco UCS Configuration

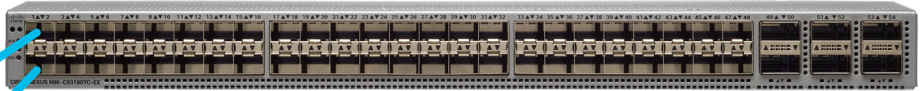
Cisco Fabric Interconnect Physical Installation



Note: L1 connects to L1, and L2 connects to L2

Cisco Fabric Interconnect and Server Cabling

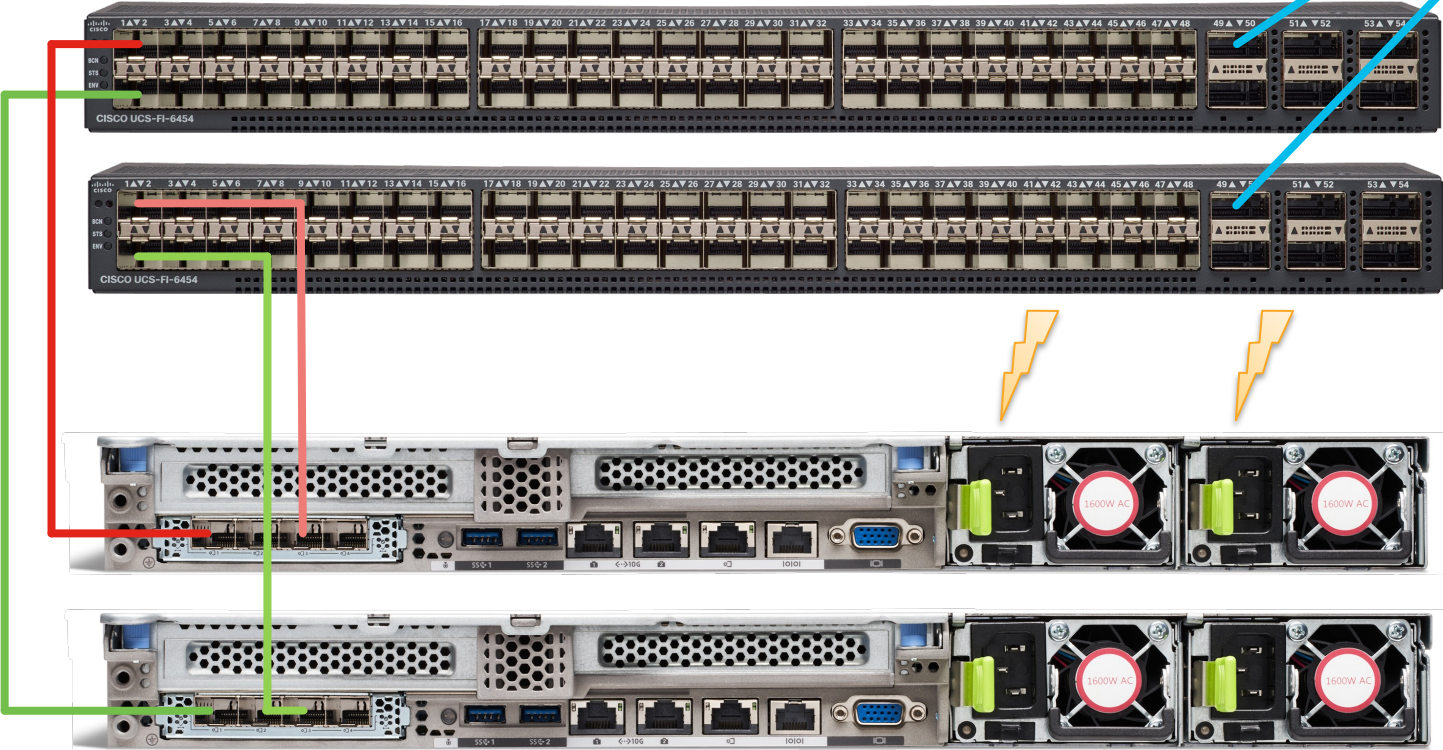
FI uplinks require 10Gb ethernet minimum end-to-end



Uplink Switch(es)

Fabric Interconnect A

Fabric Interconnect B



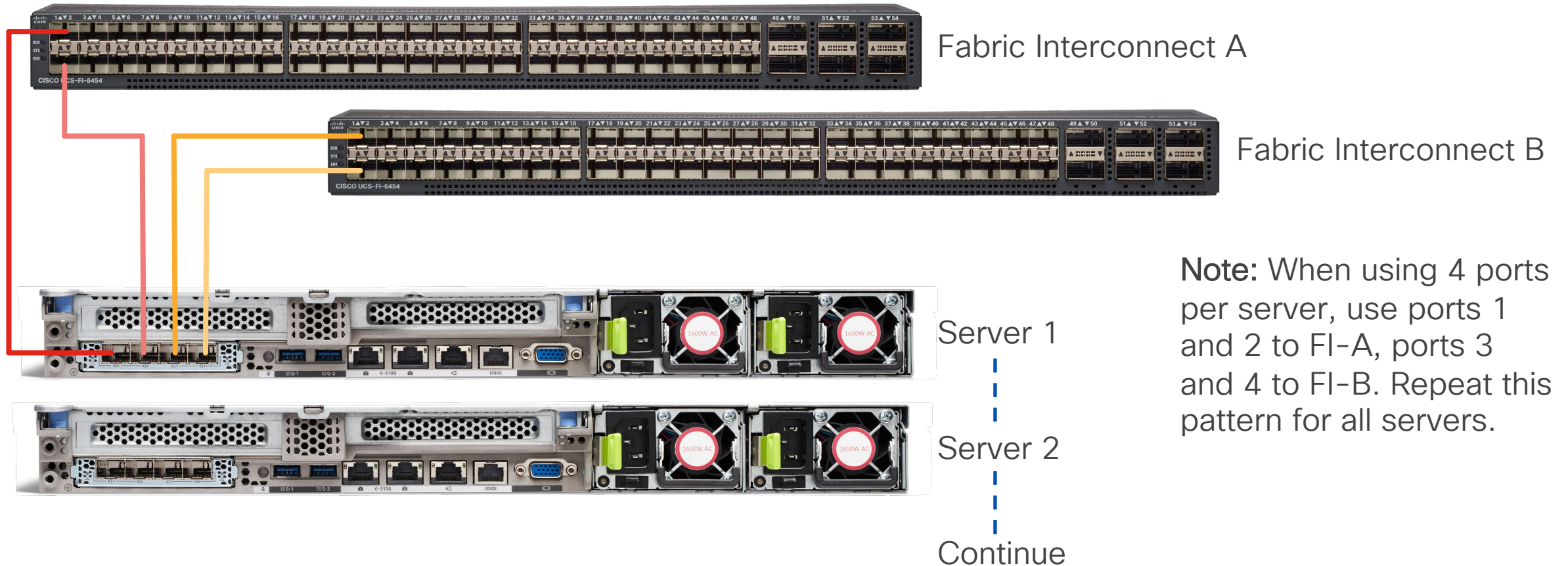
Server 1

Server 2

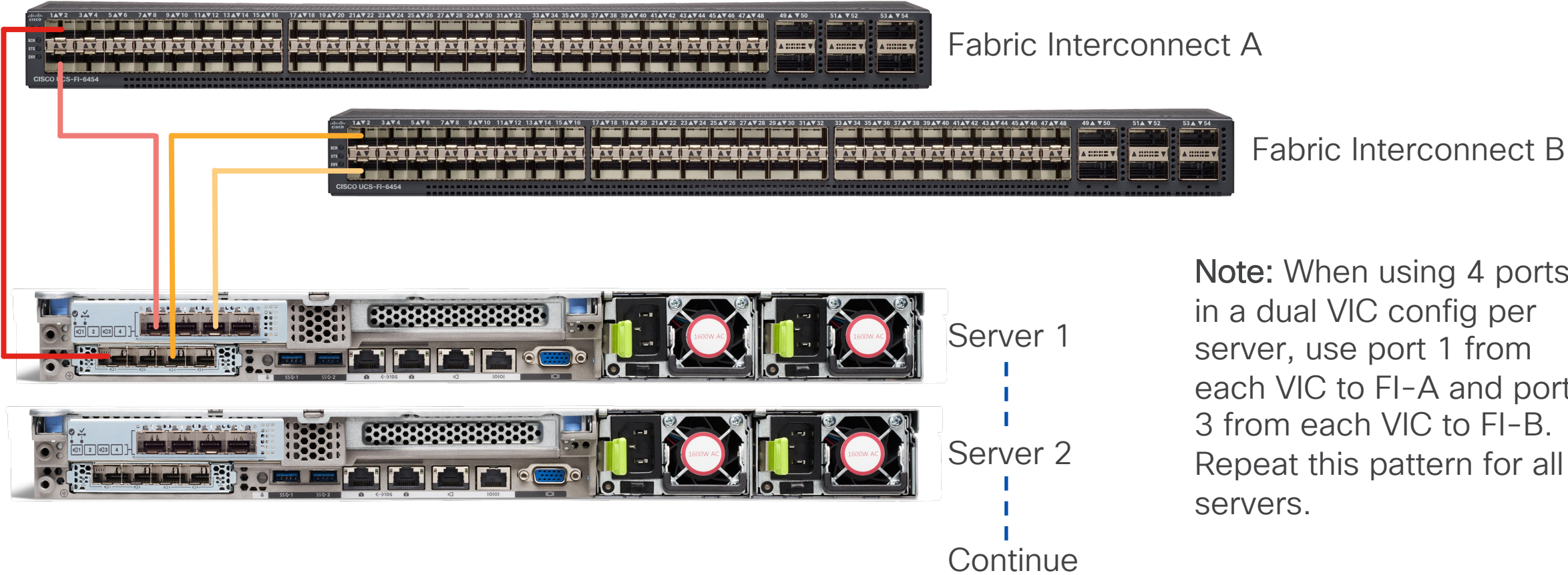
Continue

Note: When using 2 ports per server, use ports 1 and 3. Port 1 to FI-A, Port 3 to FI-B. Repeat this pattern for all servers.

Alternate Server Cabling - 4 cable method



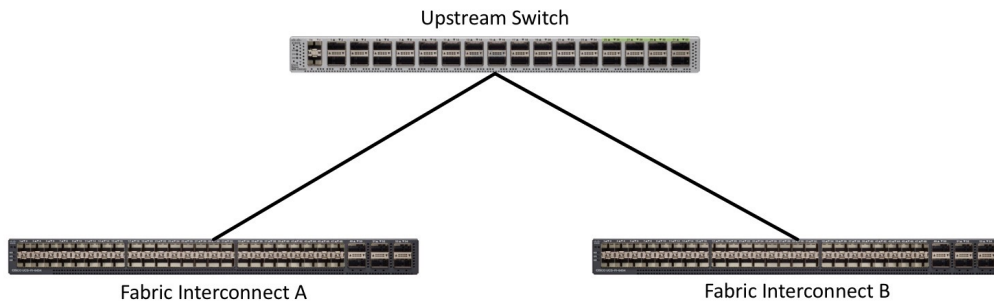
Alternate Server Cabling – Dual VIC



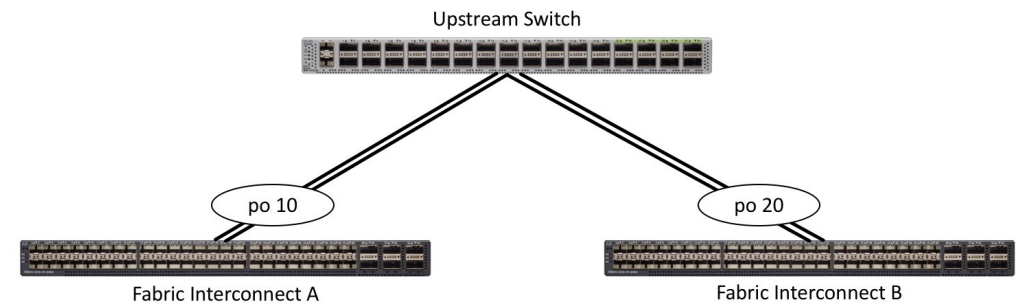
Note: When using 4 ports in a dual VIC config per server, use port 1 from each VIC to FI-A and port 3 from each VIC to FI-B. Repeat this pattern for all servers.

Fabric Interconnect Uplink Options

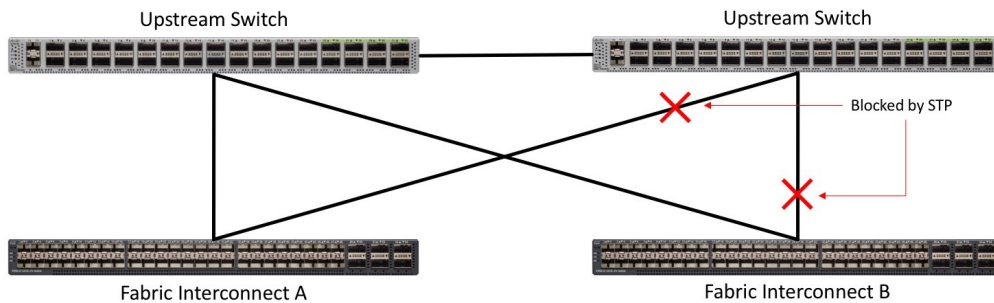
Single Switch



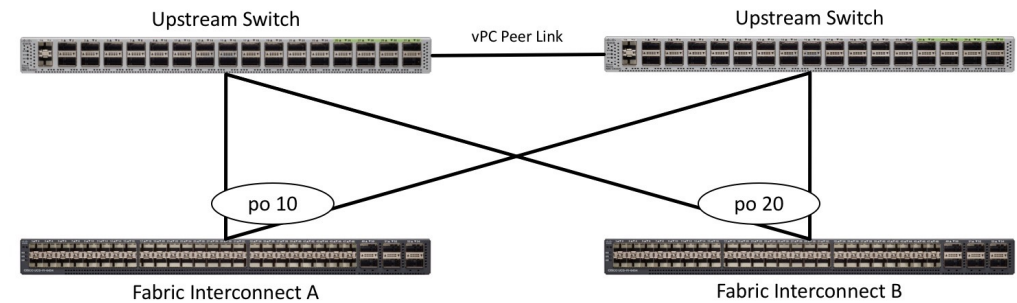
Single Switch with Port Channels



Dual Switch without Port Channels



Dual Switch with vPC



Note: For maximum flexibility, configure ports on the uplink switches for jumbo frames when possible

Initial UCS Configuration – Fabric Interconnect A

- Connect to FI-A via a serial console router or directly with a serial cable/adaptor
- Configure FI-A via the CLI with the values for your UCS domain
- 3 IP addresses are required, one per FI and one for the cluster
- Choose UCSM management mode

```
---- Basic System Configuration Dialog ----
```

```
This setup utility will guide you through the basic configuration of the system. Only minimal configuration including IP connectivity to the Fabric interconnect and its clustering mode is performed through these steps.
```

```
Type Ctrl-C at any time to abort configuration and reboot system. To back track or make modifications to already entered values, complete input till end of section and answer no when prompted to apply configuration.
```

```
Enter the configuration method. (console/gui) ? console
```

```
Enter the setup mode; setup newly or restore from backup. (setup/restore) ? setup
```

```
You have chosen to setup a new Fabric interconnect. Continue? (y/n): y
```

```
Enter the management mode. (ucsm/intersight)? ucsm
```

```
The Fabric interconnect will be configured in the ucsm managed mode. Choose (y/n) to proceed: y
```

```
Enforce strong password? (y/n) [y]: y
```

```
Enter the password for "admin":  
Confirm the password for "admin":
```

```
Is this Fabric interconnect part of a cluster(select 'no' for standalone)? (yes/no) [n]: yes
```

```
Enter the switch fabric (A/B) []: A
```

```
Enter the system name: Nutanix1-FI
```

```
Physical Switch Mgmt0 IP address : 10.1.50.7
```

```
Physical Switch Mgmt0 IPv4 netmask : 255.255.255.0
```

```
IPv4 address of the default gateway : 10.1.50.1
```

```
Cluster IPv4 address : 10.1.50.9
```

```
Configure the DNS Server IP address? (yes/no) [n]: yes
```

```
DNS IP address : 10.1.50.10
```

```
Configure the default domain name? (yes/no) [n]: yes
```

```
Default domain name : punisher.local
```

```
Join centralized management environment (UCS Central)? (yes/no) [n]: no
```

```
Following configurations will be applied:
```

```
Management Mode: ucsm
```

```
Switch Fabric=A
```

```
System Name=Nutanix1-FI
```

```
Enforced Strong Password=no
```

```
Physical Switch Mgmt0 IP Address=10.1.50.7
```

```
Physical Switch Mgmt0 IP Netmask=255.255.255.0
```

```
Default Gateway=10.1.50.1
```

```
Ipv6 value=0
```

```
DNS Server=10.1.50.10
```

```
Domain Name=punisher.local
```

```
Cluster Enabled=yes
```

```
Cluster IP Address=10.29.133.106
```

```
NOTE: Cluster IP will be configured only after both Fabric Interconnects are initialized
```

```
Apply and save the configuration (select 'no' if you want to re-enter)? (yes/no): yes  
Applying configuration. Please wait.
```

```
Configuration file - Ok
```



Initial UCS Configuration – Fabric Interconnect B

- Connect to FI-B via a serial console router or directly with a serial cable/adaptor
- Configure FI-B via the CLI with the values for your UCS domain
- Verify you can log into both FIs as admin using the password you provided

```
---- Basic System Configuration Dialog ----
```

```
This setup utility will guide you through the basic configuration of the system. Only minimal configuration including IP connectivity to the Fabric interconnect and its clustering mode is performed through these steps.
```

```
Type Ctrl-C at any time to abort configuration and reboot system. To back track or make modifications to already entered values, complete input till end of section and answer no when prompted to apply configuration.
```

```
Enter the configuration method. (console/gui) ? console
```

```
Installer has detected the presence of a peer Fabric interconnect. This Fabric interconnect will be added to the cluster. Continue (y/n) ? y
```

```
Enter the admin password of the peer Fabric interconnect:
```

```
Connecting to peer Fabric interconnect... done
```

```
Retrieving config from peer Fabric interconnect... done
```

```
Peer Fabric interconnect Mgmt0 IPv4 Address: 10.1.50.7
```

```
Peer Fabric interconnect Mgmt0 IPv4 Netmask: 255.255.255.0
```

```
Cluster IPv4 address : 10.1.50.9
```

```
Peer FI is IPv4 Cluster enabled. Please Provide Local Fabric Interconnect Mgmt0 IPv4 Address
```

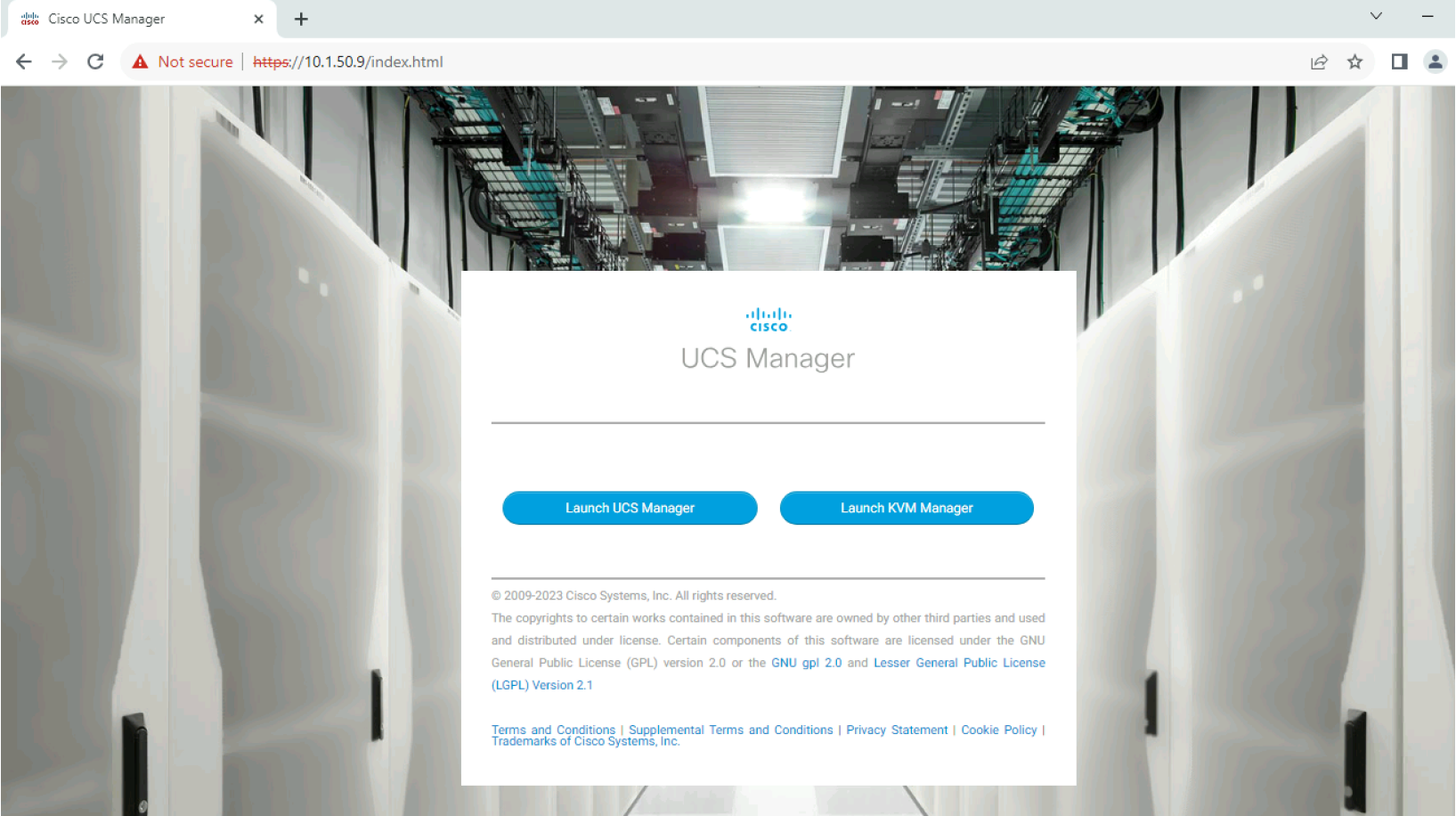
```
Physical Switch Mgmt0 IP address : 10.1.50.8
```

```
Apply and save the configuration (select 'no' if you want to re-enter)? (yes/no): yes
```

```
Applying configuration. Please wait.
```

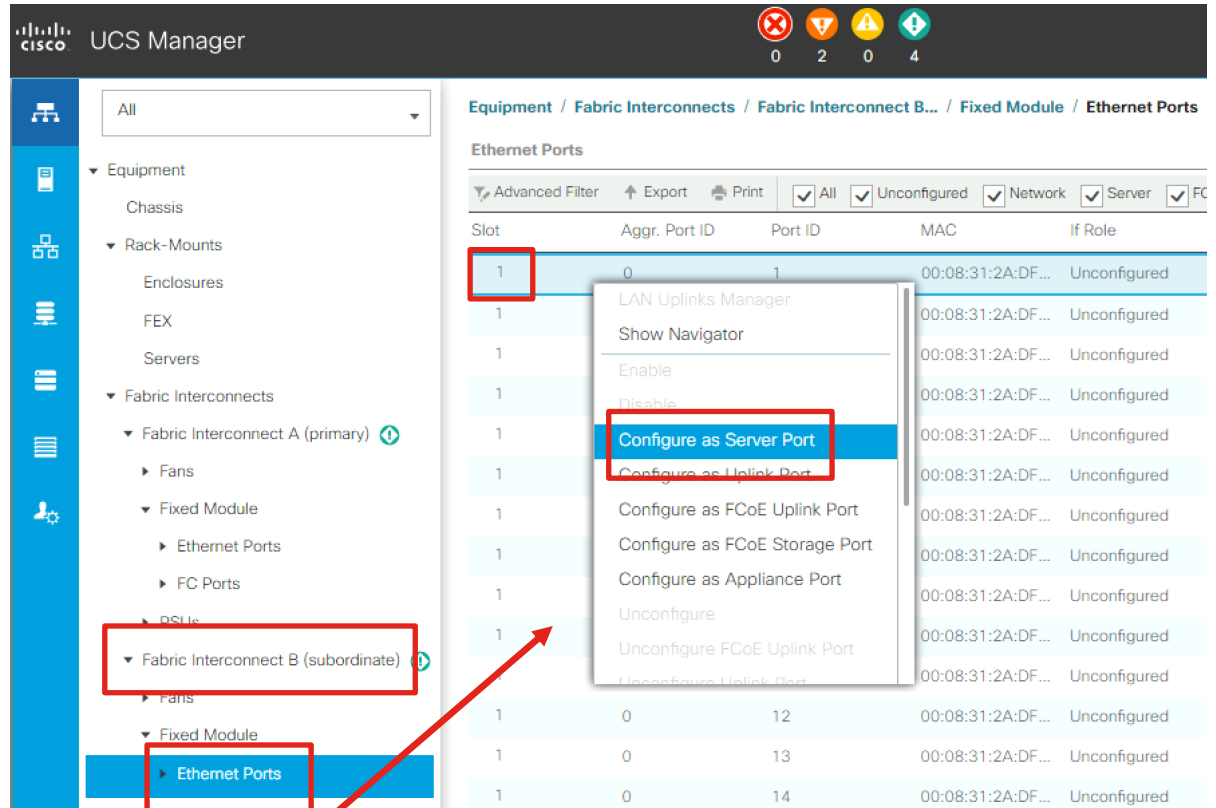
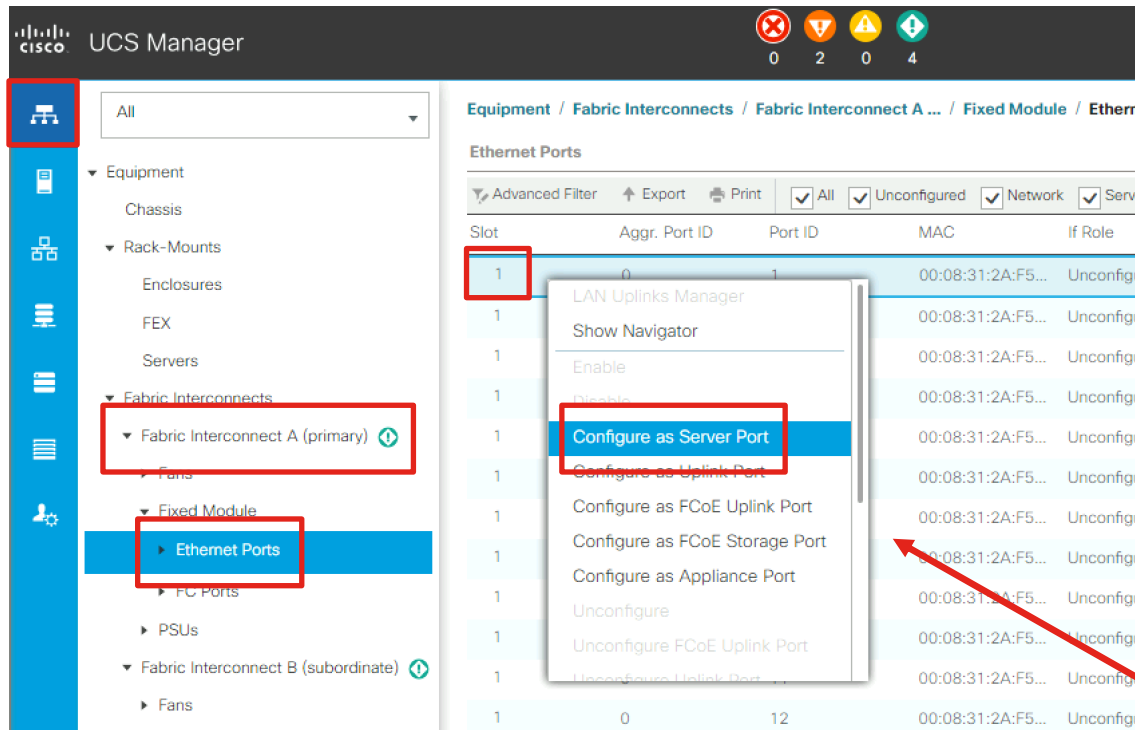
```
Configuration file - Ok
```

Log in to Cisco UCS Manager



Connect to the roaming cluster IP address, not an individual FI's IP address

Enable Server Ports

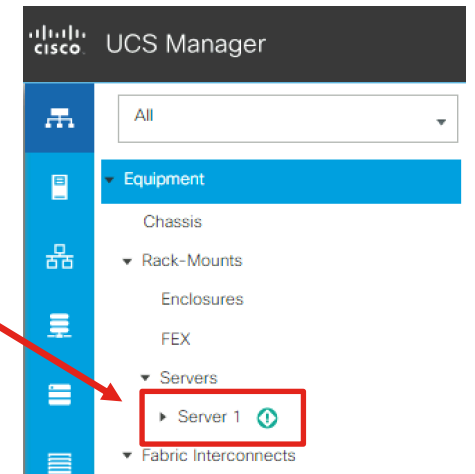


Configure the first ports on FI-A and FI-B which are connected to the first server as server ports.

Wait for the first server to appear in the inventory.

Configure the second Server ports on FI-A and FI-B and wait for it to appear.

Repeat this pattern until all servers have appeared in the inventory.



Enable Uplink Ports

The screenshot shows the Cisco UCS Manager interface. The left sidebar contains a navigation tree with the following items: Equipment, Rack-Mounts, Enclosures, FEX, Servers, Fabric Interconnects (with sub-items: Fabric Interconnect A (primary), Fans, Fixed Module, Ethernet Ports, FCoE Ports, PSUs), Fabric Interconnect B (subordinate) (with sub-items: Fans, Fixed Module, Ethernet Ports, FCoE Ports, PSUs), and Policies (with sub-item: Port Auto-Discovery Policy). The main area displays the 'Ethernet Ports' table for 'Fabric Interconnect A ... / Fixed Module / Ethernet Ports'. The table has columns for Slot, Aggr. Port ID, Port ID, MAC, If Role, If Type, Overall Status, Admin State, and Peer. A context menu is open over the table, with the 'Configure as Uplink Port' option highlighted. The top status bar shows 0 errors, 2 warnings, 0 alerts, and 2 info messages.

Slot	Aggr. Port ID	Port ID	MAC	If Role	If Type	Overall Status	Admin State	Peer
1	0	37	00:08:31:2A:F5...	Unconfigured	Physical	▼ Sfp Not Pre...	↓ Disabled	
1	0	38	00:08:31:2A:F5...	Unconfigured	Physical	▼ Sfp Not Pre...	↓ Disabled	
1	0	39	00:08:31:2A:F5...	Unconfigured	Physical	▼ Sfp Not Pre...	↓ Disabled	
1	0	40	00:08:31:2A:F5...	Unconfigured	Physical	▼ Sfp Not Pre...	↓ Disabled	
1	0	41	00:08:31:2A:F5...	Unconfigured	Physical	▼ Sfp Not Pre...	↓ Disabled	
1	0	42	00:08:31:2A:F5...	Unconfigured	Physical	▼ Sfp Not Pre...	↓ Disabled	
1	0	43	00:08:31:2A:F5...	Unconfigured	Physical	▼ Sfp Not Pre...	↓ Disabled	
1	0	44	00:08:31:2A:F5...	Unconfigured	Physical	▼ Sfp Not Pre...	↓ Disabled	
1	0	45	00:08:31:2A:F5...	Unconfigured	Physical	▼ Sfp Not Pre...	↓ Disabled	
1	0	46	00:08:31:2A:F5...	Unconfigured	Physical	▼ Sfp Not Pre...	↓ Disabled	
1	0	47	00:08:31:2A:F5...	Unconfigured	Physical	↓ Admin Down	↓ Disabled	
1	0	48	00:08:31:2A:F5...	Unconfigured	Physical	↓ Admin Down	↓ Disabled	
1	0	49	00:08:31:2A:F5...	Unconfigured	Physical	▼ Sfp Not Pre...	↓ Disabled	
1	0	50	00:08:31:2A:F5...	Unconfigured	Physical	▼ Sfp Not Pre...	↓ Disabled	
1	0	51	00:08:31:2A:F5...	Unconfigured	Physical	▼ Sfp Not Pre...	↓ Disabled	
1	0	52	00:08:31:2A:F5...	Unconfigured	Physical	▼ Sfp Not Pre...	↓ Disabled	
1	0	53	00:08:31:2A:F5...	Unconfigured	Physical	▼ Sfp Not Pre...	↓ Disabled	
1	0	54	00:08:31:2A:F5...	Unconfigured	Physical	▼ Sfp Not Pre...	↓ Disabled	
1	0	55	00:08:31:2A:F5...	Unconfigured	Physical	▼ Sfp Not Pre...	↓ Disabled	
1	0	56	00:08:31:2A:F5...	Unconfigured	Physical	▼ Sfp Not Pre...	↓ Disabled	
1	0	57	00:08:31:2A:F5...	Unconfigured	Physical	▼ Sfp Not Pre...	↓ Disabled	

Configure the uplink ports for both FI-A and FI-B

Create Uplink Port Channels (optional)

The first screenshot shows the UCS Manager interface with the navigation path: LAN > LAN Cloud > Fabric A > Port Channels > Create Port Channel. The second screenshot shows the 'Create Port Channel' dialog with 'Add Ports' selected, displaying two ports in a table:

Ports			
Slot ID	Aggr. Po...	Port	MAC
No data available			

Ports in the port channel			
Slot ID	Aggr. Po...	Port	MAC
1	0	47	00:08:3...
1	0	48	00:08:3...

The third screenshot shows the UCS Manager interface with the navigation path: LAN > LAN Cloud > Fabric B > Port Channels > Create Port Channel.

If using port-channels from the FIs to the uplink switches, create the port channels for FI-A and FI-B, adding the uplink ports that were enabled earlier.

Create UCS VLANs

The screenshot shows the UCS Manager interface. On the left, the navigation menu is visible with 'VLANs' highlighted at the bottom. The main content area shows the 'LAN / LAN Cloud / VLANs' section. A table lists the existing VLANs:

Name	ID	Type	Transport	Native
VLAN default (1)	1	Lan	Ether	Yes

Below the table, there are buttons for '+ Add', 'Delete', and 'Info'. The 'Add' button is highlighted with a red box. At the top of the interface, there are status indicators for various components: 0 (red X), 2 (orange triangle), 0 (yellow triangle), and 2 (green circle).

The 'Create VLANs' dialog box is shown. It contains the following fields and options:

- VLAN Name/Prefix :
- Multicast Policy Name : [Create Multicast Policy](#)
- Sharing Type : None Primary Isolated Community
- VLAN IDs :

Below the fields, there is a note: "You are creating global VLANs that map to the same VLAN IDs in all available fabrics. Enter the range of VLAN IDs.(e.g. "2009-2019", "29,35,40-45", "23", "23,34-45")". At the bottom right, there are buttons for 'Check Overlap', 'OK', and 'Cancel'.

Create the VLANs needed in UCS Manager, for example the VLAN for Nutanix cluster CVMs and ESXi/AHV host management, and VLANs for the guest VMs.

Populate the Default MAC Address Pool

The screenshot displays the Cisco UCS Manager interface. In the left-hand navigation pane, the 'MAC Pool default' option is highlighted with a red box. The main content area shows the configuration for the 'MAC Pool default' under the 'MAC Blocks' tab. A modal dialog titled 'Create a Block of MAC Addresses' is open, with the following details:

- First MAC Address:
- Size:
- Instruction: To ensure uniqueness of MACs in the LAN fabric, you are strongly encouraged to use the following MAC prefix: **00:25:B5:xx:xx:xx**
- Buttons:

At the bottom right of the main configuration area, the '+ Add' button is highlighted with a red box.

Create a block of MAC addresses in the default MAC Address Pool. This will be used during the installation only. Create a pool with at least 2 MAC addresses per node when using 2 cables per node, or 4 MAC addresses per node when using 4 cables. In the next screen we will create a unique pool which will be used long-term. Skipping this will lead to an installation failure.

Create MAC Address Pool

The image shows a sequence of three screenshots from the Cisco UCS Manager interface, illustrating the process of creating a MAC Address Pool.

- Left Screenshot:** Shows the UCS Manager navigation pane. The 'Pools' section is expanded, and 'MAC Pools' is selected. The 'Create MAC Pool' button is highlighted with a red box.
- Middle Screenshot:** Shows the 'Create MAC Pool' wizard. Step 1 is 'Define Name and Description', where the name 'Nutanix' is entered. Step 2 is 'Add MAC Addresses'. The 'Assignment Order' is set to 'Sequential'.
- Right Screenshot:** Shows the 'Create a Block of MAC Addresses' dialog box. The 'First MAC Address' is '00:25:B5:A0:F9:00' and the 'Size' is '64'. The 'OK' button is highlighted with a red box.

Recommend creating a unique MAC Address Pool rather than using the default pool in the long-term. Create at least 2 or 4 MAC addresses per node depending on if you are using 2 or 4 cables to the FIs, plus additional for growth. Remember the name of the pool created for use later.

Verify All Servers Finish Discovery

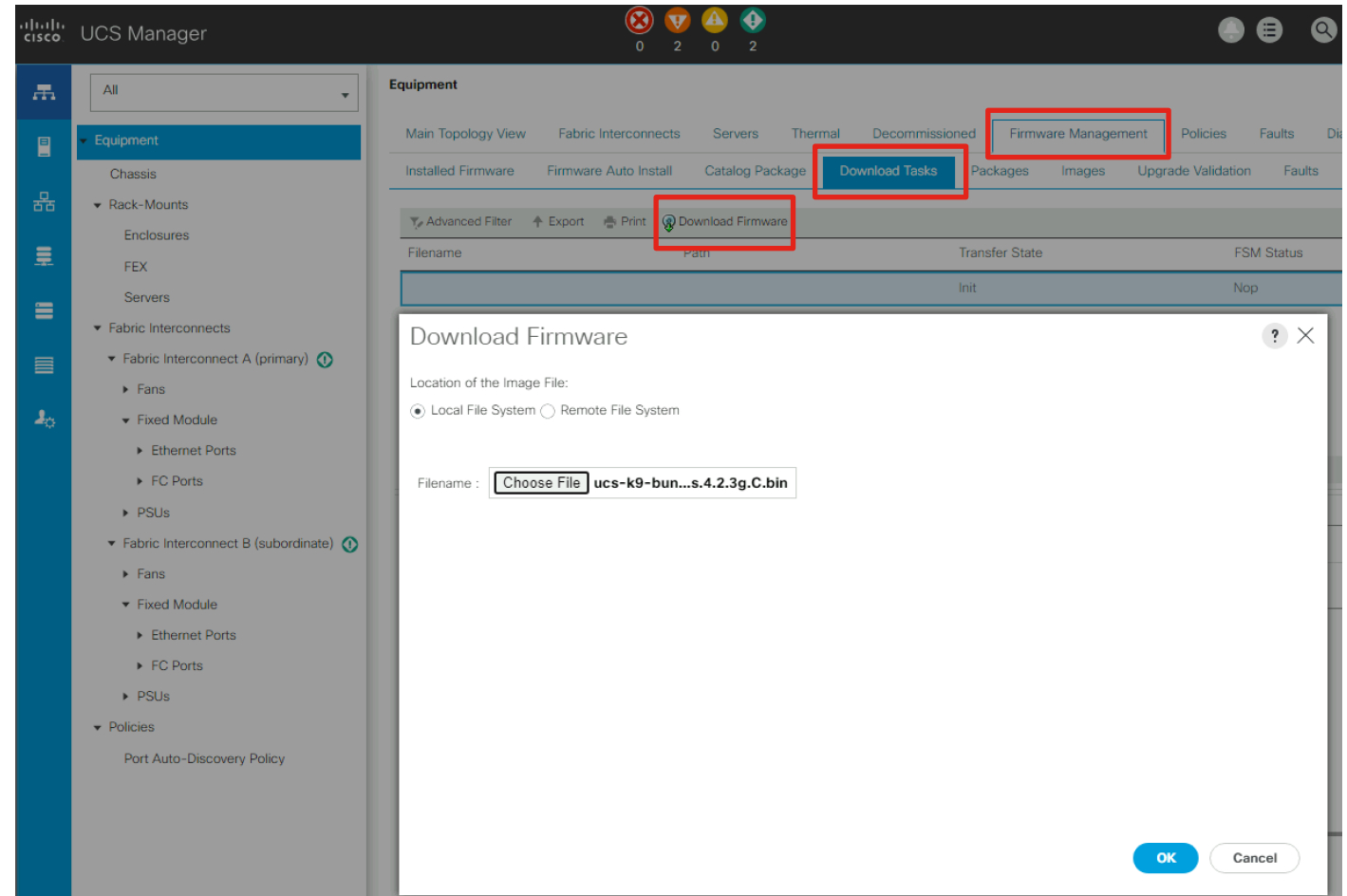
The screenshot shows the Cisco UCS Manager interface. The top navigation bar includes the Cisco logo and the text 'UCS Manager'. On the right side of the top bar, there are four status icons: a red 'X' (0), a yellow triangle (0), a yellow triangle (0), and a green checkmark (8). The left navigation pane is highlighted with a red box around the 'Servers' menu item. The main content area shows the 'Servers' page with a table of servers. The 'Overall Status' column is highlighted with a red box, showing all servers as 'Unassociated'.

Name	Overall Status	PID	Model
Server 1	Unassociated	UCSC-...	Cisco UCS C220 M6S
Server 2	Unassociated	UCSC-...	Cisco UCS C220 M6S
Server 3	Unassociated	UCSC-...	Cisco UCS C220 M6S
Server 4	Unassociated	UCSC-...	Cisco UCS C220 M6S
Server 5	Unassociated	UCSC-...	Cisco UCS C220 M6S
Server 6	Unassociated	UCSC-...	Cisco UCS C220 M6S

Servers will start with a status of Discovery when they are first connected and reach a status of Unassociated when they have finished their inventory and are ready for use.

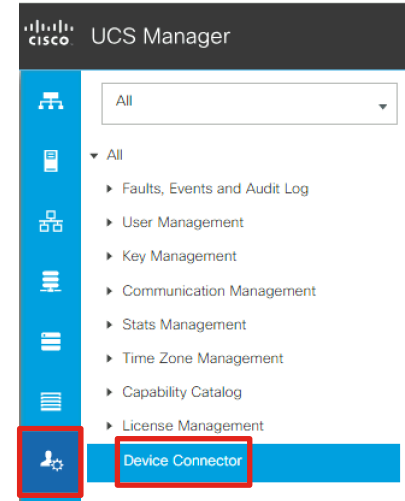
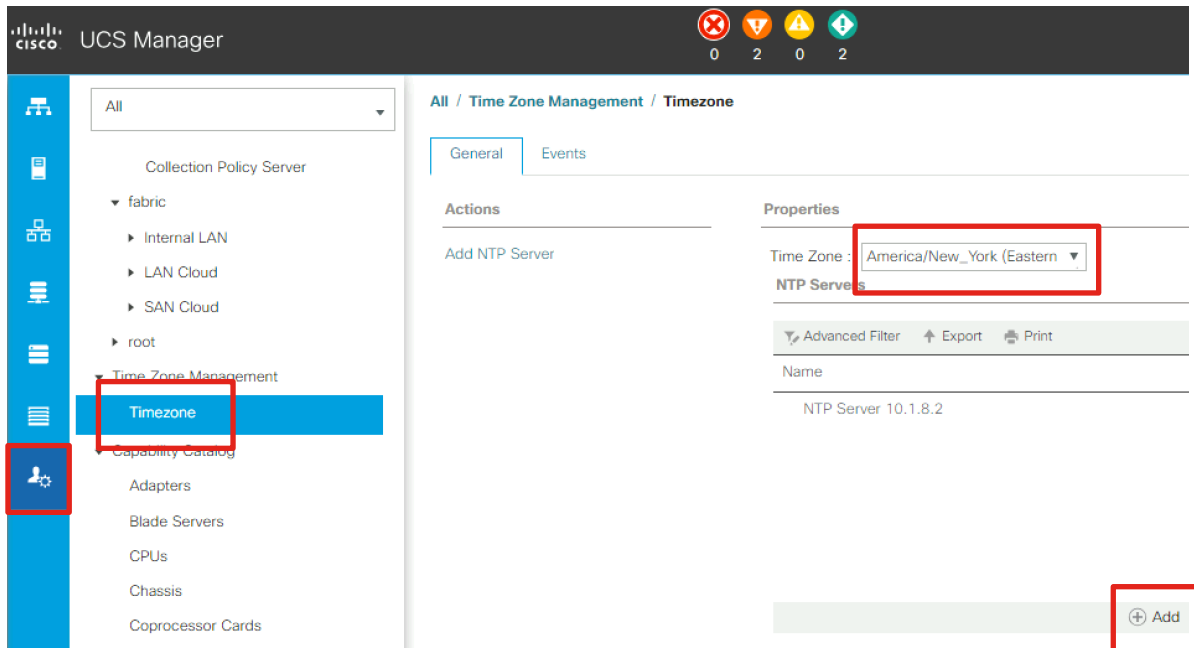
Upload Cisco UCS B-series and C-series bundles

- Consult the Cisco UCS HCL here: <https://ucshcltool.cloudapps.cisco.com/public/#>
- Search by operating system and select Nutanix to determine the required UCSM firmware version.
- Download the latest supported B-series and C-series bundles and release notes from here: <https://software.cisco.com/download/home>
- The A (infrastructure) bundle must be equal or newer than the required B and C bundles. Refer to tables 4 and 6 in the UCS Manager release notes to verify compatibility.
- If either required B or C bundle is missing the installation will fail.
- If the A (infrastructure) bundle requires upgrading, refer to the instructions found here: https://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/ucs-manager/GUI-User-Guides/Firmware-Mgmt/4-3/b_UCSM_GUI_Firmware_Management_Guide_4-3.html

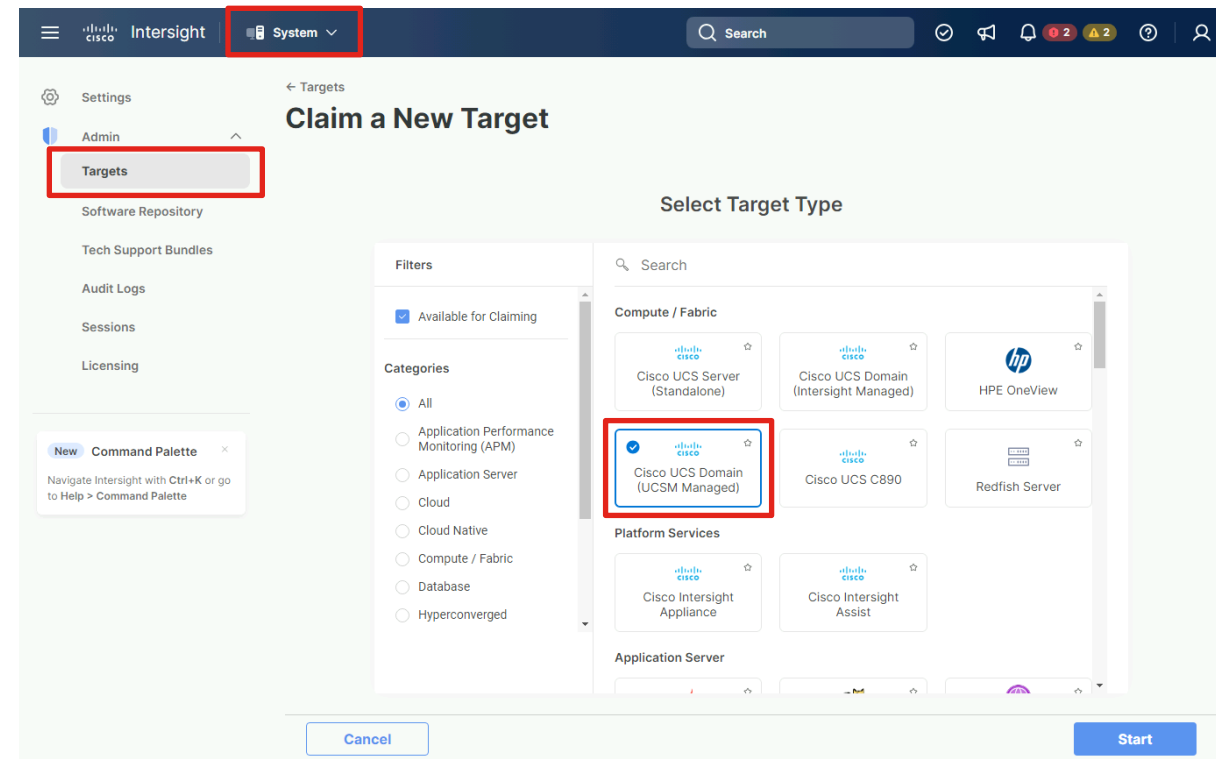


Other Optional UCSM Settings

Configure NTP servers and time zone



Claim UCS domain in Cisco Intersight



Nutanix Installation



Download Software

Download the latest Cisco custom ESXi ISO here:

<https://customerconnect.vmware.com/downloads/details?downloadGroup=OEM-ESXI70U3-CISCO&productId=974>

For example, the current ISO is version 7.0 Update 3i. Also copy the MD5SUM for the file to verify it later in Foundation if necessary.

Cisco Custom image for ESXi 7.0U3i

Cisco Custom Image for ESXi 7.0 U3 Install CD

File size: 390.88 MB

File type: iso

DOWNLOAD NOW

Name: VMware-ESXi-7.0.3i-20842708-Custom-Cisco-4.2.2-a.iso
Release Date: 2023-02-23
Build Number: 20842708

Cisco Custom Image for ESXi 7.0 U3 Install CD
Component--Version

CIS-ucs-tool-esxi--1.2.2-1OEM
Cisco-nenic--1.0.45.0-1OEM.700.1.0.15843807
Cisco-nenic-ens--1.0.6.0-1OEM.700.1.0.15843807
Cisco-nfnic--5.0.0.37-1OEM.700.1.0.15843807
Mellanox-nmlx5--4.21.71.101-1OEM.702.0.0.17630552
Intel-ixgben--1.12.3.0-1OEM.700.1.0.15843807
Intel-i40en--2.2.7.0-1OEM.700.1.0.15843807
MRVL-E3-Ethernet-iSCSI-FCoE--3.0.182.0-1OEM.700.1.0.15843807
MRVL-E4-CNA-Driver-Bundle--5.0.305.0-1OEM.700.1.0.15843807
Intel-igbn--1.9.1.0-1OEM.700.1.0.15843807
Intel-Volume-Mgmt-Device--2.7.2.1001-1OEM.700.1.0.15843807

MD5SUM: bf903f158f676271fa987eaf9a77b9ca
SHA1SUM: 3b35aa01d67dbda0113560d85bd332c5808dba0c
SHA256SUM: 7e818f49e646c02bb4105d375e300100c82dcd68b2cb36a6db3ef2cf7bb42afb



Download Software

Consult the Nutanix Compatibility and Interoperability matrix here:

<https://portal.nutanix.com/page/documents/compatibility-interoperability-matrix>

Download a supported Nutanix AOS STS or LTS image, the accompanying AOS metadata json file, plus the latest Foundation VM here: <https://portal.nutanix.com/page/downloads/list>

Compatibility and Interoperability Matrix

Platform Software Interoperability AHV Guest OS Partner Software Disaster Recovery Prism Central NGT Nutanix Cloud

Hardware Manufacturer: Cisco x Hardware Model: Select AOS Version: Select Hypervisor: Select Recommended Hypervisor Version: Select

Qualification of ESXi 8.0 with Nutanix is in progress. Once the qualification is complete, the compatibility matrix will reflect the changes.

Download.csv Exclude EOL Versions Supported Products Intermixing 1 - 20 of 2,802

All Versions My Impacted Clusters

Hardware Model	AOS Version	Recommended Hypervisor Version
HCIAF220C-M6S/UCSC-C220-M6S	6.5.4.5	ESXi 7.0 U3i Vendor
HCIAF220C-M6S/UCSC-C220-M6S	6.5.4.5	AHV-20220304.462
HCIAF220C-M6S/UCSC-C220-M6S	6.7	ESXi 7.0 U3i Vendor
HCIAF220C-M6S/UCSC-C220-M6S	6.7	AHV-20230302.207

AOS Upgrade/Installer - LTS (Version: 6.5.4.5)

Release Date: Nov 29, 2023

[Download](#) [Metadata](#)

[Show Less](#)

Filename: nutanix_installer_package-release-fraser-6.5.4.5-stable-49bd685cde4e9488d6347655f7b655df97e1849e-x86_64.tar.gz

Size: 4.5 GB

Md5: 8312c735f1e1092e5df6684b853c2560

Release Notes: [Release Notes](#) / [Upgrade](#)

Standalone Foundation VM image for importing into VirtualBox or ESXi (Version: 5.5)

Release Date: Oct 26, 2023

[Download](#)

[Show Less](#)

Filename: Foundation_VM-5.5.tar

Size: 3.56 GB

Md5: eee63d239488d0cda2d7170df23792bd

Release Notes: [Release Notes](#) / [User Guide](#)

Power on the VM and connect to the web interface

← → ↻ Not secure | 10.1.50.101:8000/gui/index.html

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

Welcome to Nutanix Installer.

- If you have used [install.nutanix.com](#), [import the configuration file](#).
- Select your hardware platform:
- Connect this installer to each node's IPMI port (if possible) and at least one other port.
Depending on hardware platform chosen, IPMI can refer to iDRAC, XCC, ILO, CIMC, IRMC, iBMC, or "out-of-band management".
- Do you want RDMA passthrough to the CVMs? No Yes
- What type of LAGs will your production switch have? None Static Dynamic (LACP)
- To assign a VLAN to host/CVMs, enter the tag:
Optional. 1 - 4094. If left blank, VLAN 0 will be used.
- Nutanix requires all hosts and CVMs of a cluster to have static IPs in the same subnet. Pick a subnet:
Netmask of Every Host and CVM Gateway of Every Host and CVM
[If you plan to deploy Nutanix Objects, click here to learn about important network requirements.](#)
- Pick a same or different subnet for the IPMIs as well, [unless you want them to have no IPs](#).
Netmask of Every IPMI Gateway of Every IPMI
- Double-check this installer's IP addresses.
 - There must be one IP address in the host/CVM subnet you entered above.

Foundation 5.5 | Platforms 2.14

Click here to check for any updates online to Foundation or the Foundation Platforms data file

Enter values on the Start page

1. Start 2. Nodes 3. Cluster 4. AOS 5. Hypervisor

Welcome to Nutanix Installer.

1. If you have used install.nutanix.com, import the configuration file.

2. Select your hardware platform: Cisco (install via UCS Manager) ▼

UCS Manager IP: 101.50.9

Manager Username: admin

Manager Password: Show

Passwords won't be stored anywhere, for security.

3. Set up your UCS Manager environment as outlined in [this link](#).

4. Nutanix requires all hosts and CVMs of a cluster to have static IPs in the same subnet. Pick a subnet:

Netmask of Every Host and CVM: 255.255.255.0

Gateway of Every Host and CVM: 101.50.1

[If you plan to deploy Nutanix Objects, click here to learn about important network requirements.](#)

5. Pick a same or different subnet for the IPMI as well, unless you want them to have no IPs.

Netmask of Every IPMI: 255.255.255.0

Gateway of Every IPMI: 101.50.1

6. Double-check this installer's IP addresses.

Make sure this installer can connect to the UCS Manager IP you entered above.

List of existing IP addresses Refresh Add a new IP address Add

eth0 Interface

Foundation 5.5 | Platforms 2.14

Next >

- Select Cisco (install via UCS Manager). Do not select the (install without UCS Manager) option, it is unsupported.
- Enter the UCS Manager details
- Enter the subnet mask and gateway for the hypervisor management interfaces and storage controller VMs. This can be a separate subnet from UCS Manager.
- Enter the subnet mask and gateway for the servers' CIMC (IPMI) addresses. This must be the same subnet as UCS Manager.


Enter values on the Start page continued

6. Double-check this installer's IP addresses.

Make sure this installer can connect to the UCS Manager IP you entered above.

List of existing IP addresses

Refresh

eth0
10.1.50.101 / netmask 255.255.255.0 

Add a new IP address

Add

Interface

eth0

IP Address

e.g. 10.0.0.5

Netmask

e.g. 255.255.255.0

VLAN Tag (Optional)

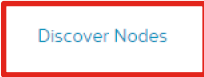
1 - 4094. If you are entering a VLAN tag, do not use
Thunderbolt Ethernet adaptors - use USB adaptors.

This is only necessary if the installer cannot reach both the hypervisor management and controller VM IP addresses, plus the UCSM and CIMC addresses via a single interface, for example if the networks were not routable. If this applies to you, add another interface in the appropriate subnet to the Foundation VM, so that it can reach all the required endpoints.

Enter values on the Nodes page



Click the button below to discover the nodes available to your UCS Manager.



- You must click Discover Nodes to inventory the UCS domain. Do not continue and attempt to add nodes manually.
- Each node requires 3 IP addresses, one for the CIMC, one for the hypervisor host, and one for the storage controller VM.
- Add A records to your DNS server for the hypervisor hosts.

Enter values on the Nodes page continued

1. Start 2. Nodes 3. Cluster 4. AOS 5. Hypervisor

6 nodes have been discovered using your UCS Manager. [Rediscover](#) [Troubleshoot](#)

Select the nodes you want to handle, and enter the IP/hostnames you want them to have. You can optionally assign a special role to each node.

<input checked="" type="checkbox"/>	NODE SERIAL	VLAN	NODE MODEL	IPMI IP	HOST IP	CVM IP	HOSTNAME OF HOST	
<input checked="" type="checkbox"/>	WMP27210026	None	UCSC-C220-M65	10.1.50.30	10.1.50.14	10.1.50.21	node-	
<input checked="" type="checkbox"/>	WMP2721002A	None	UCSC-C220-M65	10.1.50.30	10.1.50.14	10.1.50.21	node-1	
<input checked="" type="checkbox"/>	WMP2721002U	None	UCSC-C220-M65	10.1.50.31	10.1.50.15	10.1.50.22	node-2	
<input checked="" type="checkbox"/>	WMP2721004X	None	UCSC-C220-M65	10.1.50.32	10.1.50.16	10.1.50.23	node-3	Regular
<input checked="" type="checkbox"/>	WMP2721004X	None	UCSC-C220-M65	10.1.50.33	10.1.50.17	10.1.50.24	node-4	Regular
<input checked="" type="checkbox"/>	WMP2721005E	None	UCSC-C220-M65	10.1.50.34	10.1.50.18	10.1.50.25	node-5	Regular
<input checked="" type="checkbox"/>	WMP2721005F	None	UCSC-C220-M65	10.1.50.35	10.1.50.19	10.1.50.26	node-6	Regular

Tools ▾

- Range Autofill
- Reorder Blocks
- Reinstall Successful Nodes
- Select Only Failed Nodes
- Remove Unselected Rows
- Autofill IPs Using Subnets

- Select the nodes for the cluster
- Select Range Autofill to enter starting IPs and hostnames and auto fill the values
- IPMI IP will be the CIMC IP address, Host IP is the hypervisor, and CVM IP is the controller VM.
- Verify all values are correct before continuing

Note: Be cautious not to pick a server already in use, it will be immediately shut down and re-imaged, causing data loss.

Enter values on the Cluster page

1. Start 2. Nodes 3. Cluster 4. AOS 5. Hypervisor

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

Alphabets, numbers, dots, hyphens and underscores are allowed.

Timezone of Every CVM

Doesn't apply to AHV and ESX hosts. Nutanix concluded these hypervisors don't support host timezone. The UTC offset numbers in the dropdown do not account for daylight saving. The numbers are only meant to help with visual navigation within the dropdown. Only the location name, not the offset number, of the timezone will be sent to the cluster formation process.

Cluster Redundancy Factor

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)

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)

Enter one IP or domain per line. Do not use commas.
Applies to host too only if AHV.
For ESX, Nutanix concluded it is best to configure NTP servers in vCenter.

< Prev Foundation 5.5 | Platforms 2.14 Next >

- Leave the checkbox unchecked to create the cluster.
- Do not enable CVM network segmentation, this will cause an installation failure.
- Enter the cluster name, time zone and redundancy factor.
- Nutanix generally recommends RF2, and only using RF3 when business rules or policies require it.
- It is highly recommended to enter the cluster virtual IP and NTP server address(es).

Enter values on the Cluster page continued

DNS Servers of Every CVM and Host (Optional)

Enter one IP per line. Do not use commas.

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 (Optional)

Minimum 20, no maximum. Must be an integer. Leave blank to use recommended defaults.

Visit this link for more information on CVM vRAM requirements for various configurations. In particular, an all-NVMe node requires at least 40GB.

Settings Related to UCS Manager

Skip automatic Service Profile creation

This installer uses the file `templates/ucsm_template.json` to create Service Profiles in your UCS Manager. Check this option if you have already manually created Service Profiles. The JSON file lists many settings of a Service Profile, of which MAC Pool and VLAN Object are configurable directly from this wizard as shown below. If you want to change other settings in the JSON file, please manually modify the file before proceeding with this wizard.

MAC Pool of Every Service Profile

In UCS-managed mode, Cisco VICs are assigned MACs from a pool, instead of having permanent ones. Only the pools already in your UCS Manager are shown here in the dropdown. To refresh the dropdown, retry discovery on the Nodes page. If you select a pool other than "default", that pool will be applied after the installation, during which the "default" pool must be used because of technical reasons. Ensure that both pools have sufficient addresses available for your nodes.

VLAN Object of Every Service Profile

In UCS-managed mode, VLAN configuration of Cisco VICs must be done via a VLAN object. Only the objects

< Prev

Foundation 5.5 | Platforms 2.14

Next >

- Enter DNS server IP address(es).
- Leave CVM vRAM allocation blank for automatic config unless you know for sure what value to enter.
- Do not skip Service Profile creation!
- Select the MAC address pool created earlier, and the VLAN created earlier, this will be the VLAN used by the controller VMs and the hypervisor hosts.

Upload files on the AOS page

The screenshot shows the '4. AOS' step in a configuration wizard. The main page has a breadcrumb trail: 1. Start, 2. Nodes, 3. Cluster, 4. AOS, 5. Hypervisor. The main content area contains the following text: '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:**'.

Below this is a section for 'AOS Installer for Every Node' with a 'Manage AOS Files' link and a dropdown menu currently showing 'No Applicable Option'. There is also a text input field for 'Arguments to the AOS Installer (Optional)' with a small instruction below it: 'List all arguments you want to pass to the installer, separated by space. Include all necessary hyphens. Example: --xxx --yyy --zzz'.

A 'Manage Files' dialog box is open in the foreground. It has a title bar with a close button. Inside, there is a '+ Add' button, a 'Refresh' button, and a progress bar for an upload of 'nutanix_install...5df97e1849e-x86_64.tar.gz'. Below the progress bar, it says 'No files have been added.' and a 'Close' button is at the bottom right.

At the bottom of the main page, there are navigation buttons: '< Prev' on the left, 'Foundation 5.5 | Platforms 2.14' in the center, and 'Next >' on the right.

- Upload the AOS version file downloaded earlier.
- Select the uploaded file from the dropdown list.
- Do not enter custom installer values.

Upload files on the Hypervisor page

The screenshot shows the '5. Hypervisor' configuration page in the Nutanix management console. The page includes a breadcrumb trail (1. Start, 2. Nodes, 3. Cluster, 4. AOS, 5. Hypervisor) and instructions: 'Nutanix requires that all nodes of a cluster, except the AHV storage-only nodes, run the same hypervisor.' and 'Due to technical reasons, when you install a new AOS, you must install a new hypervisor as well:'. Below this, there are two dropdown menus: 'Select a hypervisor installer' (set to 'ESX') and 'Manage Whitelist - Manage ESX Files' (set to 'No Applicable Option'). A link 'View existing hypervisor of each node...' is also present. A 'Manage Files' dialog box is open in the foreground, showing a progress bar for 'Uploading VMware-ESXi-7.0...-Custom-Cisco-4.2.2-a.iso' with a 'Cancel' link. Below the progress bar, it says 'No files have been added.' and has a 'Close' button. At the bottom of the page, there is a 'Prev' button, the text 'Foundation 5.5 | Platforms 2.14', and a 'Start' button.

- Select AHV or ESXi
- If using AHV, use the version bundled with AOS from the dropdown list.
- If using ESXi, upload the Cisco custom ESXi ISO file downloaded earlier. Do not use a generic ESXi ISO image.
- Select the uploaded file from the dropdown list.
- The Cisco custom ESXi ISO should be auto whitelisted.
- Click Start.
- Ensure the installer is being run from a machine that will not go to sleep during the install.

Install Progress



Installation in progress [Abort this Installation](#)



Node Progress

NODE SERIAL	IPMI IP	HOST IP	CVM IP	PROGRESS	LOG
	10.1.50.30	10.1.50.14	10.1.50.21	Associating service profile to node	Log
	10.1.50.31	10.1.50.15	10.1.50.22	Associating service profile to node	Log
	10.1.50.32	10.1.50.16	10.1.50.23	Associating service profile to node	Log
	10.1.50.33	10.1.50.17	10.1.50.24	Associating service profile to node	Log
	10.1.50.34	10.1.50.18	10.1.50.25	Associating service profile to node	Log
	10.1.50.35	10.1.50.19	10.1.50.26	Associating service profile to node	Log

Cluster Formation Progress Will start after all nodes are done.

CLUSTER NAME	PROGRESS	LOG
NTX-6node-AF	Idle	Log

[Review Configuration](#) • [Foundation 5.5](#) | [Platforms 2.14](#)



Install Complete

✕

Installation finished.

Node Progress [Download Log Bundle](#)

NODE SERIAL	IPMI IP	HOST IP	CVM IP	PROGRESS	LOG
WMP27210026	10.1.50.30	10.1.50.14	10.1.50.21	✔ All operations completed successfully	Log
WMP2721002A	10.1.50.31	10.1.50.15	10.1.50.22	✔ All operations completed successfully	Log
WMP2721002U	10.1.50.32	10.1.50.16	10.1.50.23	✔ All operations completed successfully	Log
WMP2721004X	10.1.50.33	10.1.50.17	10.1.50.24	✔ All operations completed successfully	Log
WMP2721005E	10.1.50.34	10.1.50.18	10.1.50.25	✔ All operations completed successfully	Log
WMP2721005F	10.1.50.35	10.1.50.19	10.1.50.26	✔ All operations completed successfully	Log

Cluster Formation Progress Will start after all nodes are done.

CLUSTER NAME	PROGRESS	LOG
NTX-6node-AF	✔ Your cluster is ready. Click here to access it.	Log

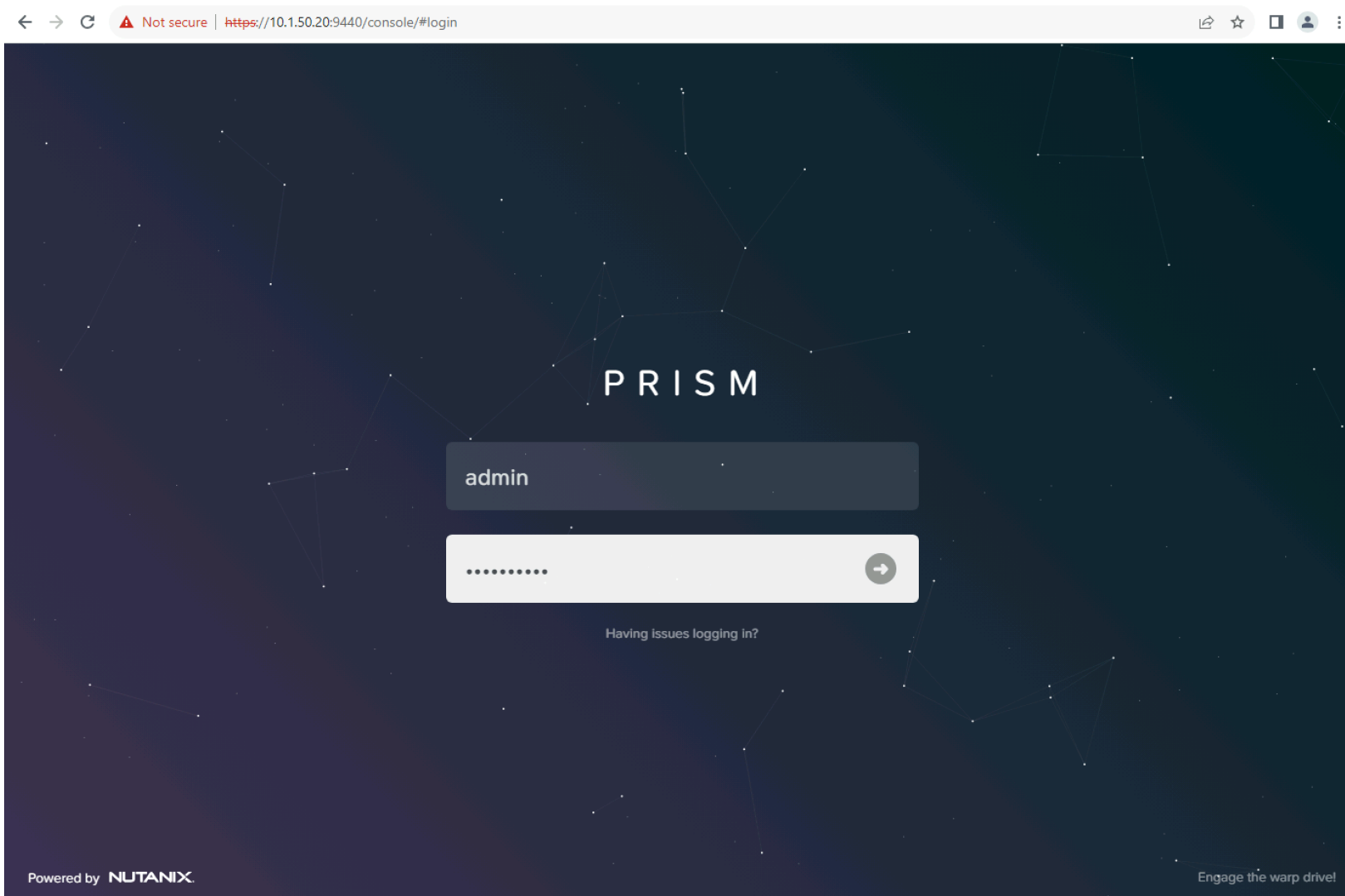
Click the link to open Prism Element when the installation is complete.

Initial Cluster Configurations

- [Initial Configuration for ESXi](#)
- [Initial Configuration for AHV](#)

Initial Nutanix Cluster Config for ESXi

Access Prism Element



- Access Prism Element (the built-in version of Prism) at the cluster IP address or an individual controller VM IP address, using HTTPS at port 9440
- Default username: admin
- Default password (case sensitive): Nutanix/4u
- Password must be changed on first login

Accept EULA and Enable Pulse

Nutanix End User License Agreement (EULA) and Terms of Use

Thank you for choosing to work with Nutanix. We look forward to a long and mutually beneficial relationship with your organization. This Agreement is entered into between Nutanix Inc., or if contracting in Europe, Africa or the middle east, Nutanix Netherlands B.V. ("Us", "We" or "Our") and your organization ("You or "Your") and is effective as of the date signed or accepted by You. This Agreement will allow You to license on-premise software, procure internet-based software-as-a-service, as well as support and other professional services any time at Your convenience. It applies if Your contract: (a) indirectly through an authorized Nutanix partner; or (b) directly with Us, regardless of whether We or a Nutanix partner charges You for the products and services or not.

1. DEFINITIONS. The following capitalized terms have the following meaning(s):

1.1. "Affiliates" means any corporation or other business entity which controls, is controlled by or is under common control by You through the ownership of more than fifty percent (50%) of

Name

Company

Job Title

I have read and agree to the terms and conditions.

Decline **Accept**

Pulse will be enabled

Pulse continuously monitors cluster health and periodically sends machine data to Nutanix's cloud based analytics engine. It automatically takes action when a problem has occurred, or is about to occur. [Learn more.](#)

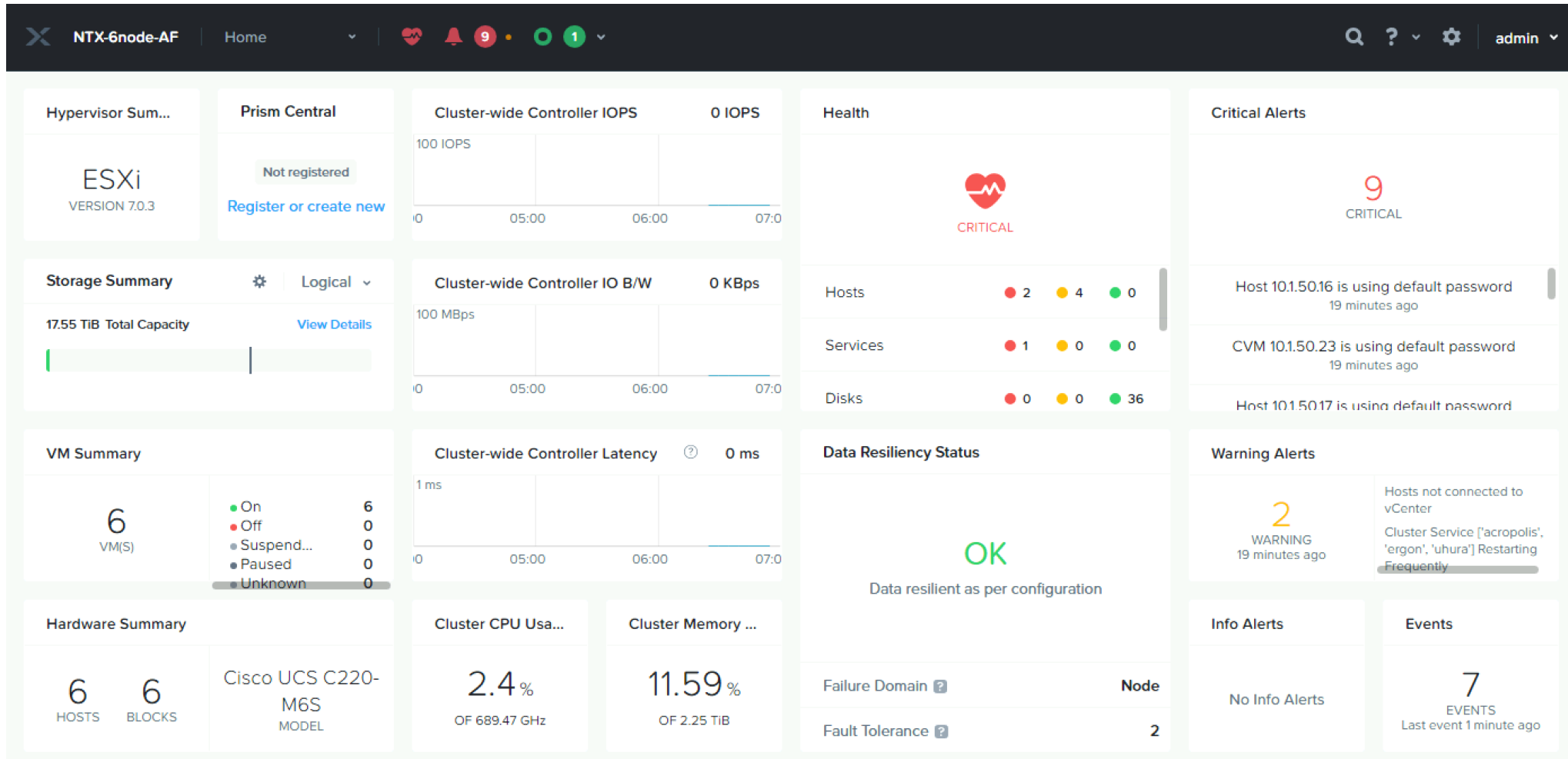
Nutanix strongly recommends not disabling this feature to improve your support experience in the event of a failure or critical system issue.

If you disable Pulse, Nutanix will not be able to proactively reach out to you in the event of failures, and your issue resolution time may increase significantly.

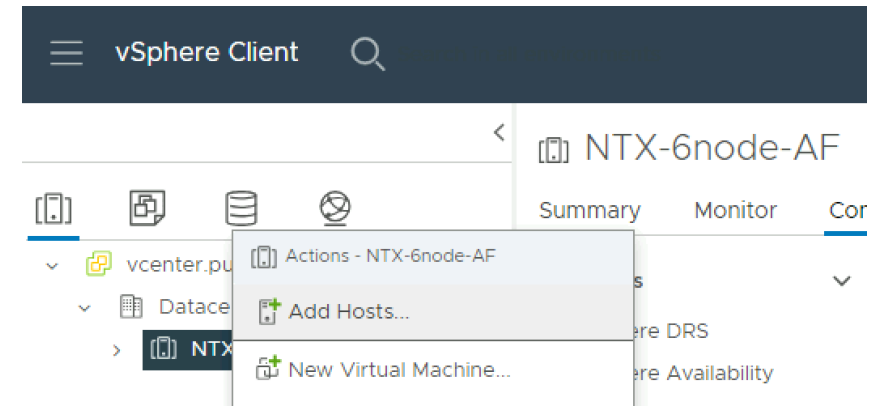
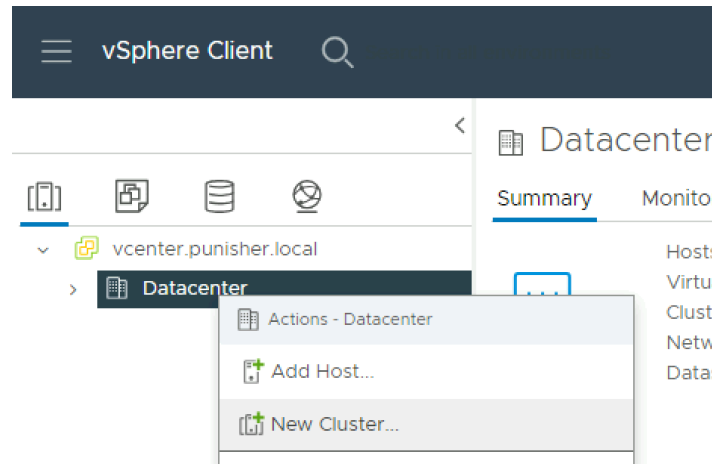
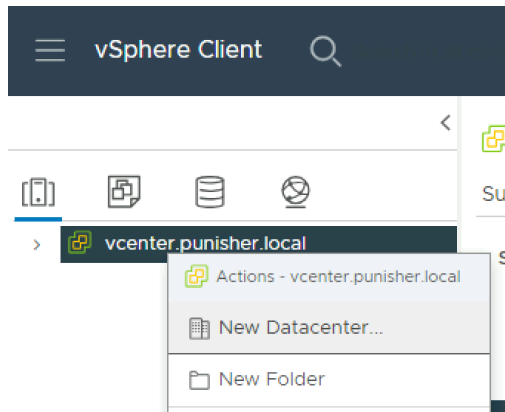
Disable Pulse (not recommended) **Continue**

By enabling Pulse, you elect and authorize Nutanix to electronically collect Pulse diagnostic data, including system alerts via e-mail, in accordance with the terms and conditions set forth in EULA.

Prism Element Home



Add Hosts to vCenter Server



Add hosts

1 Add hosts
2 Host Summary
3 Ready to Complete

Add new and existing hosts to your cluster

New hosts (6) Existing hosts (0 from 0)

Use the same credentials for all hosts

node-1.punisher.local	root	x
node-2.punisher.local	Username	Password	x
node-3.punisher.local	Username	Password	x
node-4.punisher.local	Username	Password	x
node-4.punisher.local	Username	Password	x
node-4.punisher.local	Username	Password	x

In the vSphere Web Client, create a Datacenter, a Cluster and add the hosts. You will have to move the hosts into the cluster after adding them.

Refer here for the recommended vSphere, DRS and HA settings:

https://portal.nutanix.com/page/documents/details?targetId=vSphere-Admin6-AOS-v6_5:vsp-cluster-settings-vcenter-vmware-c.html

Prism Element to vCenter Server Registration

The screenshot shows the Prism Element Settings page. The top navigation bar includes 'NTX-6node-AF', 'Settings', and a user profile 'admin'. A red box highlights the settings gear icon in the top right. On the left sidebar, 'vCenter Registration' is highlighted with a red box. The main content area shows the 'vCenter Registration' configuration page with a table of discovered or registered vCenter instances.

IP Address	Host Connection	Actions
10.1.50.12	Connected	Register

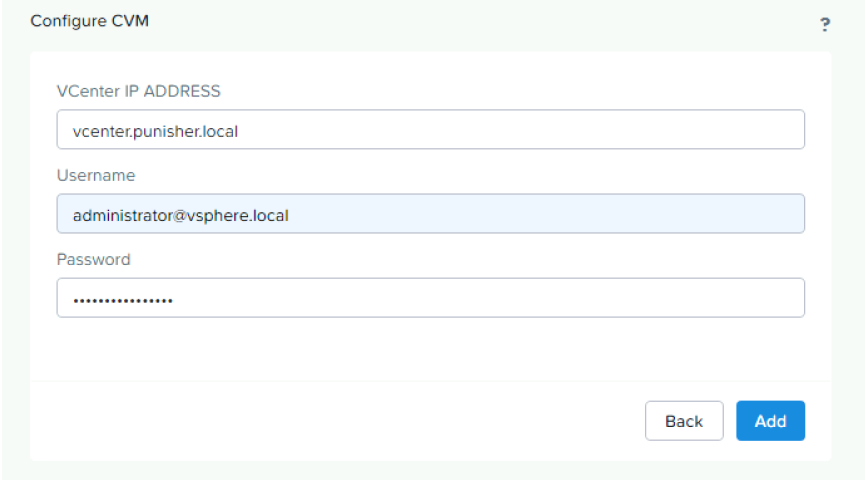
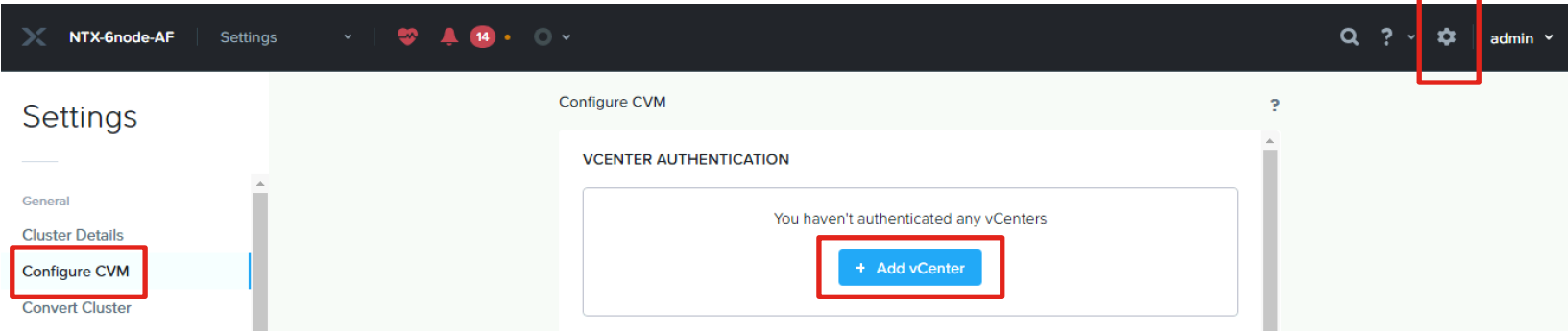
The screenshot shows the 'vCenter Registration' form. It includes input fields for IP ADDRESS (10.1.50.12), PORT (443), ADMIN USERNAME (administrator@vsphere.local), and ADMIN PASSWORD (masked with dots). A blue 'Register' button is located at the bottom right.

The screenshot shows the 'vCenter Registration' page with a table of discovered or registered vCenter instances. The 'Unregister' button is visible in the Actions column.

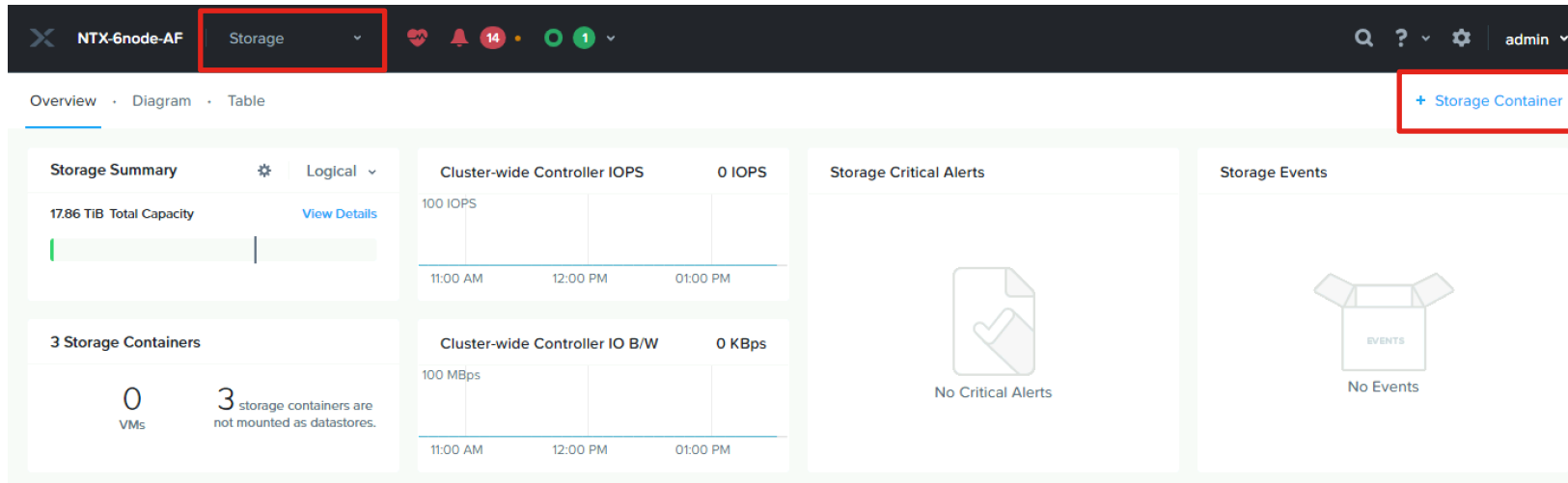
IP Address	Host Connection	Actions
10.1.50.12	Connected	Unregister

Note: It may take a few minutes after adding the nodes for the vCenter to be discovered and allow you to register it.

Configure vCenter Server Authentication



Create Storage Containers (Datastores)



Note: After creating the containers, you should manually select them as the HA datastores in the vCenter Cluster Availability settings, when using ESXi.

Create Storage Container

Name: DS-1

Storage Pool: default-storage-pool-44140812390707

Max Capacity: 53.58 TiB (Physical) Based on storage pool free unreserved capacity

NFS Datastore

Mount on all ESXi hosts

Mount on the following ESXi hosts

Advanced Settings Cancel Save



Create Storage Container

Advanced Settings

Replication Factor: 2

Reserved Capacity: 0 GIB

Advertised Capacity: Total GIB

Compression

Perform post-process compression of all persistent data. For inline compression, set the delay to 0.

Delay (in minutes): 0

Advanced Settings Cancel Save



Create Storage Container

Deduplication

Cache

Perform inline deduplication of read caches to optimize performance.

Capacity

Perform post-process deduplication of persistent data.

Erasure Coding

Enable

Erasure coding enables capacity savings across solid-state drives and hard disk drives.

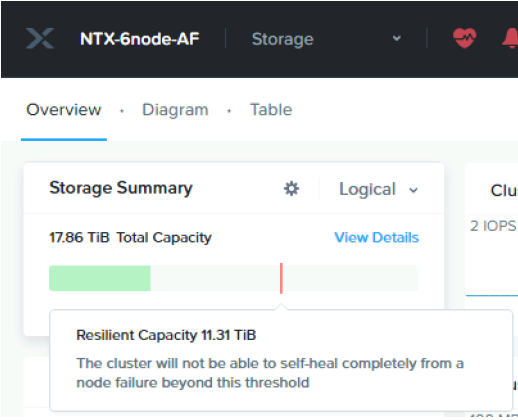
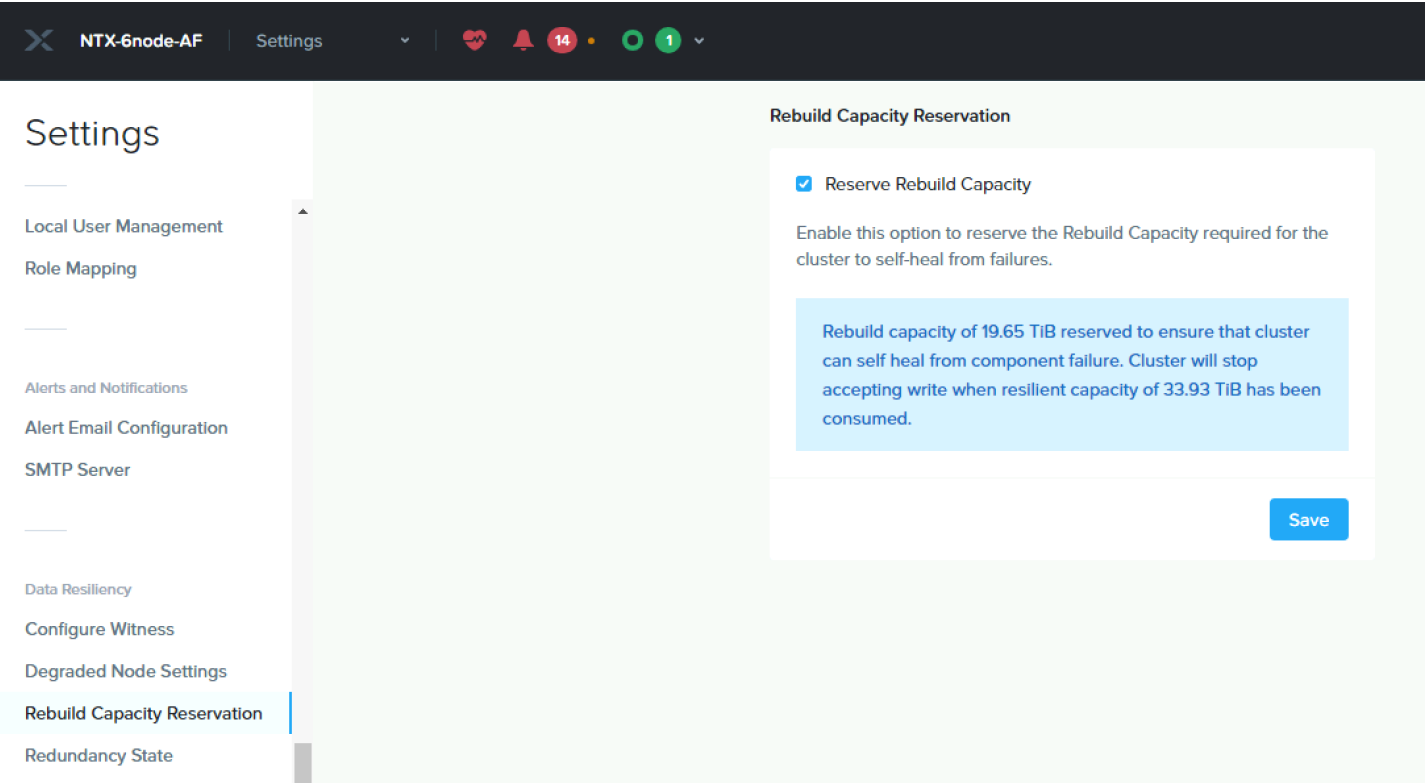
Filesystem Whitelists

Enter comma separated entries

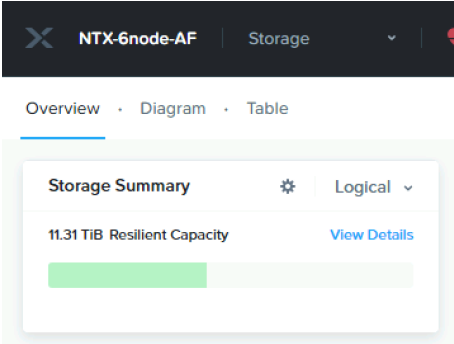
Use IP address/netmask format for entries, e.g., 192.168.0.12/255.255.255.252. Also, note that setting a storage container whitelist will override any global whitelists for this storage container.

Advanced Settings Cancel Save

Set Rebuild Capacity Reservation



Without this setting enabled, cluster will accept incoming writes even if all blocks cannot completely heal during failures



After enabling, cluster will refuse new writes if they cannot be fully protected during failures

Set iSCSI Data Services IP Address

The screenshot shows the Cisco vCenter Settings interface for a cluster named 'NTX-6node-AF'. The 'Cluster Details' section is active, displaying various configuration fields. The 'iSCSI Data Services IP' field is highlighted with a blue border and contains the value '10.1.50.29'. Other fields include 'Cluster Name' (NTX-6node-AF), 'FQDN', 'Virtual IP' (10.1.50.20), and 'Virtual IPv6'. A checkbox for 'Retain Deleted VMs' is checked, and the 'Cluster Encryption State' is 'Not encrypted'. A 'Save' button is located at the bottom right of the configuration panel.

This is an additional clustered IP address for enabling iSCSI Data Services, which is required to install Prism Central.

Modify Default Passwords on ESXi and CVMs

Follow the instructions here to reset the default administrative passwords on the ESXi hypervisors and the Nutanix controller VMs:

<https://portal.nutanix.com/page/documents/kbs/details?targetId=kA00e000000LKXcCAO>

Log on to a CVM via SSH, username: nutanix
password: nutanix/4u

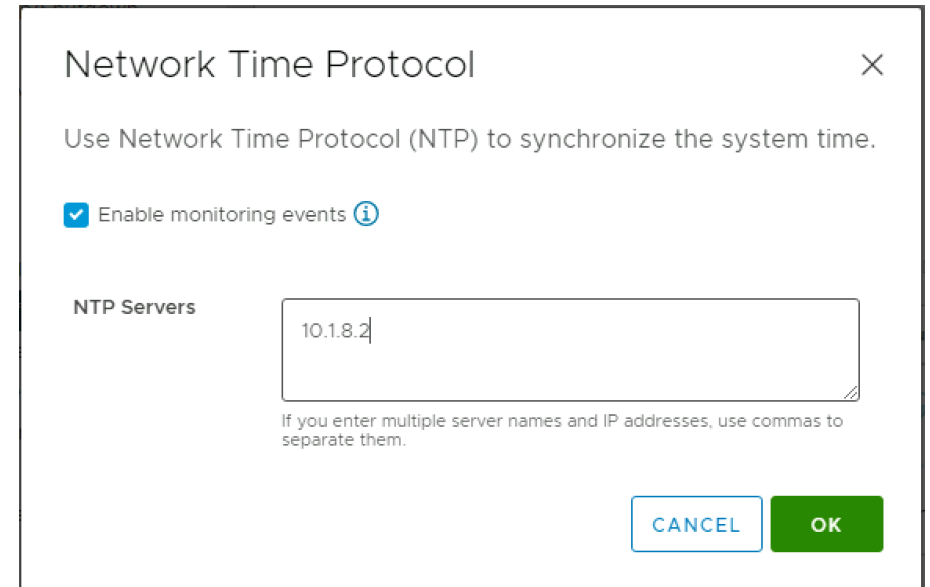
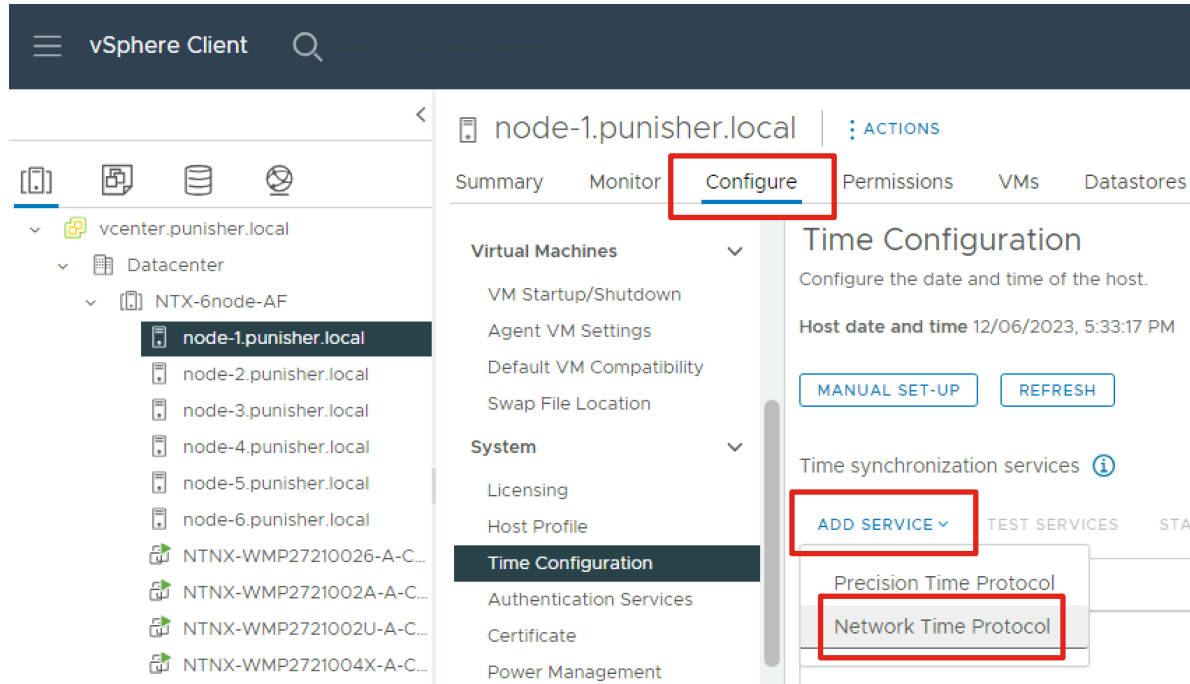
```
nutanix@NTNX-WMP27210026-A-CVM:10.1.50.21:~$ sudo passwd nutanix
Changing password for user nutanix.
New password:
Retype new password:
passwd: all authentication tokens updated successfully.
```

Re-run NCC password health check after changing the passwords

```
nutanix@NTNX-WMP27210026-A-CVM:10.1.50.21:~$ ncc health_checks
system_checks default_password_check
```

```
nutanix@NTNX-WMP27210026-A-CVM:10.1.50.21:~$ echo -e "CHANGING ALL
ESXi HOST PASSWORDS. Note - This script cannot be used for passwords
that contain special characters ( \$ \ { } ^ &)\nPlease input new
password: "; read -s password1; echo "Confirm new password: "; read -s
password2; if [ "$password1" == "$password2" ] && [[ ! "$password1" =~
[\\{\}\$\^\&] ]]; then hostssh "echo -e \"\${password1}\" | passwd
root --stdin"; else echo "The passwords do not match or contain
invalid characters (\ $ { } ^ &)"; fi
CHANGING ALL ESXi HOST PASSWORDS. Note - This script cannot be used
for passwords that contain special characters ( \$ \ { } ^ &)
Please input new password:
Confirm new password:
===== 10.1.50.14 =====
Changing password for root
passwd: password updated successfully
===== 10.1.50.18 =====
Changing password for root
passwd: password updated successfully
===== 10.1.50.16 =====
Changing password for root
passwd: password updated successfully
===== 10.1.50.15 =====
Changing password for root
passwd: password updated successfully
===== 10.1.50.19 =====
Changing password for root
passwd: password updated successfully
===== 10.1.50.17 =====
Changing password for root
passwd: password updated successfully
```


Enable NTP on ESXi hosts



Repeat for each ESXi hypervisor host

Configure DNS on ESXi hosts

node-2.punisher.local | ACTIONS

Summary Monitor **Configure** Permissions VMs Datastores Networks Updates

TCP/IP Configuration IPv6 CONFIGURATION

Edit...

Configuration	Type	VMkernel...	IPv4 Gate...	IPv6 Gateway Address	Preferred DNS ser...	Alternate DNS server
Default	System stack	2	10.150.1.0	--	--	--
Provisioning	System stack	0	--	--	--	--
vMotion	System stack	0	--	--	--	--

TCP/IP Stack: Default

DNS Routing IPv4 Routing Table IPv6 Routing Table Advanced

Configuration method Use manual settings
Host name node-2
Domain
Preferred DNS server --
Alternate DNS server --

Default - Edit TCP/IP Stack Configuration

DNS configuration

Routing Obtain settings automatically from a VMkernel network adapter

Name VMkernel network adapter

Advanced Enter settings manually

Host name node-1

Domain **punisher.local**

Preferred DNS server **10.150.10**

Alternate DNS server e.g. 192.168.1.1

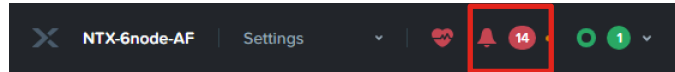
Search domains

CANCEL OK

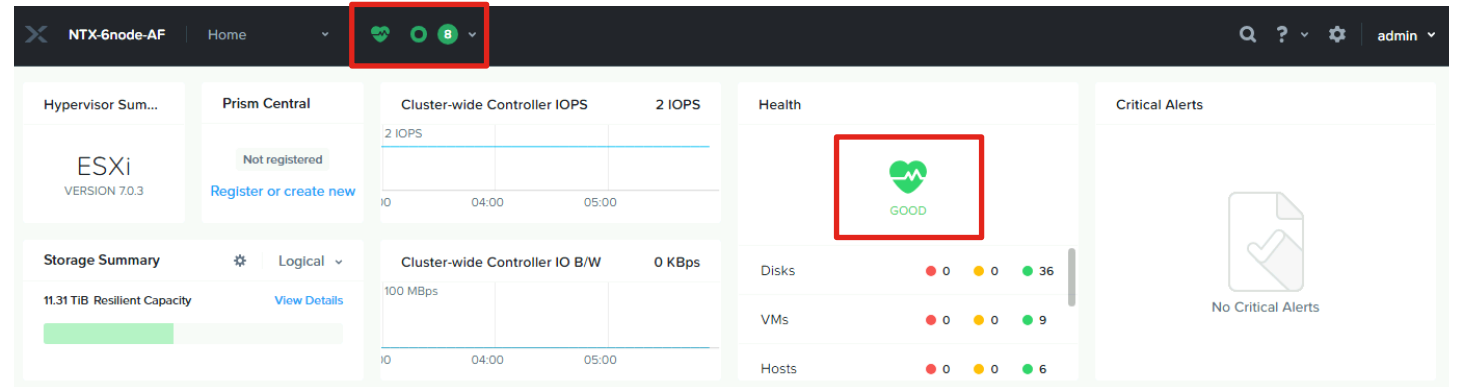
Repeat for each ESXi hypervisor host

Remediate all NCC Failures and Warnings

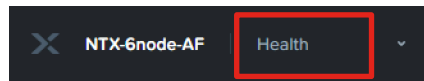
Resolve all active alerts



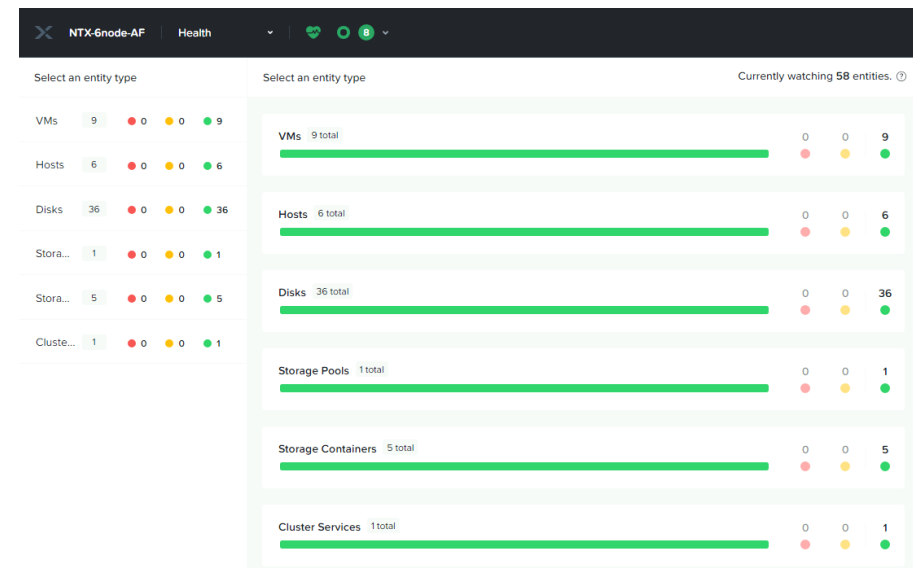
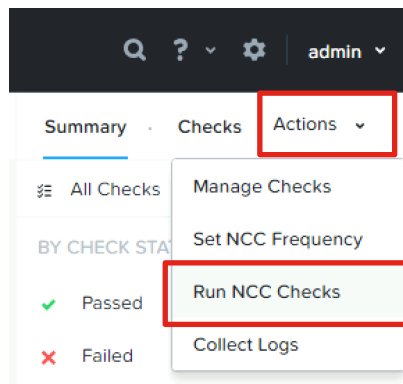
Remediate until all Alerts, Failures and Warnings are gone



Go to Health

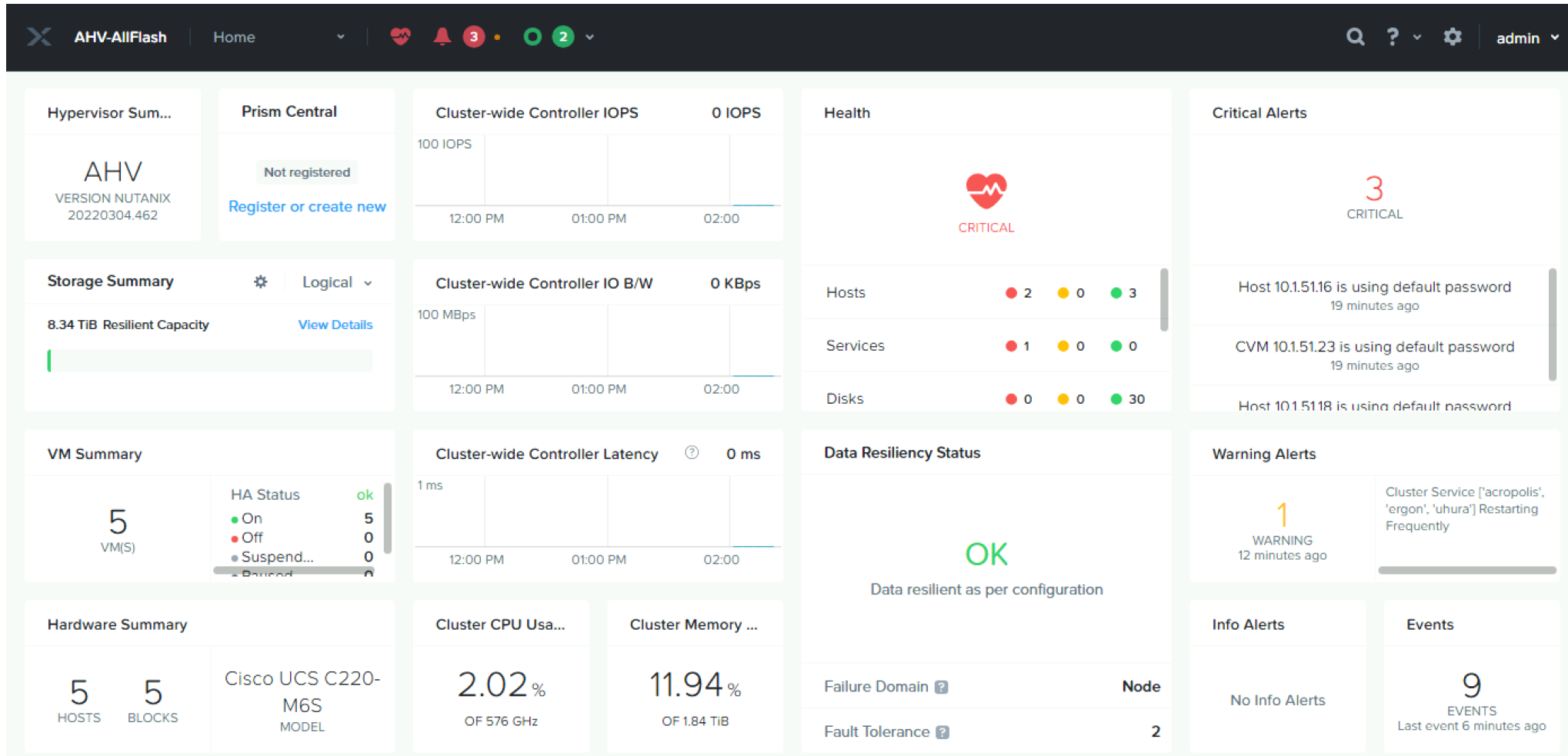


Run NCC checks



Initial Nutanix Cluster Config for AHV

Prism Element Home



Create Storage Containers (Datastores)

AHV-AllFlash Storage

Overview · Diagram · Table

+ Storage Container

Storage Summary

8.34 TiB Resilient Capacity

Cluster-wide Controller IOPS: 0 IOPS

Storage Critical Alerts: No Critical Alerts

Storage Events: No Events

3 Storage Containers

5 VMs on Datastores

3 Storage containers are mounted on 5 hosts.

Cluster-wide Controller IO B/W: 0 KBps

Create Storage Container

Name: DS-1

Storage Pool: default-storage-pool-44140812390707

Max Capacity: 53.58 TiB (Physical) Based on storage pool free unreserved capacity

NFS Datastore

Mount on all ESXi hosts

Mount on the following ESXi hosts

Advanced Settings

Cancel Save



Create Storage Container

Advanced Settings

Replication Factor: 2

Reserved Capacity: 0 GIB

Advertised Capacity: Total GIB

Compression

Perform post-process compression of all persistent data. For inline compression, set the delay to 0.

Delay (in minutes): 0

Advanced Settings

Cancel Save



Create Storage Container

Deduplication

Cache

Perform inline deduplication of read caches to optimize performance.

Capacity

Perform post-process deduplication of persistent data.

Erasure Coding

Enable

Erasure coding enables capacity savings across solid-state drives and hard disk drives.

Filesystem Whitelists

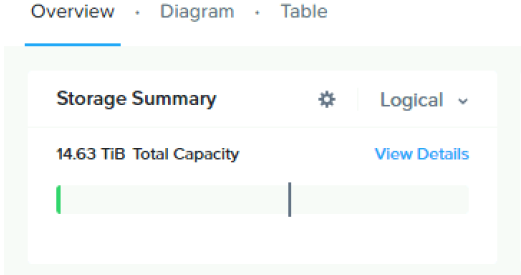
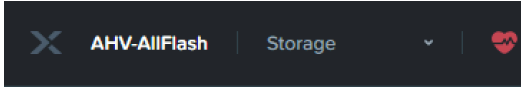
Enter comma separated entries

Use IP address/netmask format for entries, e.g., 192.168.0.12/255.255.255.252. Also, note that setting a storage container whitelist will override any global whitelists for this storage container.

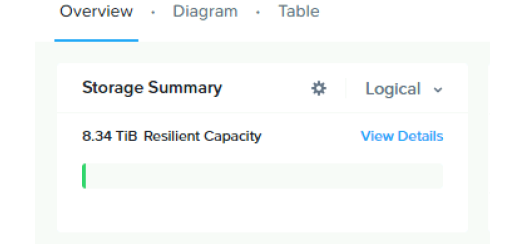
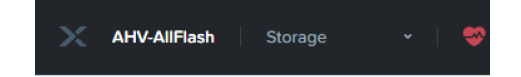
Advanced Settings

Cancel Save

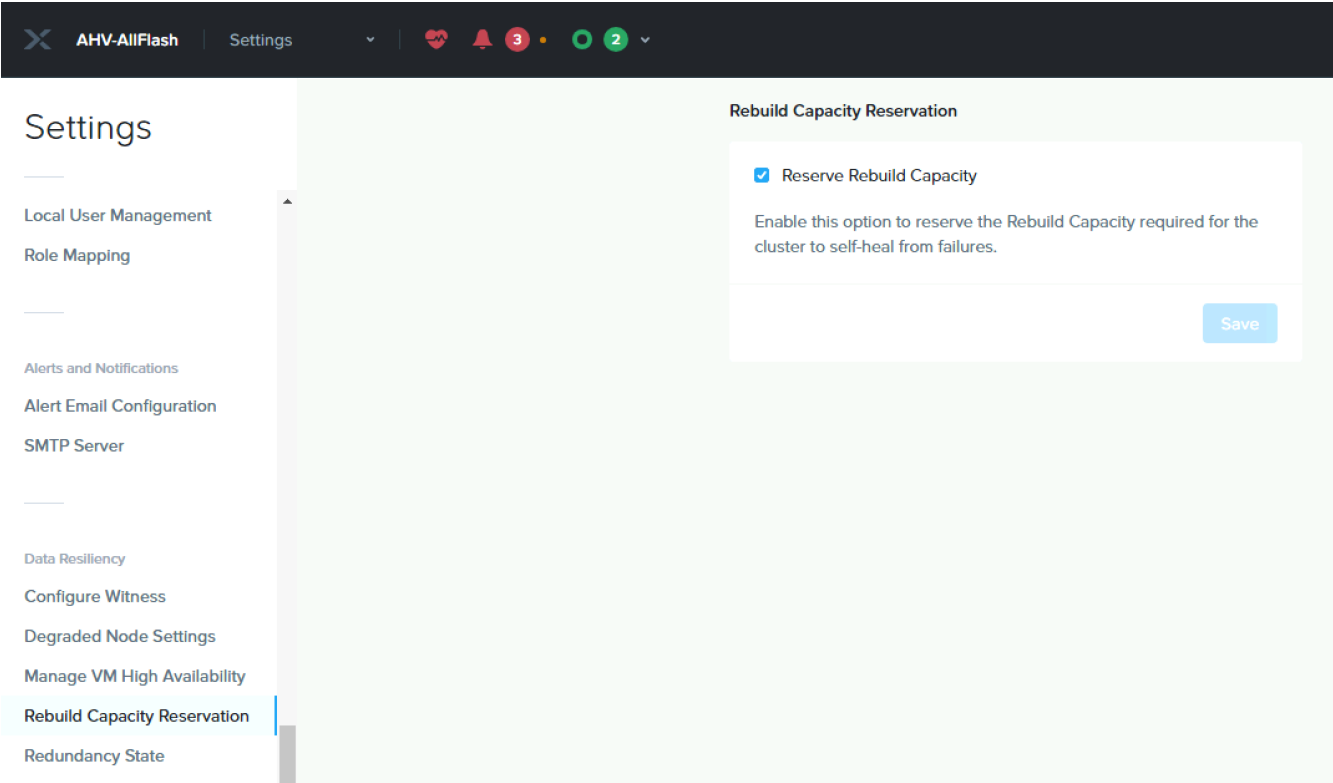
Set Rebuild Capacity Reservation



Without this setting enabled, cluster will accept incoming writes even if all blocks cannot completely heal during failures



After enabling, cluster will refuse new writes if they cannot be fully protected during failures



Set iSCSI Data Services IP Address

The screenshot displays the AHV-AllFlash Settings interface. The 'Settings' menu is highlighted in the top navigation bar. In the left sidebar, the 'Cluster Details' option is selected and highlighted with a red box. The main content area shows the 'Cluster Details' configuration page. The 'Cluster Name' is 'AHV-AllFlash'. The 'Virtual IP' is '10.151.20'. The 'iSCSI Data Services IP' is '10.151.30'. The 'Retain Deleted VMs' checkbox is checked. The 'Cluster Encryption State' is 'Not encrypted'. A 'Save' button is located at the bottom right of the configuration area.

This is an additional clustered IP address for enabling iSCSI Data Services, which is required to install Prism Central.

Enable VM High Availability Reservation

The screenshot displays the AHV-AllFlash management interface. At the top, the 'Settings' menu item is highlighted with a red box. On the left sidebar, the 'Manage VM High Availability' option is also highlighted with a red box. The main content area shows the 'Manage VM High Availability' configuration page, where the 'Enable HA Reservation' checkbox is checked and highlighted with a red box. Below this, explanatory text states: 'High Availability ensures that VMs can be migrated and restarted on another node in the case of a single-host failure.' and 'Enabled: In the current state of cluster up to **754.1 GiB** of memory will be reserved to protect in the event of two host failures. Please note that the amount of reserved memory will be dynamically updated in the future to match cluster utilization.' A blue 'Save' button is located at the bottom right of the configuration panel.

Modify Default Passwords on AHV and CVMs

Follow the instructions here to reset the default administrative passwords on the AHV hypervisors, and the Nutanix controller VMs:

<https://portal.nutanix.com/page/documents/kbs/details?targetId=kA00e000000LKXcCAO>

Three accounts on AHV must have their passwords reset: root, admin and nutanix

Log on to a CVM via SSH, username: nutanix
password: nutanix/4u

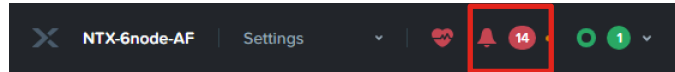
```
nutanix@NTNX-WMP27210026-A-CVM:10.1.50.21:~$ sudo passwd nutanix
Changing password for user nutanix.
New password:
Retype new password:
passwd: all authentication tokens updated successfully.
```

Re-run NCC password health check after changing the passwords

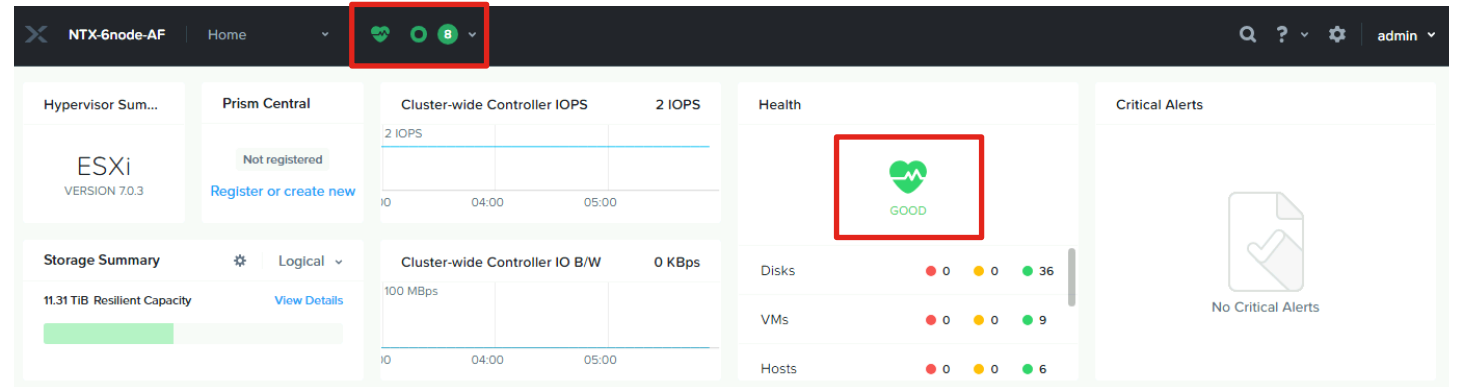
```
nutanix@NTNX-WMP27210026-A-CVM:10.1.50.21:~$ ncc health_checks
system_checks default_password_check
```

Remediate all NCC Failures and Warnings

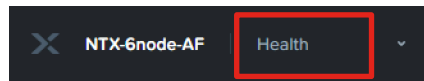
Resolve all active alerts



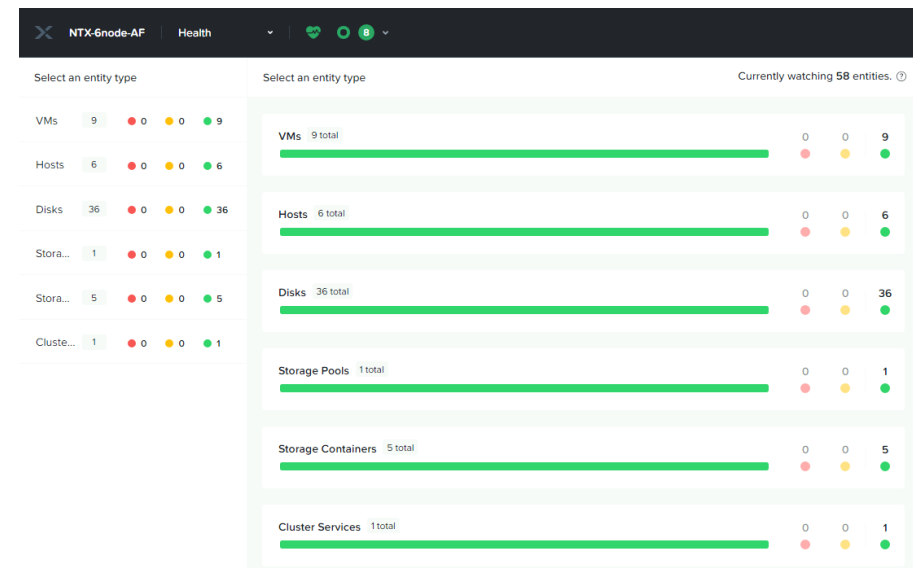
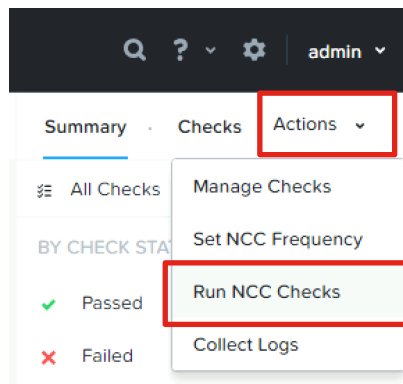
Remediate until all Alerts, Failures and Warnings are gone



Go to Health



Run NCC checks



Guest VM Networking

- [Guest VM Networking for ESXi](#)
- [Guest VM Networking for AHV](#)

Configure Guest VM Networking for ESXi

Add VLANs in UCS Manager

UCS Manager

LAN / LAN Cloud / VLANs

Name	ID	Type	Transport	Native
VLAN default (1)	1	Lan	Ether	Yes
VLAN vlan50 (...)	50	Lan	Ether	No

+ Add Delete Info

Details

General Org Permissions VLAN Group Membership Faults Events

Fault Summary

0	0	0	0

Properties

Name : default
Native VLAN : Yes
Network Type : Lan

Create VLANs

VLAN Name/Prefix : vlan51

Multicast Policy Name : <not set> [Create Multicast Policy](#)

Common/Global Fabric A Fabric B Both Fabrics Configured Differently

You are creating global VLANs that map to the same VLAN IDs in all available fabrics. Enter the range of VLAN IDs.(e.g. "2009-2019", "29,35,40-45", "23", "23,34-45")

VLAN IDs : 51

Sharing Type : None Primary Isolated Community

Check Overlap OK Cancel

Create additional VLANs in UCS Manager for guest VMs, if not already created earlier

Add VLAN(s) to Nutanix Host vNICs

The screenshot shows the UCS Manager interface with the following elements:

- Navigation Sidebar:** A red box highlights the 'Servers' icon. Another red box highlights the 'fdtnWMP27210026' service profile under the 'root' service profile.
- Main Content Area:** The 'Network' tab is selected and highlighted with a red box. Below it, the 'vNICs' table is visible, with two rows highlighted by red boxes:

Name	MAC Address	Desired Order	Actual Order	Fabric ID	Desired Place
vNIC 1-fabri...	00:25:B5:A0:F9...	1	1	A	Any
vNIC 1-fabri...	00:25:B5:A0:F9...	2	2	B	Any

The 'Modify vNIC' dialog box is open, showing the configuration for vNIC 1-fabric-A. The 'VLANs' tab is selected, and a table lists the VLANs to be added:

Select	Name	Native VLAN	VLAN ID
<input type="checkbox"/>	default	<input type="radio"/>	1
<input checked="" type="checkbox"/>	vlan3068	<input type="radio"/>	3068
<input checked="" type="checkbox"/>	vlan50	<input checked="" type="radio"/>	50
<input checked="" type="checkbox"/>	vlan51	<input type="radio"/>	51
<input checked="" type="checkbox"/>	vlan52	<input type="radio"/>	52

At the bottom of the dialog, the 'Save Changes' button is highlighted with a red box.

Add VLANs to the vNICs of the Nutanix service profiles. New VLANs must be non-native (i.e. tagged), while the original VLAN used during installation is native. Modify both vNICs in the service profile and save changes. Repeat for all vNICs in all the service profiles.

Create New Port Groups in vCenter

The screenshot shows the vSphere Client interface for host 'node-1.punisher.local'. The 'Configure' tab is active, and the 'Virtual switches' section is expanded to show 'Standard Switch: vSwitch0'. A red box highlights the 'ADD NETWORKING...' button. Below this, three network configurations are visible: 'Backplane Network', 'Management Network', and 'VM Network'. To the right, the 'Physical Adapters' section shows 'vmnic0 25000 Full' and 'vmnic1 25000 Full'. The left sidebar shows the navigation tree with 'node-1.punisher.local' selected.

The 'Add Networking' dialog box is shown at Step 1: 'Select connection type'. The 'Virtual Machine Port Group for a Standard Switch' option is selected and highlighted with a red box. The other options are 'VMkernel Network Adapter' and 'Physical Network Adapter'. The 'NEXT' button is visible at the bottom right.

The 'Add Networking' dialog box is shown at Step 3: 'Connection settings'. The 'Network label' is set to 'vm-network-51' and the 'VLAN ID' is set to '51', both highlighted with red boxes. The 'NEXT' button is visible at the bottom right.

Add a new port group to the default vSwitch0 for the guest VMs, using VLAN ID tags. Repeat for each VLAN required and repeat for all the hosts in the vCenter cluster so their configuration matches.

Configure Guest VM Networking for AHV

Add VLANs in UCS Manager

The screenshot shows the UCS Manager interface. On the left, a navigation menu has 'VLANs' highlighted with a red box and a green checkmark. Other items like 'Uplink Eth Interfaces' are marked with red 'X's. The main area shows the 'LAN / LAN Cloud / VLANs' page with a table of existing VLANs and an '+ Add' button highlighted with a red box.

Name	ID	Type	Transport	Native
VLAN default (1)	1	Lan	Ether	Yes
VLAN vlan50 (...)	50	Lan	Ether	No

The 'Create VLANs' dialog box is shown. It includes fields for 'VLAN Name/Prefix' (vlan51), 'Multicast Policy Name' (<not set>), and 'VLAN IDs' (51). The 'Sharing Type' is set to 'None'. The dialog also has 'Check Overlap', 'OK', and 'Cancel' buttons.

Create additional VLANs in UCS Manager for guest VMs, if not already created earlier

Add VLAN(s) to Nutanix Host vNICs

The screenshot shows the UCS Manager interface with the following elements:

- Navigation Sidebar:** A red box highlights the 'Servers' icon. Another red box highlights the 'fdtnWMP27210026' service profile under the 'root' service profile.
- Main Content Area:** The 'Network' tab is selected and highlighted with a red box. Below it, the 'vNICs' table is visible, with two rows highlighted by red boxes:

Name	MAC Address	Desired Order	Actual Order	Fabric ID	Desired Place
vNIC 1-fabri...	00:25:B5:A0:F9...	1	1	A	Any
vNIC 1-fabri...	00:25:B5:A0:F9...	2	2	B	Any

The 'Modify vNIC' dialog box is open, showing the configuration for vNIC 1-fabric-A. The 'VLANs' tab is selected, and a table lists the VLANs to be added:

Select	Name	Native VLAN	VLAN ID
<input type="checkbox"/>	default	<input type="radio"/>	1
<input checked="" type="checkbox"/>	vlan3068	<input type="radio"/>	3068
<input checked="" type="checkbox"/>	vlan50	<input checked="" type="radio"/>	50
<input checked="" type="checkbox"/>	vlan51	<input type="radio"/>	51
<input checked="" type="checkbox"/>	vlan52	<input type="radio"/>	52

At the bottom of the dialog, the 'Save Changes' button is highlighted with a red box. The 'OK' and 'Cancel' buttons are also visible.

Add VLANs to the vNICs of the Nutanix service profiles. New VLANs must be non-native (i.e. tagged), while the original VLAN used during installation is native. Modify both vNICs in the service profile and save changes. Repeat for all vNICs in all the service profiles.

Create VM Subnet(s)

The screenshot shows the VMware vCenter interface. The top navigation bar includes the 'VM' menu, which is highlighted with a red box. In the top right corner, the 'Network Config' button is also highlighted with a red box. Below the navigation bar, there are tabs for 'Overview' and 'Table'. A '+ Create VM' button is visible, and a search bar contains the text 'No entities found (filtered from 5)'. Below the search bar is a table with columns for VM Name, Host, IP Addresses, Cores, Memory Capacity, Storage, CPU Usage, Memory Usage, Controller Read IOPS, Controller Write IOPS, Controller IO Bandwidth, Controller Avg IO Latency, Backup..., and Flash Mode.

The screenshot shows the 'Network Configuration' dialog box with the 'Subnets' tab selected. The main area displays the message 'No subnets have been configured.' Below this message, a blue 'Create Subnet' button is highlighted with a red box.

The screenshot shows the 'Create Subnet' dialog box. It contains the following fields and options:

- Subnet Name: vm-network-52
- Virtual Switch: vs0
- VLAN ID: 52
- Enable IP address management. This gives AHV control of IP address assignments within the network.

At the bottom right, there are 'Cancel' and 'Save' buttons.

The screenshot shows the 'Network Configuration' dialog box with the 'Virtual Switch' tab selected. It displays a table with the following data:

Name	Bridge	MTU (bytes)	Bond Type
vs0	br0	1500	Active-Backup

The 'Active-Backup' bond type is highlighted with a red box. A '+ Create VS' button is visible in the top right corner.

The screenshot shows the 'Network Configuration' dialog box with the 'Subnets' tab selected. It displays a table with the following data:

Subnet Name	Virtual Switch	VLAN ID	Used IP Addresses	Free IPs in Subnets	Free IPs in Pool	Actions
vm-network-52	vs0	52	N/A	N/A	N/A	Edit · Delete

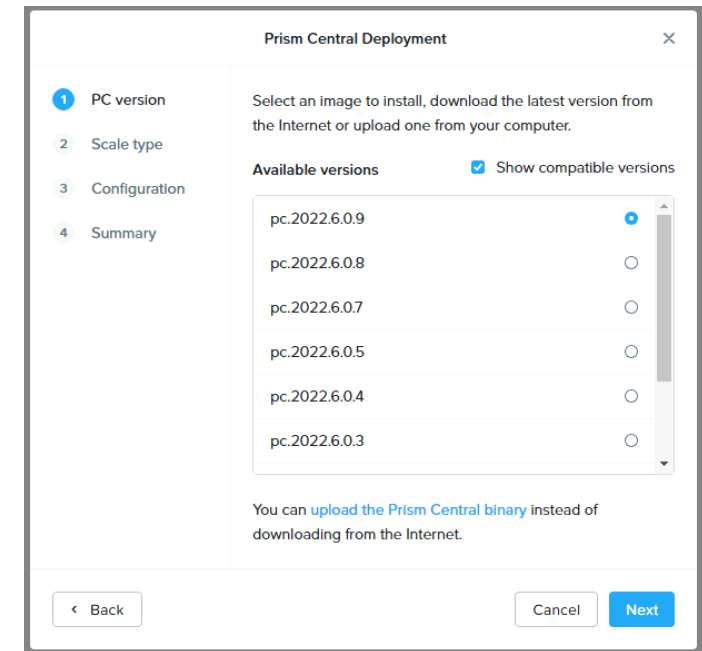
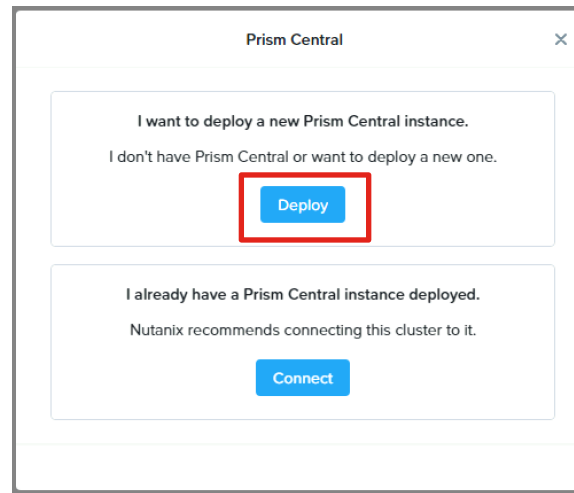
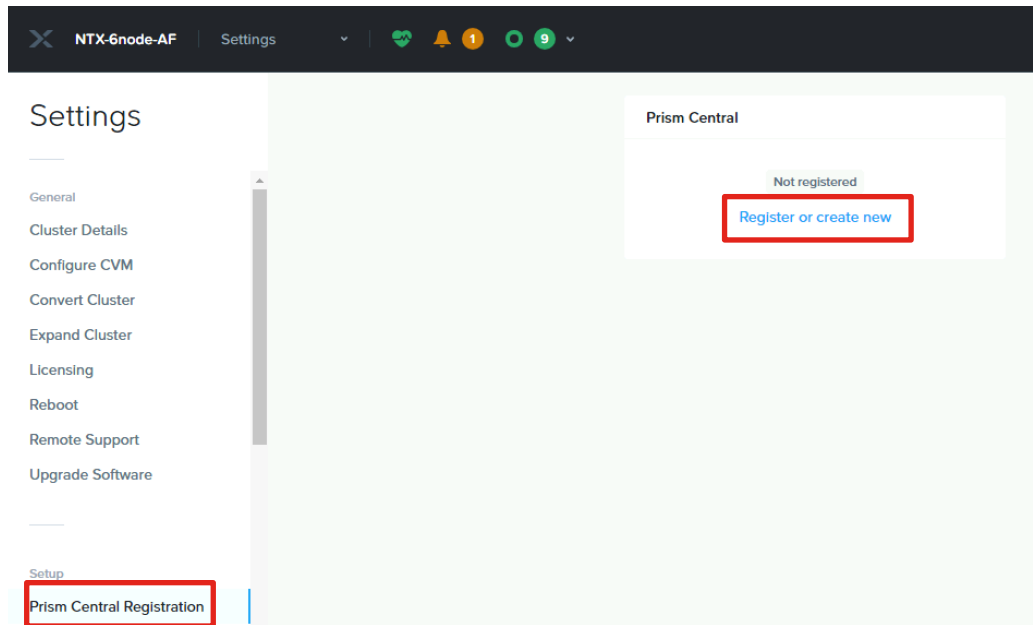
A '+ Create Subnet' button is visible in the top right corner.

Note: Do not modify the default virtual switch bond type to Active-Active. This requires LACP and will not work within Cisco UCS domains.

Prism Central Installation



Start Prism Central Installation



Take extra care when deploying a new Prism Central VM or cluster. Prism Central binaries can be downloaded here: <https://portal.nutanix.com/page/downloads?product=prism> This page also lists some compatibility information, for example, version 2022.9 or later can only be newly deployed on AOS 6.6 or later. If you were to attempt to upload this Prism Central binary for a new deployment on AOS 6.5 LTS, the install will fail. Additional upgrade path and compatibility information is available here: <https://portal.nutanix.com/page/documents/upgrade-paths> and here: <https://portal.nutanix.com/page/documents/compatibility-interoperability-matrix/interoperability>

Start Prism Central Installation continued

Prism Central Deployment

1 PC version
2 **Scale type**
3 Configuration
4 Summary

Prism Central is composed of one or more Virtual Machines that allow you to monitor, manage, and automate one or more clusters.

Deploy Single-VM PC
Capacity: up to 12,500 VMs
Added resiliency: -
Minimum memory required: 26 GB

Deploy Scale-Out PC (on 3 VMs)
Capacity: up to 25,000 VMs
Added resiliency: RF2
Minimum memory required: 78 GB

[Back](#) [Cancel](#) [Next](#)

Prism Central Deployment

1 PC version
2 Scale type
3 **Configuration**
4 Summary

Select a PC size and provide your Network details.

Small (6 vCPUs and 26 GB Memory)
For managing up to 2,500 VMs

Large (10 vCPUs and 44 GB Memory)
For managing up to 12,500 VMs

X-Large (14 vCPUs and 60 GB Memory)
For managing up to 12,500 VMs
Resources included for all optional services

Network

Subnet Mask: 255.255.255.0 Gateway: 10.150.1

DNS Address(es) Optional

Select a Container: DS-1

[Back](#) [Cancel](#) [Next](#)

Prism Central Deployment

1 PC version
2 Scale type
3 Configuration
4 **Summary**

X-Large (14 vCPUs and 60 GB Memory)
For managing up to 12,500 VMs
Resources included for all optional services

Network

Subnet Mask: 255.255.255.0 Gateway: 10.150.1

DNS Address(es) Optional

Select a Container: DS-1

VM Name: PrismCentral-1
IP: 10.150.4d
6 vCPUs 26 GiB

[Back](#) [Cancel](#) [Next](#)

Prism Central Deployment

1 PC version
2 Scale type
3 Configuration
4 **Summary**

PC version: pc.2022.6.0.9
Scale type: Single-VM PC
Added resiliency: -

Configuration
VM Size: Small (up to 2,500 VMs)
vCPUs: 6
Memory: 26 GiB
Storage: 500 GiB
Network: VM Network
Subnet Mask: 255.255.255.0
Gateway: 10.150.1
DNS Address(es): 10.150.10
Container: DS-1
VM Name: PrismCentral-1
IP: 10.150.40

[Back](#) [Cancel](#) [Deploy](#)

Note:
Deployment can
take 30+
minutes

NTX-6node-AF Tasks

Overview

Type text to filter by

Viewing all 12 Tasks

Task	Entity Affected	Progress	Status	Created On	Duration
Download and deploy Prism C...	Cluster Details	<div style="width: 63%;"></div> 63%	Running	Dec 6, 2023, 06:2...	5 minutes 32 seco...



Register Cluster with Prism Central

NTX-6node-AF Settings

Settings

- General
- Cluster Details
- Configure CVM
- Convert Cluster
- Expand Cluster
- Licensing
- Reboot
- Remote Support
- Upgrade Software

Setup

- Prism Central Registration**

Prism Central

Not registered

[Register or create new](#)

Prism Central

I want to deploy a new Prism Central instance.
I don't have Prism Central or want to deploy a new one.

[Deploy](#)

I already have a Prism Central instance deployed.
Nutanix recommends connecting this cluster to it.

[Connect](#)

Prism Central

1 Connect info

2 Configuration

Once the registration is complete, several management features will be in Read-Only mode on Prism Element but fully accessible on Prism Central.

Feature/Service	Prism Element	Prism Central
Cluster Unregistration	By scripts only ✓	By scripts only ✓
Self-Service Portal	✗	✓

< Back Cancel [Next](#)

Prism Central

1 Connect info

2 Configuration

Connect to an existing Prism Central instance.
Please fill in the information needed to establish a connection.

Prism Central IP/FQDN

Port

Username

Password
 [Show](#)

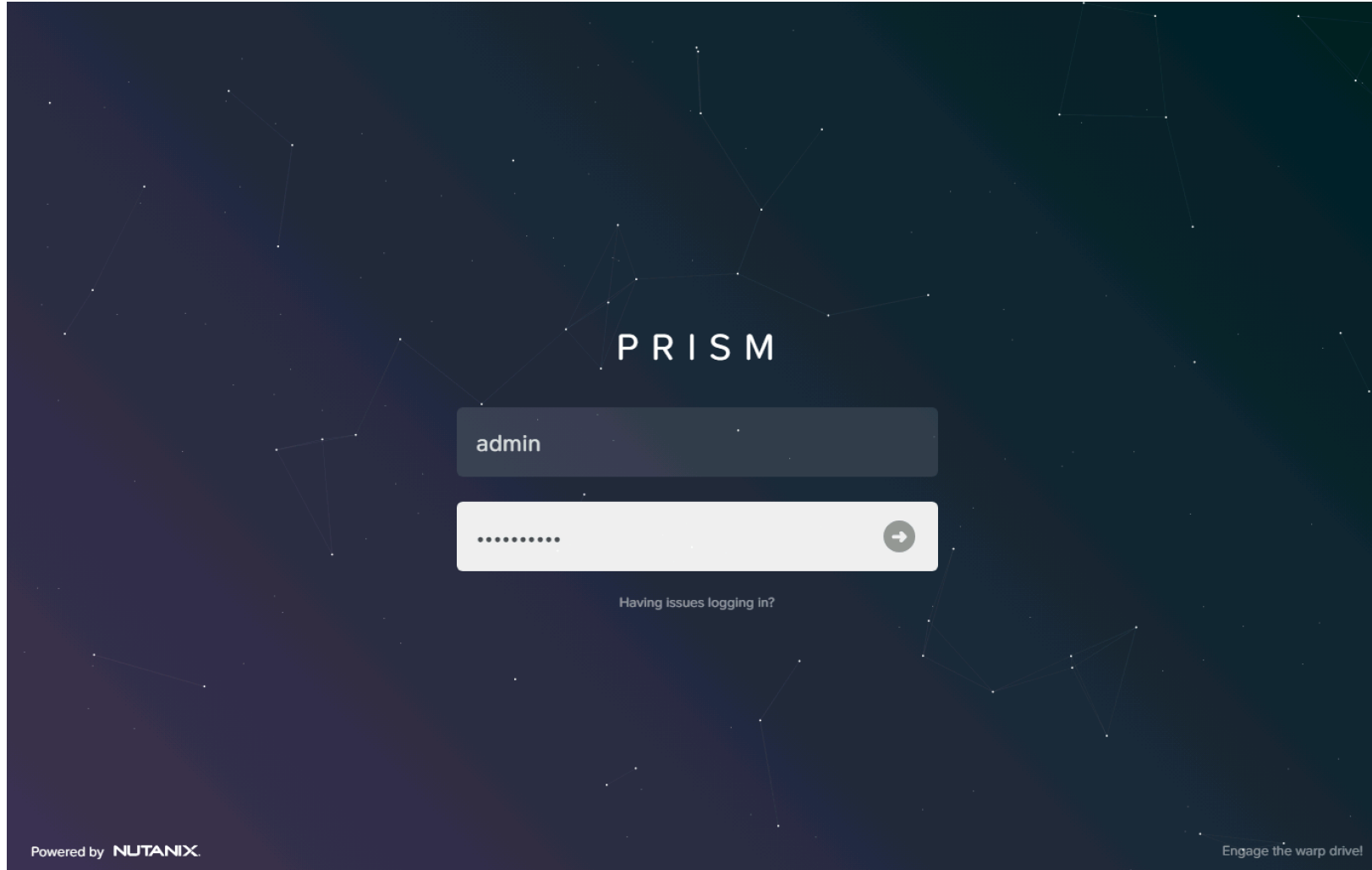
< Back Cancel [Connect](#)

Prism Central

Connected

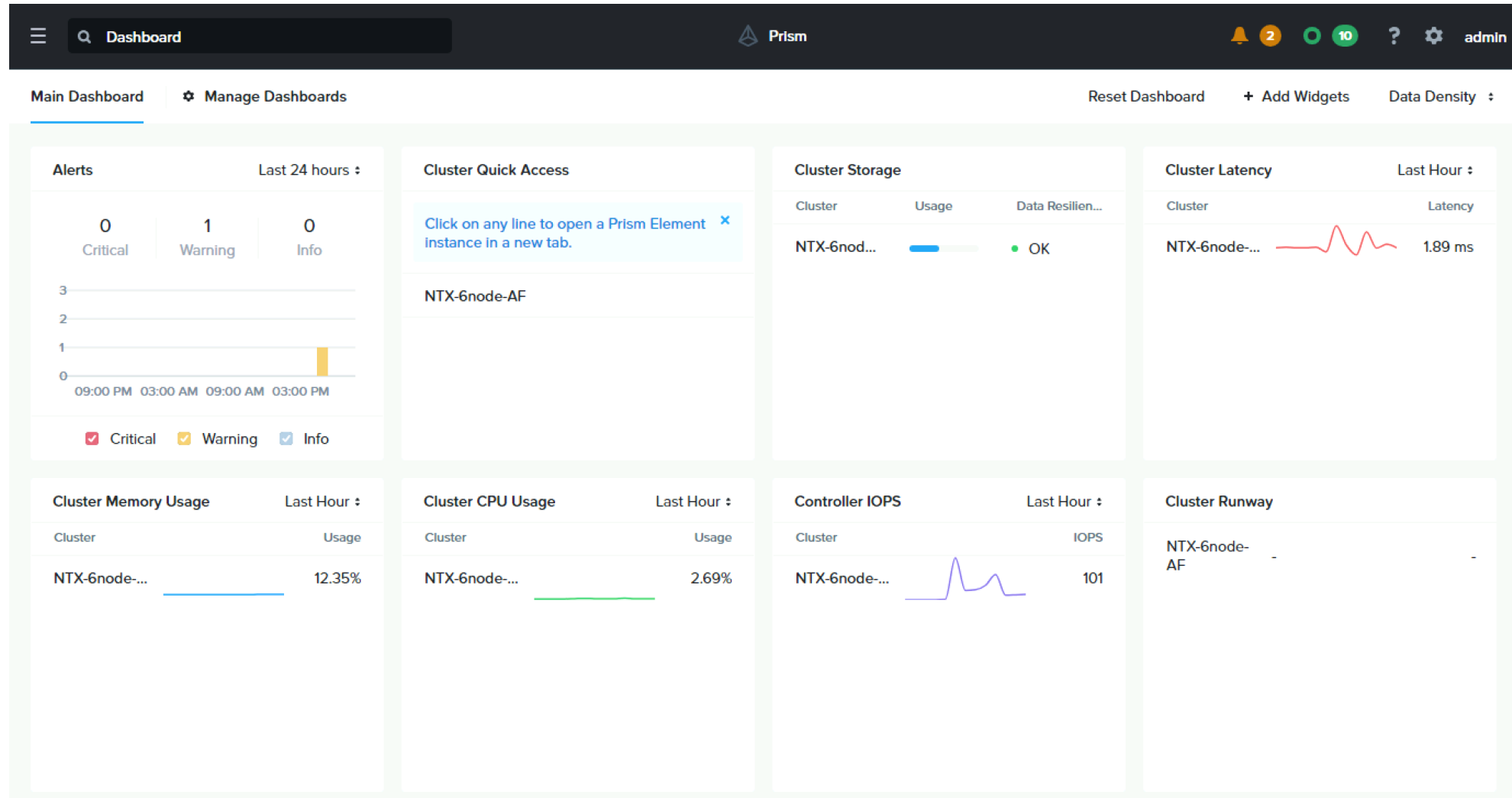
101.50.41 [Launch](#)

Access Prism Central



- Access Prism Central at the VM or cluster IP address, using HTTPS at port 9440
- Default username: admin
- Default password: Nutanix/4u
- Password must be changed on first login

Prism Central Dashboard

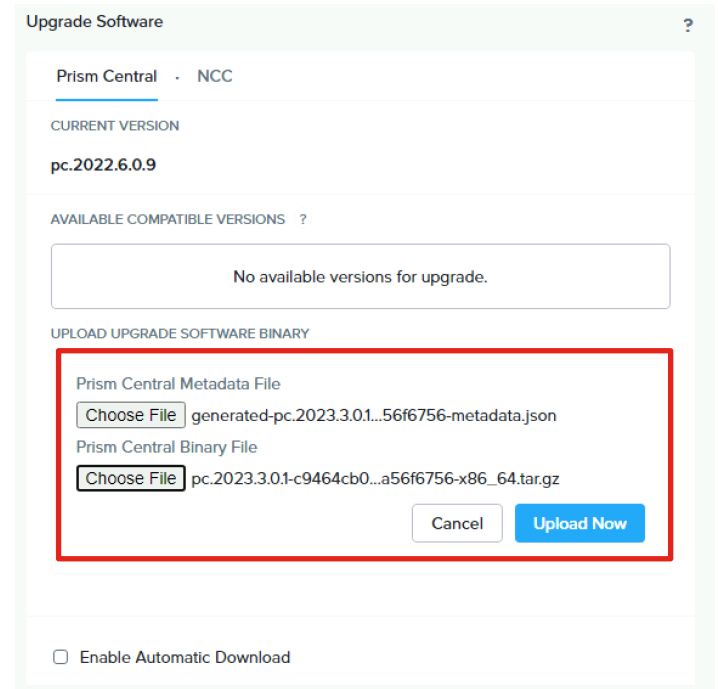
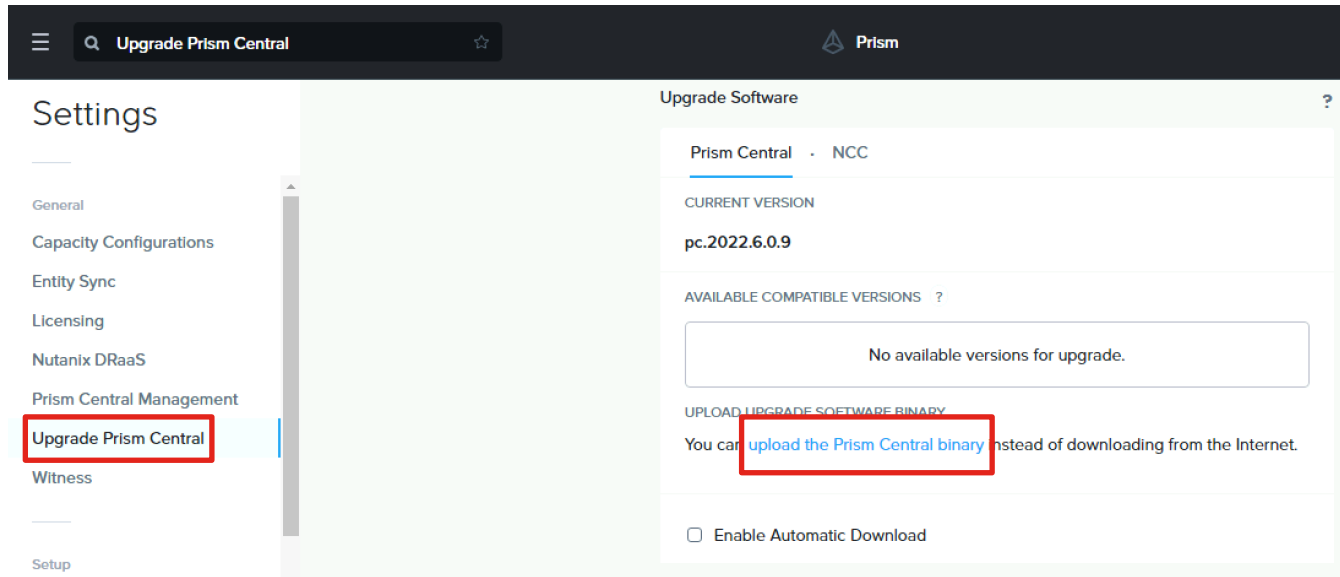


Configure NTP in Prism Central

The screenshot shows the Cisco Prism Central interface. On the left is a 'Settings' sidebar with a red box around the 'NTP Servers' option. The main content area is titled 'NTP Servers' and contains a configuration card. The card has a header 'NTP Servers' with a question mark icon. Below the header is a text block: 'Configure one or more NTP servers that you would like to use. Servers that have been configured are displayed below.' Underneath is a form with a label 'NTP Server' and a text input field containing '10.18.2'. To the right of the input field is a '+ Add' button, which is highlighted with a red box. Below the input field is a larger text area with the placeholder text 'Hostname or IP Address' and a message 'NTP servers have not been configured.'

Prism Central cannot be upgraded without DNS and NTP configured

Prism Central Upgrade



Manually upload after verifying compatibility

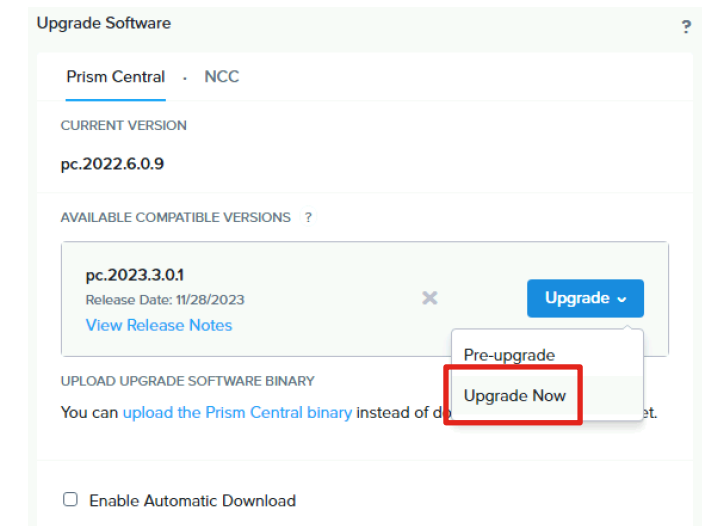
Verify upgrade path and compatibility here:

<https://portal.nutanix.com/page/documents/upgrade-paths>

and here:

<https://portal.nutanix.com/page/documents/compatibility-interoperability-matrix/interoperability>

Prism Central must be upgraded first to a compatible version before upgrading AOS.



Configure Licensing

The screenshot displays the Nutanix Admin Center interface for the Licensing section. The left sidebar contains navigation options: My Apps, Marketplace, Projects, IAM, LCM, Licensing (highlighted), and Settings. The top navigation bar shows 'Admin Center' (highlighted), a search bar with 'Licensing', and user information 'admin'. The main content area is titled 'All Clusters' and includes a 'Manage All Licenses' button (highlighted), an 'Actions' dropdown, and buttons for 'Manually Manage Licenses' and 'View License Details'. A 'Portal Connection' toggle is visible in the top right. Below the title, there is a 'Filter' button and pagination information: 'Viewing 1/1 clusters', '1-1 of 1', and '20 rows'. A table lists the cluster details:

<input type="checkbox"/>	Cluster Name	UUID	License Entitlement	Earliest Expiration Date	Violations
<input type="checkbox"/>	NTX-6node-AF	00060bcb-70...		23 Apr, 2051	None

Recommended method for licensing is to use Seamless Licensing via Prism Central, which requires internet access. Clicking on “Manage All Licenses” will prompt you to log in to the Nutanix support portal. Ensure you log in with a valid My Nutanix account with administrative rights and is entitled with valid licenses. Licenses can be selected and applied to the clusters in the subsequent screens. For more information on licensing, refer to this page:

<https://portal.nutanix.com/page/documents/details?targetId=License-Manager:License-Manager>

Cluster Expansion



Enter values on the Start page

1. Start 2. Nodes 3. Cluster 4. AOS 5. Hypervisor

Welcome to Nutanix Installer.

1. If you have used install.nutanix.com, import the configuration file.

2. Select your hardware platform: Cisco (install via UCS Manager) ▼

UCS Manager IP: 101.50.9

Manager Username: admin

Manager Password: Show

Passwords won't be stored anywhere, for security.

3. Set up your UCS Manager environment as outlined in [this link](#).

4. Nutanix requires all hosts and CVMs of a cluster to have static IPs in the same subnet. Pick a subnet:

Netmask of Every Host and CVM: 255.255.255.0

Gateway of Every Host and CVM: 101.50.1

[If you plan to deploy Nutanix Objects, click here to learn about important network requirements.](#)

5. Pick a same or different subnet for the IPMI as well, unless you want them to have no IPs.

Netmask of Every IPMI: 255.255.255.0

Gateway of Every IPMI: 101.50.1

6. Double-check this installer's IP addresses.

Make sure this installer can connect to the UCS Manager IP you entered above.

List of existing IP addresses	Refresh	Add a new IP address	Add
eth0		Interface	

Foundation 5.5 | Platforms 2.14

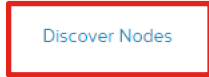
Next >

- A new node being added to the cluster must be prepared using Foundation first
- Use the Foundation VM deployed earlier
- Click the Reset link at the bottom of the page to clear the information from a previous installation
- Enter the UCS Manager details
- Enter the storage controller VM subnet mask and gateway matching the existing nodes
- Enter the subnet mask and gateway for the servers' CIMC addresses matching the existing nodes

Enter values on the Nodes page



Click the button below to discover the nodes available to your UCS Manager.



- You must click Discover Nodes to inventory the UCS domain. Do not continue and attempt to add nodes manually.
- Each node requires 3 IP addresses, one for the CIMC, one for the hypervisor host, and one for the storage controller VM.
- Add A records to your DNS server for the hypervisor hosts.

Enter values on the Nodes page continued

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

6 nodes have been discovered using your UCS Manager. [Rediscover](#) [Troubleshoot](#)

Select the nodes you want to handle, and enter the IP/hostnames you want them to have. You can optionally assign a special role to each node. Tools ▾

<input type="checkbox"/>	NODE SERIAL	VLAN	NODE MODEL	IPMI IP	HOST IP	CVM IP	HOSTNAME OF HOST	NODE ROLE ⓘ
<input type="checkbox"/>	WMP27210026	None	UCSC-C220-M65	10.150.30				Regular ▾
<input type="checkbox"/>	WMP2721002A	None	UCSC-C220-M65	10.150.31				Regular ▾
<input type="checkbox"/>	WMP2721002U	None	UCSC-C220-M65	10.150.32				Regular ▾
<input type="checkbox"/>	WMP2721004X	None	UCSC-C220-M65	10.150.33				Regular ▾
<input type="checkbox"/>	WMP2721005E	None	UCSC-C220-M65	10.150.34				Regular ▾
<input checked="" type="checkbox"/>	WMP2721005F	None	UCSC-C220-M65	10.150.35	10.150.19	10.150.26	node-6	Regular ▾

Regular ▾
Regular ▾
Storage-only (AHV)
Compute-only (AHV/ESX)

- Select only the node(s) to be added the cluster
- Enter the IPs and hostnames for the new nodes
- Select to add a Regular (i.e. HCI) node, a Storage-only node or a Compute-only node.

Enter values on the Cluster page

1. Start 2. Nodes 3. Cluster 4. AOS 5. Hypervisor

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](#))

vRAM Allocation for Every CVM, in Gigabytes (Optional)

Minimum 20, no maximum. Must be an Integer. Leave blank to use recommended defaults.

[Visit this link for more information on CVM vRAM requirements for various configurations. In particular, an all-NVMe node requires at least 40GB.](#)

Settings Related to UCS Manager

Skip automatic Service Profile creation

This installer uses the file `templates/ucsm_template.json` to create Service Profiles in your UCS Manager. Check this option if you have already manually created Service Profiles. The JSON file lists many settings of a Service Profile, of which MAC Pool and VLAN Object are configurable directly from this wizard as shown below. If you want to change other settings in the JSON file, please manually modify the file before proceeding with this wizard.

MAC Pool of Every Service Profile

Nutanix: 54 addresses available

In UCS-managed mode, Cisco VICs are assigned MACs from a pool, instead of having permanent ones. Only the pools already in your UCS Manager are shown here in the dropdown. To refresh the dropdown, retry discovery on the Nodes page. If you select a pool other than "default", that pool will be applied after the installation, during which the "default" pool must be used because of technical reasons. Ensure that both pools have sufficient addresses available for your nodes.

VLAN Object of Every Service Profile

vlan50: VLAN 50 non-native

In UCS-managed mode, VLAN configuration of Cisco VICs must be done via a VLAN object. Only the objects

[← Prev](#) Foundation 5.5 | Platforms 2.14 [Next →](#)

- Check the box to skip creating a cluster.
- Select the appropriate existing MAC address pool and subnet.

Select the AOS and hypervisor versions

[X](#) [1. Start](#) [2. Nodes](#) [3. Cluster](#) **4. AOS** [5. Hypervisor](#)

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:**

AOS Installer for Every Node [Manage AOS Files](#)

Arguments to the AOS Installer (Optional)

List all arguments you want to pass to the Installer, separated by space. Include all necessary hyphens. Example: --xxx --yyy --zzz

[View existing AOS version of each node...](#)

[X](#) [1. Start](#) [2. Nodes](#) [3. Cluster](#) [4. AOS](#) **5. Hypervisor**


Nutanix requires that all nodes of a cluster, except the [AHV storage-only 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 ESX Files](#)

[View existing hypervisor of each node...](#)


Observe the node preparation progress until complete



Installation in progress [Abort this installation](#)



Node Progress

NODE SERIAL	IPMI IP	HOST IP	CVM IP	PROGRESS	LOG
	10.1.50.35	10.1.50.19	10.1.50.26	 Associating service profile to node	Log



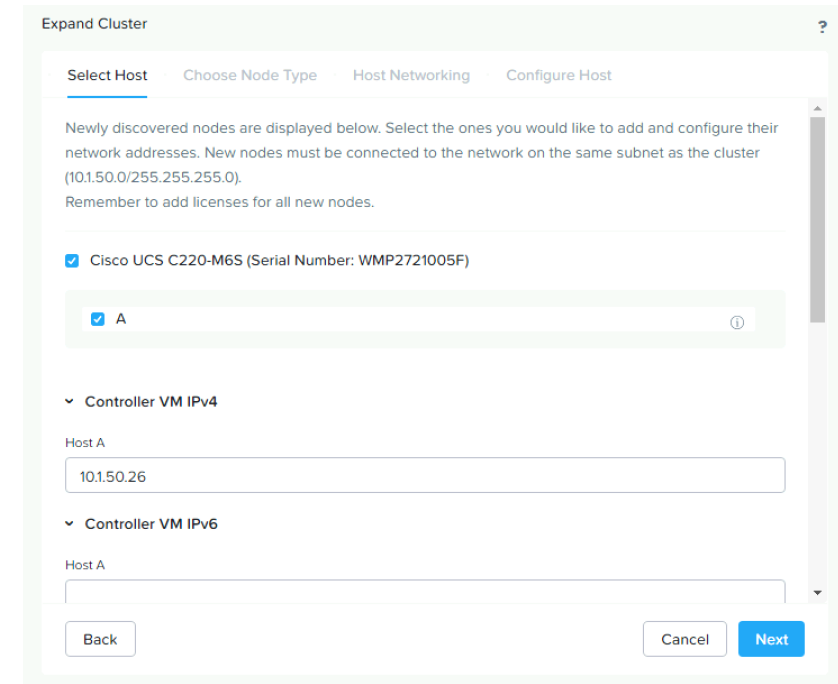
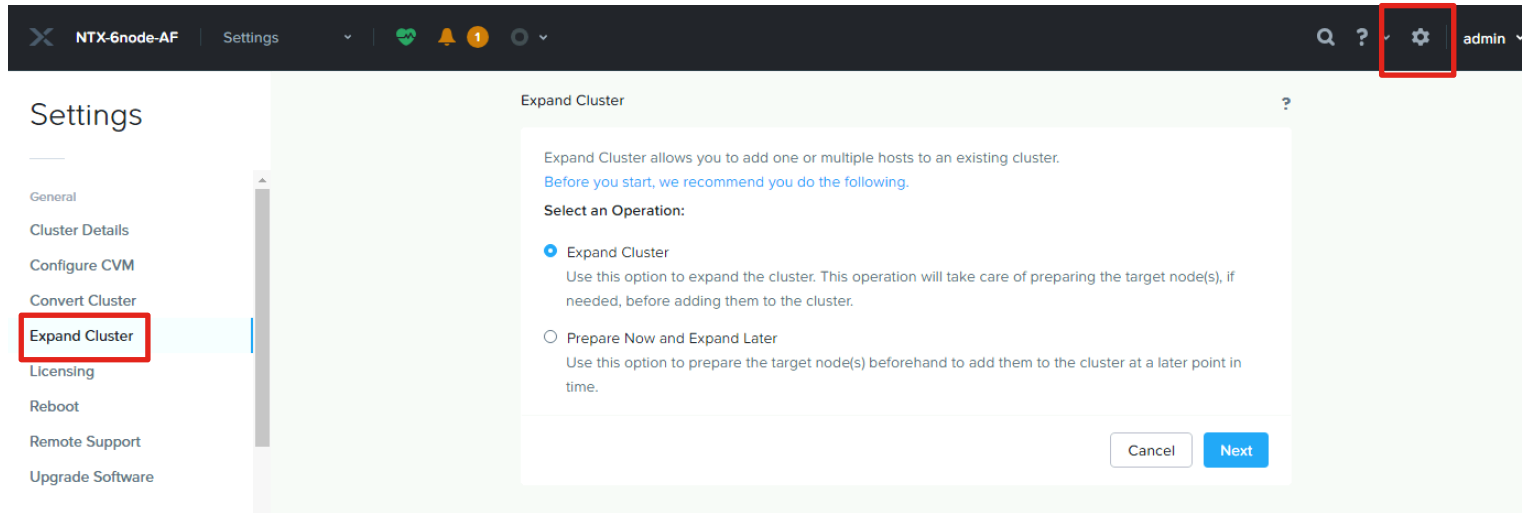
Installation finished.



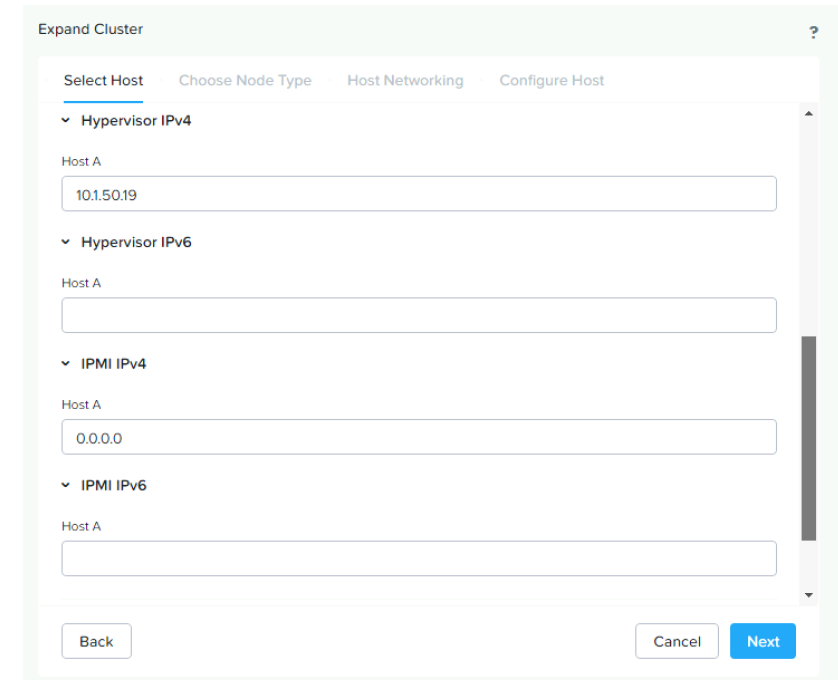
Node Progress [Download Log Bundle](#)

NODE SERIAL	IPMI IP	HOST IP	CVM IP	PROGRESS	LOG
WMP2721005F	10.1.50.35	10.1.50.19	10.1.50.26	 All operations completed successfully	Log

Expand the cluster from Prism Element



The newly prepared node should be discovered automatically with its preset IP addresses configured in Foundation. A compute-only node will likely not be discovered, and the IP address of the hypervisor host will need to be manually entered.



Expand the cluster from Prism Element continued

Expand Cluster

Select Host **Choose Node Type** Host Networking Configure Host

Node can be used for different purposes. Nutanix allows you to pre-define node type as HCI node or Storage-only node.

Cisco UCS C220-M6S (Serial number: WMP2721005F) - A

Node Type
HCI Node

Back Next

Expand Cluster

Select Host Choose Node Type **Host Networking** Configure Host

Select the appropriate active and backup uplink for the hosts.

Model	Uplink(s)	Active/Standby	
10.1.50.26			
vSwitch0 (Management)	vmnic0	Active	x
	vmnic1	Standby	x

Back Skip Host Networking Next

Add the vNICs as uplinks in this screen before continuing. For ESXi and AHV the default config is vmnic0 is Active and vmnic1 is Standby. AHV based compute-only and storage-only nodes may not show any uplinks.

Expand Cluster

Select Host Choose Node Type Host Networking **Configure Host**

Hypervisor(s) Needed

The detected hypervisor on the new node has the same Hypervisor and AOS version as the rest of the nodes on this cluster. No re-imaging needed.

Back Run Checks Expand Cluster

Observe cluster expansion until completed

Expand Cluster

Select Host · Choose Node Type · Host Networking · Configure Host

Expanding Cluster

83 %

Open

Back

NTX-6node-AF | Tasks | 2 | 3 | admin

Overview

Filters

Type text to filter by

Viewing all 45 Tasks | Export | 1 - 20 of 45

Task	Entity Affected	Progress	Status	Created On	Duration
Adding node 101.50.26 1 Subtask	Host	100%	Succeeded	Dec 8, 2023, 05:2...	2 minutes 10 seco...
Node preparation for expand c... 5 Subtasks	Details	100%	Succeeded	Dec 8, 2023, 05:0...	8 minutes 21 seco...
Expand cluster 4 Subtasks	Details	100%	Succeeded	Dec 8, 2023, 05:0...	12 minutes 18 sec...



Perform post-expansion configuration

Perform the following tasks, as documented earlier, for the post-expansion configuration:

- Change the ESXi hypervisor root password, where applicable
- Change the AHV root, admin and nutanix account passwords, where applicable
- Change the CVM Nutanix account password (ESXi and AHV)
- Add the new host to the vCenter Datacenter (ESXi only)
- Configure NTP on the new host (ESXi only)
- Configure DNS on the new host (ESXi only)
- Move the new host into the vCenter cluster (ESXi only)
- Add any additional VLANs as tagged VLANs to the vNICs in UCS Manager (ESXi and AHV)
- Add the additional port groups to the default vSwitch0 (ESXi only)

Mount user created storage containers to the new node(s)

NTX-6node-AF Storage

Overview · Diagram · Table [+ Storage Container](#)

Storage Container Storage Pool

1 - 5 of 6 search in table

Name	Replication Factor	Compression	Cache Deduplication	Capacity Deduplication	Erasure Coding	Free (Logical)	Used	Reserved Capacity	Max Capacity	Controller IOPS	Controller IO B/W	Controller IO Latency
default-container-44140812390707	3	Off	Off	Off	Off	6.36 TiB	0 GiB	0 GiB	6.36 TiB	0	0 KBps	0 ms
DS-2	3	On	Off	Off	Off	4.82 TiB	66.69 GiB	4.88 TiB	4.88 TiB	1	0 KBps	2.08 ms
DS-HA	3	Off	Off	Off	Off	20 GiB	0 GiB	20 GiB	20 GiB	1	0 KBps	2.1 ms
mzp-04e6b7a8-535f-4bbb-4493-ac4f2c3e67db	3	On	Off	Off	Off	6.36 TiB	0 GiB	0 GiB	6.36 TiB	0	0 KBps	0 ms
NutanixManagementShare	3	On	Off	Off	Off	6.36 TiB	9.95 GiB	0 GiB	6.37 TiB	-	-	-

Summary > DS-2 [Update](#) [Delete](#)

Update Storage Container

Name: DS-2

Storage Pool: default-storage-pool-44140812390707

Max Capacity: 4.88 TiB

NFS Datastore

Mount on all ESXi hosts

Unmount on all ESXi hosts

Mount/Unmount on the following ESXi hosts

- 10.1.50.15 (node-2.punisher.local)
- 10.1.50.16 (node-3.punisher.local)
- 10.1.50.17 (node-4.punisher.local)
- 10.1.50.18 (node-5.punisher.local)
- 10.1.50.19 (node-6.punisher.local) *To be mounted*

[Advanced Settings](#) [Cancel](#) [Save](#)

Nutanix Lifecycle Manager



Do Not Use Upgrade Software, Only Use LCM

Settings

Upgrade Software

AOS · File Server · Hypervisor · Foundation

AOS Update is now managed by [Life Cycle Manager](#)

CURRENT VERSION

6.6.2.5

AVAILABLE COMPATIBLE VERSIONS ?

No available versions for upgrade.

UPLOAD UPGRADE SOFTWARE BINARY

You can [upload the AOS base software binary](#) instead of downloading from the Internet.

Enable Automatic Download

LCM

Best Practices | Inventory | Updates 2 | Direct Uploads | Settings

LCM now supports scheduled automatic updates for the NCC module. Enable auto inventory and auto update for NCC from the general settings menu.

General Prerequisites

- Nutanix recommends performing an inventory before applying any updates.
- For clusters connected to the Internet, ensure you have configured your firewall to allow software and firmware updates. See the Ports and Protocols Refer
- When a hypervisor version reaches end of maintenance, LCM no longer provides software or firmware update support for that hypervisor version. For type [End of Life Information announcements](#).



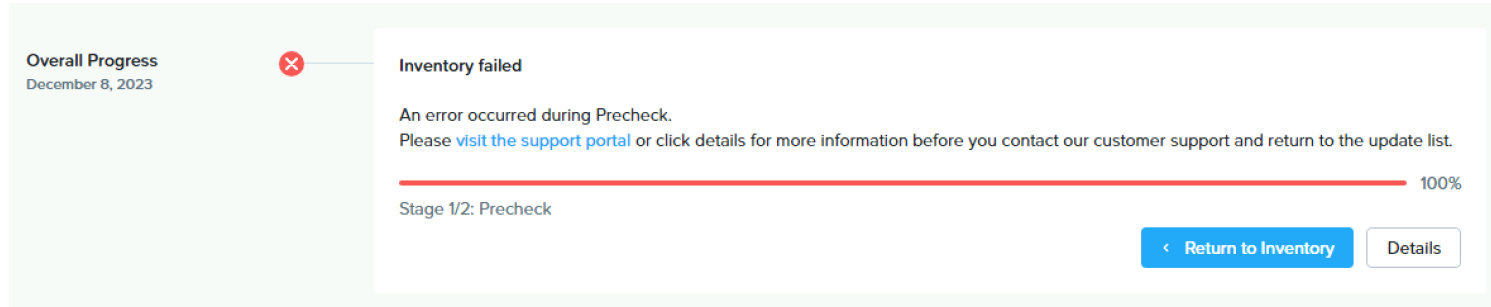
Perform initial inventory to update LCM

The screenshot shows the LCM portal interface for a cluster named 'NTX-6node-AF'. The 'LCM' dropdown menu is highlighted with a red box. The 'Inventory' tab is selected and also highlighted with a red box. A notification banner at the top states: 'A newer version 2.7 of the framework is available. Perform an inventory to automatically update the LCM framework before performing any updates.' Below this, a text block explains: 'The Inventory view shows the installed software and firmware versions, along with their last updated time.' A blue 'Perform Inventory' button is highlighted with a red box. Other buttons include 'Export' and 'View By'. The current version is shown as 'Version 2.5.0.4'.

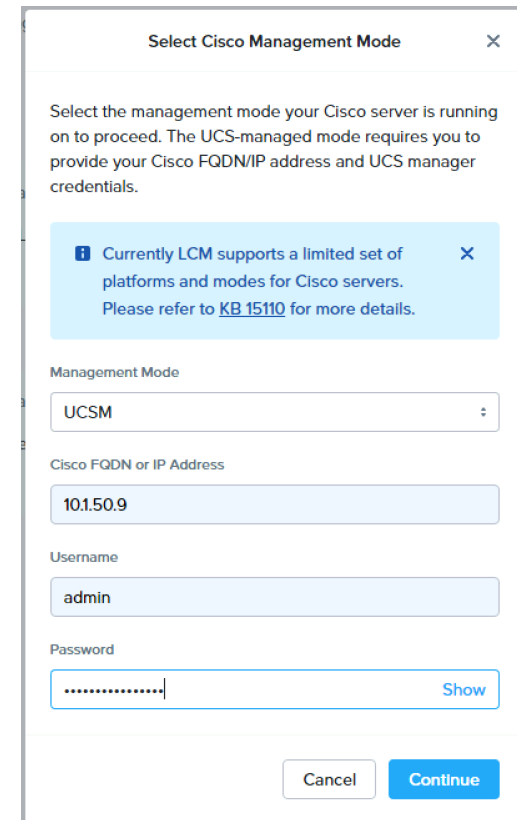
The screenshot shows the LCM portal interface during the inventory process. The 'Inventory' tab is selected. The current version is updated to 'Version 2.7'. The main content area displays a progress overview for 'Overall Progress' on December 8, 2023. The progress is broken down into stages: 'Stage 1/2: Precheck' (6:03:28 PM) and 'Stage 2/2: Inventory' (Queued). The 'Performing Inventory' task is shown with a 5% progress bar. The 'LCM Framework Check' sub-task is completed. The 'Running LCM precheck 'test_esxi_scratch_space'' sub-task is in progress. The 'Creating Inventory Task ...' sub-task is queued.

Perform second inventory after the upgrade

The initial inventory will fail because LCM had not been upgraded yet.



Return to inventory, then perform inventory a second time once LCM is upgraded to version 2.7+. You will be prompted for the Cisco Management Mode, and the IP address and credentials to log in to UCS Manager.



The screenshot shows a dialog box titled 'Select Cisco Management Mode'. It contains the following elements:

- A close button (X) in the top right corner.
- Instructional text: 'Select the management mode your Cisco server is running on to proceed. The UCS-managed mode requires you to provide your Cisco FQDN/IP address and UCS manager credentials.'
- An information box (blue background) with a close button (X): 'Currently LCM supports a limited set of platforms and modes for Cisco servers. Please refer to KB 15110 for more details.'
- A 'Management Mode' dropdown menu with 'UCSM' selected.
- A 'Cisco FQDN or IP Address' text input field containing '10.150.9'.
- A 'Username' text input field containing 'admin'.
- A 'Password' text input field with a 'Show' button to the right.
- 'Cancel' and 'Continue' buttons at the bottom right.

Inventory Progress

The screenshot displays the Cisco LCM (Lifecycle Manager) interface for a cluster named 'NTX-6node-AF'. The 'Inventory' section is active, showing the progress of the inventory task. The overall progress is 89% for the 'Performing Inventory' stage, which is 'Stage 2/2: Version Refresh Task'. Below this, a list of tasks is shown, including 'LCM Framework Check', 'Download', 'Inventory Task', and 'Version Refresh Task'. The 'Inventory Task' is currently in progress, while the others are completed.

Task Name	Status	Progress
Overall Progress	In Progress	89%
Performing Inventory	In Progress	89%
Stage 1/2: Precheck	Completed	6:07:30 PM – 6:09:02 PM
Stage 2/2: Inventory	In Progress	6:09:11 PM
LCM Framework Check	Completed	
Download	Completed	
Inventory Task	In Progress	
Version Refresh Task	Completed	
Version Refresh Task	In Progress	



Available Updates

The screenshot shows the Nutanix LCM interface with the 'Updates' dropdown menu open, highlighting 9 software updates and 5 firmware updates. The main content area displays a table of software updates.

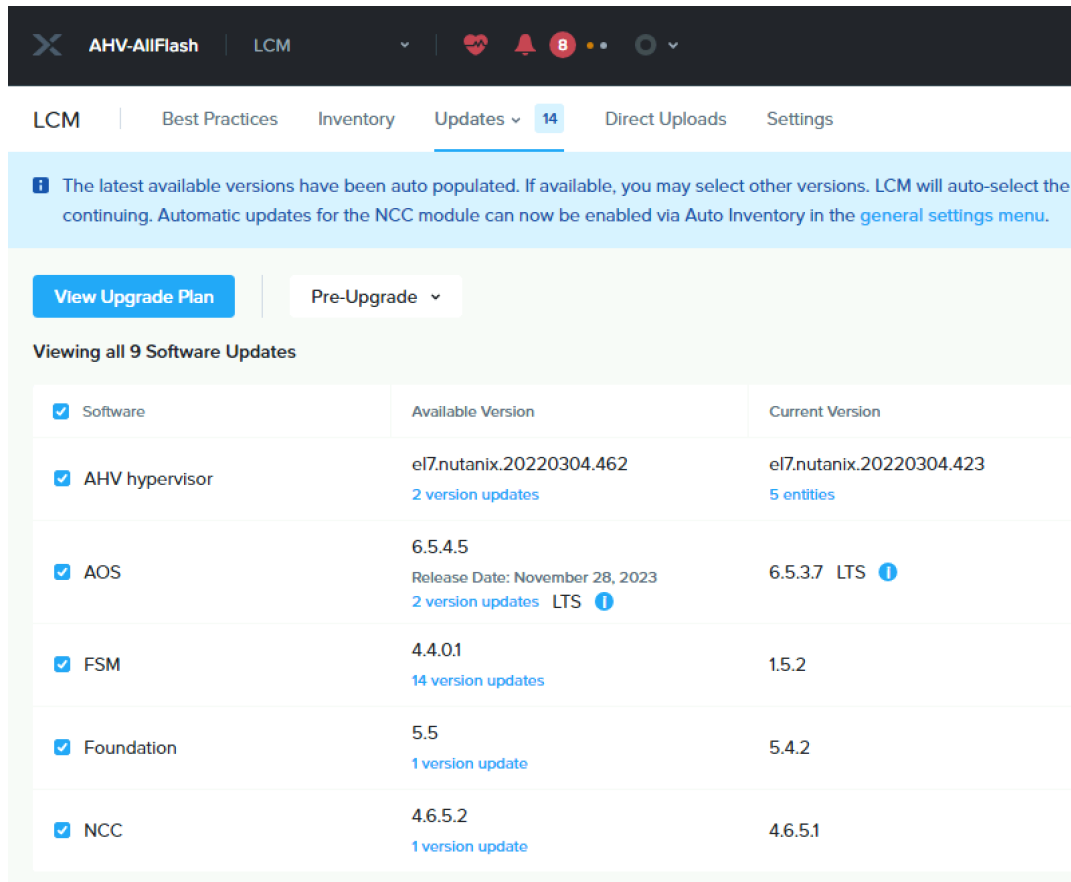
<input type="checkbox"/> Software	Available Version	Current Version
<input type="checkbox"/> AHV hypervisor	el7.nutanix.20220304.462 2 version updates	el7.nutanix.20220304.423 5 entities
<input type="checkbox"/> AOS	6.5.4.5 Release Date: November 28, 2023 2 version updates LTS ⓘ	6.5.3.7 LTS ⓘ
<input type="checkbox"/> FSM	4.4.0.1 14 version updates	1.5.2
<input type="checkbox"/> Foundation	5.5 1 version update	5.4.2
<input type="checkbox"/> NCC	4.6.5.2 1 version update	4.6.5.1

The screenshot shows the Nutanix LCM interface with the 'Updates' dropdown menu open, highlighting 9 software updates and 5 firmware updates. The main content area displays a list of firmware updates for various hosts.

<input type="checkbox"/> Host	<input type="checkbox"/> All UCS Server Firmware
<input type="checkbox"/> node-1	<input type="checkbox"/> UCS Server Firmware Update To: 4.2(3h)C
<input type="checkbox"/> node-2	<input type="checkbox"/> UCS Server Firmware Update To: 4.2(3h)C
<input type="checkbox"/> node-3	<input type="checkbox"/> UCS Server Firmware Update To: 4.2(3h)C
<input type="checkbox"/> node-4	<input type="checkbox"/> UCS Server Firmware Update To: 4.2(3h)C
<input type="checkbox"/> node-5	<input type="checkbox"/> UCS Server Firmware Update To: 4.2(3h)C

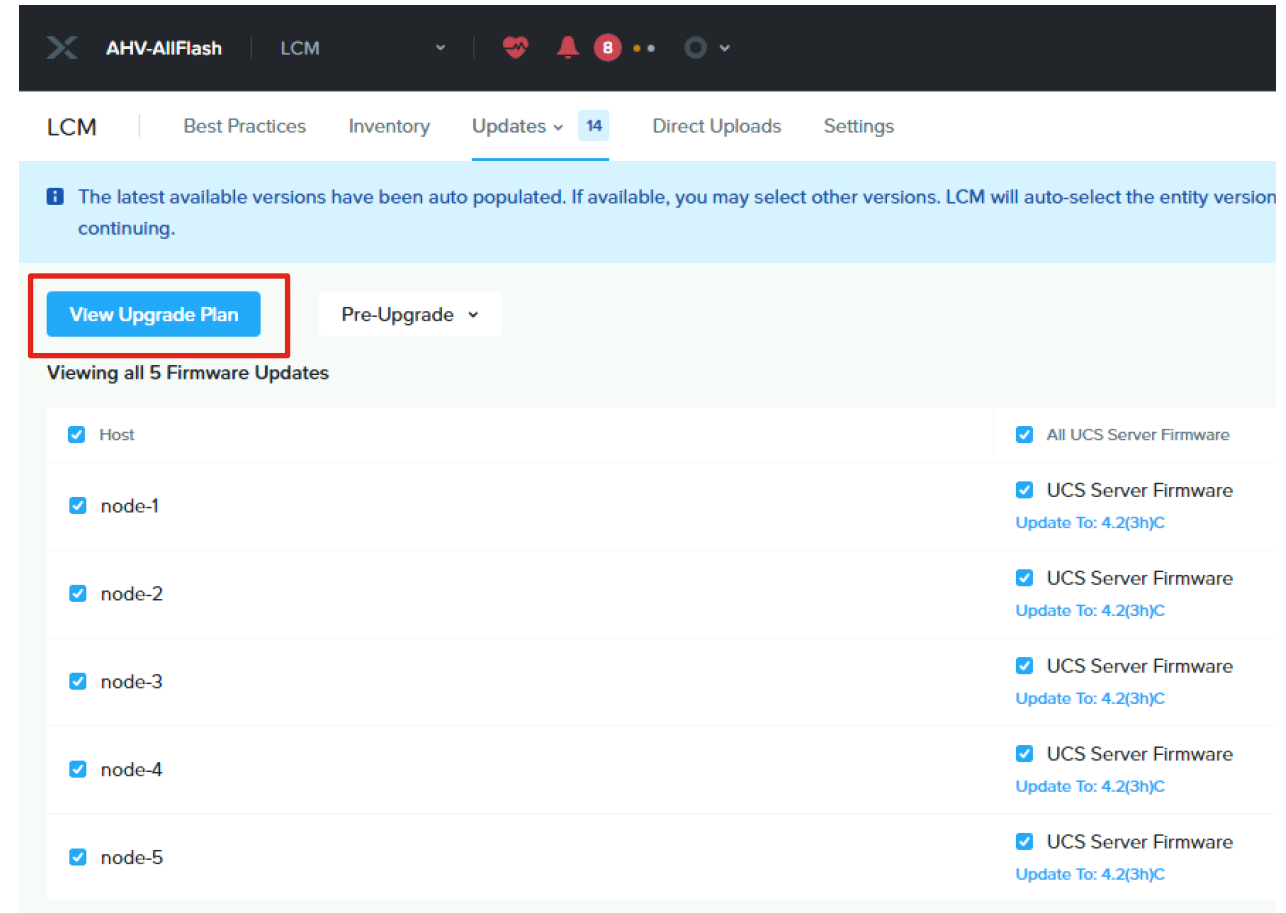
Nutanix generally recommends doing all software updates and firmware updates at once and letting LCM handle the proper order and dependencies. For manual upgrade order, refer to this page: https://portal.nutanix.com/page/documents/details?targetId=Acropolis-Upgrade-Guide-v6_7:upg-upgrade-recommended-order-t.html

Select All Available Updates



The screenshot shows the LCM Updates page with a navigation bar at the top containing 'AHV-AllFlash', 'LCM', and a notification bell with '8' alerts. The main navigation includes 'LCM', 'Best Practices', 'Inventory', 'Updates' (with a '14' badge), 'Direct Uploads', and 'Settings'. A blue information banner states: 'The latest available versions have been auto populated. If available, you may select other versions. LCM will auto-select the continuing. Automatic updates for the NCC module can now be enabled via Auto Inventory in the general settings menu.' Below this is a 'View Upgrade Plan' button and a 'Pre-Upgrade' dropdown. The main content area is titled 'Viewing all 9 Software Updates' and contains a table with the following data:

<input checked="" type="checkbox"/> Software	Available Version	Current Version
<input checked="" type="checkbox"/> AHV hypervisor	el7.nutanix.20220304.462 2 version updates	el7.nutanix.20220304.423 5 entities
<input checked="" type="checkbox"/> AOS	6.5.4.5 Release Date: November 28, 2023 2 version updates LTS ⓘ	6.5.3.7 LTS ⓘ
<input checked="" type="checkbox"/> FSM	4.4.0.1 14 version updates	1.5.2
<input checked="" type="checkbox"/> Foundation	5.5 1 version update	5.4.2
<input checked="" type="checkbox"/> NCC	4.6.5.2 1 version update	4.6.5.1



The screenshot shows the LCM Updates page with the same navigation bar as the first image. The main navigation includes 'LCM', 'Best Practices', 'Inventory', 'Updates' (with a '14' badge), 'Direct Uploads', and 'Settings'. A blue information banner states: 'The latest available versions have been auto populated. If available, you may select other versions. LCM will auto-select the entity version continuing.' Below this is a 'View Upgrade Plan' button (highlighted with a red box) and a 'Pre-Upgrade' dropdown. The main content area is titled 'Viewing all 5 Firmware Updates' and contains a table with the following data:

<input checked="" type="checkbox"/> Host	<input checked="" type="checkbox"/> All UCS Server Firmware
<input checked="" type="checkbox"/> node-1	<input checked="" type="checkbox"/> UCS Server Firmware Update To: 4.2(3h)C
<input checked="" type="checkbox"/> node-2	<input checked="" type="checkbox"/> UCS Server Firmware Update To: 4.2(3h)C
<input checked="" type="checkbox"/> node-3	<input checked="" type="checkbox"/> UCS Server Firmware Update To: 4.2(3h)C
<input checked="" type="checkbox"/> node-4	<input checked="" type="checkbox"/> UCS Server Firmware Update To: 4.2(3h)C
<input checked="" type="checkbox"/> node-5	<input checked="" type="checkbox"/> UCS Server Firmware Update To: 4.2(3h)C

Select all the available updates from the two pages then click View Upgrade Plan.

Note: Performing all available updates at once assumes your cluster is configured with DRS in fully automated mode for ESXi, or the VM High Availability Reservation is enabled for AHV. This allows for the VMs to automatically migrate, and the nodes to automatically reboot without service interruptions.

Review Upgrade Plan

Review Upgrade Plan

- 1 Review Selected Updates
- 2 Information and Messages
- 3 Select Cisco Management Mode

i Each node will be rebooted, one node at a time. Except one node cluster, user workloads will not be affected as automatic migration of workloads to other nodes will be handled by the update process. On one node clusters, user workloads will be disrupted. Refer to [KB 6945](#) for more details.
Each CVM/PCVM for AOS/PC upgrade will be rebooted, one CVM/PCVM at a time. User workloads will not be affected. Refer to [KB 6945](#) for more details.

Stopping the update is possible at any point via the "Stop Update" button. Please note that depending on the current state of the process, LCM will automatically choose the safest time to stop. Pausing the update is currently not supported.

Do you want to apply the selected updates?

Software Updates

Cluster	AHV hypervisor	AOS	FSM	Foundation	NCC
AHV-AllFlash	e17.nutanix.20220304.462 Installed e17.nutanix.20220304.42 3 on 5 entities	6.5.4.5 Installed: 6.5.3.7	4.4.0.1 Installed: 1.5.2	5.5 Installed: 5.4.2	4.6.5.2 Installed: 4.6.5.1

Firmware Updates

Host	UCS Server Firmware
node-1 Details v	4.2(3h)C Installed: 4.2(3g)C
node-2 Details v	4.2(3h)C Installed: 4.2(3g)C
node-3 Details v	4.2(3h)C Installed: 4.2(3g)C
node-4 Details v	4.2(3h)C Installed: 4.2(3g)C
node-5 Details v	4.2(3h)C Installed: 4.2(3g)C



Review Upgrade Plan continued

Review Upgrade Plan



- 1 Review Selected Updates
- 2 Information and Messages
- 3 Select Cisco Management Mode

Update AOS from 6.5.3.7 to 6.5.4.5

! Before upgrading: If this cluster is registered with Prism Central, ensure that Prism Central has been upgraded first to a compatible version. Refer to the Software Product Interoperability page on the Nutanix portal.

< Back

Cancel

Next >



Review Upgrade Plan continued

Review Upgrade Plan



- ✓ Review Selected Updates
- ✓ Information and Messages
- 3 Select Cisco Management Mode

Select the management mode your Cisco server is running on to proceed. The UCS-managed mode requires you to provide your Cisco FQDN/IP address and UCS manager credentials.

i Currently LCM supports a limited set of platforms and modes for Cisco servers. Please refer to [KB 15110](#) for more details. **X**

Management Mode

UCSM

Cisco FQDN or IP Address

101.50.9

Username

admin

Password

..... Show

< Back

Cancel

Apply 14 Updates



Monitor LCM Upgrade Progress

Overall Progress
December 12, 2023

Applying Updates

Life Cycle Manager is currently applying updates. Check back when the update process is completed. You can stop most updates with the 'Stop Update' button. LCM will automatically choose the safest time to stop, depending on the current status of your update.

0%

Stage 1/2: Module Check

Stop Update

Stage 1/2: Precheck
2:14:41 PM

LCM Framework Check

Module Check

AOS

- Starting download of AOS image on cluster to run pre-upgrade checks

Stage 2/2: Install Update
Queued

Creating Update Task ...

Overall Progress
December 12, 2023

Applying Updates

Life Cycle Manager is currently applying updates. Check back when the update process is completed. You can stop most updates with the 'Stop Update' button. LCM will automatically choose the safest time to stop, depending on the current status of your update.

57%

Stage 2/2: Update AHV hypervisor

Stop Update

Update AOS

Update Foundation

Update FSM

Update NCC

Update AHV hypervisor

- Executing post-actions: waiting for all services to startup on CVM on CVM [101.51.25] Hypervisor [101.51.18]

Overall Progress
December 12, 2023

Applying Updates

Life Cycle Manager is currently applying updates. Check back when the update process is completed. You can stop most updates with the 'Stop Update' button. LCM will automatically choose the safest time to stop, depending on the current status of your update.

31%

Stage 2/2: Update AOS

Stop Update

Stage 2/2: Install Update
2:23:04 PM

Download

Update AOS

- Monitoring upgrade status on CVM 101.51.23: Running AOS upgrade. for Core Cluster (AOS) update

Update Foundation

Update FSM



The bridge to possible