Managing Pod Through Cisco VIM Unified Management

The following are the naming conventions used in the Cisco VIM UM

1. Super Administrator (UM Admin): User having access to UM Admin profile
2. POD Administrator: User having access to register a Pod in the system(Only UM can add new Pod Admin in the system)
3. Pod users (Normal users): o All the users which are associated with the Pod. Full-pod-access: Role assigned to user which gives full access of a specific Pod(This has nothing to do with Pod Admins)

The following are the Key Points

- User who are UM admin or Pod admin but not associated with any Pod are not counted in UM admin dashboard user count section
- Only Pod Admins can register a new Pod
- Every Pod must a user with “Full-pod-Access” role.
- User cannot be revoked/delete if the users is the last user on the pod with “Full-Pod-Access” role.
- User cannot be delete if user is a Pod admin or UM admin.

The following topics tell you how to install and replace Cisco Virtual Infrastructure Manager (VIM) nodes using Cisco VIM Unified Management.

Monitoring Pod Status

The unified management application manages the pods and displays the pod management action status with a cloud icon.

The following table displays a summary of the pod operation, the corresponding cloud-icon color, and the pod status.

Table 1: Pod Operation Status

Pod Operation	UM Icon-Color	Pod Status
Active cloud with no failures	Green	Active
Cloud installation or pod management operation is in progress	Blue	In-progress
Software update (auto) rollback is failed	Red	Critical Warnings
Pending commit post software update	Amber	Warning
Reconfigure failed (for any operation)	Red	Critical Warning
Update, commit, or Rollback failed	Red	Critical Warning
Power management operation fails	Amber	Warning
Management not reachable	Red	Not Reachable

Managing Hardware

Management of your Cisco VIM pods includes adding, removing, or replacing the nodes.

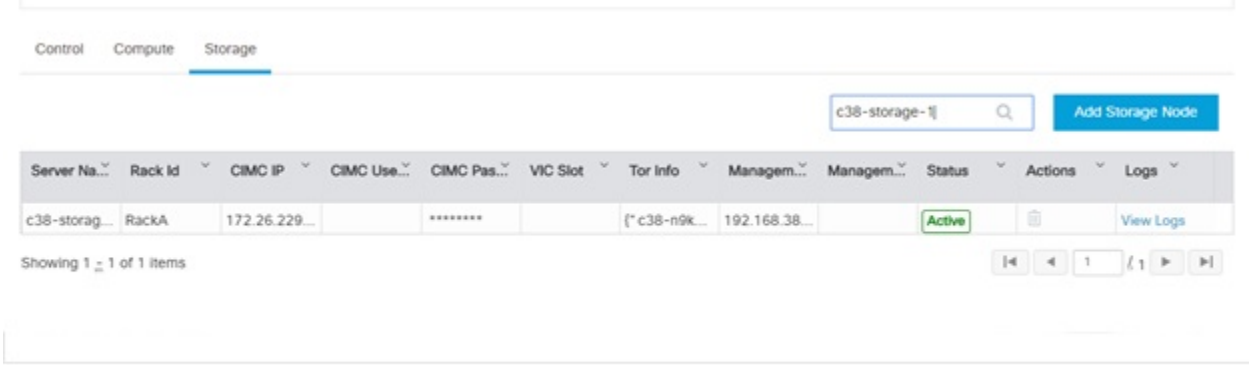
In a pod, multiple nodes cannot be changed at the same time. For example, if you want to replace two control nodes, you must successfully complete the replacement of the first node before you begin to replace the second node. Same restriction applies for addition and removal of storage nodes. Only, in case of Compute Nodes you can add or remove multiple nodes together.However, there must always be one active compute node in the pod at any given point. VNF manager stays active and monitors the compute nodes so that moving the VNFs accordingly as compute node management happens.

Note When you change a control, storage, or compute node in a Cisco VIM pod using Unified Management, it automatically updates the server and role in the active blueprint, as a result, your OpenStack deployment changes. When a node is removed from Cisco VIM, sensitive data may remain on the drives of the server. Administrator advice you to use Linux tools to wipe the storage server before using the same server for another purpose. The drives that are used by other application server must be wiped out before adding to Cisco VIM.

Searching Compute and Storage Nodes

This functionality allows you to search the Compute and Storage nodes by server names only. The search result is generated or shows an empty grid if there are no results.

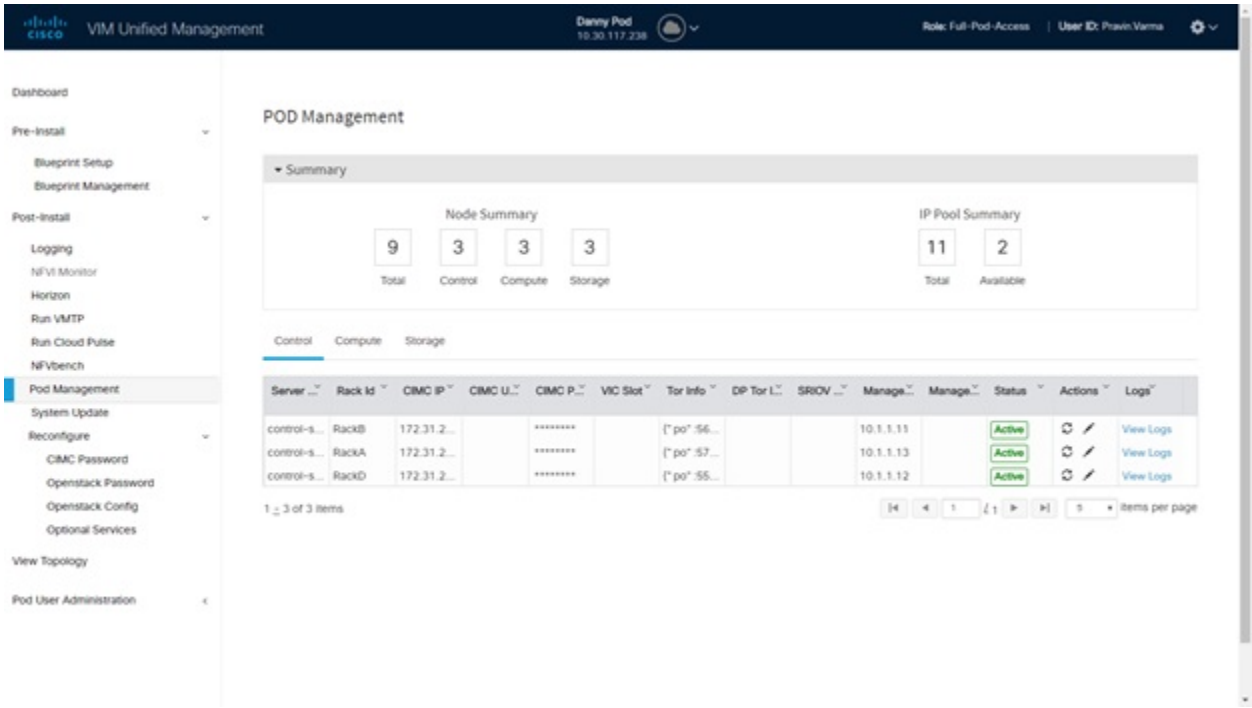
Figure 1: Search Storage Nodes



POD Management

Cisco VIM allows the admin to perform pod life-cycle management from a hardware and software perspective. Cisco VIM provides the ability to power on/off compute node, add, remove or replace nodes based on the respective roles when the nodes of a given pod corrupts at times.

Figure 2: POD Management



Pod Management page has two sections–

1. **Node Summary:** This section shows how many nodes are available and the detailed count of Control, Compute and Storage type.

2. **IP Pool Summary:** This section shows the Total Pool Summary and the current available pool count.

The operations performed on the running pod are:

Replace Control Nodes: Double fault scenario is not supported. Only the replacement of one controller at a time is supported.

Note If the TOR type is Cisco NCS 5500, an additional popup is displayed to enable the user to update splitter configuration before replacing the control node.

Add Computes/Storage Nodes: N-computes nodes can be replaced simultaneously; however at any given point, at least one compute node has to be active.

Note If the TOR type is Cisco NCS 5500, an option is available to update the splitter cable configuration.

Power On/ Off compute Nodes: You can Power On or Power Off compute node. At least one compute node must be powered on.

Remove Compute/Storage Nodes: You can add one node at a time, when Ceph is run as a distributed storage offering.

Note If TOR type is Cisco NCS 5500, an additional popup is displayed to enable the user to update the splitter cable configuration, before the removal of compute or storage node.

Add Pool: You can increase pool size at any time.

Managing Storage Nodes

Before you add or remove a storage node, review the following guidelines for Managing Storage Nodes.

- **Required Number of Storage Nodes**: A Cisco VIM pod must have a minimum of three and a maximum of 20 storage nodes. If your pod has only two storage nodes, you cannot delete a storage node until you add another storage node. If you have fewer than three storage nodes, you can add one node at a time until you get to 20 storage nodes.
- **Validation of Nodes**: When you add a storage node to a pod, Cisco VIM Unified Management validates that all the nodes in the pod meet the minimum requirements and are in active state. If you have a control or compute node in a faulty state, you must either correct, delete or replace that node before you can add a storage node.
- **Update Blueprint**: When you add or delete a storage node, Unified Management updates the blueprint for the Cisco VIM pod.
- **Storage Node Logs**: You can access the logs for each storage node from the link in the Log column on the **Storage Nodes** tab.

Adding Storage Node

Complete the following instructions to add a storage node:

Note You cannot add more than one storage node at a time.

Before you begin

- Remove the non-functional storage node from the pod. You can have maximum 20 storage nodes in a Cisco VIM pod.
- Ensure that the server for the new storage node is in powered state in OpenStack for C Series.

Step 1 In the navigation pane, choose **Post-Install** > **Pod Management** > **Storage**.

Step 2 Click on Add Storage node button on the Storage tab. A popup will open where you can provide information about the new Storage node.

Step 3 For C Series, add the following details:

- **Server Name**: Name for the Storage Server to be added.
- **Rack ID**: Enter the Rack ID. (Accepts String format).
- **CIMC IP**: Enter the CIMC IP.
- **CIMC User Name**: User name for the CIMC.
- **CIMC Password**: Enter the password for the CIMC
- **VIC Slot**: Enter the VIC Slot (Optional).
- **ToR switch info**:Mandatory if ToR is configured as True
  - **Management IPv6**: Enter IPv6 Address.

Step 4 For B Series, add the following details:

- **Server Name**: Name for the Storage Server to be added.
- **Rack ID**: Enter the Rack ID. (Accepts String format).
- **Rack Unit ID**: Enter the Rack Unit ID.
- **Management IPv6**: Enter IPv6 Address.

Note Cancel will discard the changes and popup will be closed

If all mandatory fields are filled in correctly then **Add Storage** button will be enabled.

Step 5 Click **Initiate Add Storage**. Add node initialized message will be displayed.

Step 6 To view logs, click **View logs** under Logs column.
The status of the POD will change to Active.

Step 7 Two kinds of failure may occur:

- **Add Node Pre-Failed**: When addition of node failed before the bare-metal stage (step 4), the Active Blueprint is modified but the Node is not yet added in the Cloud. If you press **X** Icon, then Unified Management will delete the node information form the Blueprint and the state would be restored.
- **Add Node Post-Failed**: When addition of node failed after the bare-metal stage (step 4), the Active Blueprint is modified and the node is registered in the cloud. If you press **X** Icon, thn Unified Management will first delete the node from the Blueprint and then node removal from cloud would be initiated.

You can view the logs for this operation under **Logs** column.

Deleting Storage Node

You cannot delete more than one storage node at a time.

Step 1 In the Navigation pane, choose **Post-Install** > **POD Management** > **Storage**.

Step 2 Click **X** adjacent to the storage node you want to delete.

Yor can delete a storage node with Force option for hyper-converged POD. The Force option is useful when VM's are running on the node.

Step 3 **Node Removal Initiated successfully** message will be displayed.

To view logs, click **View logs** under logs column.

- If the Storage Node is deleted successfully, the storage node will be removed from the list under **Add/Remove storage Node**.
- In deletion failed, a new button **Clear Failed Nodes** will be displayed. Click **Clear Failed Nodes** to remove the node form cloud and Blueprint.

Managing Compute Nodes

Before you add or remove a compute node, review the following guidelines:

- **Required number of compute nodes**: Cisco VIM pod must have a minimum of one compute node and a maximum of 128 nodes. Out of 128 nodes, three nodes are control nodes and remaining 125 nodes is between compute and ceph nodes with a maximum of 25 ceph nodes. If your pod has only one compute node, you cannot delete that node until you add another compute node.
- **Update blueprint**: When you add or remove a compute node, Unified Management updates the blueprint for the Cisco VIM pod.
- **Compute node logs**: You can access the Logs for each compute node from the link in the Log column on the Compute Nodes table.

Adding Compute Node

Add IP Pool

If all the existing pool size is already used, then you need to increase the pool size. On the Add compute or Add storage popup, Click **Expand Management IP pool** to add a new Pool.

Complete the instructions, to add a compute node:

Before you begin

Ensure that the server for the new compute node is in powered state in OpenStack. You can add more than one compute node at a time.

Step 1 In the navigation pane, click **Post-Install** > **Pod Management** > **Compute**.

Step 2 Click **Add Compute Node** on the Compute tab a popup opens . Add the required information in the popup. To add another node clcik **Add Another Node** if you planned to add another compute node OR hit Initiate Add Compute if you so not plan to add any more compute node. If you hit **Add Another Node** button, the existing form will be emptied. You need to fill the information for the new compute node and then repeat step 1. You may use **Previous** and **Next** button to navigate among different added node information.

Step 3 For C-series, add the following details:

- **Server Name**: Name for the Compute Server.
- **Rack ID**: Enter the Rack ID. (Accepts String format).
- **CIMC IP**: Enter the CIMC IP.
- **CIMC User Name**: User name for the CIMC.
- **CIMC Password**: Enter the password for the CIMC.
- **VIC Slot**: Enter the VIC Slot (Optional).
- **ToR switch info**: Mandatory if configured ToR is true.
- **DP ToR switch info**: Enter input as string format.
- **SRIVO ToR info** : Enter input as string format.

- **Management IPv6** : Enter IPv6 address.
- **Trusted_vf**: Optional and not reconfigurable. Applicable only for SRIOV node with compute role for C-series pod.
- **Vtep IPs**: IP address from vxlan-tenant and vxlan-tenant.
- **INTEL_SRIOV_VFS** :Value range is 1 to 32.
- **INTEL_FPGA_VFS**: Value range is 1 to 8.
- **INTEL_VC_SRIOV_VFS**: Value range is 1 to 32.
- **Vendor**: Optional. It can be CISCO - Cisco Systems Inc or QCT - Quanta Cloud Technology Inc or HPE - Hewlett Packard Enterprise.

  :
- **VM Hugepage Size**: Optional. It can be 2M or 1G. Only applicable with NFV HOSTS.
- **RX TX Queue Size**: Optional. It can be 256, 512, or 1024.
- **SECCOMP_SANDBOX** : Optional. If not defined, set to 1.
- **NOVA_CPU_ALLOCATION_RATIO**: Optional, overrides the NOVA_CPU_ALLOCATION_RATIO defined in openstack_config.yaml. Values lie in the range of 0.958 to 16.0
- **NOVA_RAM_ALLOCATION_RATIO:** Optional, overrides the NOVA_RAM_ALLOCATION_RATIO defined in openstack_config.yaml. Values lie in the range of 1.0 to 4.0
- **NUM GPU CARDS**: Optional, for server with GPU. Value lies in the range from 0 to 6
- **root_drive_type: <HDD or SSD or M.2_SATA, NUM_GPU_CARDS**: 0 to 6
- **VIC Port Channel Enable**: Optional. It can be True or False. By default, it is set to True.
- **VIC Admin FEC mode**: Optional. It can be auto, off, cl74, or cl91.

Step 4 For B series, add the following details:

- **Server Name**: Name for the Storage Server to be added.
- **Rack ID**: Enter the Rack ID. (Accepts String format).
- **Rack Unit ID**: Enter the Rack Unit ID.
- **Chassis ID**: Enter the Chassis ID. Range for Chassis ID is 1-24.
- **Blade ID**: Enter the Blade ID. Range for Blade ID is 1-8.
- **CIMC Password**: Enter the CIMC Password.
- **VM Hugepage Size**: Optional. It can be 2M or 1G. Only applicable for NFV HOSTS.
- **RX TX Queue Size**: Optional. It can be 256, 512, or 1024.
- **SECCOMP_SANDBOX** : Optional. If not defined, set to 1.
- **NOVA_CPU_ALLOCATION_RATIO**: Optional, overrides the NOVA_CPU_ALLOCATION_RATIO defined in openstack_config.yaml. Values lie in the range of 0.958 to 16.0
- **NOVA_RAM_ALLOCATION_RATIO:** Optional, overrides the NOVA_RAM_ALLOCATION_RATIO defined in openstack_config.yaml. Values lie in the range of 1.0 to 4.0

- **Management IPv6**: Enter IPv6 address.

  If all mandatory fields are filled in correctly, click **Save**

Note
- Add compute process can initiate multiple addition of compute nodes. Fill in the mandatory fields to save new compute node or press cancel to exit.
- Fields of pod management will remain mandatory for user input based on setup-data.

Step 5 You may perform one among these steps mentioned below:

- Clicking **Cancel** displays the compute node information listed in the table and **Add Compute Node** button is enabled.
- If you feel you have filled in a wrong entry for the compute node information, click **Delete**. This will delete the entry from the table as this information is not added in the Blueprint.
- Click **Initiate Add Compute**, displays Add node initialized message.

Step 6 To view logs, click **View logs** under Logs column. The status of the POD will change to Active.

Step 7 Two kinds of failure may occur:

- **Add Node Pre-Failed**: When addition of node failed before the bare-metal stage (step 4) the Active Blueprint will be modified but the Node is not yet added in the Cloud. If you press **X** Icon, then Unified Management will delete the node information form the Blueprint and the state would be restored.
- **Add Node Post-Failed**: When addition of node failed after the bare-metal stage (step 4) the Active Blueprint will be modified and the node is registered in the cloud. If you press **X** Icon, then Unified Management will first delete the node from the Blueprint and then node removal from cloud would be initiated.

You can view the logs for this operation under **Logs** column.

Deleting Compute Node

Compute node is deleted due to a hardware failure. You can delete one compute node at a time.

Note If your pod has only one compute node, you cannot delete that node until you add another compute node.

Step 1 In the navigation pane, choose **Post-Install** > **POD Management** > **Compute**.

Step 2 Click **X** for the compute node to be deleted. To remove multiple compute nodes, choose the target compute nodes which is on the extreme left column, then click **Trash** to remove multiple computes.

You can delete a compute node with Force option which is useful when VM's are running on the node.

"Node removal initiated successfully" message is displayed.

Step 3 To view the Logs, click **View logs** under Logs column.

- If compute nodes are deleted successfully, you cannot view the compute node in the list under **Add or Remove Compute Node**.

- If Compute Note is deleted, a new button **Clear Failed Nodes** is displayed.

Step 4 Click **Clear Failed Nodes** to remove the node form Cloud and Blueprint.

Managing Control Nodes

Before you replace a control node, review the following guidelines:

- **Required Number of Control Nodes**: A Cisco VIM pod must have three control nodes and you can only replace one node at a time.
- **Validation of Nodes**: When you replace a control node, Cisco VIM Unified Management validates if all the other nodes in the pod meet the minimum requirements and are in active state. If you have a storage or a compute node in a faulty state, you must correct the faulty state or delete or replace that node before you can replace the control node.
- **Update Blueprint**: When you replace a control node, Unified Management updates the Active blueprint for the Cisco VIM pod.
- **Control Node Logs**: You can access the logs for each control node from the link in the **Logs** column of Control Nodes table.

Replacing Control Node

You can replace only one control node at a time.

Step 1 In the navigation pane, click **Post-Install** > **Pod Management** > **Control**.

Step 2 Click (Spin) icon. A confirmation pop-up appears, Click **Proceed** to continue.

You can replace a control node with Force option for Micropod. The Force option is useful when VM's are running on the node.

Step 3 If you want to edit a specific control node before replace, click **Edit** to update the changes.

Step 4 On success, **Replace Node Initiated** successfully message is displayed.

Step 5 You can view the logs in the **Logs** column on the Control Nodes table.

What to do next

If the replacement of the control node fails, do the following:

- Click the link in the Logs column.
- Check the logs to determine the cause of the failure.
- Correct the issue and attempt to replace the control node again.

Note For replace controller, you can change only a subset of the server information. For C-series, you can change the server information such as CIMC IP, CIMC Username, CIMC password, rack_id, and tor_info. For B-series, you can change the rack_id, chassis_id, and blade_id, but not the server hostname and management IP during the operation of replace controller.

Power Management

Compute node can be powered on or powered off from the Compute Tab in Pod Management section. There is a power button associated with each compute with information provided as tooltip when you hover on that icon.

Following are the steps to power on/off multiple compute node:

1. Click **Power** button located to the left of delete button.
2. Choose the compute nodes by selecting the check box, the corresponding power button gets enabled.

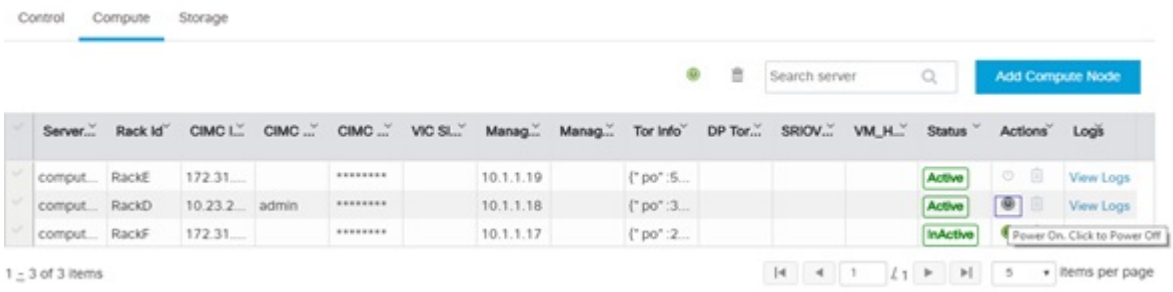
Powering On a Compute Node

Following are the steps to power on the compute node:

1. Click the **Compute** tab.
2. In the Pod Management area, check the check box corresponding to the Compute node that you want to power on.

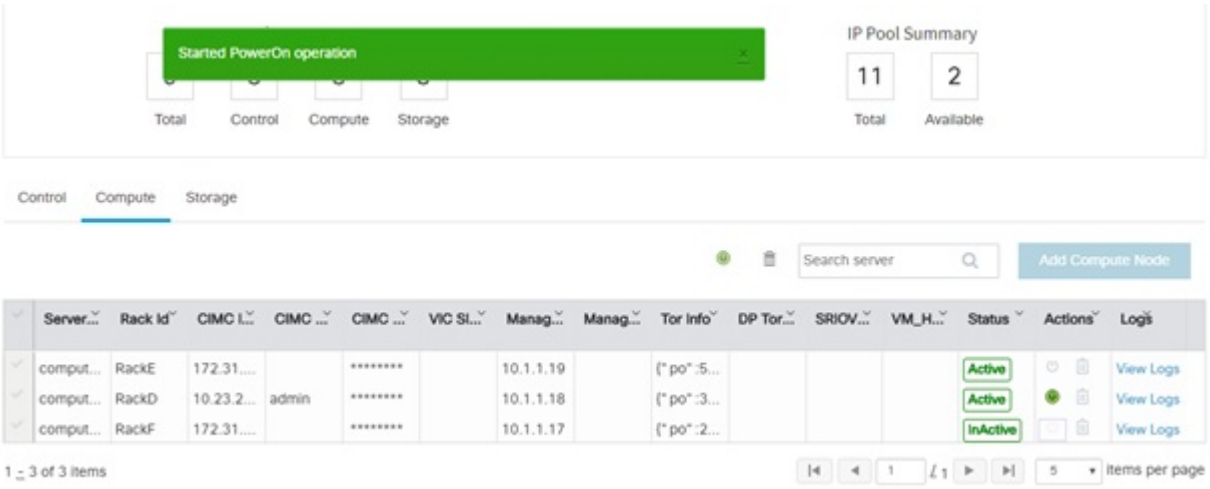
Note The **Power** button of a Compute node is enabled only after you select the Compute node.

Figure 3: Powering On a Compute Node



3. Under the Actions column, click the **Power** button of the Compute node. It may take a few minutes for the Compute node to power on. The tooltip of the power button displays the status of the Compute node. Once the compute node is powered on, the Power button stops blinking and its color changes to green.

Figure 4: Power On Operation



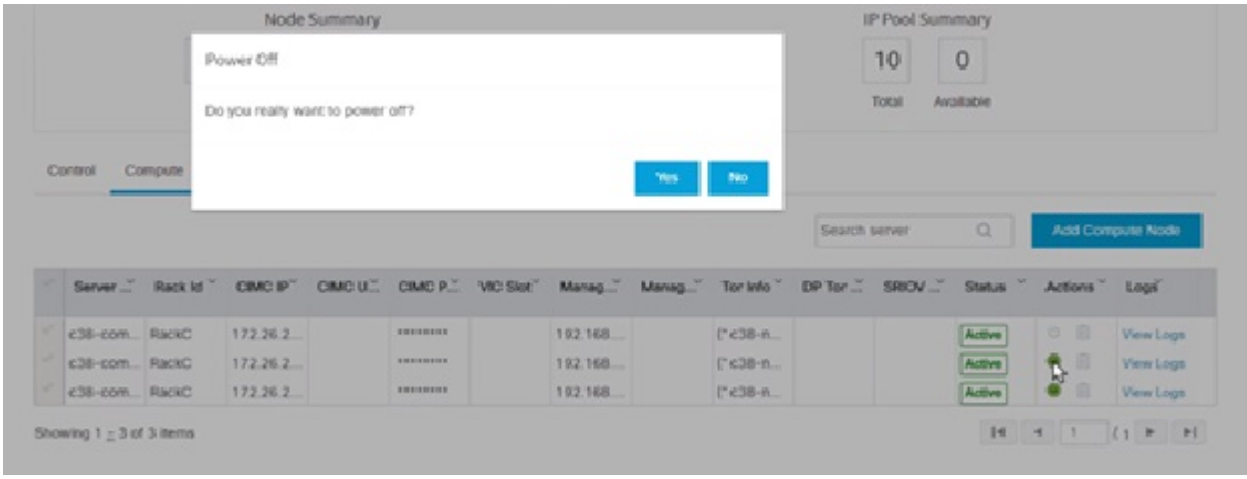
You can add a Compute node only once a power on task is complete.

Powering Off Compute Node

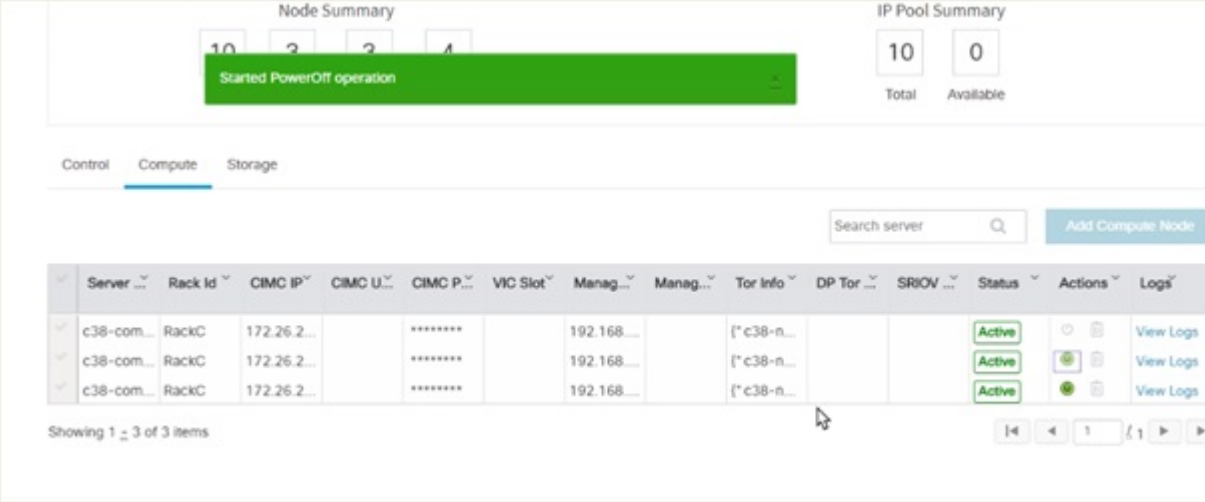
Note You cannot power off all the Compute nodes. There must be at least one Compute node that is in the On state.

Follow these steps to power off a Compute node:

1. Click the **Compute** tab.
2. In the Pod Management area, under the Actions column, click the **Power** button of the Compute node that you want to power off.



3. Click **Yes** in the confirmation dialog box.

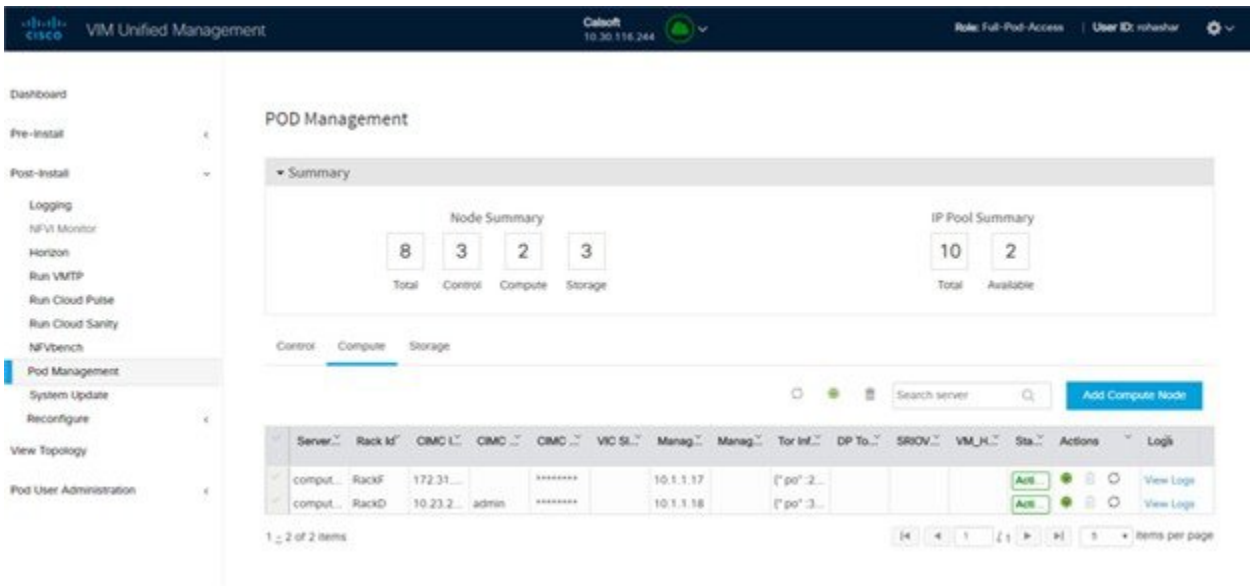


It may take a few minutes for the Compute node to power off. The tooltip of the power button displays the status of the Compute node. Once the compute node is powered off, the Power button stops blinking and its color changes to grey.

Note If there is only one compute node in the grid, and you try to power off it, a message *Last compute node can't be powered off* is displayed. Also, when you power off the last available compute node in the list of nodes, then the message *At least one compute node should be powered on* is displayed.

Multiple compute power/ delete/ reboot operation

You can perform power, delete, and reboot operation on multiple compute nodes using the global buttons located at the top of grid. To enable this operation, select at least one compute node.



Rebooting Compute Node

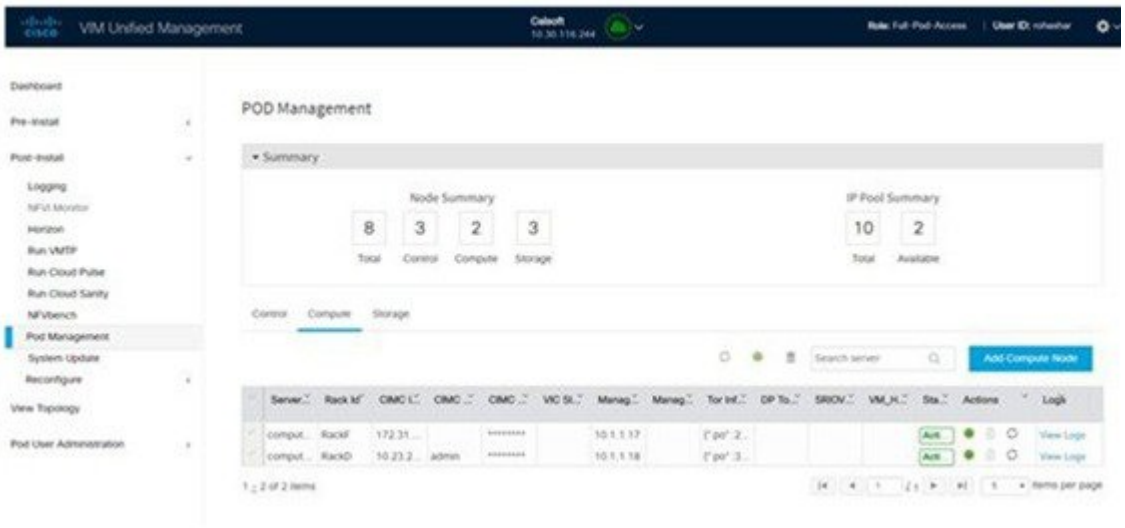
To reboot the compute node, follow the below steps:

1. Click on **Compute** tab.
2. In the **Pod Management** pane, under the **Actions** column, click **Reboot** of the compute node that you want to reboot.
3. Click **Yes** in the confirmation dialog box, to perform reboot. You can reboot a compute node with Force option which is useful when VM's are running on the node.

Multiple compute power/ delete/ reboot operation

You can perform power, delete, and reboot operation on multiple compute nodes using the global buttons located at the top of grid. To enable this operation, select at least one compute node.

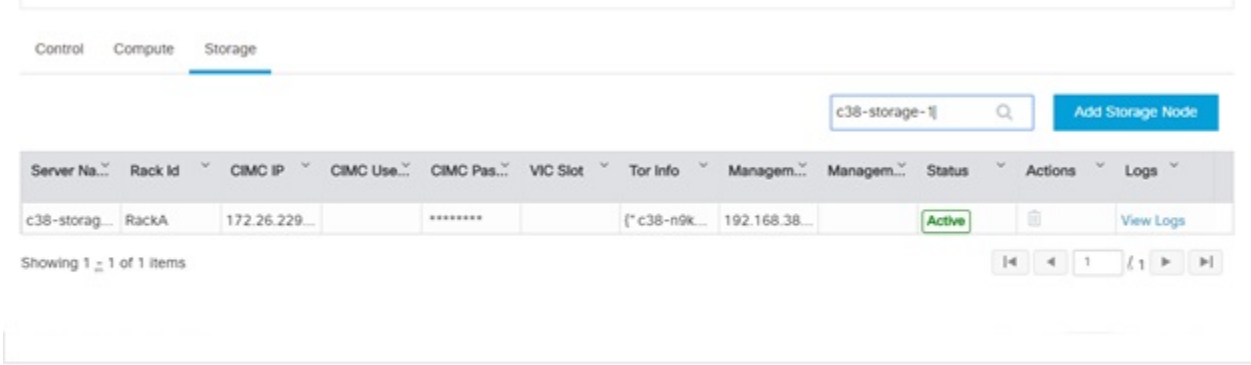
Figure 5: Pod Management



Searching Compute and Storage Nodes

This functionality allows you to search the Compute and Storage nodes by server names only. The search result is generated or shows an empty grid if there are no results.

Figure 6: Search Storage Nodes



Managing Software

Software management of your Cisco VIM pods includes software update, reconfigure of openstack services and password, etc.

VIM Software Update

As part of the lifecycle management of the cloud, VIM has the ability to bring in patches (bug fixes related to code, security, etc.), thereby providing cloud management facility from software point of view. Software update of the cloud is achieved by uploading a valid tar file, following initiation of a System Update form the Unified Management as follows:

Step 1 In the Navigation pane, click **Post-Install** > **System Update**.

Step 2 Click **Browse** and select the valid tar file.

Step 3 Click **Open**.

Step 4 Click **Upload and Update**.
Update started Successfully message will be displayed.

Step 5 Update status will be shown as **ToUpdate**.

Click the hyperlink to view the reconfigure logs for install logs.

Reconfigure status will be available on the page or the dashboard under **POD Operation** details.

What to do next

System Update has been initiated message will be displayed. Logs front-ended by hyperlink will be in the section below in-front of **Update Logs** which shows the progress of the update. During the software update, all other pod management activities will be disabled. Post-update, normal cloud management will commence. Once update has completed you will see the status of update in the box below.

If log update fails, **Auto-RollBack** will be initiated automatically.

If log update is successful, you will have two options to be performed:

1. **Commit**—To proceed with the update.
2. **RollBack**—To cancel the update.

If Auto-rollback fails during software update fails through Unified Management UI, it is advised that the administrator contact Cisco TAC for help. Do not re-try the update or delete the new or the old installer workspace.

If the update is successful and reboot is required for at least one compute node:

- Only commit or rollback is allowed.
- Following operations are not permitted:
  - Reconfigure
  - System update
  - Pod management

Note You can reboot the node, only after the commit or rollback operation.

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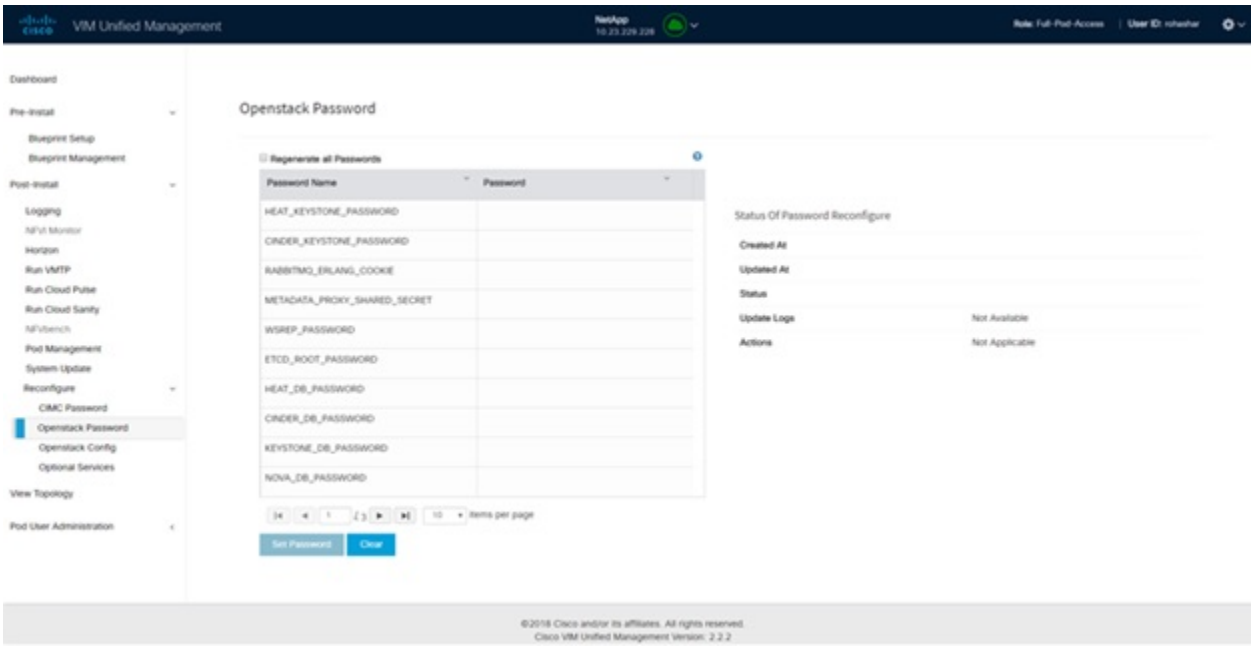
Reconfigure Openstack Passwords

There are two options to regenerate the passwords:

- **Regenerate all passwords**: Click **Regenerate all passwords** checkbox and click **Set Password**. This will automatically regenerate all passwords in alphanumeric format.
- **Regenerate single or more password**: This will set a specific password by doing an inline edit for any service like Horizon's ADMIN_USER_PASSWORD. Double click on the filed under Password and enter the password to enable **Set Password** button.



During the reconfiguration of password, all other pod management activities will be disabled. Post-update, normal cloud management will commence. If the reconfigure of the password fails, all subsequent pod management operations will be blocked. It is advised to contact Cisco TAC to resolve the situation through CLI.

Reconfigure OpenStack Services, TLS Certificates, and ELK Configurations

Cisco VIM supports the reconfiguration of OpenStack log level services, TLS certificates, and ELK configuration. Following are the steps to reconfigure the OpenStack and other services:

Step 1 In the navigation pane, click **Post-Install** > **Reconfigure Openstack Config**.

Step 2 Click the specific item that you want to change and update. For example: to update the TLS certificate click the path to the certificate location.

Step 3 Enter **Set Config** to commence the process.

What to do next

During the reconfiguration process, all other pod management activities are disabled. Post-update, normal cloud management commences. If reconfigure of OpenStack Services fails, all subsequent pod management operations are blocked. Contact, Cisco TAC to resolve the situation through CLI.

Reconfiguring CIMC Password through Unified Management

Cisco VIM allows you to 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.

You need to match the following password rule to update the password:

- 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.

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

Step 1 Log-in to **CISCO VIM Unified Management**.

Step 2 In the navigation pane, select **Post-Install**.

Step 3 Click **Reconfigure CIMC Password**.

Step 4 You can reconfigure the CIMC Password at global level by adding new CIMC_COMMON Password. To reconfigure CIMC Password for individual servers, double-click the server password that you want to edit.

Step 5 Click **Reconfigure** to initiate reconfigure process.

Reconfiguring Optional Services

Cisco VIM offers optional services such as heat, migration to Keystone v3, NFVBench, NFVIMON, etc, that can be enabled post-pod deployment. These services can be enabled in one-shot or selectively.

Listed below are the steps to enable optional services:

Step 1 In the navigation pane, click **Post-Install** > **Reconfigure Optional Services**.

Step 2 Choose the right services and update the fields with the right values.

Step 3 Click **Offline validation**.

Step 4 Once offline validation is successful, click **Reconfigure** to commence the process.

During the reconfiguration process, all other pod management activities will be disabled. Post-update, normal cloud management will commence.

If reconfigured OpenStack Services fail, all subsequent pod management operations are blocked. Contact Cisco TAC to resolve the situation through CLI.

Note All reconfiguration features contain repeated re-deployment option set to true or false.

- Repeated re-deployment true - Feature can be re-deployed again.
- Repeated re-deployment false- Deployment of feature allowed only once.

Deployment Status :

Optional Features	Repeated re-deployment Option
APICINFO	True
DHCP reservation for VM MAC address	True
EXTERNAL_LB_VIP_FQDN	False
EXTERNAL_LB_VIP_TLS	False
INSTALL_MODE	True
HTTP_PROXY & HTTPS_PROXY	True
LDAP	True
NETWORKING	True
NFVBENCH	False
NFVIMON	True. Can be unconfigured.
PODNAME	False
PROVIDER_VLAN_RANGES	True
SYSLOG_EXPORT_SETTINGS	False
TENANT_VLAN_RANGES	True
TORSWITCHINFO	False
VIM _ ADMINS	True
VMTP	False
VTS_PARAMETERS	False
AUTOBACKUP	` True
Heat	False
Cobbler	True
ES Remote Backup	True
CVIM-MON	True
NETAPP_SUPPORT	True
Enable Read-only OpenStack Admins	True
Base MAC address	True

Optional Features	Repeated re-deployment Option
VAULT	False
Cloud Settings	True

Reconfiguring Optional Features Through Unified Management

Step 1 Log into Cisco VIM UM.

Step 2 In the **Navigation** pane, expand the **Post-Install Section**.

Step 3 Click **Reconfiguring Optional Feature through UM**.

Step 4 On the **Reconfiguring Optional Feature through UM** page of the Cisco VIM UM, enter the data for the following fields:

Name	Description
Heat check box	• Enable **Heat**. • Click **Offline Validation** . • When Offline Validation is successful, click **Reconfigure** to commence the process.
Enable Read-only OpenStack Admins checkbox	• Check/uncheck **Enable Read-only OpenStack Admins** • Click **Offline Validation** When Offline Validation is successful, click **Reconfigure** to commence the process.
Keystone v3 check box	• Enable **Keystone v3**. • Click **Offline Validation** . • When Offline Validation is successful, click **Reconfigure** to commence the process.
ENABLE_ESC_PRIV	• Enable **ENABLE_ESC_PRIV** . • Click **Offline Validation** . • When Offline Validation is successful, click **Reconfigure** to commence the process.

Name	Description
Autobackup check box	• Enable/Disable **Autobackup**. • Click **Offline Validation** . • When Offline Validation is successful, click **Reconfigure** to commence the process.
External LB VIP TLS check box	• Enable **External LB VIP TLS**. • Click **Offline Validation** . • When Offline Validation is successful, click **Reconfigure** to commence the process.
External LB VIP FQDN check box	• Enter input as a string. • Click **Offline Validation** . • When Offline Validation is successful, click **Reconfigure** to commence the process.
Pod Name	• Enter Input as a string. • Click **Offline Validation** . • When Offline Validation is successful, click **Reconfigure** to commence the process.
Tenant Vlan Ranges	• Augment tenant vlan ranges input. For Example: 3310:3315. • Click **Offline Validation** . • When Offline Validation is successful, click **Reconfigure** to commence the process.
Provider VLAN Ranges	• Enter input to tenant vlan ranges. For Example: 3310:3315. • Click **Offline Validation** . • When Offline Validation is successful, click **Reconfigure** to commence the process.
Install Mode	• Select **Connected** or **Disconnected**, any one form the drop-down list. • Click **Offline Validation** . • When Offline Validation is successful, click **Reconfigure** to commence the process.

Name	Description
VAULT	• Enable Vault, if it is not deployed on day 0. • Click **Offline Validation** • If offline validation is successful, click **Reconfigure** to commence the process.
Cloud Settings	Following are the options for Cloud Settimgs: • **keystone_lockout_failure_attempts**: Number of incorrect password attempts before the user is locked out. Values are 0 by default for no lockout, and can be in the range of 0 to 10. • **keystone_lockout_duration**: Number of seconds a user is locked out. By default, it is 1800 for 30 minutes. Values are in the range of 300 (5 minutes) to a maximum of 86400 (24 hours). • **keystone_unique_last_password_count:** Forces the user to change their password to a value not used before. Default is 0 for no history check.Values are in the range of 0 to 10. • **keystone_minimum_password_age**: Restricts you to change their password at most every this many days. Default is 0 for no limit. Values are in the range of 0 to 2. • **horizon_session_timeout**: Number of seconds of inactivity before Horizon dashboard is logged out. Default is 1800 for 30 minutes. Values are in the range of 300 (5 minutes) to maximum of 86400 (24 hours). Click **Offline Validation**. If **Offline Validation** is successful, click **Reconfigure** to commence the process.

<table>
<tr><th>Name</th><th>Description</th></tr>
<tr><td>Registry Setup Settings checkbox</td><td>For Registry Setup:
Enter the Registry User Name. It is a mandatory field
Enter the Registry Password. The minimum length of the password is three.
Enter the Registry Email. It is a mandatory field.
Enter the Registry Name. For example, Registry FQDN name. It is a mandatory field, only when Cisco VIM Software Hub is enabled.
Click Offline Validation
If offline validation is successful, click Reconfigure to commence the process..</td></tr>
<tr><td>Syslog Export Settings</td><td>Following are the options for Syslog Settings:<table><tr><td>Remote Host</td><td>Enter Syslog IP Address.</td></tr><tr><td>Facility</td><td>Defaults to local5</td></tr><tr><td>Severity</td><td>Defaults to debug</td></tr><tr><td>Clients</td><td>Defaults to ELK</td></tr><tr><td>Port</td><td>Defaults to 514 but is modified by the User.</td></tr><tr><td>Protocol</td><td>Supports only UDP</td></tr></table>Click Offline Validation .
When Offline Validation is successful, click Reconfigure to commence the process.</td></tr>
<tr><td>Configure ToR checkbox</td><td>True or False. Default is false.</td></tr>
</table>

<table>
<tr><th>Name</th><th>Description</th></tr>
<tr><td>ToR Switch Information</td><td>Click + to add information for ToR Switch.
<table>
<tr><th>Name</th><th>Description</th></tr>
<tr><td>Name</td><td>ToR switch name.</td></tr>
<tr><td>Username</td><td>ToR switch username.</td></tr>
<tr><td>Password</td><td>ToR switch Password.</td></tr>
<tr><td>SSH IP</td><td>ToR switch SSH IP Address.</td></tr>
<tr><td>SSN Num</td><td>ToR switch ssn num. output of show license host-id.</td></tr>
<tr><td>VPC Peer Keepalive</td><td>Peer Management IP. You need not define if there is no peer.</td></tr>
<tr><td>VPC Domain</td><td>Need not define if there is no peer.</td></tr>
<tr><td>VPC Peer port</td><td>Interface for vpc peer ports.</td></tr>
<tr><td>VPC Peer VLAN Info</td><td>vlan ids for vpc peer ports (optional).</td></tr>
<tr><td>BR Management Port Info</td><td>Management interface of the build node.</td></tr>
<tr><td>BR Management PO Info</td><td>Port channel number for the management interface of the build node.</td></tr>
</table>
Click Save
• Click Offline Validation .
• When Offline Validation is successful, click Reconfigure to commence the process.</td></tr>
</table>

Note When setup data is ACI VLAN with TOR then reconfigure options are:

<table>
<tr>
<td>TORSwitch Information mandatory table if you want to enter ToR information</td>
<td>Click + to add information for ToR Switch.
<table>
<tr><th>Name</th><th>Description</th></tr>
<tr><td>Host Name</td><td>ToR switch name.</td></tr>
<tr><td>VPC Peer Keepalive</td><td>Peer Management IP.</td></tr>
<tr><td>VPC Domain</td><td>Do not define if there is no</td></tr>
<tr><td>Node ID</td><td>Integer, unique across all switches</td></tr>
</table>
Click Save
• Click Offline Validation .
• When Offline Validation is successful, click Reconfigure to commence the process.</td>
</tr>
<tr>
<td>NFVBench</td>
<td>Enable check box which by default is false.
Add ToR information connected to switch:
• Select a ToR Switch and enter the Switch name.
• Enter the port number. For example: eth1/5
• NIC Ports: INT1 and INT2 optional input, enter the two port numbers of the 4-port 10G Intel NIC at the management node used for NFVBench.
For mechanism driver VPP, there are two optional fields in NFVBENCH if network option is available:
• VTEP IPs: Mandatory for NFVBench with VXLAN. It must be comma separated IP pair in vxlan-tenant network, but not in the tenant pool.
• VNIs: Mandatory for NFVBench with VXLAN, and must be comma separated vnid_id pairs.
For mechanism driver VTS:
VTEP IPs: Mandatory for VTS/VXLAN only. It must be comma separated IP pair belonging to tenant network segment, but not in the tenant network pool.
• Click Offline Validation .
• When Offline Validation is successful, click Reconfigure to commence the process.
Note If ToR is already present in setup-data or already deployed, Tor info need not be added. By default ToR information switch name is mapped in NFV bench.</td>
</tr>
</table>

<table>
<tr>
<td>Swiftstack
SwiftStack is only supported with Keystone v2. If you select Keystone v3, swiftstack will not be available for configuration.</td>
<td>
<table>
<tr><td>Cluster End Point</td><td>IP address of PAC (proxy-account-container) endpoint.</td></tr>
<tr><td>Admin User</td><td>Admin user for swift to authenticate in keystone.</td></tr>
<tr><td>Admin Tenant</td><td>The service tenant corresponding to the Account-Container used by Swiftstack.</td></tr>
<tr><td>Reseller Prefix</td><td>Reseller_prefix as configured for Keystone Auth,AuthToken support in Swiftstack E.g KEY_</td></tr>
<tr><td>Admin Password</td><td>swiftstack_admin_password</td></tr>
<tr><td>Protocol drop-down list</td><td>http or https</td></tr>
</table>

Click Offline Validation .
When Offline Validation is successful, click Reconfigure to commence the process.

</td>
</tr>
</table>

<table>
<tr>
<td>LDAP with Keystone v3</td>
<td>
<table>
<tr><td>Domain Name field</td><td>Enter the Domain name.</td></tr>
<tr><td>Object Class for Users field</td><td>Enter a string as input.</td></tr>
<tr><td>Object Class for Groups</td><td>Enter a string.</td></tr>
<tr><td>Domain Name Tree for Users</td><td>Enter a string.</td></tr>
<tr><td>Domain Name Tree for Groups field</td><td>Enter a string.</td></tr>
<tr><td>Suffix for Domain Name field</td><td>Enter a string.</td></tr>
<tr><td>URL field</td><td>Enter a URL with port number.</td></tr>
<tr><td>Domain Name for Bind User field</td><td>Enter a string.</td></tr>
<tr><td>Password field</td><td>Enter Password as string format.</td></tr>
<tr><td>User Filter</td><td>Enter filter name as string.</td></tr>
<tr><td>User ID Attribute</td><td>Enter a string.</td></tr>
<tr><td>User Name Attribute</td><td>Enter a string.</td></tr>
<tr><td>User Mail Attribute</td><td>Enter a string.</td></tr>
<tr><td>Group Name Attribute</td><td>Enter a string.</td></tr>
</table>

Click Offline Validation .
When Offline Validation is successful, click Reconfigure to commence the process.

</td>
</tr>
</table>

<table>
<tr><td>NFVI Monitoring</td><td>Followings are the field values for NFVI monitoring:<table>
<tr><td>Master Admin IP</td><td>Enter the input in IP format.</td></tr>
<tr><td>Master 2 Admin IP field.</td><td>Enter the input in IP format.</td></tr>
<tr><td>Collector Management IP</td><td>Enter the input in IP format.</td></tr>
<tr><td>Collector VM1 info</td><td></td></tr>
<tr><td>Host Name field</td><td>Enter Host Name as a string.</td></tr>
<tr><td>CCUSER password field</td><td>Enter Password.</td></tr>
<tr><td>Password field</td><td>Enter password.</td></tr>
<tr><td>Admin IP field</td><td>Enter Input as IP format.</td></tr>
<tr><td>Management IP field</td><td>Enter Input as IP format.</td></tr>
<tr><td>Collector VM2 info</td><td></td></tr>
<tr><td>Host Namefield</td><td>Enter a string.</td></tr>
<tr><td>CCUSER field</td><td>Enter Password.</td></tr>
<tr><td>Management IP field</td><td>Enter Input as IP format.</td></tr>
<tr><td>Dispatcher</td><td></td></tr>
<tr><td>Rabbit MQ Username Field</td><td>Enter a string.</td></tr>
<tr><td>NFVIMON_ADMIN</td><td>Enter a single string. Can have only one and is optional.</td></tr>
</table>

Click Offline Validation .
When Offline Validation is successful, click Reconfigure to commence the process.
</td></tr>
<tr><td>VTS Parameter</td><td>Following are the fields to reconfigure for VTS parameters<table>
<tr><td>VTC SSH Username field.</td><td>Enter the string.</td></tr>
<tr><td>VTC SSH Username field.</td><td>Enter the password.</td></tr>
</table>

Click Offline Validation .
When Offline Validation is successful, click Reconfigure to commence the process.
</td></tr>
</table>

<table>
<tr>
<td>VMTP</td>
<td>
Check one of the check boxes to specify a VMTP network:

Provider Network
External Network

For the Provider Network complete the following:
<table>
<tr><td>Network Name field.</td><td>Enter the name for the external network.</td></tr>
<tr><td>IP Start field.</td><td>Enter the starting floating IPv4 address.</td></tr>
<tr><td>IP End field.</td><td>Enter the ending floating IPv4 address.</td></tr>
<tr><td>Gateway field</td><td>Enter the IPv4 address for the Gateway.</td></tr>
<tr><td>DNS Server field.</td><td>Enter the DNS server IPv4 address.</td></tr>
<tr><td>Segmentation ID field.</td><td>Enter the segmentation ID.</td></tr>
<tr><td>Subnet</td><td>Enter the Subnet for Provider Network.</td></tr>
</table>
For External Network fill in the following details:
<table>
<tr><td>Network Name field.</td><td>Enter the name for the external network.</td></tr>
<tr><td>Network IP Start field.</td><td>Enter the starting floating IPv4 address.</td></tr>
<tr><td>Network IP End field.</td><td>Enter the ending floating IPv4 address.</td></tr>
<tr><td>Network Gateway field</td><td>Enter the IPv4 address for the Gateway.</td></tr>
<tr><td>DNS Server field.</td><td>Enter the DNS server IPv4 address.</td></tr>
<tr><td>Subnet</td><td>Enter the Subnet for External Network.</td></tr>
</table>

Click Offline Validation .
When Offline Validation is successful, click Reconfigure to commence the process.

</td>
</tr>
</table>

Networking In Reconfigure optional services networking, you can reconfigure IP tables, or add http_proxy/https_proxy.	

To reconfigure networking, update the relevant information:

IP Tables	Click **Add(+)** to add a table. Enter input as subnet format. E.g. 12.1.0.1/2
http_proxy_server	Enter HTTP_PROXY_SERVER E.g. <a.b.c.d:port>
https_proxy_server	Enter HTTP_PROXY_SERVER E.g. <a.b.c.d:port>
NTP Server	Click Add (+) to add server • You can delete or edit the entered value • You cannot delete all the data (minimum 1 server should be present) • Maximum of four NTP servers can be present.
Domain Name Server	Click Add (+) to add server • You can delete or edit the entered value. • You cannot delete all the data (minimum 1 server must be present) • Maximum of three DNS servers can be present.
Head-end replication	Add VTEP IP address and comma separated VNI IDs. Multiple entries are allowed. You can change VTEP IP for individual compute/control servers. **Note** Whenever HER is removed from both vxlan-tenant and vxlan-tenant, all the vtep ips associated with

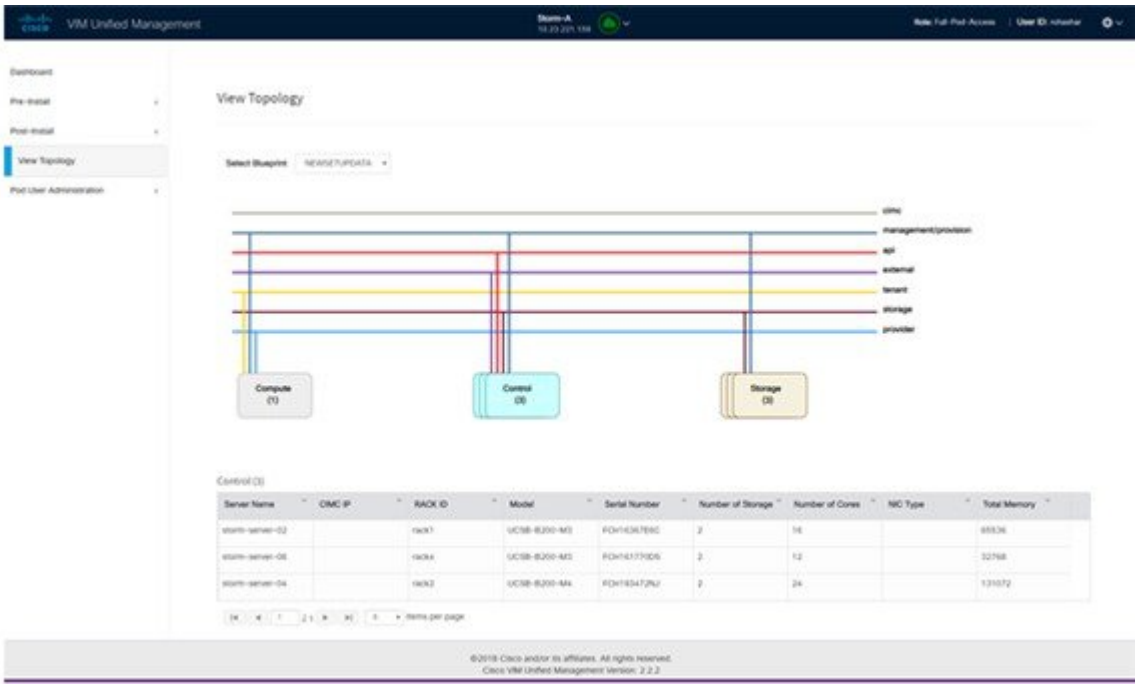
		the computes are removed.
	Layer 3 BGP Adjacency	Applicable to control servers only when VXLAN is enabled in NETWORK OPTIONS.IPs are picked up from management subnet, but not from IP pool. You can change the existing IP values if required.
	• Click **Save**. • Click **Offline Validation**. • When Offline Validation is successful, click **Reconfigure** to commence the process.	
APICINFO **Note** Reconfigure optional services only APIC hosts can be reconfigure.	To reconfigure APICINFO, follow the process: • Enter input for APIC hosts format. <ip1|host1>:[port] or eg.12.1.0.12 • Click **Save**. • Click **Offline Validation**. • When Offline Validation is successful, click **Reconfigure** to commence the process. **Note** APIC hosts can be reconfigure minimum 1 host and max 3 but not 2 hosts.	
Vim_admins	To reconfigure vim_admins, follow the process: • To add a new root user, Click + and add the Username and admin hash password (Starting with $6). At least, one Vim Admin must be configured, when Permit root login is false. • To remove the existing user, Click -. • When Offline Validation is successful, click **Reconfigure** to commence the process.	

Cobbler	To reconfigure Cobbler, follow the process: • Generate the admin password hash by executing the below command: `python -c 'import crypt; print crypt.crypt ("<plaintext_strong_password>")' on the management node.` • Validate that the admin_password_hash starts with '$6' • Enter Admin Password Hash. • Click **Offline Validation**. • When Offline Validation is successful, click **Reconfigure** to commence the process.
ES Remote Backup	To reconfigure Elastic Search Remote Backup: **Service** field displays NFS by default, if the remote NFS server is used. • Enter the **Remote Host**, which is IP of the NFS server. • Enter the **Remote Path.** . It is the path of the backup location in the remote server. • Click **Offline Validation**. • If Offline Validation is successful, click **Reconfigure** to commence the process.
CVIM-MON	To reconfigure CVIM-MON, enter the following details: • Enter the **Low Frequency**, such that it is higher than medium frequency. Minimum value is 1 minute. By default, it is set to 1 minute. • Enter the **Medium Frequency**such that it is more than high frequency. Minimum value is 30 seconds. By default, it is set to 30 seconds. • Enter the **High Frequency** such that the minimum value is 10 seconds. By default, it is set to 10 seconds. • Click **Offline Validation**. • If Offline Validation is successful, click **Reconfigure** to commence the process. • Set **ui_access** to True in deployed Blueprint, to enable the Cisco VIM monitor link. This property is reconfigurable. If set to False, the link is disabled.

NETAPP_SUPPORT	To reconfigure NETAPP_SUPPORT, enter the following details: • Select the **Server Port**. It is the port of NetApp management or API server. Select 80 for HTTP and 443 for HTTPS. • Select the **Transport Type** of the NetApp management or API server. It can be HTTP or HTTPS. • Select the **NetApp Cert Path**. It is the root ca path for NetApp cluster, only if protocol is HTTPS. • Click **Offline Validation**. • If Offline Validation is successful, click **Reconfigure** to commence the process.

View Topology

You can view the graphical representation of the control, compute, and storage node that is associated with the various network segments.



You can click Control, Compute, or Storage from the topology, to view the details of respective node.

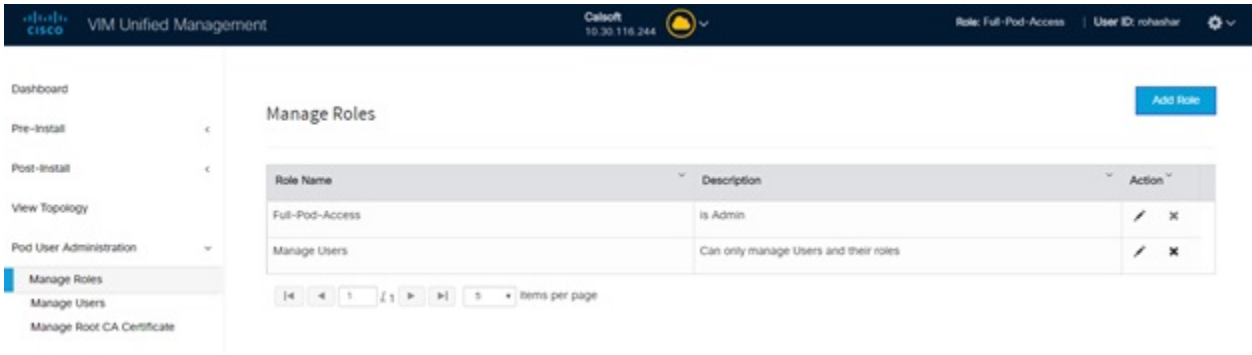
Pod User Administration

Cisco VIM UM offers Users (Pod Admins or Pod Users) to manage Users and roles that are associated with them.

Managing Roles

User can create multiple Roles and assign them to other pod users. System has a default role that is named as Full-Pod-Access which is assigned to the person who registers the Pod.

Manage Roles



Step 1 Click **Login as POD User.**

Step 2 Navigate to **Pod User Administration** and click **Manage Roles**. By default you see full-pod-access role in the table.

Step 3 Click **Add New Role** to create a new role.

Step 4 Complete the following fields in the **Add Roles** page in Cisco VIM UM:

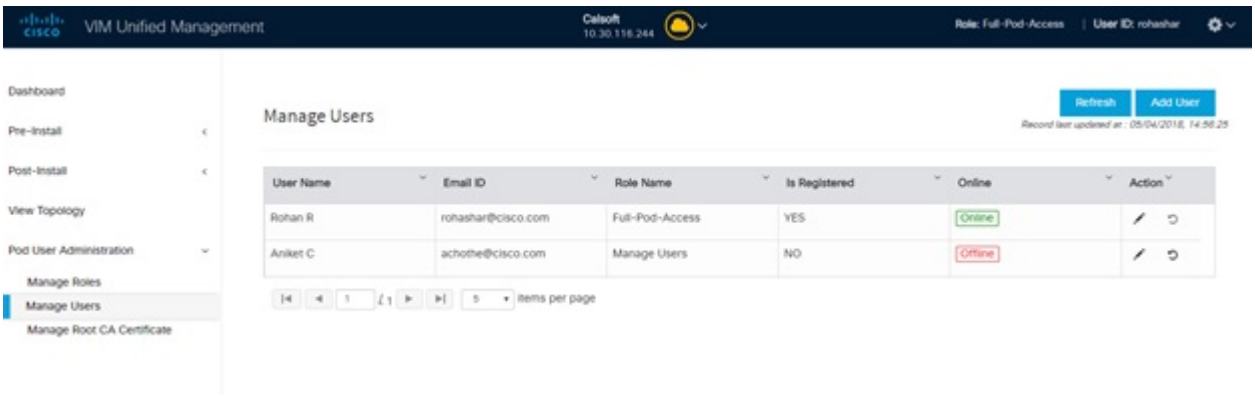
Field Name	Field Description
Role	Enter the name of the role.
Description	Enter the description of the role.
Permission	Check the **Permission** check box to select the permission.
Click **Save**.	Once the Blueprint is in Active state all the permissions are same for C-series and B-series Pods other than Reconfigure CIMC Password which is missing for B-series Pod.

Note Permissions are divided in the granular level where viewing Dashboard is the default role that is implicitly added while creating a role.

Note Permissions are divided in the granular level where viewing **Dashboard** is the default role that is implicitly added while creating a role.

Managing Users

This section allows you to add the users. It shows all the users associated with the Pod. You can check the online status of all the user. Click**Refresh** on upper right corner to check the status.



To add a new user:

Step 1 Click **Login as POD User**.

Step 2 Navigate to **POD User Administration** and click **Manage Users** .

Step 3 Click **Add Users** to add a new user.

Step 4 Complete the following fields in the **Add Users** pane of the Cisco VIM Unified Management:

Field Name	Field Description
User auth	Select the User auth for the new user. This option is enabled only if LDAP mode is True.
Select User	• While adding new pod-user, a drop-down appears in the user-registration form containing all users with pod-user permissions. • Only available when DISPLAY_ALL_POD_USERS is set to True.
Registration Type	Registration type can be User/Group only when User Auth is LDAP. Following fields are available when the Registration Type is 'Group': • Group Dn – Enter the distinguished name of the LDAP group. • Group Name – Enter the name of the LDAP group
Email ID	Enter the Email ID of the user or the LDAP user id if LDAP user attribute is set to uid.
User Name	Enter the User Name if the User is new. If the User is already registered to the Unified Management the User-Name gets auto-populated.
Role	Select the Role from the drop-down list.

Step 5 Click **Save** Once the Blueprint is in Active state all the permissions are same for C-series and B-series Pods other than Reconfigure CIMC Password which is missing for B-series Pod.

Revoke Users

User with Full-Pod-Access or Manage Users permission can revoke other users from the specific Pod.

To revoke users:

Step 1 Click **Undo** icon. A confirmation pop up will appear.

Step 2 Click **Proceed** to continue.

Note Self revoke is not permitted. After revoking the another user, if the user is not associated with any other pod then the revoked user will be auto deleted from the system.

Edit Users

User with Full-Pod-Access or Manage Users permission can edit other user's permission for that specific Pod.

To edit user's permission

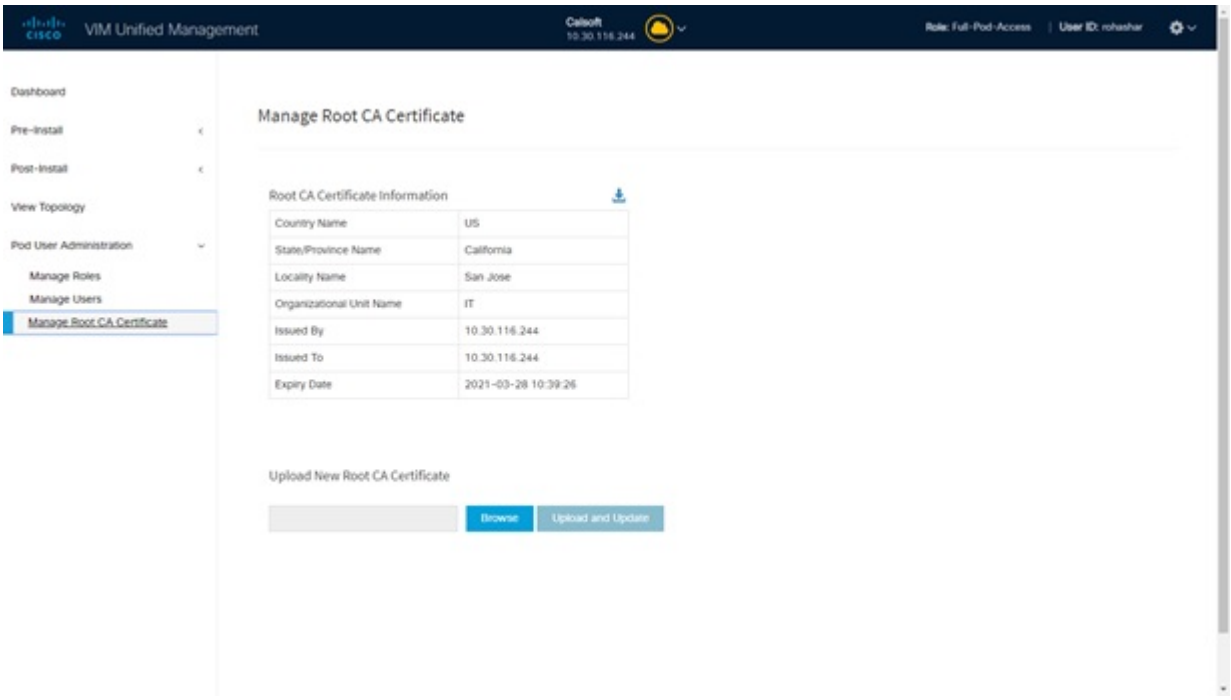
Step 1 Click **Edit** icon.

Step 2 Update the permission.

Step 3 Click **Save**. The Grid will get refreshed automatically.

Managing Root CA Certificate

You can update the CA Certificate during the registration of the POD. Once, logged in as POD User and if you have the permission to update the certificate you can view under POD User Administration>> Manage Root CA Certificate.



To update the Certificate:

Step 1 Click **Login as POD User**

Step 2 Navigate to **POD User Administration>>Manage Root CA certificate**.

Step 3 Click **Browse** and select the certificate that you want to upload.

Step 4 Click **Upload.**

- If the certificate is Invalid, and does not matches with the certificate on the management node located at (var/www/mercury/mercury-ca.crt) then Unified Management reverts the certificate which was working previously.
- If the Certificate is valid, Unified Management runs a management node health check and then update the certificate with the latest one.

Note The CA Certificate which is uploaded should be same as the one which is in the management node.