

EDUCLOUD SERVER

User Guide

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EduCloud Server User Guide

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Overview

This document provides basic instructions for using the EduCloud Server Service. Instructions for network tasks are in a separate document. More detailed information is available through VMWare documentation (click the help icon from EduCloud).

Getting Started with EduCloud Server

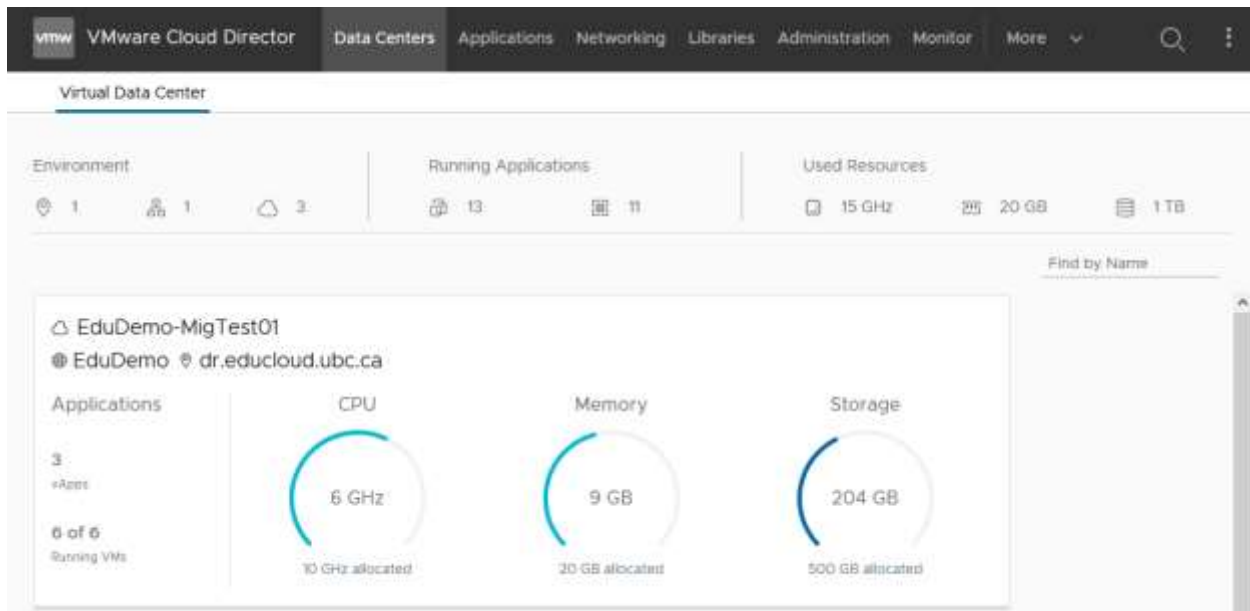
Log In to the Web Interface

Access the EduCloud Server user interface using a web browser.

- **Note:** You must have an account in order to access the EduCloud Server service. This account was specified when you initially ordered the EduCloud Server service and/or provided by your Org Administrator.
1. Open a Web browser and navigate to:
<https://bcnet.educloud.ubc.ca/tenant/<OrganizationCode>>.
The <OrganizationCode> was provided during the onboarding process. For example, the University of British Columbia IT department could have an access URL similar to:
<https://bcnet.educloud.ubc.ca/tenant/ubc-it/>
 2. Type the user name and password provided during onboarding and click **LOGIN**.
- **Note:** If you are unable to log in after repeated attempts, ensure you have entered your organization code correctly in the URL. The web interface will always display a login screen – even for incorrect organization codes.

After successfully logging in, you will be brought to the Data Centers Dashboard screen which displays the **Navigation Menu** at the top, the **Summary Ribbon** below that, and the **Virtual Data Centers** display in a card view.

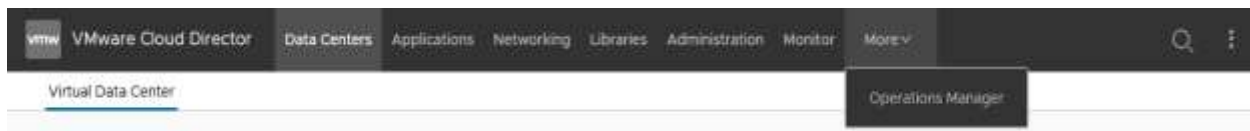
Data Centers - Virtual Data Center Dashboard



Note that depending on the role(s) your user is assigned, you may not see some items.

Navigation

From the main menu, navigate using the primary drop down menu.



Datacenters

Virtual Data Centers and Data Center Groups

Applications

Virtual Applications (vApps) and Virtual Machines (VMs)

Networking

Networks and Edge Gateways

Libraries

Managing Templates, Catalogues, and Media (ISOs, etc)

Administration

User and Group management

Monitor

Tasks and Events

Operations Manager

Dashboard view of health and performance

Navigating VDCs

When navigating to other menu items and returning to **Datacenters** you will see a list of VDCs, even if you only have one VDC.

To bring up the side menu, click on the card for the virtual datacenter you are working with.

Multiselect Option

This option allows you to perform operations on multiple VMs or vApps simultaneously.

Site: dr.educloud.ubc.ca | Organization: EduDemo | Data center: EduDemo-Kam-Std

Virtual Machines

Find by: Name [ADVANCED FILTERING](#) Sort by: Creation Date

6 Virtual Machines [Clear all filters](#)

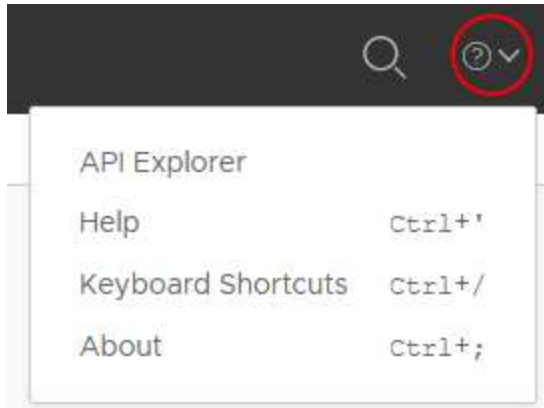
[NEW VM](#) [ACTIONS](#) [Select all](#) [Deselect all](#) Multiselect

Microsoft Windows Server 2019 Microsoft Windows Server 2019

Common Tasks

Find Help

Use the slide out menu on the top right of the screen. Click on Help under the Help section. This links to the vendor's on-line vCloud Director Tenant Portal documentation.



Create vApp/VM from Template

Libraries → vApp Templates → Click on the desired template → Create vApp

Create vApp/VM

Data Centers → Appropriate VDC Card → vApps → New → Add vApp from Catalog

Modify Virtual Machine Resources (CPU, RAM, Disks, NICs)

Data Centers → Appropriate VDC Card → Virtual Machines → Find your VM → DETAILS → Hardware

Snapshot vApp/VM

Data Centers → Appropriate VDC Card → vApp/Virtual Machines → Find vApp/VM → ACTIONS → Snapshot → Create Snapshot

Note that Snapshots should not be kept for more than a week and should NOT be used as a backup. Snapshots negatively impact VM performance and backups. Network information is not captured by a snapshot.

Upload an OVF (Open Virtualization Format) or ISO

Libraries → Media & Other → ADD

Restore a vApp or VM

Place a Service Request

vApps

A vApp is a collection of one or more virtual machines together with the associated networking. You can create a new vApp based on a vApp Template from one of the Catalogues that you have access to; either standard EduCloud templates, or a catalog created in your Organization. vApps can also be created from OVF (Open Virtualization Format) or an Install Disk/ISO.

vApp Creation

There are a number of ways to create a vApp. To create a vApp, ensure that the following items are configured:

- vApp Name
- VM Name
- VM Computer Name – this will be used as the host name
- Network Information
- VM Stop Action – Shutdown OS / Halt VM
- vApp Sharing

vApp Creation from Standard Template

Create vApp

- vApps → NEW → Add vApp From Catalog
- Select your target VDC (Virtual Data Center)
- Choose the template based on the OS and the Catalogue and click Next.

Select Template To Import

	Name	Catalog	Created On	VI
<input type="radio"/>	Image - Red Hat Enterprise Linux 7	EduAdmin-Kam	03/04/2022, 12:03:59 PM	1
<input type="radio"/>	Image - Red Hat Enterprise Linux 8	EduAdmin-Kam	03/04/2022, 12:03:57 PM	1
<input type="radio"/>	Image - Ubuntu 18.04 LTS	EduAdmin-Kam	03/04/2022, 12:02:56 PM	1

- Enter a vApp name (Description is optional) → Next

- Enter a VM Name → Next
Configure Resources

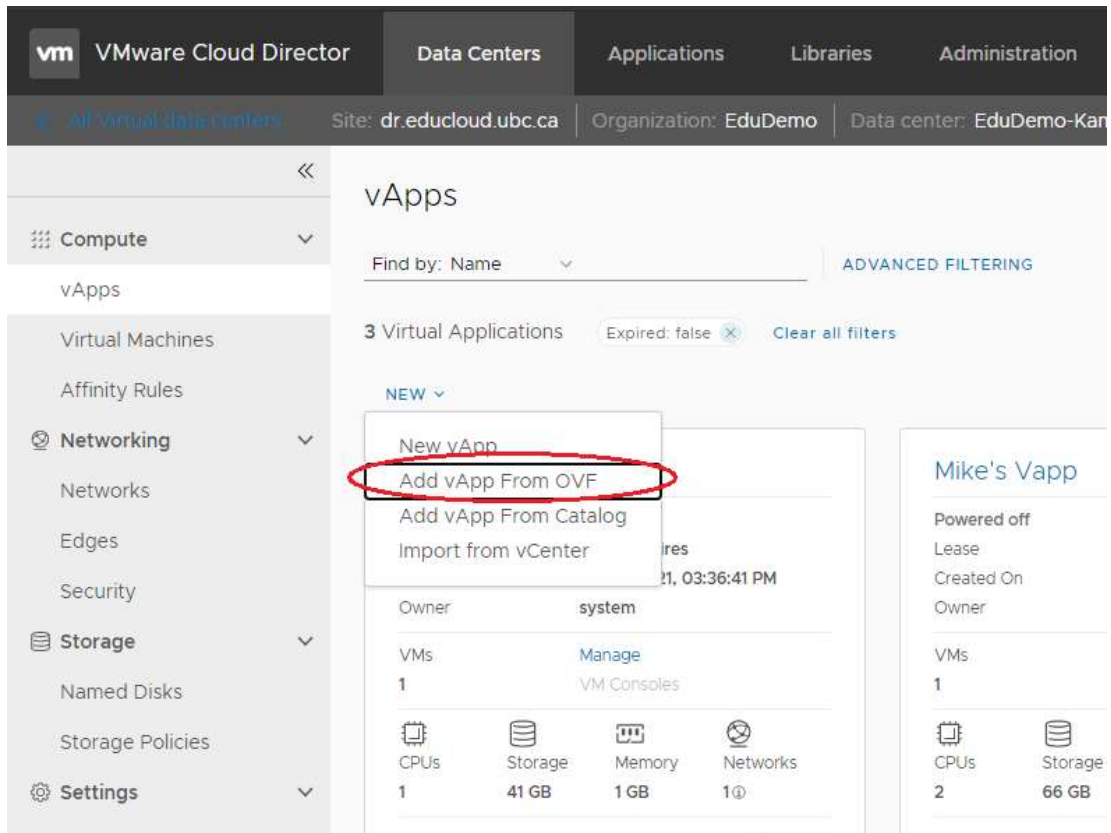
Select the Storage Policies that you want the deployed virtual machines of this vApp to use.

Name	Storage Policy	Default VM Template Storage Policy
myVM	Kam Standard (\$\$) ▾	-

- Enter the desired number of virtual CPUs and memory → Next
- Enter the desired Hard Disk size → Next
If required, you will be able to add additional disks once the VM is provisioned
- Enter the Computer name and select the desired network from the Network dropdown menu → Next
If you wish more advanced customization, check the box for **Switch to the advanced network workflow**
- Review the details and click FINISH
- Configure VM as required

vApp Creation from OVF

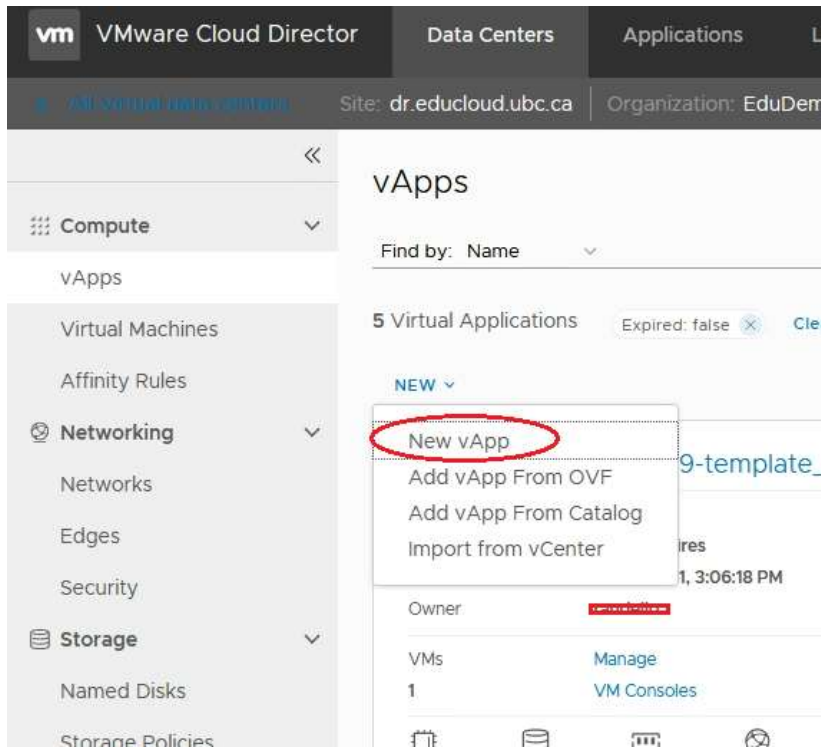
- If you have more than one VDC (Virtual Data Centre), choose the Data Center you wish
Data Centers → Select the **Data Center** desired.
- From the **Compute** menu choose **vApps**
- Click on the **NEW** dropdown → **Add vApp From OVF**



- Under **Select Source, Browse** to select your OVF package → Next
- **Review Details** → Next
- **Accept Licenses**, if applicable → Next
- **Enter vApp Name** → Next
- **Configure Resources**; Set VM Name, Computer Name, and Storage Policy → Next
- **Select Network**:
If you wish more advanced customization, check the box for **Switch to the advanced network workflow**
- Select the desired resources
- **Ready to Complete**: Review and click **Finish**

vApp Creation from Install Disk

- Ensure you are in the correct Virtual Data Center
- From the **Compute** menu, choose **vApps** → **New** → **New vApp**



- Enter a vApp **Name** then **ADD VIRTUAL MACHINE**
- Enter a VM **Name**, a **Computer Name** and choose Type **New** and other options as appropriate
- Select a previously uploaded ISO as the Boot Image
- Enter the size of the hard disk
- Click **OK**
- Click **Create**
- Power On the VM
- Use the Console to interact with the Install
- After installing the guest OS, ensure that VMware tools, or open-vmware-tools is installed and running – see "VMware tools and open-vm-tools" section

Virtual Machines

Guest OS Customization

Guest OS customization configures the guest operating system of a VM.

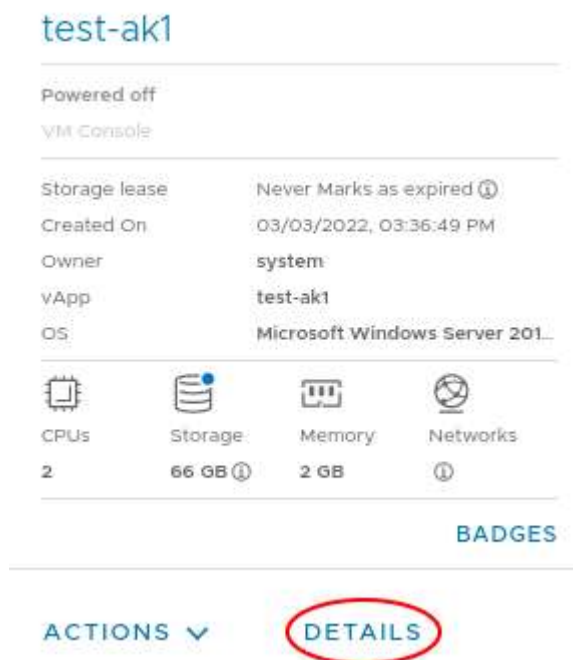
The customization process can update the administrator/root password, hostname, and network settings based on the information entered in the VM properties. It also ensures there are no hostname, IP, and MAC address conflicts.

Guest OS Customization is usually run after creating a VM or making configuration changes. Run **Guest OS Customization** to:

- change the administrator/root password
- reset the host name
- reset the network settings

The guest OS must have VMware tools or open-vm-tools installed for guest customization to work.

- In the appropriate **Virtual Datacenter** → **Compute** menu, choose **Virtual Machines**
- Find the **VM** you wish to modify
You can also navigate to the **VM** via the **vApp**
- Click **DETAILS**.
- Select **Guest OS Customization** → **Edit**



- To change the administrator/root password, ensure that the following are selected:

- Enable guest customization
- Allow local administrator password
- Auto generate password or specify a password

Edit Guest Properties

General

Enable guest customization

The computer name and network settings configured for this VM are applied to its Guest OS when the VM is powered on. The following settings are only applied the 1st time the VM is powered on or if "Power on and Force Recustomization" is performed. Change SID, Password Reset, Join Domain and Customization Script. Guest customization should not be enabled if the VM uses iGuest Properties for customization.

Change SID

Applicable for Windows VMs and will run Sysprep to change Windows SID. On Windows NT, VMware Cloud Director uses Sidgen. Running sysprep is a prerequisite for completing domain join.

Password Reset

Allow local administrator password

Require Administrator to change password on first login

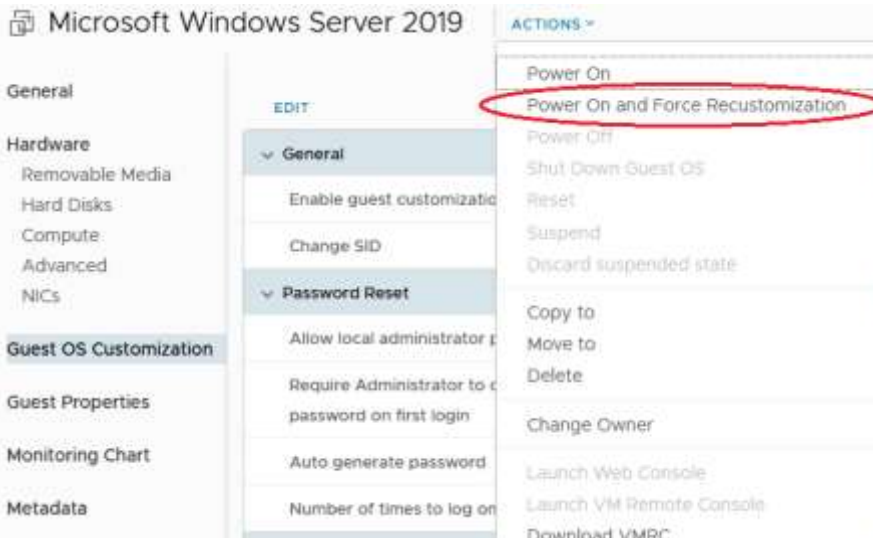
Auto generate password

Specify password

Number of times to log on automatically

Value of 0 will disable automatic log on as administrator.

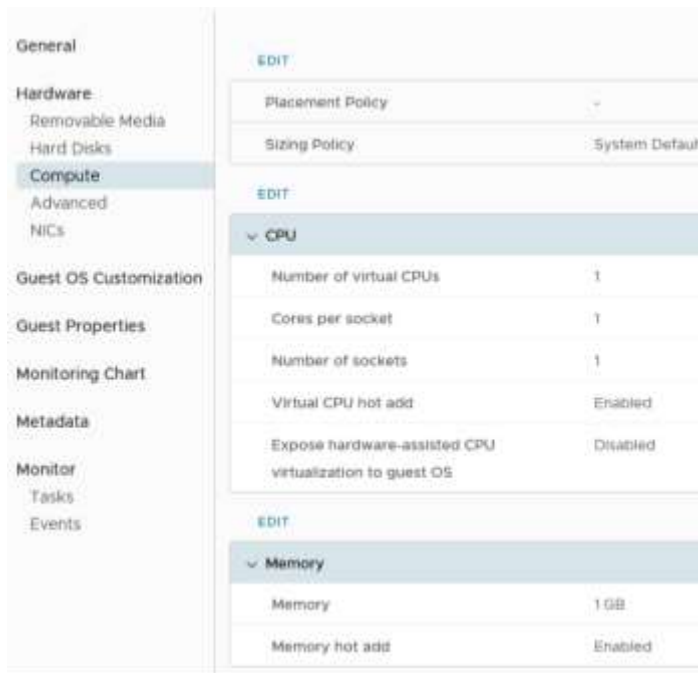
- Then click **Save**
- Shut down the VM if it is still running
- From the ACTIONS dropdown select Power on and Force Recustomization



Host name, network info and (if selected) credentials will be changed.

Modify VM CPU Memory, Hard Disk and/or Network Resources

- In the appropriate Virtual Datacenter → **Compute** menu, choose **Virtual Machines**
- Find the VM you wish to modify
You can also navigate to the VM via the vApp
- Click **DETAILS**
- Under **Hardware**



- Modify as required:
 - Virtual CPUs and cores
 - Total memory
 - Add disk and/or modify current disks
 - Add NIC and/or modify current NICs
- Depending on your change, run Guest OS Customization
From **ACTIONS** select **Power on and Force Recustomization**

Enable Hot Add

These options are enabled by default on all EduCloud templates in the public catalogues.

The hot-add options allow you to increase CPU and memory resources to a VM that is powered on. This feature is only supported on certain guest operating systems and virtual machine hardware versions.

- In the appropriate Virtual Datacenter select the **Compute** menu
- Choose **Virtual Machines**

- Find the VM you wish to modify
You can also navigate to the VM via the vApp
- **Details** → **Hardware** → Compute → **Edit** the CPU / Memory settings
- Toggle the **Virtual CPU hot add** and/or **Memory hot add** as you wish

VM Console

Please note that browser pop-ups must be enabled to open a VM console.

- In the appropriate Datacenter → **Compute** → **Virtual Machines** → find the appropriate **VM**
- Click on **VM Console**



Or click on **ACTIONS** and choose **Launch Web Console** or **Launch Remote Console**
If the VM is not powered on, first click on **ACTIONS** and choose **Power On**.

You may see various setup messages first time the VM is powered on as EduCloud applies customization changes.

Once completed you will see your operating system logon prompt:

Affinity Rules

Affinity and anti-affinity rules allow some control over how VMs are distributed across hosts in the physical cluster/compute tier.

An Affinity Rule specifies that a group of VMs should be placed on the same host whenever possible. In some cases this can improve performance by reducing network latency for communications between the VMs.

An Anti-affinity Rule specifies that a group of VMs should be placed on different hosts whenever possible, minimizing how many VMs are impacted when a single host fails. This feature is often used for a group of VMs that are being load balanced.

View Affinity Rules

You can view existing affinity and anti-affinity rules and their properties including rules, status, and applicable virtual machines of each rule.

- In the appropriate Virtual Datacenter → **Compute** menu, choose **Affinity Rules**

Add an Affinity Rule

- In the Affinity Rules section, click **NEW**.
- Type a **Name** for the new affinity rule.
- (Optional) Deselect **Enabled** to create the rule without enabling it.
- (Optional) Deselect **Required** to create a preferred rule, which means that the virtual machines added to the rule are powered on even when the rule is violated.
- Select virtual machines to add to the affinity rule
- Click **SAVE** to create the new rule

Add Anti-Affinity Rule

- In the appropriate Virtual Datacenter → **Compute** menu, choose **Affinity Rules**
- In the Anti-Affinity Rules section, click **NEW**
- Type a **Name** for the new anti-affinity rule
- (Optional) Deselect **Enabled** to create the rule without enabling it
- (Optional) Deselect **Required** to create a preferred rule, and enable the cluster to power on the virtual machines even if the rule is violated
- Select virtual machines to add to the anti-affinity rule
- Click **SAVE** to create the new rule

Edit Affinity or Anti Affinity Rule

- In the appropriate Virtual Datacenter → **Compute** menu, choose **Affinity Rules**
- Select the **Anti-Affinity** or **Affinity** rule you wish to edit
- Click **EDIT**
- Edit as required
- Click **SAVE** to apply the changes to the rule

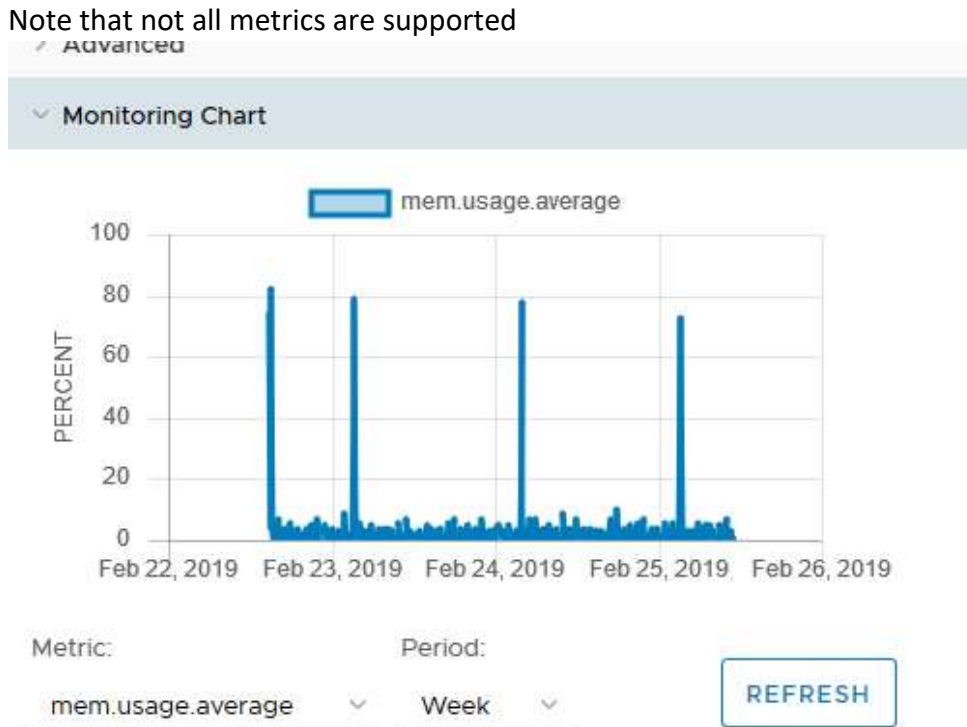
Delete an Affinity or Anti-Affinity Rule

- In the appropriate Virtual Datacenter → **Compute** menu, choose **Affinity Rules**
- Select the **Anti-Affinity** or **Affinity** rule you wish to delete
- Click **DELETE**

Monitoring Chart

Basic VM Statistics are available via the EduCloud interface.

- In the appropriate Virtual Datacenter → **Compute** menu, choose **Virtual Machines**
- Find the VM you wish to look at
You can also navigate to the VM via the vApp
- Click on **Monitoring Chart** in the menu on the left
- Choose a **Metric** and **Period**

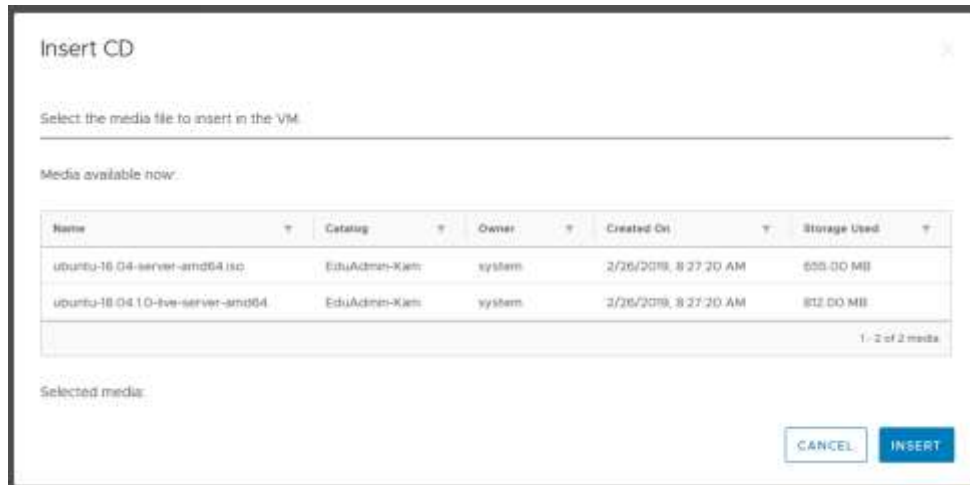


Mount ISO

If you need to mount an ISO image:

1. Upload the ISO if you have not already:
Libraries → **Content Libraries** Menu → **Media & Other** → **ADD**
2. Mount the ISO to the VM:
 - a. **Datcenters** → **Compute** Menu → **Virtual Machines** → find the VM
 - b. **ACTIONS** → Insert Media

- c. Click the desired ISO and then click **INSERT**



Install a Guest Operating System

If the Public catalogues do not have a required image you have the option to install a Guest OS directly.

- Create a Blank VM
- Mount the OS Install ISO as in the previous section
- Power up the VM (ACTIONS → Power On)
- Complete the installation using the Console (ACTIONS → Launch Web Console)
- Ensure that VMware Tools or open-vm-tools is installed in the Guest OS – see the "VMware Tools and open-vm-tools" section

Add Additional VMs to a vApp

- Datacenters → **vApps** → Find the vApp you created
- Click **ACTIONS** → **Add** → **Add VM**
- Click the **Add Virtual Machine** button

- Enter a **Name** , **Computer Name**, and if using a template, choose the template

New VM ✕

Name *

Computer Name *

Description

Type * New From Template

Power on

Templates

Template	OS
<input checked="" type="radio"/> Name Image - Red Hat Enterprise Linux 7 64bit (ea717dd6-23d4-4aae-94e6-c5c769e275d2) Catalog EduAdmin-Vari	Red Hat Enterprise Linux 7 (64-bit)

Use custom storage policy

End User License Agreements

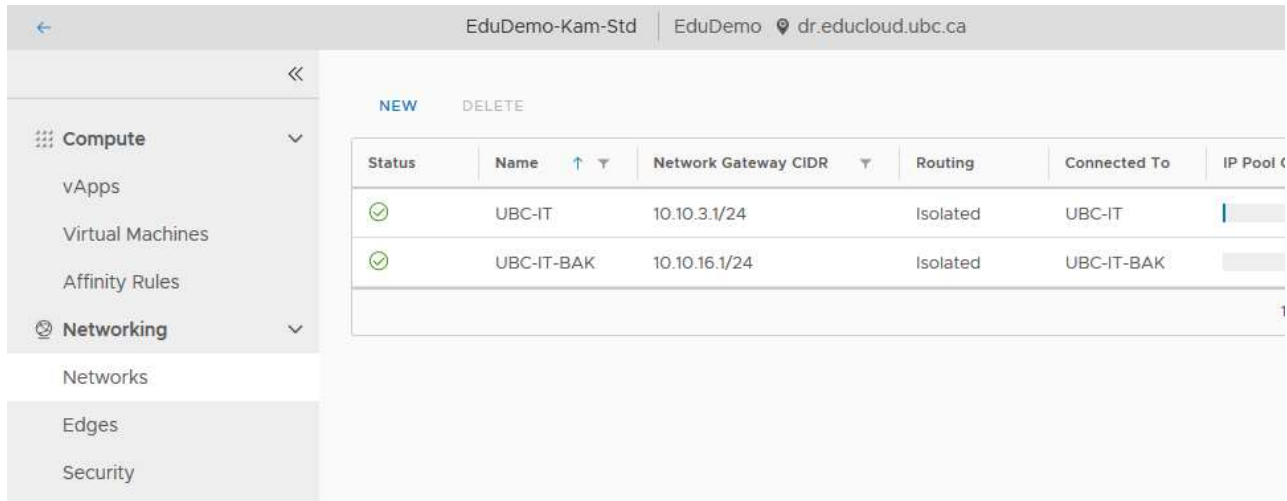
There are no EULAs to review.

- Click OK

Networking

This is a brief discussion of networking in EduCloud. See the more comprehensive "*EduCloud Networking and Security Guide*" for more information regarding networks and firewalls.

Datacenters → **Virtual Data Center** → Desired **VDC** → **Networking** Menu → **Networks** will show networks that have been added to and/or created in your Organization.



Networks can be configured when creating a VM or can be added to a vApp (Compute → vApps → Find vApp → ACTIONS → **Add Network**) and then configured.

Configuring a Network for a VM under **Hardware**, you will see the following:



- Primary NIC – indicates the primary NIC for traffic
- Connected – indicates whether the NIC is enabled
- Network – the network connected to this NIC
- IP Mode
 - DHCP – if you have configured and are using DHCP
 - Static IP Pool – EduCloud will assign an IP from the Network selected
 - Static Manual – allows you manually specify an IP Address
- MAC Address – assigned to the NIC. To reset, clear the field and Save

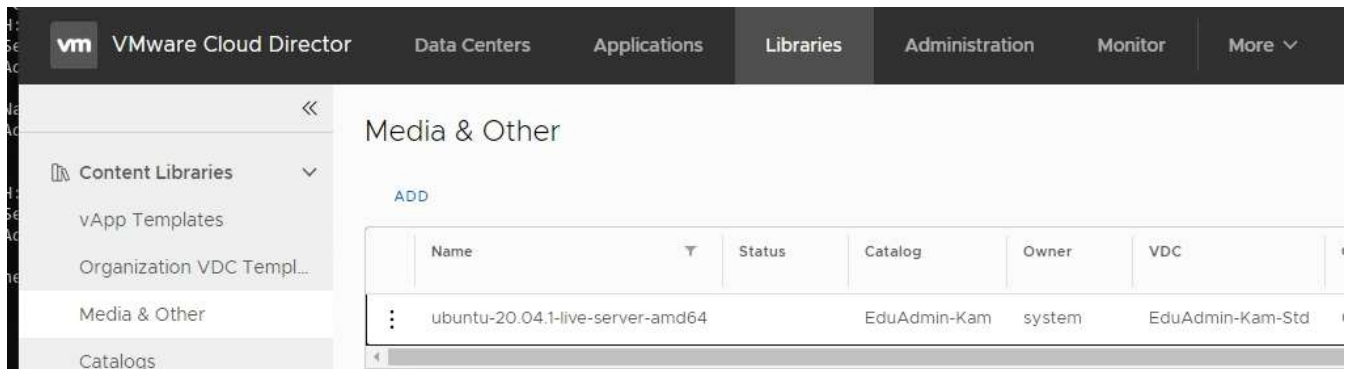
Catalogues

A catalogue is a container for vApp templates and media files.

EduCloud has public catalogues containing pre-built operating system images. You can also create your own templates and/or upload media as necessary, depending on the roles assigned to your account.

Navigation

To view Catalogues and Media, go to **Libraries** in the top menu



From the Content Libraries menu, choose:

- **Catalogs**
 - to view Public catalogues and view/edit Organization-specific catalogues
- **vApp Templates**
 - to view vApp Templates in Catalogs
- **Media and Other**
 - to view/upload/delete ISOs and other media in Catalogs

Public Catalogues

EduCloud publishes catalogues containing vApp Templates built with recent versions of Microsoft Windows, RedHat Linux, and Canonical Ubuntu. You can use these templates to create vApps within your organization.

To view catalogues and create new vApps:

- **Libraries → Content Libraries Menu → Catalogs**

To view vApp Templates directly

- **Libraries → Content Libraries Menu → vApp Templates**

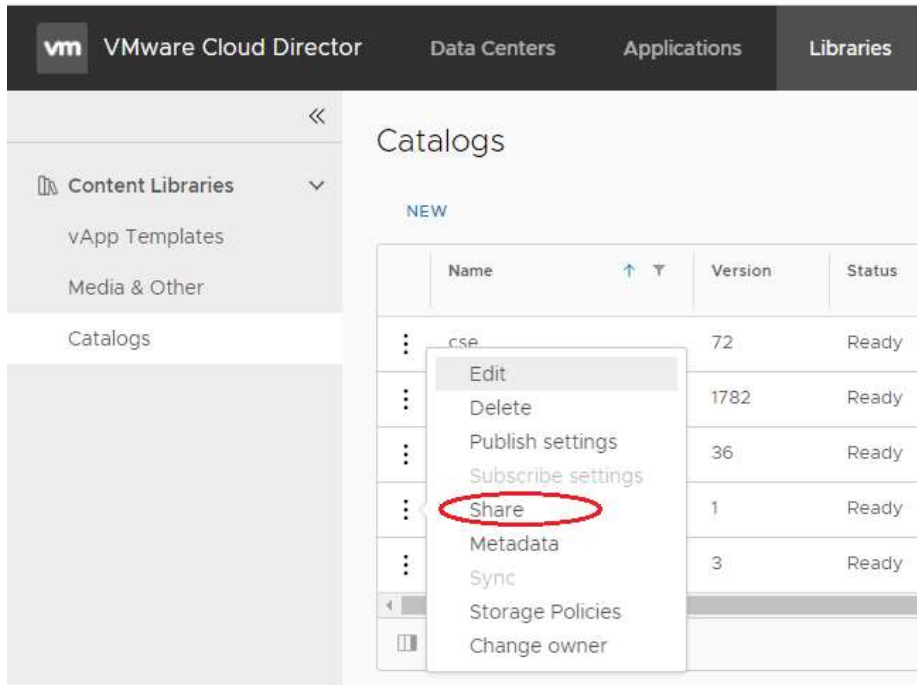
Public Catalogues will be in a catalog named **EduAdmin-*location***
e.g.: EduAdmin-Van

My Organization's Catalogues

As noted, you can create a catalogue and publish its content to the users of your organization. Create a catalogue first, then add vApp Templates and Media

Create a Catalogue

- **Libraries** → **Content Libraries** Menu → **Catalogs**
- Click **NEW**
- Enter a **Name**
- Click **OK**
- From the menu for the Catalog choose **Share**



- Click the **+ADD** button
- Share as required

Create a vApp Template

From vApp

- Create a vApp configured and customized as per your requirements
- **Datacenters** → **vApps** → Find vApp → **ACTIONS** → **Add to Catalog**

- Select the Catalog and any other options and click **OK**

Add to Catalog:-2019-template ✕

Add this vApp to catalog:

Catalog:

⚠ This catalog is public and available to other organization members.

Name *

Description

When using this template: Make identical copy Customize VM settings.

This setting applies when creating a vApp based on this template. It is ignored when building a vApp using individual VMs from this template.

From OVF

- **Libraries** → **Content Libraries** Menu → **vApp Templates** → **NEW**
- Select the source OVF; Review Details
- Enter a vApp Template Name and select the Catalogue
- **FINISH**

Add Media

- **Libraries** → **Content Libraries** Menu → **Media & Other**
- Click **ADD**
- Choose the Catalogue to add to
- Enter a **Name**
- Select the media to upload
- Click **OK**

User and Group Management

General

User, group, and role management can be found in the **Administration** menu.



You need to be an Organization Administrator to view this section. Roles and rights for users and groups in your Organization are managed here.

Import Users and Groups from Authentication Service

Import/Add users from your LDAP based authentication service (eg UBC CWL/EAD):

Add Users

- **Administration → Access Control → Users**
- **IMPORT USERS**
- Search for the username from the Search text box
- Select the user(s) from the search result
- Assign the appropriate role for the user(s)
- Click **SAVE**

Add Groups

- **Administration → Access Control → Users**
- **IMPORT GROUPS**
- Search for the group from the Search text box
- Select the group(s) from the search result
- Assign the appropriate role for the group(s)
- Click **SAVE**

Create Local User

For Users that are not in an LDAP Authentication System

Add Users

- **Administration → Access Control → Users**
- **NEW**

- Create the user's **Credentials**, choose **Role**, fill in the **Contact Info**, and select appropriate **Quotas**; or tick *Unlimited* where applicable
- Click **SAVE**

Roles

The following Roles are commonly used in the EduCloud Server Service. A number of other roles are available to Organization Administrators as well.

- **Administrator – Limited**
Limited access allowing VM management, console access, powering on/off, snapshot management, and password management.
However, there is no access to manage resources.
Primarily used for shared Organizations and/or allowing access to users for limited management of specific VMs in an Organization
- **Catalog Author**
Rights to create and manage vApps, Vms, and Catalogues
Limited Org management
- **Organization Administrator**
Rights to most Organization management except inter-org and VDC Management
- **vApp User**
Rights to use vApps created by other users.
Fewer rights than the Administrator – Limited role

VMware Tools and open-vm-tools

Support for VMs not running current versions of VMware Tools or open-vm-tools may be restricted. If you are having VM issues, please ensure you are running the latest version of the tools.

Some of the features that will fail for a VM without VMware tools installed:

- Guest OS Customization
- Security Tags or Security groups referencing your VM
- Proper guest OS shutdown when VM or vApp is stopped (vm will be halted)

VMware Tools

VMware Tools are the official, commercial versions of the guest system utilities from VMware and consist of a suite of virtualization utilities that improve the functionality, administration, and management of virtual machines within a VMware environment.

VMware tools enable features such as shared folders and cut and paste operations between the guest operating system and the machine from which you launch the vCloud Director Web console.

Installation on a Windows Guest

- In the appropriate Datacenter → **Compute** → **Virtual Machines** → find the appropriate **VM**
- In the left pane, click **VMs**
- **Actions** → select **Install VMware Tools**
- Follow the prompts in the guest OS to complete the installation wizard
- Click **Finish**
- Restart the virtual machine

Install on a Linux Guest

Check to see whether open-vm-tools is more appropriate for the OS you are working with. If so, use the steps on the Open VM Tools section, below.

- In the appropriate Datacenter → **Compute** → **Virtual Machines** → find the **VM**
- In the left pane, click **VMs**
- **Actions** → select **Install VMware Tools**
- Login to the VM via the console or remote
- If using a GUI in the guest OS, start the RPM installer
 - Double click the VMware Tools CD icon on your desktop and double click the RPM installer in the root of the CD-ROM
 - Double click the RPM installer in the file manager window
 - Type the root password and click **OK**
 - Click **Continue** when the package is ready
 - When VMware tools is installed, no confirmation or Finish button appears
- At a terminal console, as root, run the **vmware-config-tools.pl** script to configure VMware Tools
- Press Enter to accept the default values
- After the upgrade is complete, enter **/etc/init.d/network restart** to restart the network
- Type **exit**
- To start the VMware Tools control panel, enter **vmware-toolbox &**

Open VM Tools

open-vm-tools is the open source implementation of VMware Tools. The primary purpose for open-vm-tools is to enable operating system vendors and/or communities and virtual appliance vendors to bundle VMware Tools into their product releases.

VMware recommends using open-vm-tools redistributed by operating system vendors if available.

open-vm-tools is available with these operating systems:

- Fedora 19 and later releases
- Debian 7.x and later releases
- openSUSE 11.x and later releases
- Recent Ubuntu releases (12.04 LTS, 13.10 and later)
- Red Hat Enterprise Linux 7 and later releases
- CentOS 7 and later releases
- Oracle Linux 7 and later releases
- SUSE Linux Enterprise 12 and later releases

VMware Tools or open-vm-tools is already pre-installed on all EduCloud Server Public Catalog templates. For instructions on installing VMware Tools or open-vm-tools for a VM not deployed from one of the Public Catalog templates, please check <http://partnerweb.vmware.com/GOSIG/home.html>

Snapshots

Snapshots allow you to save the state of a vApp or VM. This allows an easy reversion to a previous state when working on a VM.

In EduCloud you can only create a single snapshot of a VM. This can be done either on a vApp level or a VM level. For example, you can snapshot all the VMs contained within a vApp by creating a vApp snapshot. Any subsequent VM snapshots will replace the previous snapshot (taken either on the vApp or VM level).

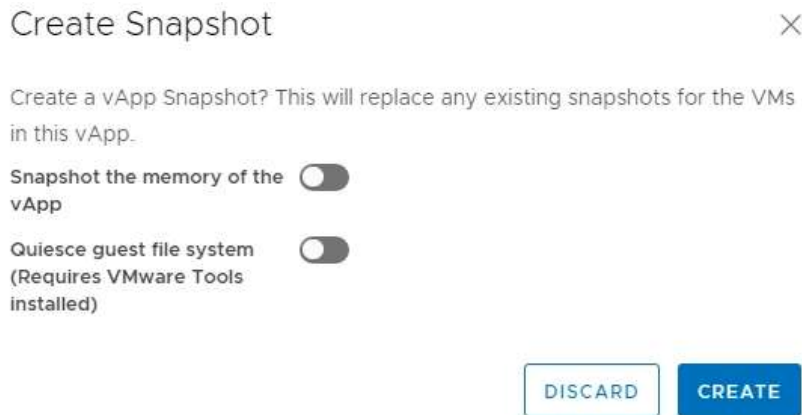
Snapshots should not be kept for longer than a week. The snapshot file will continue to grow as it ages. This may cause the snapshot storage location to run out of space, reduced system performance, and/or problems with regular backups.

Note that network information is not captured by a Snapshot – any networking changes made after the snapshot is taken will not be reverted if you roll back to a snapshot.

vApp snapshot

- In the appropriate Datacenter → **Compute** → **vApps** → find the appropriate **vApp**
- **ACTIONS** → **Create Snapshot**

- A window will pop up with a warning that previous snapshots will be replaced. Click **CREATE** to proceed.
- (Optional) Select whether to snapshot the memory of the vApp. When you capture the vApp memory state, the snapshot retains the live state of the vApp and the virtual machines in the vApp.
- (Optional) Select whether to quiesce the guest file system. This operation requires that VMware Tools is installed on the virtual machines in the vApp. A quiesce operation ensures that a snapshot disk represents a consistent state of the guest file systems.



This may take some time depending on how many VMs are contained in the vApp, their size and whether they are powered on.

VM snapshot

Alternatively, you may only want to create a snapshot for a single virtual machine.

- In the appropriate Datacenter → **Compute** → **Virtual Machines** → find the appropriate **VM**.
- **ACTIONS** → **Create Snapshot**
- Click **CREATE** button to create the snapshot
- (Optional) Select whether to snapshot the memory of the virtual machine. When you capture the virtual machine's memory state, the snapshot retains the live state of the virtual machine.
- (Optional) Select whether to quiesce the guest file system. This operation requires that VMware Tools is installed on the virtual machine. A quiesce operation ensures that a snapshot disk represents a consistent state of the guest file systems.

Create Snapshot



Create a VM Snapshot? This will replace any existing snapshots for this VM.

Snapshot the memory of the virtual machine

Quiesce the guest file system (Requires installed VMware Tools)

DISCARD

CREATE

Revert a vApp/VM to a Snapshot

You can revert a virtual machine to the state it was in when the snapshot was created. This can be done multiple times until the snapshot is deleted.

Remember that snapshots are intended for short term use and should not be kept for too long.

- In the appropriate Datacenter → **Compute** → **vApps / Virtual Machines** → find the appropriate **vApp** or **VM**
- **ACTIONS** → **Revert to Snapshot**
- Click **OK** button to create the snapshot

Remove a vApp/VM Snapshot

- In the appropriate Datacenter → **Compute** → **vApps / Virtual Machines** → find the appropriate **vApp** or **VM**
- **ACTIONS** → **Remove Snapshot**
- Click **OK**

This will remove snapshots from all VMs in the vApp

Remove a Snapshot for a single VM

- In the appropriate Datacenter → **Compute** → **Virtual Machines** → find the appropriate **VM**
- **ACTIONS** → **Remove Snapshot**
- Click **OK** button to create the snapshot

Appendix

Supported browsers

VMware Cloud Director is compatible with the current major and previous major release of the following browsers:

- Google Chrome
- Mozilla Firefox
- Microsoft Edge