

## **Managing Blueprints**

The following topics tell you how to manage Cisco NFVI Blueprints.

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- Creating a Blueprint for B-Series Server Platform, page 2
- Creating a Blueprint for C-Series Server Platform, page 19
- Creating a Blueprint using Upload Functionality, page 39
- Managing Post Install Features, page 42

## **Blueprints**

Blueprints contain the configuration metadata required to deploy an OpenStack system through a Cisco VIM pod in Cisco VIM Insight. You can create a blueprint in Cisco Insight or you can upload a yaml file that contains the metadata for a blueprint. You can also create a blueprint from an existing OpenStack system that you are configuring as a Cisco VIM pod.

The configuration in the blueprint is specific to the type of Cisco UCS server that is in the OpenStack system. A blueprint for a C-Series server-based OpenStack system cannot be used to configure a B-Series server-based OpenStack system. Cisco Insight will display an error if the blueprint does not match the configuration of the OpenStack system.

The blueprint enables you to quickly change the configuration of an OpenStack system. While only one blueprint can be active, you can create or upload multiple blueprints for a Cisco VIM pod. If you change the active blueprint for a pod, you update the configuration of the OpenStack system to match the new blueprint.

You can modify and validate an existing blueprint, or delete a blueprint. However, you cannot modify any of the configuration metadata in the active blueprint for a Cisco VIM pod.

### **Blueprint Activation**

A blueprint becomes active when you use it in a successful installation for a Cisco VIM pod. Any other blueprints that you created or uploaded to that pod are in non-active state.

Uploading or creating a blueprint does not activate that blueprint for the pod. You need to install a blueprint through the **Cisco VIM Suite** wizard. If the installation is successful, the selected blueprint becomes active.

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If you want to activate a new blueprint in an existing pod, you need to delete certain accounts and the credential policies for that pod before you activate the blueprint. See Activating a Blueprint in an Existing Pod with OpenStack Installed, on page 40.

### **Viewing Blueprint Details**

You can view the details of an OpenStack installation blueprint. To view blueprint details:

- **Step 1** Log in to Cisco VIM Insight as pod User.
- **Step 2** In the Dashboard's Switch between Management Nodes, select the Cisco VIM pod with the blueprint that you want to view.
- **Step 3** Click **Menu** button at the top left corner to expand the navigation pane.
- **Step 4** Choose **Pre-Install** > **Blueprint Management.**
- **Step 5** Choose a blueprint from the list.
- Step 6 Click Preview & Download YAML.

## **Creating a Blueprint for B-Series Server Platform**

Typically, you create the blueprint when you create the Cisco VIM pod. Follow the instructions below to create an additional blueprint for a pod that uses B-Series servers.

### **Before You Begin**

Create a Cisco VIM Insight User Account and Register the respective Pod.

- **Step 1** Log-in to Cisco VIM Insight.
- **Step 2** In the Navigation pane, expand the Pre-Install Section.
- Step 3 Click Blueprint Setup.
- Step 4
  - 4 On the **Blueprint Initial Setup** page of the Cisco VIM Insight, complete the following fields:

Name	Description	
Blueprint Name field	Enter the name for the blueprint configuration.	
Platform Type drop-down list	Choose one of the following platform types:	
	• B-Series (By Default)	
	• C-Series	

Name	Description	
Tenant Network drop-down list	Choose one of the following tenant network types:	
	• Linux Bridge/VXLAN	
	• OVS/VLAN	
Ceph Mode drop-down list	Choose one of the following Ceph types:	
	• Dedicated	
	• Central (By Default) (not supported in production)	
Pod Type drop-down list	Fullon (By default).	
<b>Optional Features and Services</b> checkbox	Syslog Export Settings, Swiftstack, Nfvbench, VMTP, LDAP, Pod Name, TOR Switch Information, TLS, Heat, Vim Admins, Auto Backup, NFVI Monitoring, Install Mode, Keystone v3, Enable Esc Priv.	
	If any one is selected, the corresponding section is visible in various Blueprint sections.	
	By default all options are disabled.	
Import Existing YAML file field	If you have an existing B Series YAML file you can use this feature to upload the file.	
	Insight will automatically fill in the fields and if any mandatory fields are missed then the respective section will be highlighted.	

**Step 5** Click **Physical Setup** to advance to the **Registry Setup** configuration page. Fill in the following details for Registry Setup:

Name	Description
Registry User Name text field	User-Name for Registry (Mandatory).
Registry Password text field	Password for Registry (Mandatory).
Registry Email text field	Email ID for Registry (Mandatory).

Once all mandatory fields are filled the Validation Check Registry page will be changed to a Green Tick.

Step 6

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### Click UCSM Common tab and fill the following fields:

Name	Description
User name disabled field	By default value is admin.

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Name	Description	
Password text field	Enter Password for UCSM Common (Mandatory).	
UCSM IP text field	Enter IP Address for UCSM Common (Mandatory).	
Resource Prefix text field	Enter the resource prefix (Mandatory)	
QOS Policy Type drop-down list	Choose one of the following types: • NFVI (Default) • Media	
Enable Prov FI PIN optional checkbox	Default is false.	
MRAID-CARD optional checkbox	Enables JBOD mode to be set on disks. Applicable only if you have RAID controller configured on Storage C240 Rack servers.	
Enable UCSM Plugin optional checkbox	Visible when Tenant Network type is OVS/VLA.	
Enable QoS Policy optional checkbox	Visible only when UCSM Plugin is enabled. If UCSM Plugin is disabled then this option will be set to False.	
SRIOV Multi VLAN Trunk optional grid	Visible when UCSM Plugin is enabled. Enter the values for network and vlans ranges. Grid can handle all CRUD operations like Add, Delete, Edit and Multiple Delete.	

**Step 7** Click Networking to advance to the networking section of the Blueprint.

Name	Description
Domain Name field	Enter the domain name (Mandatory).
HTTP Proxy Server field	If your configuration uses an HTTP proxy server, enter the IP address of the server.
HTTPS Proxy Server field	If your configuration uses an HTTPS proxy server, enter the IP address of the server.
IP Tables on Management Pods	
NTP Servers field	Enter a maximum of four and minimum of one IPv4 and/or IPv6 addresses in the table.
Domain Name Servers field	Enter a maximum of three and minimum of one IPv4 and/or IPv6 addresses.

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Name	Description
Network table	

Description	Description	
	ated with segments. To add ear all the table using <b>Delete all</b> segment and fill in the details.	
You can add, edit, or delete table.	<ul><li>You can add, edit, or delete network information in the table.</li><li>Click Add to enter new entries (networks) to the table.</li></ul>	
• Specify the following Networks dialog:	fields in the Edit Entry to	
VALN field	Enter the VLAN ID. For Segment - Provider, the VLAN ID value is always <b>none</b> .	
Segment drop-down list	You can select any of one segment from dropdown list	
	• API	
	Management     Provision	
	• Tenant	
	• CIMC	
	• Storage	
	• External	
	• Provider (optional)	
	<b>Note</b> Depending upon the segment not all entries listed below are needed	
Subnet field	Enter the IPv4 address for the subnet.	
IPv6 Subnet field	Enter IPv6 Subnet Address. This field will be available only for Management Provision and API .	
Gateway field	Enter the IPv4 address for the Gateway.	

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Name	Description	Description	
	IPv6 Gateway field	Enter IPv6 gateway. This field is only available for the Management Provision and API.	
	Pool field	Pool can be defined with single IP, range of IP or discontinuous pool. Enter the pool information in the required format:	
		Single IP: Example: 10.30.118.101	
		Range of IP: Example: 10.30.118.98 to 10.30.118.105	
		Discontinuous IP: Example: 10.30.118.101, 10.30.118.98 to 10.30.118.105	
	IPv6 Pool field	Enter the pool information in the required format. For Example: 10.1.1.5-10.1.1.10,102.1.5-102.1.10	
		This field is available only for Management Provision.	
Click Save.			

# **Step 8** On the Servers and Roles page of the Cisco VIM Suite wizard, click Add (+) to add a new entry in the table, and complete the following fields:

Name	Description	
Server User Name	Enter the username of the Server.	
Disable Hyperthreading	Default value is false. You can set it as true or false.	

Name	ne Description		
Cobbler	Enter the Cobbler details in	Enter the Cobbler details in the following fields:	
	Name	Description	
	Cobbler Timeout field	The default value is 45 min.	
		This is an optional parameter. Timeout is displayed in minutes, and its value ranges from 30 to 120.	
	Block Storage Kickstart field	Kickstart file for Storage Node.	
	Admin Password Hash field	Enter the Admin Password. Password should be Alphanumeric. Password should contain minimum 8 characters and maximum of 32 characters.	
	Cobbler Username field	Enter the cobbler username to access the cobbler server.	
	Control Kickstart field	Kickstart file for Control Node.	
	Compute Kickstart field	Kickstart file for Compute Node.	
	<b>Cobbler Admin Username</b> field	Enter the admin username of the Cobbler.	

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Name	Description		
Add Entry to Servers and Roles.	Click <b>Edit</b> or + to add a new	Click <b>Edit</b> or + to add a new server and role to the table.	
	Server Name	Enter a server name.	
	Server Type drop-down list.	Choose Blade or Rack from the drop-down list.	
	Rack ID field.	The Rack ID for the server.	
	Chassis ID field	Enter a Chassis ID.	
	If Rack is chosen, the <b>Rack</b> <b>Unit ID</b> field is displayed.	Enter a Rack Unit ID.	
	If Blade is chosen, the <b>Blade ID</b> field is displayed.	Enter a Blade ID.	
	Select the <b>Role</b> from the drop down list.	If Server type is Blade then Control and Compute. If Rack is selected then Block Storage.	
	Management IP field.	It is an optional field but if provided for one server then it is mandatory to provide it for other Servers as well.	
	Management IPv6 field.	Enter Management Ipv6 address.	
Click Save or Add.	Clicking <b>Save or Add</b> , adds and Roles.	all information for Servers	

# **Step 9** Click **ToR Switch** checkbox in Blueprint Initial Setup to enable the **TOR SWITCH** configuration page. It is an **Optional** section in Blueprint Setup, but once all the fields are filled in then it will become a part of the Blueprint.

Name	Description
Configure ToR optional checkbox .	If you enable this checkbox, the Configure ToR section will change from false to true.

Name	Description	
ToR Switch Information mandatory table if you want to	Click + to add information for ToR Switch.	
enter ToR information.	Name	Description
	Name	ToR switch name.
	Username	ToR switch username.
	Password	ToR switch Password.
	SSH IP	ToR switch SSH IP Address.
	SSN Num	ToR switch ssn num. output of show license host-id.
	VPC Peer Keepalive	Peer Management IP. You need not define if there is no peer as it is optional but it will become mandatory when the ToR is in VPC.
	VPC Domain	Need not define if there is no peer.
	VPC Peer port	Interface for vpc peer ports.
	VPC Peer VLAN Info	vlan ids for vpc peer ports (optional).
	BR Management Port Info	Management interface of build node.
	BR Management PO Info	Port channel number for management interface of build node.
On clicking <b>Save</b> , Add ToR Info connected to Fabric field will be visible.	Port Channel field.	Enter the port channel input.
	Switch Name field.	Enter the switch name.

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Step 10	Click OpenStack Setup tab to advand	ce to the <b>OpenStack Setup</b> Configuration page.
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### **Step 11** On the **OpenStack Setup** page of the Cisco VIM Insight wizard, complete the following fields:

Name	Description	
HA Proxy	Fill in the mandatory fields:	
	External VIP Address	Enter IP address of External VIP.
	External VIP Address IPv6	Enter IPv6 address of External VIP.
	Virtual Router ID	Enter the Router ID for HA.
	Internal VIP Address IPv6	Enter IPv6 address.
	Internal VIP Address	Enter IP address of Internal VIP.
Keystone	Mandatory fields are pre-popul	ated. This option is always true.
	Admin Username	admin.
	Admin Tenant Name	admin.
		1]

Name	Description		
<b>LDAP on Keystone</b> . Note: this option is only available with Keystone v3	This is available only when Keystone v3 and LDAP both are enabled under Optional Features and Services in Blueprint Initial Setup.		
	Domain Name field	Enter name for Domain name	
	Object Class for Users field	Enter a string as input.	
	Object Class for Groups	Enter a string.	
	Domain Name Tree for Users	Enter a string.	
	<b>Domain Name Tree for</b> <b>Groups</b> field	Enter a string.	
	<b>Suffix for Domain Name</b> field	Enter a string.	
	URL field	Enter a URL with ending por number.	
	<b>Domain Name for Bind User</b> field	Enter a string.	
	Password field	Enter Password as string format.	
	User Filter field	Enter filter name as string.	
	User ID Attribute field	Enter a string.	
	User Name Attribute field	Enter a string.	
	User Mail Attributefield	Enter a string.	
	Group Name Attribute field	Enter a string.	

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Name	Description	
Neutron	Neutron fields change on the Selection from <b>Blueprint Ini</b>	basis of <b>Tenant Network Type</b> tial Setup page.
	Following are the options ava OVS/VLAN:	ilable for Neutron for
	Tenant Network Type	Auto Filled based on the Tenant Network Type selected in the Blueprint Initial Setup page.
	Mechanism Drivers	Auto Filled based on the Tenant Network Type selected in Blueprint Initial Setup page.
	NFV Hosts	Auto filled with the Compute you added in Server and Roles.
		If you select All in this section NFV_HOSTS: <b>ALL</b> will be added to the Blueprint or you can select one particular compute. For Eg:
		NFV_HOSTS: compute-server-1, compute-server-2.
	Tenant VLAN Ranges	List of ranges separated by comma of form start:end.
	Provider VLAN Ranges	List of ranges separated by comma of form start:end.
	VM Hugh Page Size (available for NFV_HOSTS option)	2M or 1G
	Enable Jumbo Frames	Check Box

Name	Description
СЕРН	Ceph has two pre-populated fields
	• CEPH Mode: By default Dedicated.
	• NOVA Boot from: From the drop-down, choose Ceph or local.
GLANCE	By default Populated for <b>CEPH Dedicated</b> with <b>Store Backend</b> value as <b>CEPH</b> .
CINDER	By default Populated for <b>CEPH Dedicated</b> with <b>Volume Driver</b> value as <b>CEPH</b> .

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Name	Description
<b>VMTP</b> optional section will only be visible once VMTP is selected from Blueprint Initial Setup.	

Description	
Check one of the check box	es to specify a VMTP network:
Provider Network	
• External Network	
For the Provider Network co	omplete the following:
Network Name field.	Enter the name for the external network.
IP Start field.	Enter the starting floating IPv4 address.
IP End field.	Enter the ending floating IPv4 address.
Gateway field	Enter the IPv4 address for the Gateway.
DNS Server field.	Enter the DNS server IPv4 address.
Segmentation ID field.	Enter the segmentation ID.
Subnet	Enter the Subnet for Provider Network.
For <b>External Network</b> fill in <b>Network Name</b> field.	Enter the name for the
	external network.
Network IP Start field.	Enter the starting floating IPv4 address.
Network IP Start field. Network IP End field.	Enter the starting floating
	Enter the starting floating IPv4 address. Enter the ending floating IPv4
Network IP End field.	Enter the starting floating IPv4 address. Enter the ending floating IPv4 address. Enter the IPv4 address for the

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Name	Description	
		Network.
<b>TLS</b> section will be visible if TLS is selected from Blueprint Initial Setup Page.	<ul> <li>TLS has two options:</li> <li>External LB VIP I</li> <li>External LB VIP 7 option is false.</li> </ul>	F <b>QDN -</b> Text Field. F <b>LS - True/False</b> . By default this
SwiftStack optional section will be visible if	Following are the options	that needs to be filled for SwiftStack:
SwiftStack is selected from <b>Blueprint Initial Setup</b> Page. SwiftStack is only supported with KeyStonev2 . If you select <b>Keystonev3</b> , swiftstack cannot be configured.	Cluster End Point	IP address of PAC (proxy-account-container) endpoint.
	Admin User	Admin user for swift to authenticate in keystone.
	Admin Tenant	The service tenant corresponding to the Account-Container used by Swiftstack.
	Reseller Prefix	Reseller_prefix as configured for Keysone Auth,AuthToken support in Swiftstack E.g KEY_
	Admin Password	swiftstack_admin_password
	Protocol	http or https
Under the <b>openstack setup</b> tab, the <b>Vim_admins</b> tab will only be visible once Vim_admins is selected from the <b>Optional Features &amp; Services</b> under the <b>Blueprint</b> <b>InitialSetup</b> tab.	Admins: • Username - Text Fi	rd field. Admin hash password should

**Step 12** If **Syslog Export** or **NFVBENCH** is selected in **Blueprint Initial Setup** Page, then **Services Setup** page would be **enabled** for user to view. Following are the options under **Services Setup Tab**:

Name	Description	
Syslog Export.	Following are the options for Syslog Settings:	
	Remote Host	Enter Syslog IP Address
	Facility	Defaults to local5
	Severity	Defaults to debug
	Clients	Defaults to ELK
	Port	Defaults to 514 but can be modified by the User.
NFVBENCH	Enable checkbox whic	b by default is <b>False</b>
	Add Tor information c	5
	• Select a <b>TOR</b> Sv	vitch and Enter the Switch name.
	VLANS (mandat	mber. For example: eth1/5. VTEP ory and needed only for VXLAN): Enter Ns for VLAN1 and VLAN2.
	port numbers of	and INT2 optional input. Enter the 2 the 4-port 10G Intel NIC at the le used for NFVBench.
ENABLE_ESC_PRIV	Enable the checkbox to	o set it as <b>True</b> . By default it is <b>False</b> .

- **Step 13** Click **Offline validation** to initiate an offline Blueprint validation.
- **Step 14** Once the **Offline validation** is successful, **Save** option will be enabled which will redirect you to the **Blueprint Management** page.

## **Creating a Blueprint for C-Series Server Platform**

Create a Cisco VIM Insight User Account and register the respective Pod.

- Step 1 Log-in to CISCO VIM Insight.
- **Step 2** In the Navigation pane, expand the Pre-Install Section.
- Step 3 Click Blueprint Setup.

Step 4 On the Blueprint Initial Setup page of the Cisco VIM Insight, complete the following fields:

Name	Description
Blueprint Name field	Enter the name for the blueprint configuration.
Platform Type drop-down list	• B-Series (By Default)
	• C-Series (Select C Series)
Tenant Network drop-down list	Choose one of the following tenant network types:
	• Linux Bridge/VXLAN
	• OVS/VLAN
	• VTS/VLAN
	• VPP/VLAN
	• ACI/VLAN
	<b>Note</b> when VTS/VLAN or ACI/VLAN is selected then respective tabs are available on Blueprint setup
Pod Type drop-down list	Choose one of the following pod type :
	• Fullon(By Default)
	• Micro
	• UMHC
	NoteUMHC pod type is only supported for OVS/VLAN tenant type. Pod type micro is supported for OVS/VLAN, ACI/VLAN,VPP/VLAN.
Ceph Mode drop-down list	Choose one of the following Ceph types:
	• Dedicated (By Default)
	• Central (Is not supported in production)

Name	Description
<b>Optional Features and Services</b> checkbox.	Swiftstack, LDAP, Syslog Export Settings, Install Mode, TorSwitch Information, TLS, Nfvmon, Pod Name, VMTP, Nfvbench, Auto Backup, Heat, Keystone v3, Enable Esc Priv.
	If any one is selected, the corresponding section is visible in various Blueprint sections. By default all options are disabled.
Import Existing YAML file	If you have an existing C Series YAML file you can use this feature to upload the file. Insight will automatically fill in the fields and if any mandatory field is missed then would highlight it in the respective section.

# **Step 5** Click **Physical Setup** to advance to the **Registry Setup** configuration page. Fill in the following details for Registry Setup.

Name	Description
Registry User Name text field	User-Name for Registry (Mandatory).
Registry Password text field	Password for Registry (Mandatory).
Registry Email text field	Email ID for Registry (Mandatory).

Once all Mandatory fields are filled, the Validation Check Registry page will indicate a green tick.

**Step 6** Click **CIMC Common** tab and complete the following fields:

Name	Description	
User Name disabled field	By default value is Admin.	
Password text field	Enter Password for UCSM Common (Mandatory).	

### **Step 7** Click Networking to advance to the networking section of the Blueprint.

Name	Description	
Domain Name field.	Enter the domain name (Mandatory).	
NTP Servers field.	Enter a maximum of four and minimum of one IPv4 and/or IPv6 addresses in the table.	

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Name	Description
Domain Name Servers field	Enter a maximum of three and minimum of one IPv4 and/or IPv6 addresses
HTTP Proxy Server field	If your configuration uses an HTTP proxy server, enter the IP address of the server.
HTTPS Proxy Server field.	If your configuration uses an HTTPS proxy server, enter the IP address of the server.

Name	Description
Networks table	

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	Description	
	Network table is pre-populated with segments. To add Networks you can either clear all the table using <b>Delete</b> or click <b>Edit</b> icon for each segment and fill in the deta You can add, edit, or delete network information in the table.	
	Name	Description
	VLAN field	Enter the VLAN ID.
		For Segment - Provider, the VLAN ID value is always "none".
	Segment drop-down list	You can select any one segment from the dropdown list.
		• API
		Management/Provision
		• Tenant
		• CIMC
		• Storage
		• External
		• Provider (optional)
		<b>Note</b> Some segments do not need some of the values listed in the preceding points.
	Subnet field	Enter the IPv4 address for the subnet.
	IPv6 Subnet field	Enter IPv6 address. This field will be available only for Management provision and API.
	Gateway field	Enter the IPv4 address for the Gateway.
	IPv6 Gateway field	Enter IPv6 gateway. This field will only available only for Management

Name	Description	
	Name	Description
		provision and API network.
	Pool field	Enter the pool information in the required format, for example: 10.30.1.1 or 10.30.1.1 to 10.30.1.12
	IPv6 Pool field	Enter the pool information in the required format, for example: 10.1.1.5-10.1.1.10,102.1.5-102.1.10
		This field is only available for the Mgmt/Provision.

**Step 8** On the Servers and Roles page of the Cisco VIM Suite wizard, click Add (+) to add a new entry in the table, and complete the following fields:

You can edit or delete existing entries in the Server and Roles table.

Name	Description	
Server User Name	Enter the username of the Server.	
Disable Hyperthreading	Default value is false. You can set it as true or false.	

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Name	Description	
Cobbler	Enter the Cobbler details in the following fields:	
	Name	Description
	Cobbler Timeout field	The default value is 45 min.
		This is an optional parameter. Timeout is displayed in minutes, and its value ranges from 30 to 120.
	Block Storage Kickstart field	Kickstart file for Storage Node.
	Admin Password Hash field	Enter the Admin Password. Password should be Alphanumeric. Password should contain minimum 8 characters and maximum of 32 characters.
	Cobbler Username field	Enter the cobbler username to access the cobbler server.
	Control Kickstart field	Kickstart file for Control Node.
	Compute Kickstart field	Kickstart file for Compute Node.
	<b>Cobbler Admin Username</b> field	Enter the admin username of the Cobbler.

Name		Description	
Add E	ntry to Servers and Roles .	Click <b>Edit</b> or + to add a new server and role to the table.	
Note	when Pod type micro is selected then all the three servers will be associated with	Server Name	Entry the server name .
For Ex	control, compute and block storage role. ample:	Rack ID field	The rack ID for the server.
Roles		VIC Slot field	Enter a VIC Slot.
• B	Block Storage	Management IPv6field	This is optional field. Enter Ipv6
	•-Server 1		format address
	°-Server 2	CIMC IP field	Enter a IP address.
	•-Server 3	CIMC Username field	Enter a Username.
• C	Control	CIMC Password field	Enter a Password for CIMC
	•-Server 1	Select the <b>Role</b> from the drop	Choose Control or Compute or
	•-Server 2	down list	Block Storage from the
	•-Server 3		drop-down list.
• C	Compute	Management IP	It is an optional field but if provided for one server then it
	°-Server 1		is mandatory to provide it for other servers.
	°-Server 2		
	•-Server 3		
Note	When Pod type UMHC is selected then auto ToR configuration is not supported and the ToR info at server and roles level is not allowed to be entered.		
Click S	Save or Add .	On clicking <b>Save or Add</b> all information related to Servers and Roles gets saved.	
one sw for each <b>Chann</b>	figure ToR checkbox is Truewith at-least itch detail, these fields will be displayed h server and this is similar to DP Tor: Port rel and Switch Name (Mandatory if gure ToR is true)	<ul> <li>Port Channel field</li> <li>Switch Name field</li> <li>Switch Port Info field</li> </ul>	<ul> <li>Enter the port channel input.</li> <li>Enter the switch name.</li> <li>Enter the switch port information.</li> </ul>

Name	Description	
DP ToR (Only for Control and Compute) : Mandatory if Intel NIC and Configure TOR is True.	<ul> <li>Port Channel field</li> <li>Switch Name field</li> <li>Switch Port Info field</li> </ul>	<ul> <li>Enter the port channel input.</li> <li>Enter the switch name.</li> <li>Enter the switch port information.</li> </ul>
SRIOV TOR INFO (Only for Compute Nodes). It is mandatory in server and roles if Intel NIC and Configure TOR is True. Switch Name (Mandatory if Configure ToR is true). This field appears only when Intel NIC support is true, as Auto TOR config is not supported in VIC_NIC combo	<ul> <li>Switch Name field</li> <li>Switch Port Info field</li> </ul>	<ul> <li>Enter the switch name.</li> <li>Enter the switch port information.</li> </ul>
<b>Intel SRIOV VFS</b> (valid for Intel NIC testbeds) and can be integer.	For SRIOV support for Intel NIC. By Default, SRIOV support is disabled. To enable, define a value in the range # * 1-32 when INTEL_NIC_SUPPORT is set True (X710 Max VFs = 32) # * 1-63 when CISCO_VIC_INTEL_SRIOV is set True (X520 Max VFs = 63)	
INTEL_SRIOV_PHYS_PORTS (valid for Intel NIC test beds) and can be of value 2 or 4 (default is 2)	In some cases the # of Physical SRIOV port needed is 4; to meet that requirement, define the following: # this is optional, if nothing is defined code will assume it to be 2; the only 2 integer values this parameter # takes is 2 or 4 and is true when INTEL_NIC_SUPPORT is True and INTEL_SRIOV_VFS is valid	
Click Save or Add .	On clicking <b>Save or Add</b> all information related to Servers and Roles gets saved.	

Maximum two ToR info needs to be configured for each connection type on each node (control, compute and Note block\_storage node). If pod type UMHC is selected then CISCO\_VIC\_INTEL\_SRIOV is enabled to be TRUE. Note

For Tenant type ACI/VLAN, port channel for each ToR port will not be available in servers and roles, as APIC Note will automatically assign port-channel numbers.

Step 9 Click ToR Switch checkbox in Blueprint Initial Setup to enable the TOR SWITCH configuration page. It is an Optional section in Blueprint Setup but once all the fields are filled, it becomes a part of the Blueprint.

Name	Description
<b>Configure TOR</b> optional checkbox.	If you enable this checkbox configure tor section would be changed
<b>Note</b> If <b>UMHC</b> is selected as podty configure TOR is not allowed	
	the configure of is the their fold switch into maps in servers

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Name	Description		
TOR Switch Information mandatory table if	Click + to add information for ToR Switch.		
you want to enter ToR information.	Name	Description	
	Name	ToR Switch Name.	
	Username	TOR switch username	
	Password	ToR switch Password	
	SSH IP	TOR switch ssh ip	
	SSN Num	TOR switch ssn num	
	VPC Peer Keepalive	Peer Management IP. Do not define if there is no peer	
	VPC Domain	Do not define if there is no peer	
	VPC Peer Port Info	Interface for vpc peer ports	
	VPC Peer VLAN Info	vlan ids for vpc peer ports (optional)	
	BR Management Port Info	Management interface of build node	
	BR Management PO Info	Port channel number for management interface of build node	

### Note When tenant type ACI/VLAN is selected, the TOR switch information table differs and is mandatory.

Name	Description
Configure ToR	Is not checked, as by default ACI will configure the ToRs

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Click + to add information for ToR Switch	
Name Description	
Host Name ToR switch	ame.
<b>VPC Peerkeep alive</b> Peer info mo	t exist in pair.
<b>VPC Domain</b> Enter an Int	ger.
8	agement port 19, must have beer switch.
Enter Node ID Entered International Entered	er must be

Note If TOR\_TYPE is selected as NCS-5500, the TOR switch information table differs and is mandatory

Name		Descri	ption
0 1	Enabling this checkbox, changes the configure ToR section from false to true.		
	TOR is set as mandatory.	Note	Configure TOR is true then ToR switchinfo maps in servers.

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Name	Description		
If you want to enter Fretta details fill in the NCS-5500	Click (+) to add information for Fretta Switch.		
Information table.	Name	Description	
	Name	Enter the NCS-5500 hostname.	
	User Name	Enter the NCS-5500 username.	
	Password	Enter the NCS-5500 password.	
	SSH IP	Enter the NCS-5500 ssh IF Address.	
	VPC Peer Link	Peer management IP.	
	BR Management PO Info	Port channel number for management interface of build node.	
	BR Management VLAN info	VLAN ID for management interface of build node (access).	
	VPC Peer Port Info	Interface for vpc peer ports	
	VPC Peer Port Address	Address for ISIS exchange	
	ISIS Loopback Interface address	ISIS loopack IP Address.	
	ISIS net entity title	Enter a String.	
	ISIS prefix SID	Integer between 16000 to 1048575.	

When ToR-TYPE selected as NCS-5500 and 2 NCS-5500 are configured it is mandatory to configure MULTI\_SEGMENT\_ROUTING\_INFO.

Name	Description
BGP AS Number	Integer between 1 to 65535.
ISIS Area Tag	A valid string.

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Name	Description
Loopback Interface name	Loopback Interface name.
API bundle ID	Integer between 1 to 65535.
API bridge domain	String (Optional, only needed when br_api of mgmt node is also going through NCS-5500; this item and api_bundle_id are mutually exclusive).
EXT bridge domain	A valid string (user pre-provisions physical, bundle interface, sub-interface and external BD for external uplink and provides external BD info setup_data).

**Step 10** Click **OpenStack Setup** Tab to advance to the **OpenStack Setup** page.

**Step 11** In the **OpenStack Setup** page of the Cisco VIM Insight wizard, complete the following fields:

Name	Description			
Neutron	Type Selection from Bluep	Neutron fields would change on the basis of <b>Tenant Network</b> <b>Type</b> Selection from <b>Blueprint Initial Setup</b> . Following are the options available for Neutron:		
	Tenant Network Type	Auto Filled based on the Tenant Network Type selection in Blueprint Initial Setup page.		
	Mechanism Drivers	Auto Filled based on the Tenant Network Type selection in Blueprint Initial Setup page.		
	NFV Hosts	Auto filled with the Compute you added in Server and Roles. If you select All in this section NFV_HOSTS: "ALL" will be added to the Blueprint or else you can select particular computes as well for eg: NFV_HOSTS: "compute-server-1, compute-server-2"		
	Tenant VLAN Ranges	Allowed with VTS/VLAN VPP/VLAN, OVS/VLAN, ACI/VLAN		
	Enable Jumbo Frames	Check Box default is false.		
	Huge page size Note : . This is available only when Compute node is present in NFV host	The following are the drop-downs: • 2M • 1G		
	For Tenant Network Type Lin the same but <b>Tenant VLAN</b>	nux Bridge everything will remain <b>Ranges</b> will be removed.		
СЕРН	Ceph has two pre-populated	fields		
	• CEPH Mode : By def	• CEPH Mode : By default Dedicated.		
	NOVA Boot from: Dr choose Ceph or local.	op Down selection. You can		
GLANCE	By default populated for CEI value as CEPH.	PH Dedicated with Store Backend		

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Name	Description			
CINDER	By default Populated for CEPH value as CEPH.	By default Populated for <b>CEPH Dedicated</b> with Volume Driver value as <b>CEPH</b> .		
HA Proxy	Enter the Mandatory fields:	Enter the Mandatory fields:		
	External VIP Address	Enter IP Address of External VIP.		
	External VIP Address IPv6	Enter IP v6 Address of External VIP .		
	Virtual Router ID	Enter the Router ID for HA.		
	Internal VIP Address	Enter IP Address of Internal VIP.		
	Internal VIP Address IPv6	Enter IP v6 Address for Internal VIP.		
Keystone	Admin Username	admin		
	Admin Tenant Name	admin		
		1		

Name	Description	
LDAP	This is available only when Ke enabled under Optional Featur Initial Setup.	eystone v3 and LDAP both are es and Services in Blueprint
	Domain Name field	Enter name for Domain name.
	<b>Object Class for Users</b> field	Enter a string as input.
	<b>Object Class for Groups</b>	Enter a string.
	Domain Name Tree for Users	Enter a string.
	Domain Name Tree for Groups field	Enter a string.
	<b>Suffix for Domain Name</b> field	Enter a string.
	URL field	Enter a URL with ending port number.
	<b>Domain Name for Bind</b> <b>User</b> field	Enter a string.
	Password field	Enter Password as string format.
	User Filter	Enter filter name as string.
	User ID Attribute	Enter a string.
	User Name Attribute	Enter a string.
	User Mail Attribute	Enter a string.
	Group Name Attribute	Enter a string.

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Name		Description
<b>VMTP</b> optional section will only be visible once VMTP is selected from Blueprint Initial Setup.		
Note	For VTS, Provider network is only supported	

Description		
Check one of the check box	Check one of the check boxes to specify a VMTP network:	
Provider Network		
• External Network		
For the <b>Provider Network</b>	complete the following:	
Network Name field	Enter the name for the external network.	
IP Start field	Enter the starting floating IPv4 address.	
IP End field	Enter the ending floating IPv4 address.	
Gateway field	Enter the IPv4 address for the Gateway.	
<b>DNS Server</b> field	Enter the DNS server IPv4 address.	
Segmentation ID field	Enter the segmentation ID.	
Subnet	Enter the Subnet for Provider Network.	
For <b>External Network</b> fill i	n the following details:	
Network Name field	Enter the name for the external network.	
Network IP Start field	Enter the starting floating IPv4 address.	
Network IP End field	Enter the ending floating IPv4 address.	
Network Gateway field	Enter the IPv4 address for the Gateway.	
<b>DNS Server</b> field	Enter the DNS server IPv4 address.	
Subnet	Enter the Subnet for External	

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Name	Description	
<b>TLS</b> This optional section will only be visible once TLS is selected from Blueprint Initial Setup Page.	<ul> <li>TLS has two options:</li> <li>External LB VIP FQDN - Text Field.</li> <li>External LB VIP TLS - True/False. By default this option is false.</li> </ul>	
SwiftStack optional section will be visible once	Following are the options	that needs to be filled for SwiftStack:
SwiftStack is selected from <b>Blueprint Initial Setup</b> Page. SwiftStack is only supported with KeyStonev2 . If you select Keystonev3, swiftstack will not be available for configuration.	Cluster End Point	IP address of PAC (proxy-account-container) endpoint.
	Admin User	Admin user for swift to authenticate in keystone.
	Admin Tenant	The service tenant corresponding to the Account-Container used by Swiftstack.
	Reseller Prefix	Reseller_prefix as configured for Keysone Auth,AuthToken support in Swiftstack E.g KEY_
	Admin Password	swiftstack_admin_password
	Protocol	http or https. Protocol that swiftstack is running on top

Note When tenant type ACI/VLAN is selected then ACI INFO tab is available in blueprint setup.

Note When ACI/VLAN is selected then Tor switch from initial setup is mandatory.

Name	Description
APIC Hosts field	Enter host input. Example: <ip1 host1>:[port] . max of 3, min of 1, not 2;</ip1 host1>
apic_username field	Enter a string format.
apic_password filed	Enter Password.
apic_system_id field	Enter input as string. Max length 8.

Name	Description
apic_resource_prefix field	Enter string max length 6.
apic_tep_address_ pool field	Allowed only 10.0.0/16
multiclass_address_pool field	Allowed only 225.0.0/15
apic_pod_id field	Enter integer(1- 65535)
apic_installer_tenant field	Enter String, max length 32
apic_installer_vrf field	Enter String, max length 32
api_l3out_network field	Enter String, max length 32

Note When Tenant Type is VTS/VLAN then VTS tab is available in blueprint setup.

Name	Description
VTS Day0 (checkbox)	True or false default is false.
VTS User name	Enter as string does not contain special characters.
VTS Password	Enter password
VTS NCS IP	Enter IP Address format.
VTC SSH Username	Enter a string
VTC SHH Password	Enter password

Note If vts day0 is enabled then SSH username and SSH password is mandatory.

If SSH\_username is input present then SSH password is mandatory vice-versa

Under the <b>openstack setup</b> tab, the <b>Vim_admins</b> tab will only be visible once Vim_admins is selected from the	Following are the options that needs to be filled for Vim Admins:
Optional Features & Services under the Blueprint InitialSetup tab.	• Username - Text Field
	• <b>Password</b> - Password field. Admin hash password should always start with \$6

**Step 12** If **Syslog Export**, **NFVBENCH**, **ENABLE\_ESC\_PRIV** is selected in **Blueprint Initial Setup** Page then, **Services Setup** page will be enabled for User to view. Following are the options under Services Setup Tab:

Name	Description		
Syslog Export	Following are the options for Syslog Settings:		
	Remote Host	Enter Syslog IP Address.	
	Protocol	Only UDP is supported.	
	Facility	Defaults to local5.	
	Severity	Defaults to debug.	
	Clients	Defaults to ELK	
	Port	Defaults to 514 but can be modified by the User.	
NFVBENCH	Enable checkbox which by default is <b>false</b> .		
Add ToR info connected to switch:		5	
	• Select a TOR S	witch. Switch- (switch name)	
	<ul> <li>Enter the port n VLANS (mand: VTS/VXLAN,): and VLAN2.</li> <li>NIC Ports: INT</li> </ul>	umber. For Example: eth1/5 . VTEP atory and needed only for : Enter 2 different VLANs for VLAN1 1 & INT2 Optional input, enter the 2	
		f the 4-port 10G Intel NIC at the de used for NFVBench.	
ENABLE_ESC_PRIV	Enable the checkbox t	Enable the checkbox to set it as <b>True</b> . By default it is <b>Fals</b>	

**Step 13** Click **Offline validation** button to initiate an offline validation of the Blueprint.

**Step 14** Once the **Offline validation** is successful, **Save** option will be enabled for you which when clicked would redirect you to the **Blueprint Management** Page.

## **Creating a Blueprint using Upload Functionality**

### **Before You Begin**

- You should have a YAML file (B series or C Series) on your system.
- Only one blueprint can be uploaded at a time. To create a blueprint off-line, please refer to the setup\_data.yaml.B\_Series\_EXAMPLE or setup\_data.yaml.C\_Series\_EXAMPLE.

• The respective keys in the sample YALM should match or the corresponding section will not be populated during upload.

Step 1 Log-in to CISCO VIM Insight. Step 2 In the Navigation pane, expand the Pre-Install Section. Step 3 Click Blueprint Setup. Step 4 Click the **Browse** button in the **Blueprint Initial Setup** page. Step 5 Click Select. Step 6 Click on Load button in the Insight UI Application. All the fields present in the YAML file will be uploaded to the respective fields in the UI. Step 7 Provide a Name for the Blueprint. Make sure the blueprint name is unique while saving it. Click Offline Validation. Step 8 • If all the mandatory fields in the UI are populated, then Offline Validation of the Blueprint will commence, or else a pop up message indicating the section of Blueprint Creation that has missing information error shows up.

Step 9On Offline Blueprint Validation being successful , Save Blueprint and Cancel button will be enabled.NoteIf the Blueprint Validation Fails, only the Cancel button will be enabled.

## Activating a Blueprint in an Existing Pod with OpenStack Installed

### **Before You Begin**

You must have a POD which has an active Installation of OpenStack. If the OpenStack installation is in Failed State, then Insight UI will not be able to fetch the Blueprint.

**Step 1** Go to the **landing page** of the Insight Login.

#### Step 2 Click Register Management Node.

- **Step 3** Enter the following details:
  - Management Node IP Address.
  - Management Node Name (Any friendly Name).
  - REST API Password ( /opt/cisco/ui\_config.json).
  - Description about the Management Node.
  - POD Admin's Email ID.

A notification email will be sent to the email id entered during registration.

- **Step 4** Login using the same email id and password.
- Step 5In the Navigation pane, click Pre-Install > Blueprint Management.In the Blueprint Management Page you will see NEWSETUPDATA.

This is the same setup data which was used by ciscovimclient to run the installation on the Management Node.

### **Downloading Blueprint**

#### **Before You Begin**

You must have atleast one blueprint (In any state Active/In-Active or In-progress), in the **Blueprint** Management Page.

Step 1 Log-in to CISCO VIM Insight
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- Step 2 In the Navigation pane, expand the Pre-Install Section.
- Step 3 Click Blueprint Management.
- **Step 4** Go-to **Download** button for any Blueprint under Action title. (**Download Button** > **Downward Arrow** (with tooltip Preview & Download YAML).
- Step 5Click the Download icon.A pop to view the Blueprint in the YAML format will be displayed.
- Step 6Click the Download button at the bottom left of the pop-up window.<br/>YAML will be saved locally with the same name of the Blueprint.

## **Validating Blueprint**

Step 1 Log-in to CISCO VIM Insight.
Step 2 In the Navigation pane, expand the Pre-Install Section.
Step 3 Click Blueprint Creation.
Step 4 Upload an existing YAML, or create a New Blueprint. Fill all the mandatory fields so that all Red Cross changes to Green Tick.
Step 5 Enter the name of the Blueprint.
Step 6 Click the Offline Validation button. Only if the Validation is successful, the Insight will allow the user to save the blueprint.

#### What to Do Next

If you see any errors, then hyperlink will be created for those errors. Click on the link to be navigated to the page where error has been encountered.

## **Managing Post Install Features**

Cisco VIM provides an orchestration that helps in lifecycle management of a cloud. VIM is responsible for pod management activities which includes fixing both hardware and software issues with one-touch automation. VIM Insight provides the visualization of the stated goal. As a result, it integrates with POST install features that Cisco VIM offers through its Rest API. These features are enabled only if there is an active Blueprint deployment on the pod.

### **Monitoring the Pod**

In VIM 2.2, we use EFK (Elasticsearch, Fluentd and Kibana) to monitor the OpenStack services, by cross-launching the Kibana dashboard.

To cross launch Kibana, complete the following instructions:

Step 1		Navigation pane, click Post-Install > Monitoring. uthentication Required browser pop up is displayed.
Step 2	Enter t	he <b>username</b> as Admin.
management node.		he ELK_PASSWORD password obtained from /root/installer- <tagid>/openstack-configs/secrets.yaml in the ement node.</tagid>
	Note	You can also view Kibana Logs in a new tab by clicking the View Kibana logs link.

### **Cross Launching Horizon**

Horizon is the canonical implementation of OpenStack's Dashboard, which provides a web based user interface to OpenStack services including Nova, Swift and, Keystone.

Step	1	In the Navigation	pane, click	<b>Post-Install</b> >	Horizon.
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Step 2Click the link Click here to view Horizon logs in new tab.<br/>You will be redirected to Horizon landing page in a new tab.

### **Run VMTP**

Run VMTP is divided in two sections:

- **Results for Auto Run**: This will show the results of VMTP which was run during cloud deployment (Blueprint Installation).
- **Results for Manual Run**: Here you have an option to run the VMTP on demand. To run VMTP on demand just click **Run VMTP** button.



If VMTP stage was skipped/not-run during Blueprint Installation, this section of POST Install would be disabled for the user.

### **Run CloudPulse**

Following are the tests supported in CloudPulse:

- 1 cinder\_endpoint
- 2 glace\_endpoint
- 3 keystone\_endpoint
- 4 nova\_endpoint
- 5 neutron\_endpoint
- 6 rabbitmq\_check
- 7 galera\_check
- 8 ceph\_check

### **Run NFV Bench**

One can **Run NFV Bench** for **B** and **C** series Pod, through Cisco VIM Insight. On a pod running with CVIM 2.2, click on the NFVbench link on the NAV-Menu.

You can run either fixed rate test or NDR/PDR test. As the settings and results for the test types differ, the options to run these tests are presented in two tabs, with its own settings and results .

### NDR/PDR Test

Step 1	Log-in to	CISCO	VIM	Insight.
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- **Step 2** In the Navigation pane, click **Post-Install** >Run NFV Bench.
- **Step 3** Click on NDR/PDR test and complete the following fields

Name		Description
Iteration Duration	n	Select duration from 10 to 60 sec. Default is 20 sec

Name	Description
Frame Size	Select the correct frame size to run
Run NDR/PDR test	Click on Run NDR/PDR test. Once NDR/PDR test is finished it will display each type of test with its own settings and results.

## **Reconfiguring CIMC Password through Insight**

Update the cimc password in the CIMC-COMMON section, and/or the individual cimc password for each server and then run the update password option.

To update a password, you need to follow the password rules:

- Must contain at least one lower case letter.
- Must contain at least one upper case letter.
- Must contain at least one digit between 0 to 9.
- One of these special characters !\$#@%^- +=\*&
- Your password has to be 8 to 14 characters long.

### **Before You Begin**

You must have a C-series pod up and running with Cisco VIM to reconfigure CIMC password.

Reconfigure CIMC password section would be disabled if the pod is in failed state as indicated by ciscovim Note install-status.

#### Step 1 Log-in to CISCO VIM Insight.

Step 2 In the navigation pane, select Post-Install

#### Step 3 Click Reconfigure CIMC Password.

Step 4

On the Reconfigure CIMC Password page of the Cisco VIM Insight, complete the following fields:

Name	Description
CIMC_COMMON old Password	<b>CIMC_COMMON</b> old password field cannot be edited.
CIMC-COMMON new Password	Enter new <b>CIMC-COMMON</b> password. Password should be alphanumeric according to the password rule.

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Name	Description
-	Old <b>CIMC-COMMON</b> password will be updated with new <b>CIMC-COMMON</b> password.