

# Flowgate User Guide

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## Introduction

This document is a Flowgate user guide that has been outlined, written and reviewed by VMware, Inc. It is a reference that gives detailed information on the activities performed by facility system administrators and IT administrators.

## Purpose of the Document

The main purpose of this user guide is to help Flowgate Administrator to deploy/management Flowgate and IT administrator to use Flowgate to enhance their IT systems.

## Installation

### System requirements

Name	Capacity	Description
CPU	Minimal 4 vCPU	8 vCPU is preferred
Memory	Minimal 8GB	16GB is preferred
Disk	Minimal 60GB	120 GB is preferred

Network: Internal network access. Better to have external network access so that the system can update latest OS security fix(optional).

### Prerequisites

#### Nlyte account: (Optional)

It should have API read access right. (Flowgate will fetch server metadata from Nlyte. It will also try to fetch sensor data from Nlyte if there is)

#### PowerIQ accounts:(Optional)

Flowgate will fetch PDU data and its related humidity, temperature sensor data from PowerIQ. In case of facility side has multiple PowerIQ servers. It will need to create an account for each of them. The account needs API read access privilege.

#### Infoblox account:(Optional)

The account needs API access right. Flowgate will use Infoblox to map the IP address and asset name. Without the Infoblox system, the Auto-mapping will not work. Which means user need manually create the facility asset<->host mappings in Server mapping page.

#### vCenter account (Optional)

If user want to enable vCenter facility awareness they will need an vCenter account for the integration.

#### vRealize Operation manager account. (Optional)

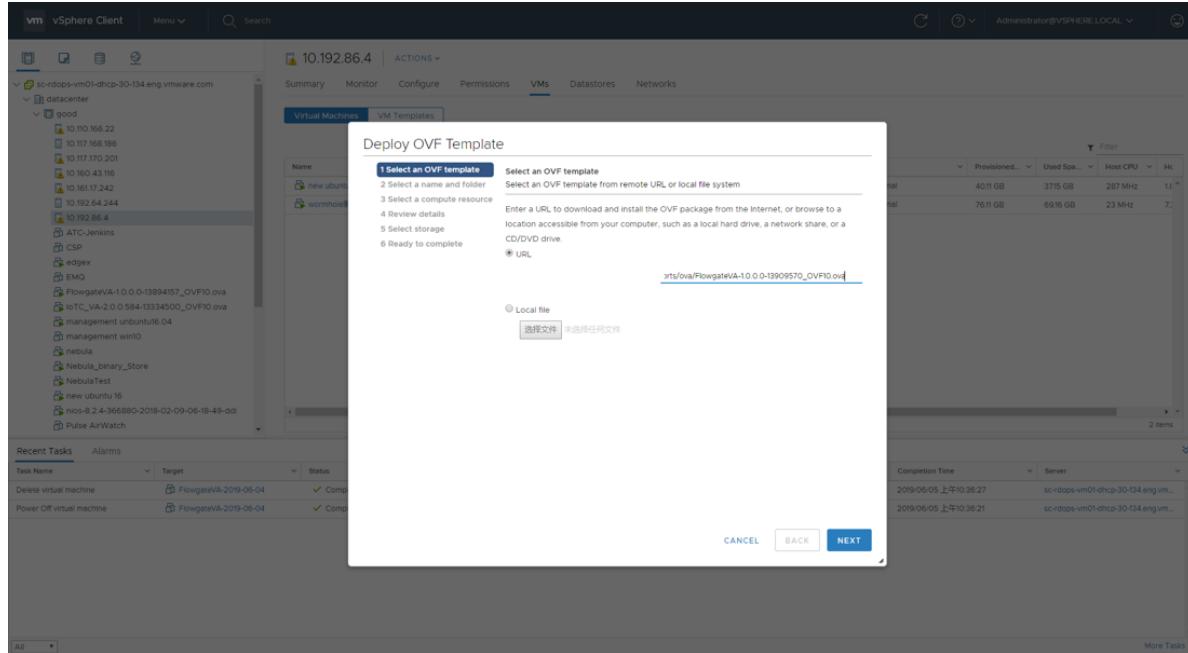
Used by Flowgate to feed the facility metrics data to vRealize Operation manager.

## Installation Steps

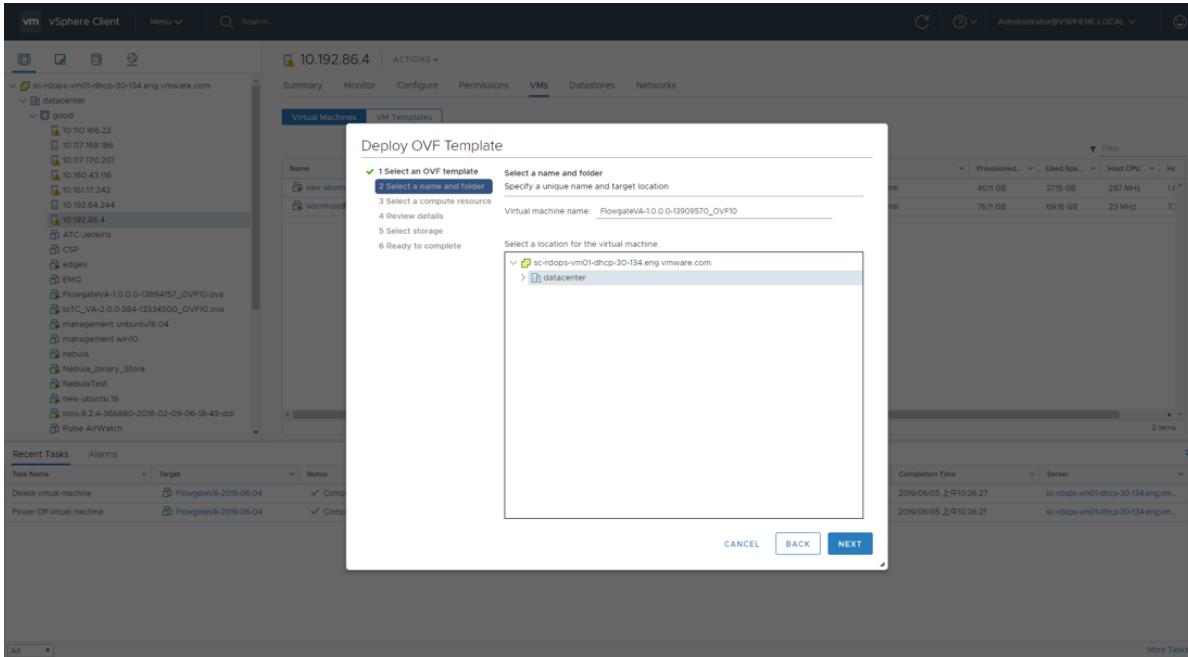
1> Download Flowgate Appliance.

2> Deploy the appliance to VCenter Server

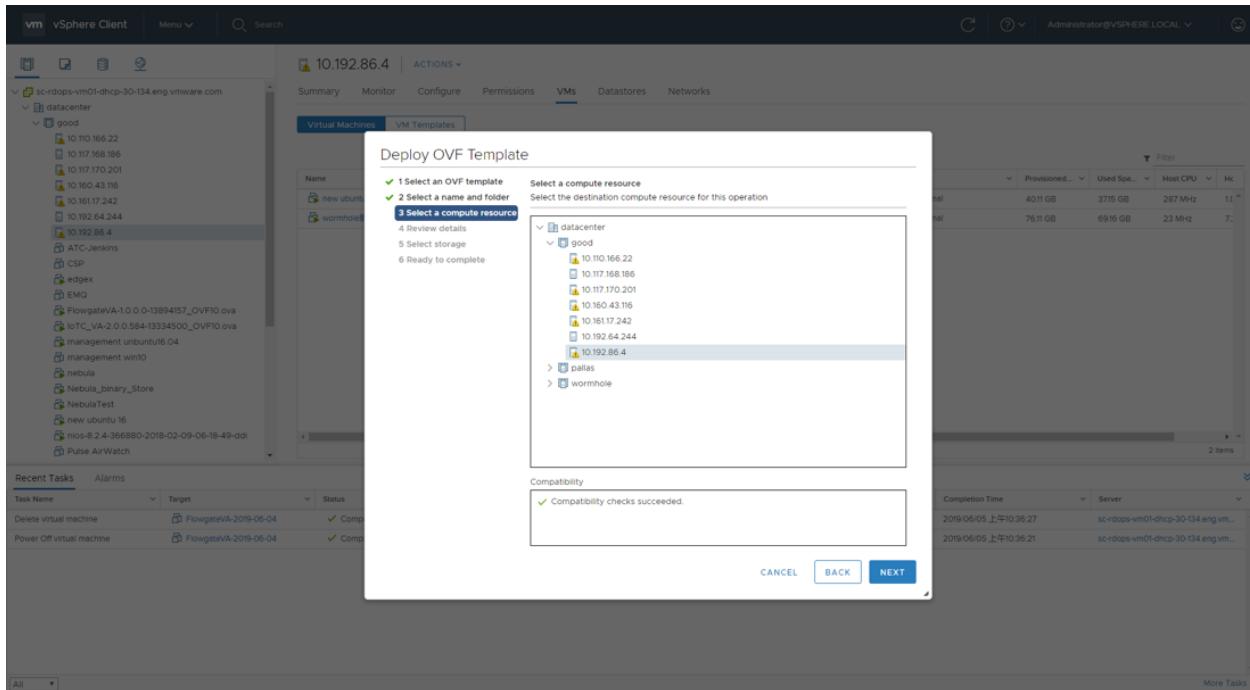
## I. Select Flowgate appliance, either by paste the download URL or select from Local file system.



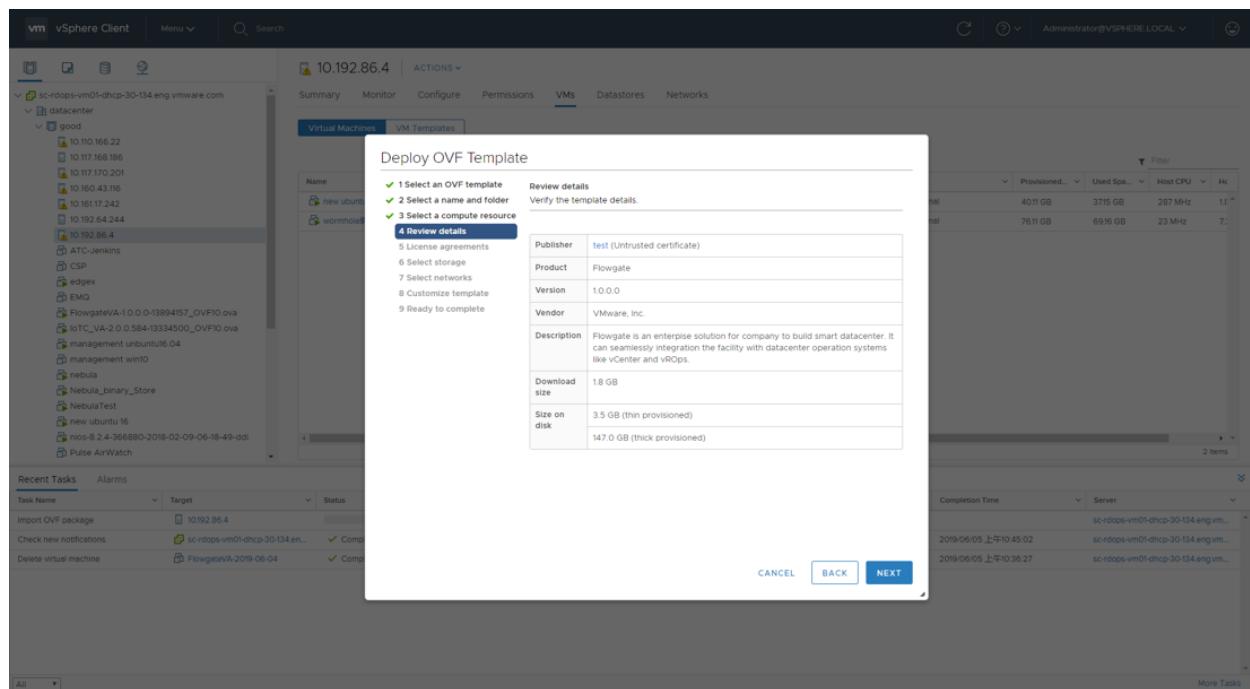
## II. Select datacenter.



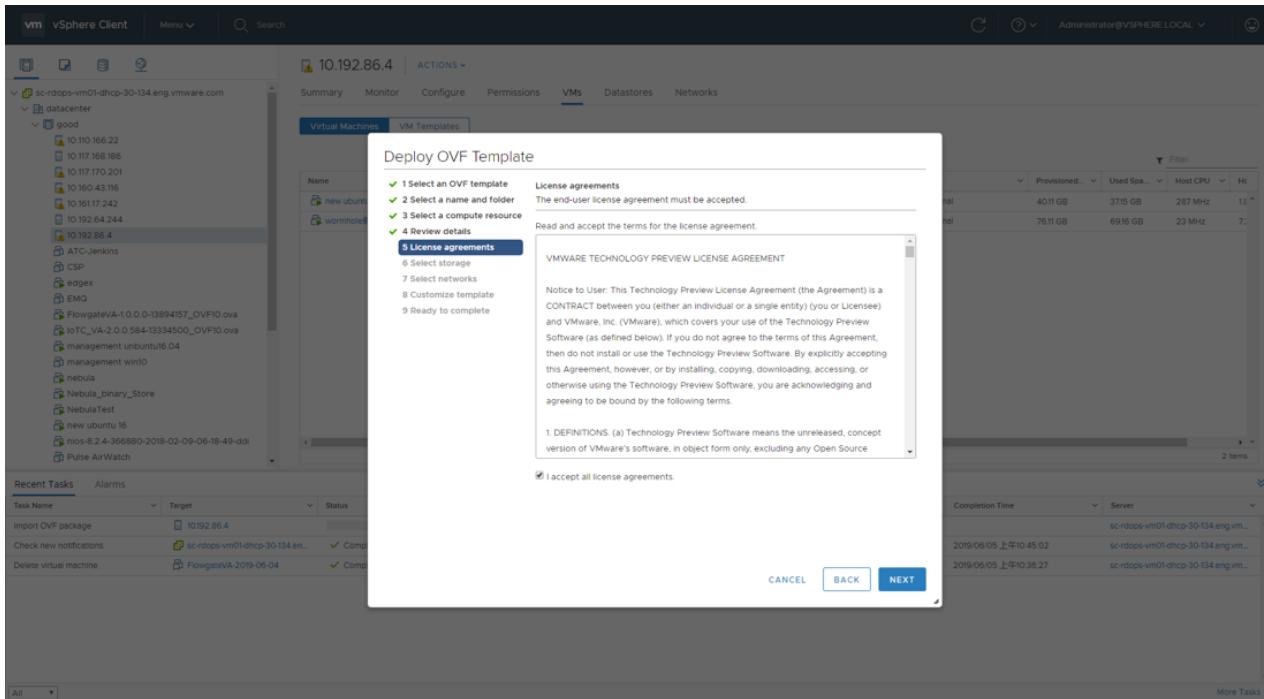
## III. Select Host.



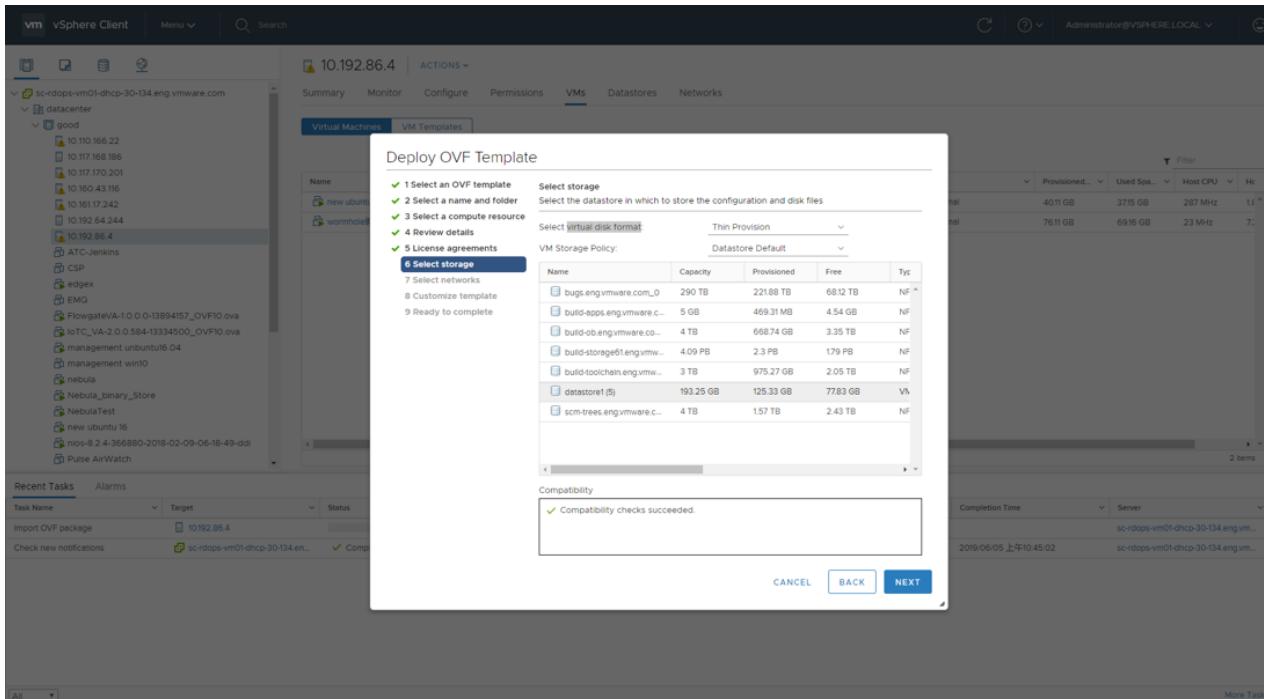
#### IV. Review details.



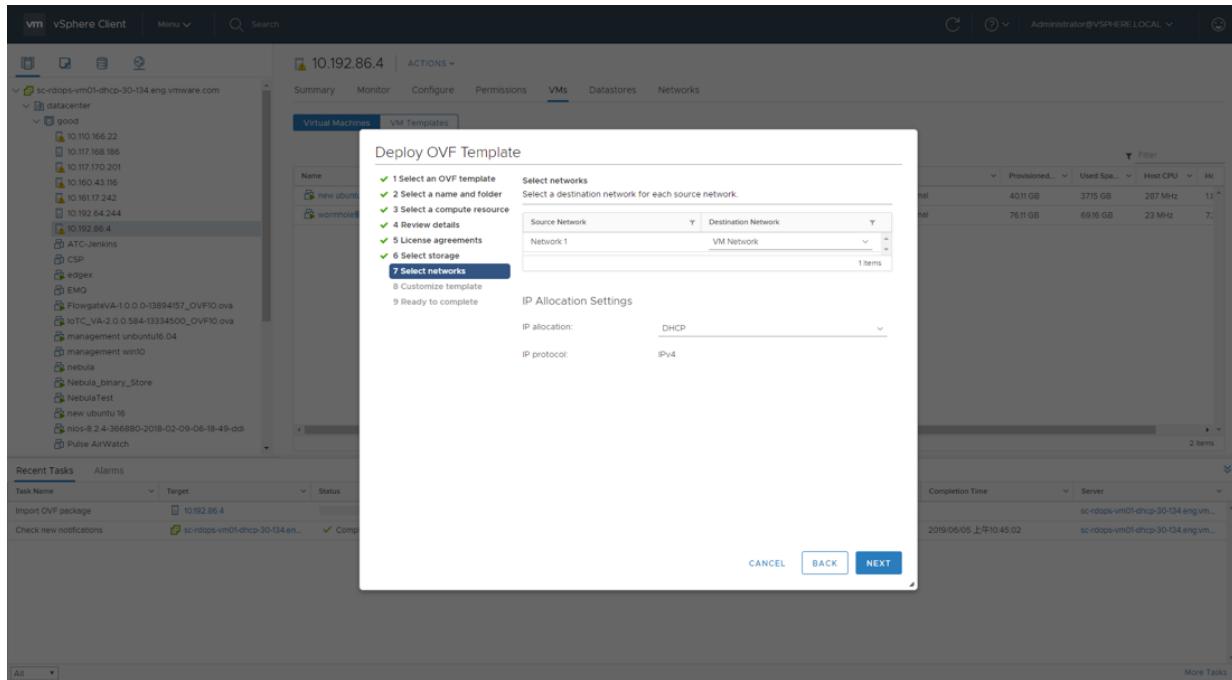
#### V. Accept the EULA.



## VI. Select storage. (In production environment, thick provision is preferred)

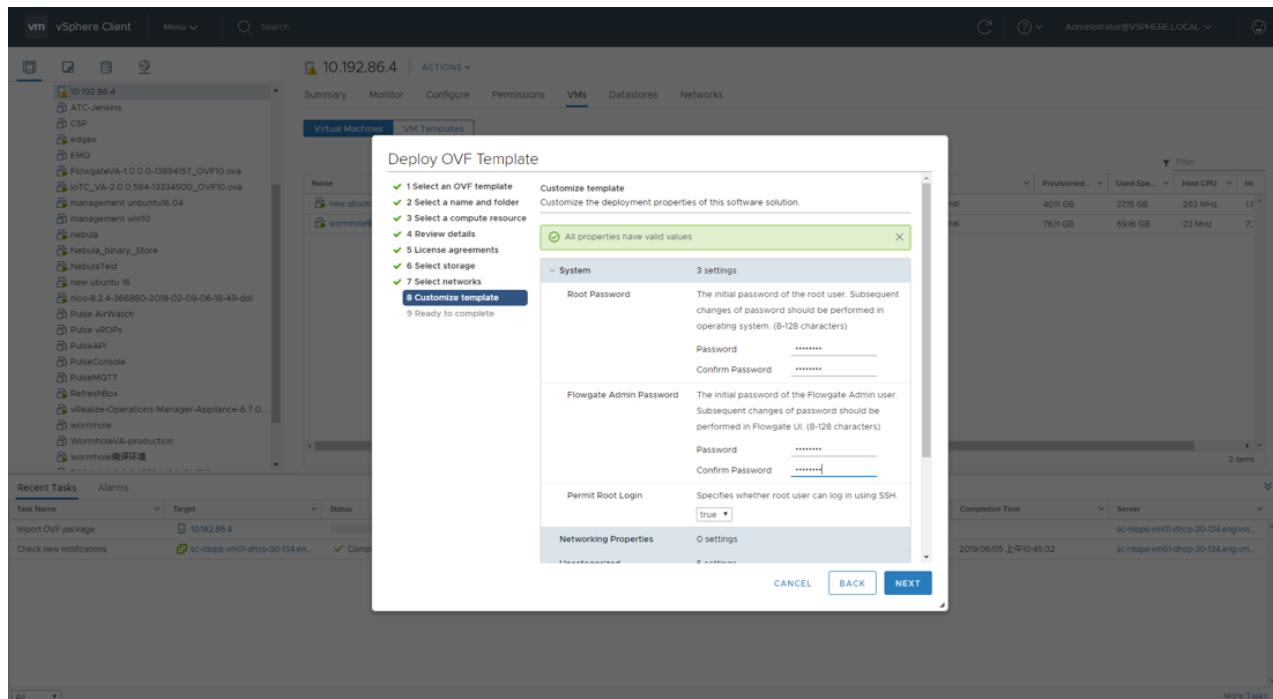


## VII. Select Network and IP settings. Static IP address is recommended.

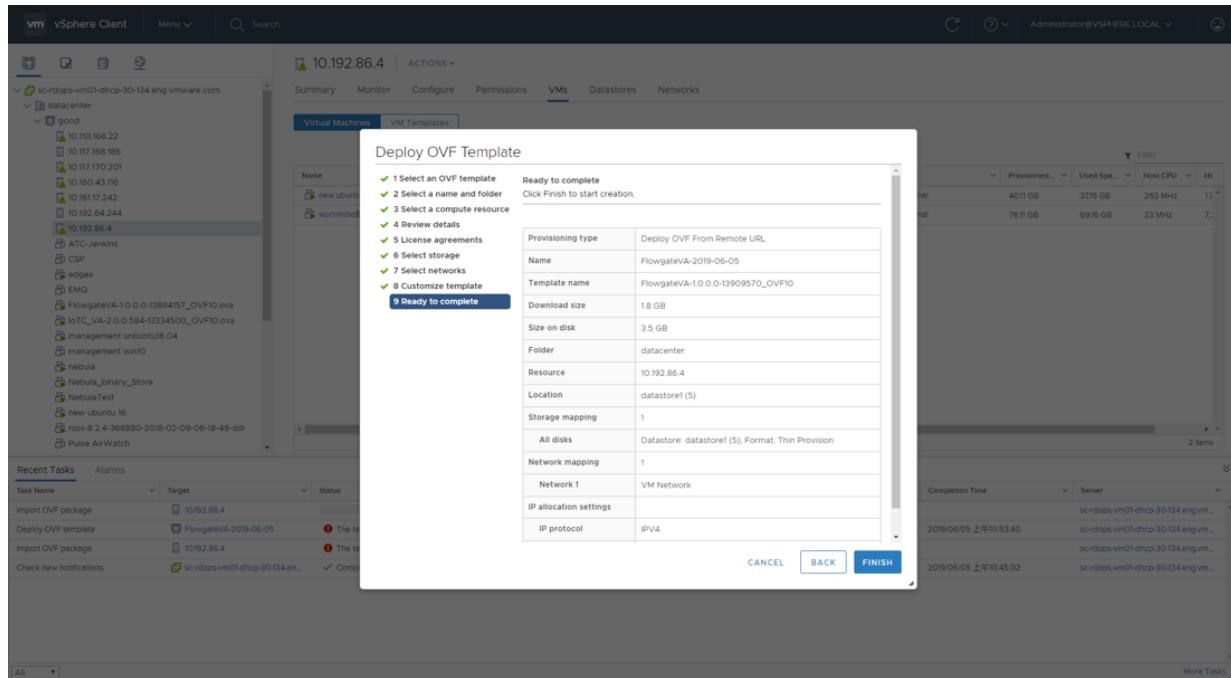


### VIII. Custom setting.

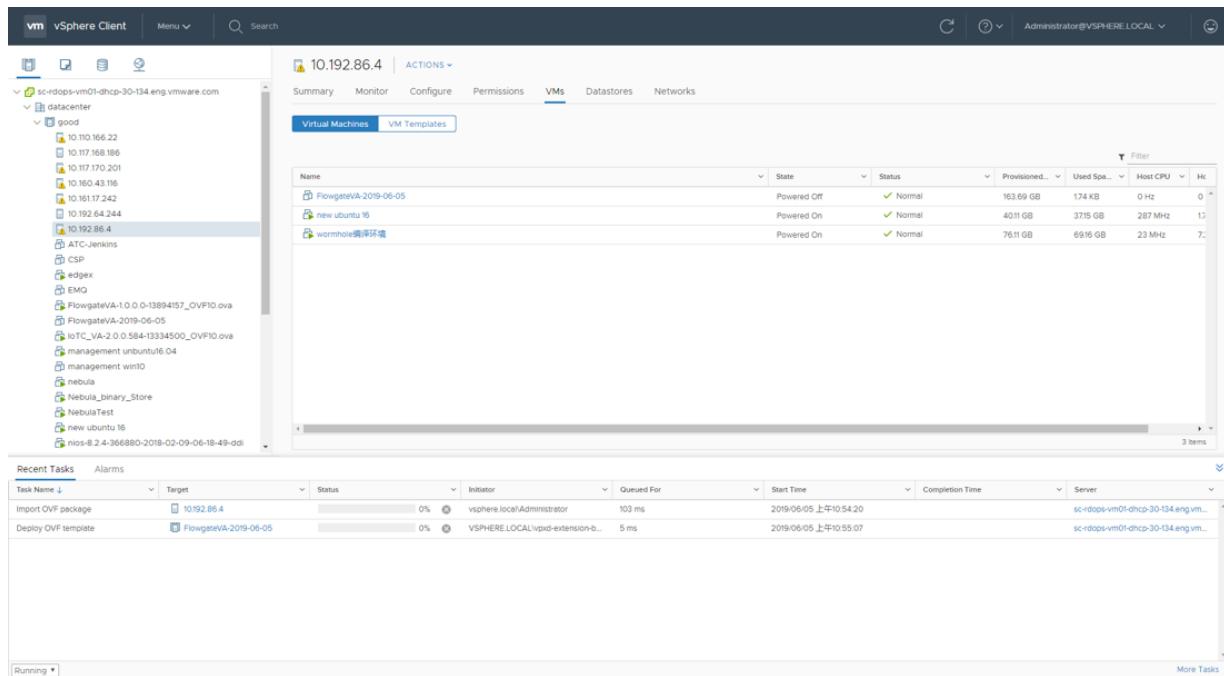
- Root password: root user password for login to the Operating system.
- Flowgate Admin Password: Password for login to Flowgate.
- Permit Root login: Whether allow root user login from remote server to the Flowgate server.



### IX. Click Finish



## X. Wait the deployment to finished.



## XI. Power on the Flowgate VM.

**FlowgateVA-2019-06-05**

**ACTIONS**

- Power
  - Power On (ctrl + alt + 5)
  - Power Off (ctrl + alt + 6)
  - Suspend (ctrl + alt + 2)
  - Reset (ctrl + alt + 1)
  - Shut Down Guest OS (ctrl + alt + 0)
  - Restart Guest OS (ctrl + alt + 8)
- Guest OS
- Snapshots
- Open Remote Console
- Migrate...
- Clone
- Fault Tolerance
- VM Policies
- Template
- Compatibility
- Edit Settings...
- Move to folder...
- Rename...
- Edit Notes...
- Tags & Custom Attributes
- Add Permission...
- Remove from Inventory
- Delete from Disk

**Notes**

Flowgate is an enterprise solution for company to build smart datacenter. It can seamlessly integrate the facility with datacenter operation systems like vCenter and vROps.

**Custom Attributes**

Attribute	Value

**Recent Tasks**

Task Name	Target	Status	Initiator	Queued For	Start Time	Completion Time	Server
Running							
							More Tasks

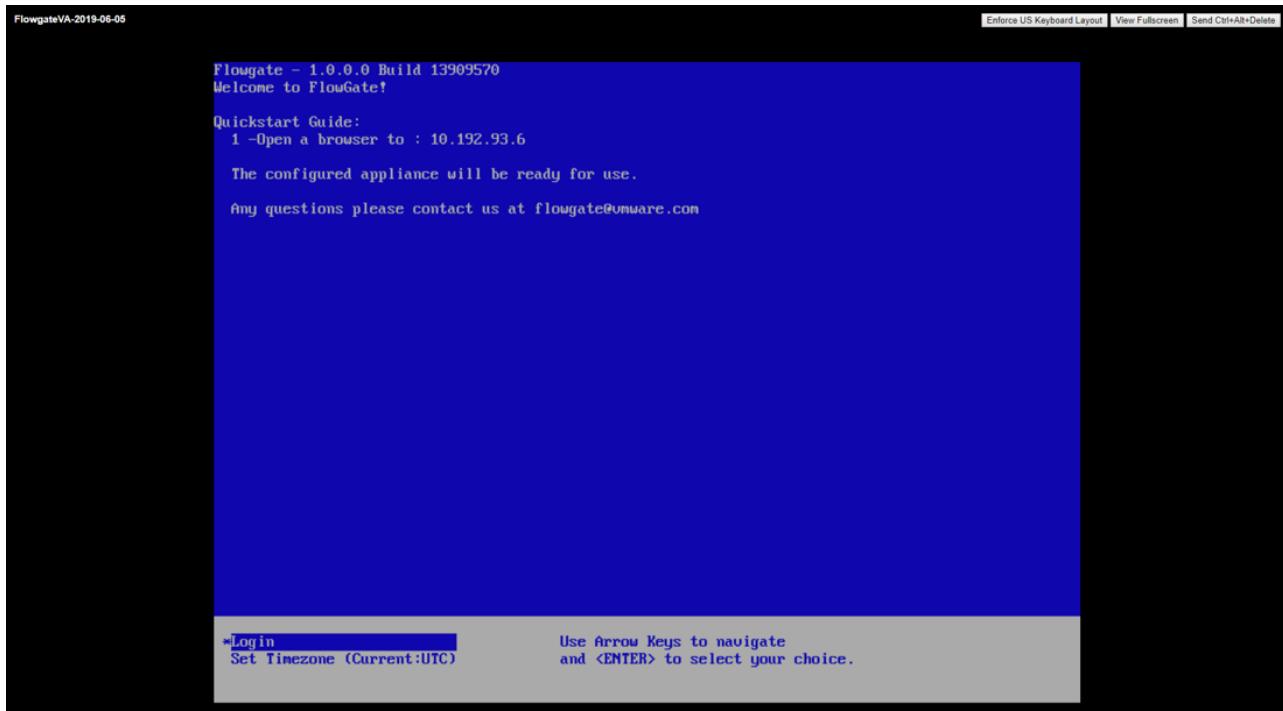
**FlowgateVA-2019-06-05**

```

Mounting /sysroot...
[ OK ] Mounted /sysroot.
[ OK ] Reached target Initrd Root File System.
Starting Reload Configuration from the Real Root...
[ OK ] Started Reload Configuration from the Real Root...
[ OK ] Reached target Initrd File Systems.
[ OK ] Reached target Initrd Default Target.
Starting Cleaning Up and Shutting Down Daemons...
[ OK ] Stopped target Remote File Systems.
[ OK ] Stopped target Initrd Default Target.
[ OK ] Stopped target Basic System.
[ OK ] Stopped target System Initialization.
[ OK ] Stopped target Local File Systems.
[ OK ] Stopped target Swap.
[ OK ] Stopped target Sockets.
[ OK ] Stopped target Timers.
[ OK ] Stopped target Initrd Root Device.
[ OK ] Stopped dracut cmdline hook.
[ OK ] Stopped dracut ask for additional cmdline parameters.
[ OK ] Stopped target Slices.
[ OK ] Stopped udev Coldplug all Devices.
[ OK ] Stopped target Remote File Systems (Pre).
Stopping udev Kernel Device Manager...
[ OK ] Stopped target Paths.
[ OK ] Stopped Dispatch Password Requests to Console Directory Watch.
[ OK ] Stopped Apply Kernel Variables.
[ OK ] Started Cleaning Up and Shutting Down Daemons.
[ OK ] Stopped udev Kernel Device Manager.
[ OK ] Stopped Create Static Device Nodes in /dev.
[ OK ] Stopped Create list of required static device nodes for the current kernel.
[ OK ] Closed udev Control Socket.
[ OK ] Closed udev Kernel Socket.
Starting Cleanup udev DB...
[ OK ] Started Cleanup udev DB.
[ OK ] Reached target Switch Root.
Starting Switch Root...

```

3> When the system is up and running, you can access the system by [https://SERVER\\_IP](https://SERVER_IP). (please note it only support https protocol)



It will need up to 5 minutes for the system to start up. So, if you find the browser has no response, please refresh it after a few minutes.

## User guide

### User Guide for Admins

Login with admin user and password



## Create User

You can create a user by click the button “CREATE A USER”

The screenshot shows the Flowgate interface with a sidebar menu on the left. The sidebar includes sections for User Management, Role Management, IT Management, Server Mapping, Data Center Facility, and Setting. Under User Management, there is a dropdown for 'User'. In the center, there is a table titled 'User Management' with columns for Username, Role Name, Email, and Creation Date. Two rows are visible: one for 'admin' (Role Name: admin, Creation Date: 2019-1-14) and one for 'sddcuser' (Role Name: user, Creation Date: 2019-1-15). At the top right of the main area, there is a blue button labeled '+ CREATE A USER'.

Three default roles have been created.

- Admin: The system administrator role
- User: Role for general User to access Flowgate through UI
- API: role for user who want to access Flowgate through API

Select one or multiple roles for the new user.

The screenshot shows the 'Content For User' form. It has fields for Username, Email, Password, Confirm Password, and Roles. The Roles field contains checkboxes for 'all', 'api', 'admin', 'user', and 'readAsset'. At the bottom are three buttons: 'SUBMIT', 'RESET', and 'BACK'.

## Create Role

Admin can create new role according to the permission requirement.

vm Flowgate admin ▾

User Management

Role Management

IT Management >

Server Mapping >

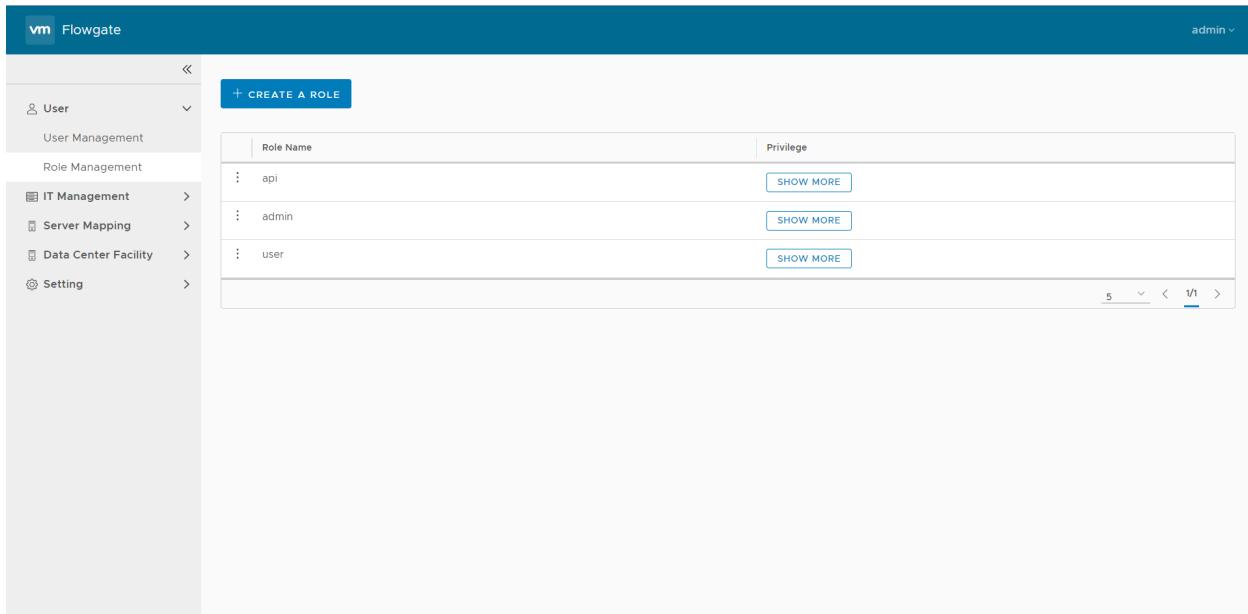
Data Center Facility >

Setting >

+ CREATE A ROLE

Role Name	Privilege
api	<a href="#">SHOW MORE</a>
admin	<a href="#">SHOW MORE</a>
user	<a href="#">SHOW MORE</a>

5 < 1/1 >



### Select privileges for the new role

vm Flowgate admin ▾

User Management

Role Management

IT Management

Server Mapping

Data Center Facility

Setting

Create A Role

1 Privileges

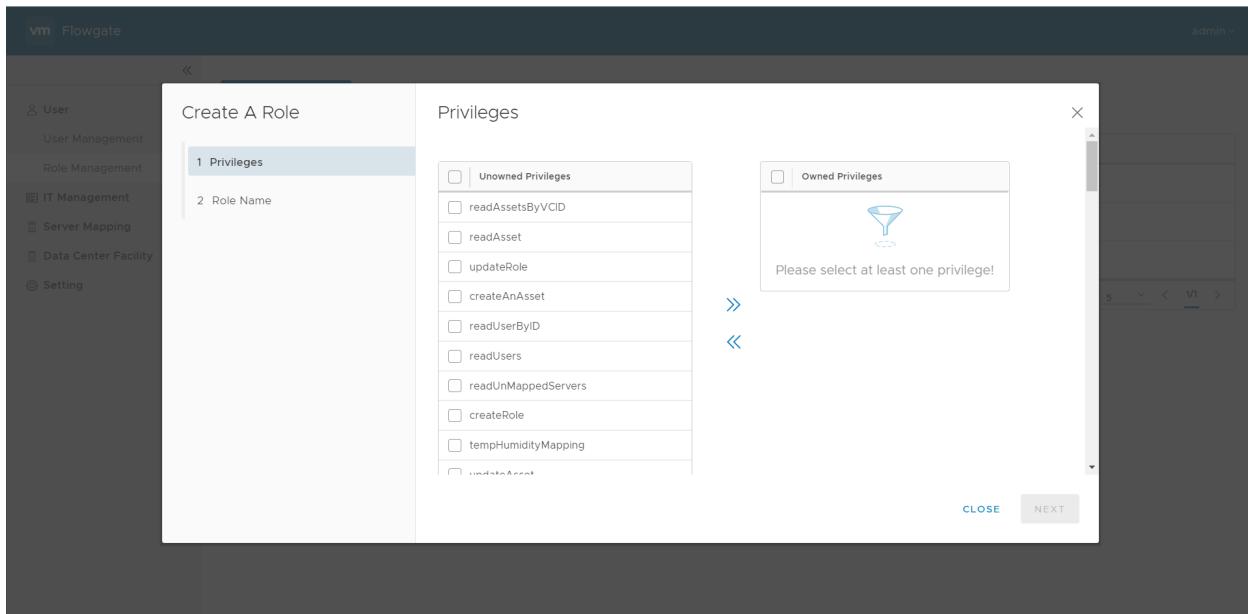
2 Role Name

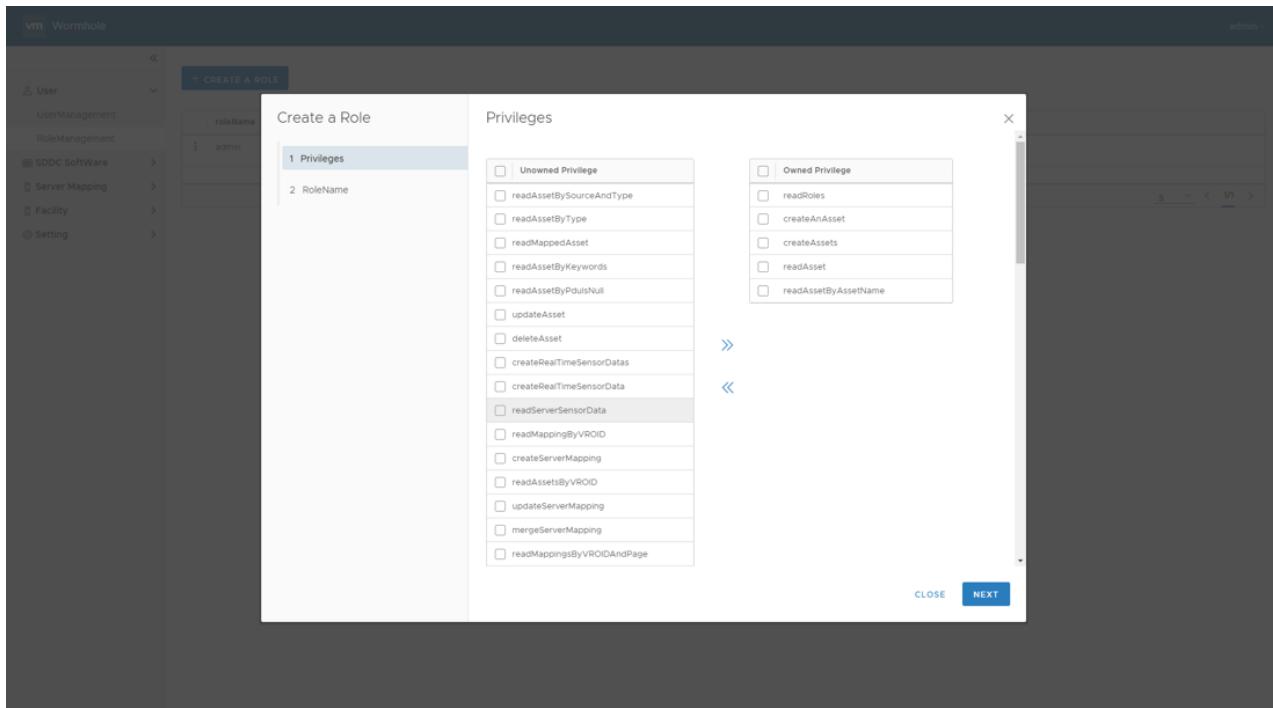
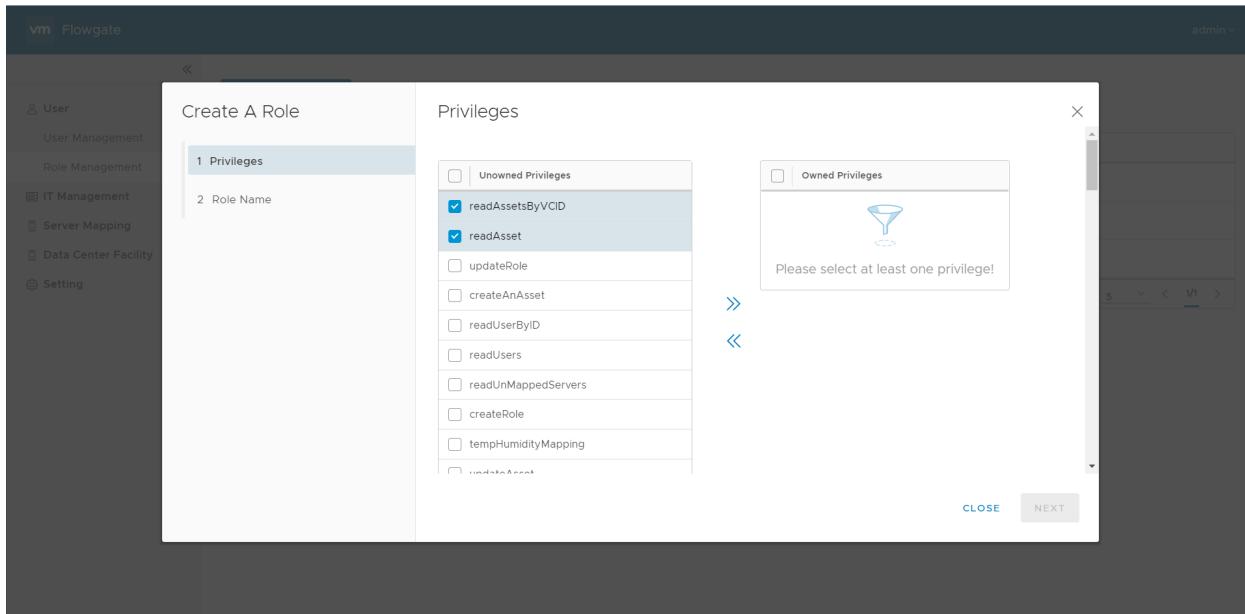
Privileges

Unowned Privileges
<input type="checkbox"/> readAssetsByVCID
<input type="checkbox"/> readAsset
<input type="checkbox"/> updateRole
<input type="checkbox"/> createAnAsset
<input type="checkbox"/> readUserID
<input type="checkbox"/> readUsers
<input type="checkbox"/> readUnMappedServers
<input type="checkbox"/> createRole
<input type="checkbox"/> tempHumidityMapping

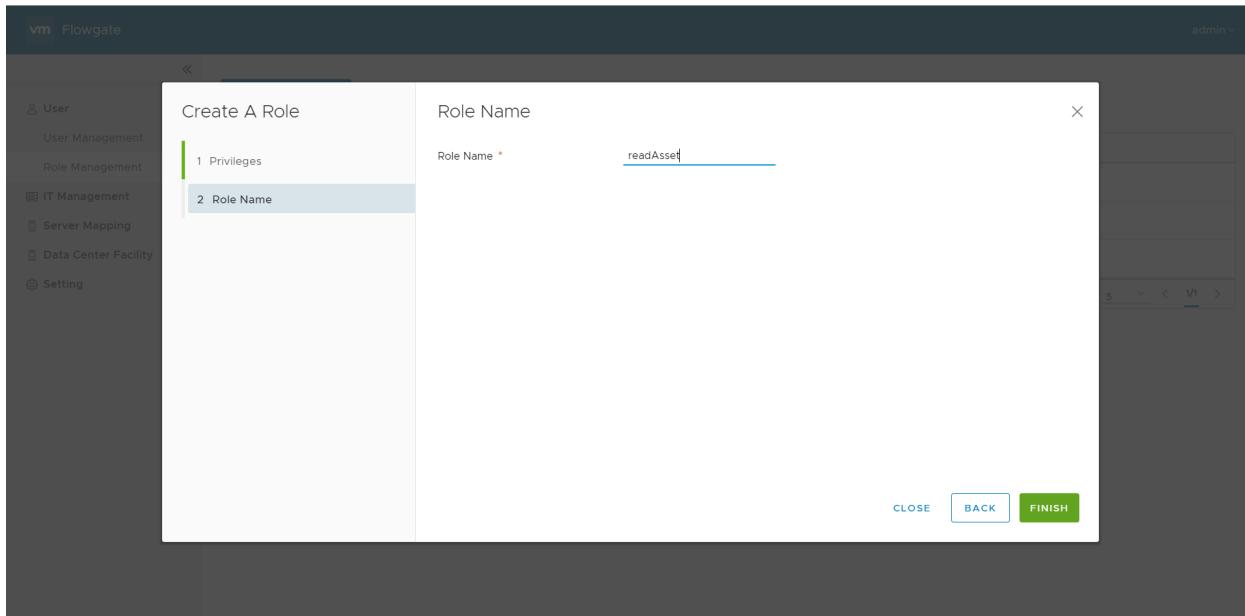
Please select at least one privilege!

» < CLOSE NEXT





Click Next to enter new role name.



Click finish to create the role.

The screenshot shows the 'Role Management' section of the application. On the left is a sidebar with the same navigation items as the previous screen. The main area displays a table with four rows of roles: 'api', 'admin', 'user', and 'readAsset'. Each row has a 'SHOW MORE' button next to it. The table includes columns for 'Role Name' and 'Privilege'. At the bottom right of the table area are buttons for '5', '<', '1/1', and '>'.

Role Name	Privilege
api	<button>SHOW MORE</button>
admin	<button>SHOW MORE</button>
user	<button>SHOW MORE</button>
readAsset	<button>SHOW MORE</button>

Click "SHOW MORE" to view the role privileges.

The screenshot shows the Flowgate interface with a sidebar containing 'User Management', 'Role Management', 'IT Management', 'Server Mapping', 'Data Center Facility', and 'Setting'. A modal window titled 'Owned Privileges' is open, showing a list of privileges for the 'api' role, which includes 'readAssetsByVCID' and 'readAsset'.

## Datacenter Facility System Integration

Flowgate itself doesn't have any data. Before IT users can use it. Flowgate Administrator need to integrate Facility systems first. Currently it supports integrate with Nlyte, PowerIQ, Infoblox and Labsdb by default. More facility systems will be supported later. As far as Flowgate is an opensource project, user can develop their system adapter easily when needed.

### *Integrate with Nlyte*

1. Navigate to **Data Center Facility->DCIM** click the “**ADD NEW INTEGRATION**” button.

The screenshot shows the 'Add New Integration' page for DCIM. The table has columns for Type, ServerUrl, Name, Description, LoginUserName, VerifyCert, and Status. A message at the bottom says 'We couldn't find any DCIM integration!'

2. Select the “Type” as Nlyte.

3. Input the Nlyte server address, it can be either an IP or a FQDN address.

4. Input other fields value accordingly

5. For the **VerifyCert** option. If your Nlyte use a self-signed certificate, you should choose “no” which means not verify the certificate, otherwise Flowgate will not be able to connect to the server.

6.Click “**SUBMIT**” to save the setting. If any error happens, please update the input fields according to the error message.

If you have multiple Nlyte server then repeat the steps in 1~6.

The screenshot shows the 'Content For Integration' configuration for the Nlyte provider. The 'Type' dropdown is set to 'Nlyte'. The 'Server Ip' field contains 'Enter Server Ip' with a red error underline. The 'Name' field contains 'Enter Name' with a red error underline. Below these, there are fields for 'Description', 'Username', and 'Password', each with a red error underline. A 'Verify Cert' section with radio buttons for 'Yes' and 'No' is also present. At the bottom are 'SUBMIT' and 'CANCEL' buttons.

If the metric unit in your Nlyte is different with the default ones. Please modify it accordingly. You can contact your Nlyte administrator for the default metric unit.

The screenshot shows the 'Content For Advance Setting' configuration. It includes fields for 'Date Format' (with a red error underline), 'Timezone' (set to 'Please Select'), 'Power Unit' (set to 'KW'), 'Current Unit' (set to 'A'), 'Voltage Unit' (set to 'V'), 'Temperature Unit' (set to 'C'), and 'Humidity Unit' (set to '%'). At the bottom are 'SUBMIT' and 'CANCEL' buttons.

#### *Integrate with PowerIQ*

1.Navigate to “Data Center Facility->DCIM” click the “**ADD NEW INTEGRATION**” button.

2.Select Type as “**PowerIQ**”

3.Input Server IP (Or FQDN), Name, Username, Password and other fields.

4. For the **VerifyCert** option. If your PowerIQ use a self-signed certificate, you should choose “no” which means not verify the certificate, otherwise Flowgate will not be able to connect to the server.

5. Click “**SUBMIT**” to save the setting. If any error happens, please update the related fields according to the error message.

If you have multiple PowerIQ servers, repeat step 1-5.

The screenshot shows the 'Content For Integration' configuration page for a PowerIQ server. The 'Type' dropdown is set to 'PowerIQ'. The 'Server Ip' field contains 'Enter Server Ip' with a red error underline. The 'Name' field contains 'Enter Name' with a red error underline. The 'Description' field is empty. The 'Username' field contains 'Enter Username' with a red error underline. The 'Password' field contains 'Enter Password' with a red error underline. The 'Verify Cert' section has two radio buttons: 'Yes' (selected) and 'No'. At the bottom are 'SUBMIT' and 'CANCEL' buttons.

Click the “Advance Setting” to check the default metric unit for your PowerIQ server. Please contact to your PowerIQ administrator to get the correct unit.

The screenshot shows the 'Content For Advance Setting' configuration page for a PowerIQ server. It includes fields for Date Format, Timezone (set to 'Please Select'), Power Unit (set to 'W'), Current Unit (set to 'A'), Voltage Unit (set to 'V'), Temperature Unit (set to 'C'), and Humidity Unit (set to '%'). At the bottom are 'SUBMIT' and 'CANCEL' buttons.

### *Integrate with Infoblox*

1. Navigate to “Data Center Facility -> CMDB” click the “**ADD NEW INTEGRATION**” button.

2. Select Type as “**InfoBlox**”

3. Input Server IP (Or FQDN), Name, Username, Password and other fields.

4. For the **VerifyCert** option. If your Infoblox use a self-signed certificate, you should choose “no” which means not verify the certificate. Otherwise Flowgate will not be able to connect to the server.

5. Click “**SUBMIT**” to save the setting. If any error happens, please update the related fields according to the error message.

If you have multiple Infoblox servers, repeat step 1-5.

The screenshot shows the Flowgate web application interface. The left sidebar has a tree view with nodes like User, IT Management, Data Center Facility, and Setting. The main content area is titled "Content For Integration" and contains the following fields:

- Type: InfoBlox (selected from a dropdown)
- Server Ip: Enter Server Ip (text input field)
- Name: Enter Name (text input field)
- Description: Description (text input field)
- Username: Enter Username (text input field)
- Password: Enter Password (text input field)
- Verify Cert: A radio button group with "Yes" (selected) and "No".

At the bottom are two buttons: "SUBMIT" (gray) and "CANCEL" (blue).

Data Center Facility Systems management

Navigate to “**Data Center Facility->DCIM**”

*Edit*

Administrator can update the Facility system information when required.

*Delete*

Administrator can delete a facility system integration.

*Sync Data*

Administrator can force to sync data for each facility system with “Sync Data” button. This will trigger a job to pull all the data from related facility system immediately. Please **Note** we have backend jobs to sync the data in different frequency. E.g. static data will be synced daily. Sensor data will sync every 5 minutes. For most of the case you don’t need to sync the data manually.

The screenshot shows a list of server integrations. One entry has a 'SyncData Pending' button highlighted, indicating a pending sync operation.

Type	ServerUrl	Name	Description	LoginUserName	VerifyCert	Status
Nlyte	https://[REDACTED].com	VMware Nlyte Server	VMware Nlyte production Server	[REDACTED]	false	ACTIVE (green)
PowerIQ	https://[REDACTED].com	sof-poweriq		[REDACTED]	false	ACTIVE (green)
PowerIQ	https://[REDACTED].com	poweriq-shat	PowerIQ for Shanghai Beijing	[REDACTED]	false	ACTIVE (green)
PowerIQ	https://[REDACTED].com	PowerIQ Singapore	PowerIQ server for Singapore	[REDACTED]	false	ERROR (red)

### Pending/Resume Data syncing

Administrator can stop a system's data syncing by click the “Pending” button. You can re-active a pending integration by click the “Active” button.

### Status Monitor

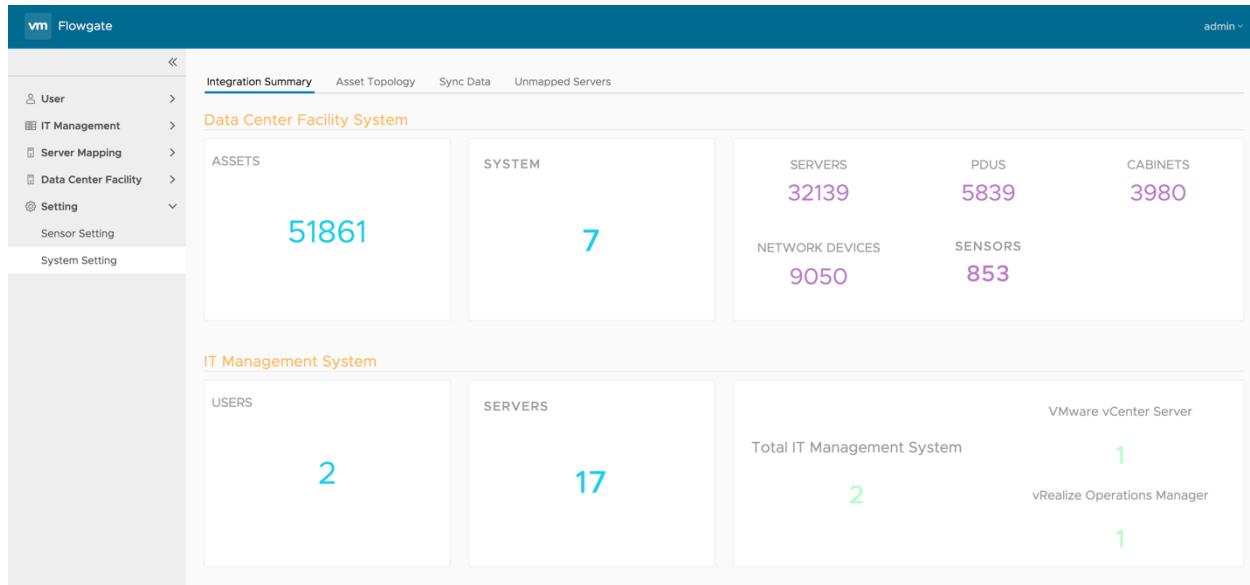
The facility systems' status can be monitored by the “Status” column. When error happens click the red “!” flag will show the detail information. Follow the instruction to fix the issue. After you fix the issue, you need to click the “Active” button to re-active the integration.

A red message box displays an error for the PowerIQ Singapore entry: "The server PowerIQ Singapore has an error:401 Unauthorized you can reactive the integration by click : > Active , you can update the setting by click Edit Setting button if needed. UPDATE SETTING".

Type	ServerUrl	Name	Description	LoginUserName	VerifyCert	Status
Nlyte	https://[REDACTED].com	VMware Nlyte Server	VMware Nlyte production Server	[REDACTED]	false	ACTIVE (green)
PowerIQ	https://[REDACTED].com	sof-poweriq		[REDACTED]	false	ACTIVE (green)
PowerIQ	https://[REDACTED].com	poweriq-shat	PowerIQ for Shanghai Beijing	[REDACTED]	false	ACTIVE (green)
PowerIQ	https://[REDACTED].com	PowerIQ Singapore	PowerIQ server for Singapore	[REDACTED]	false	ERROR (red)

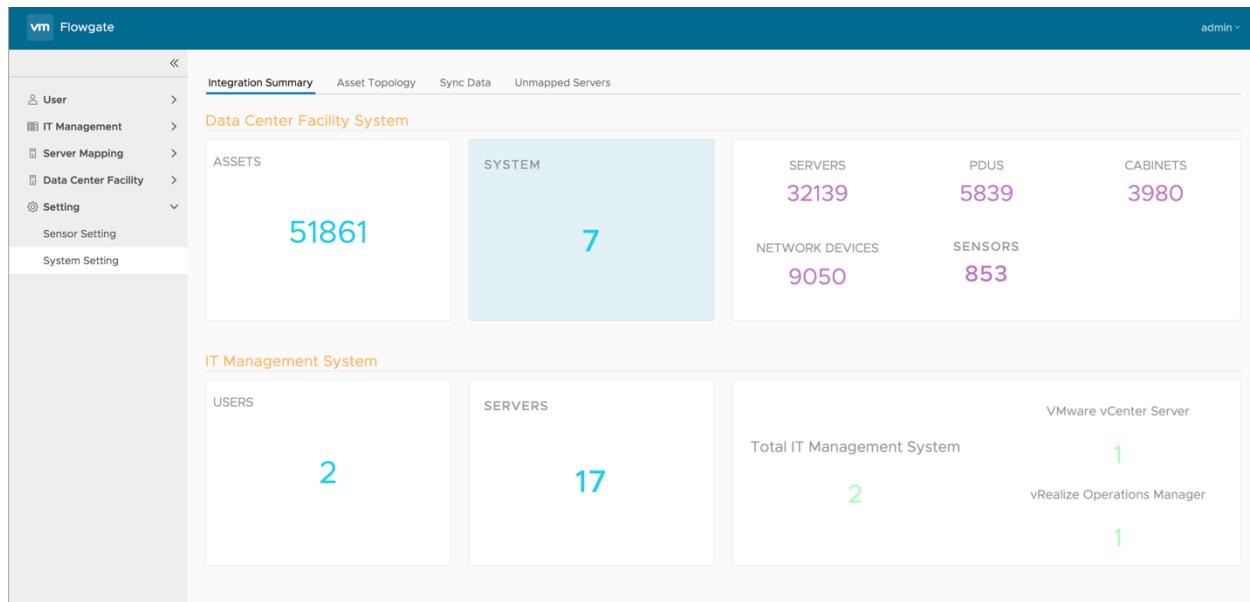
## Setting

### Summary page

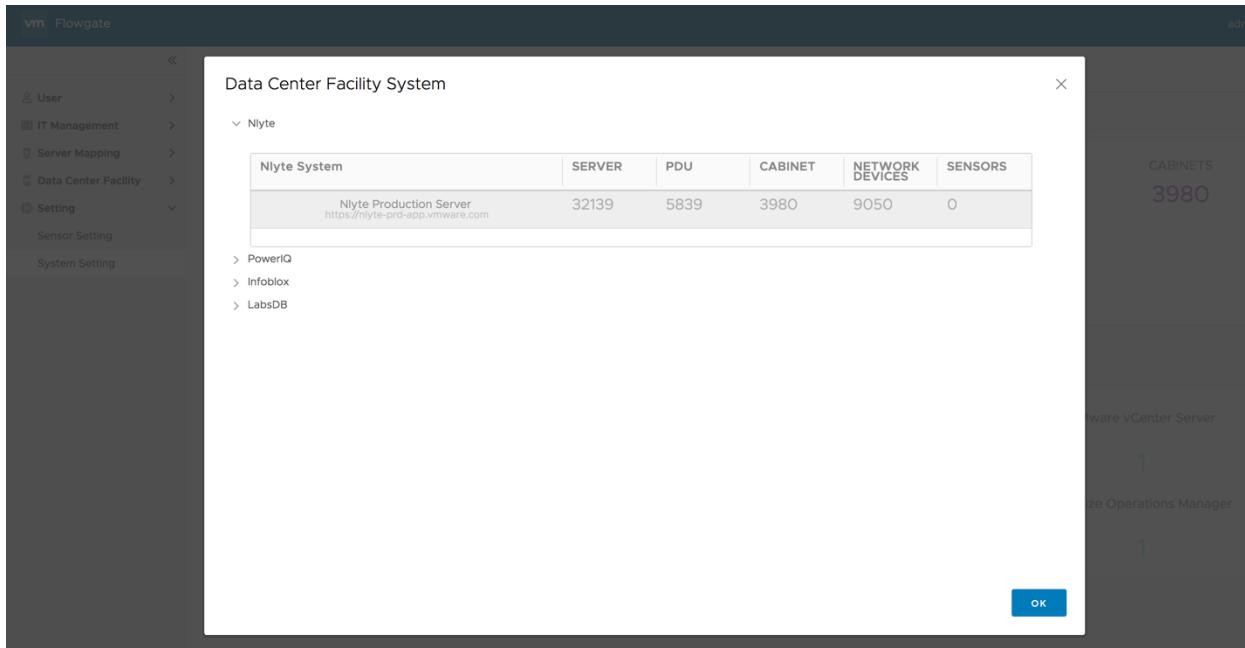


### View Facility information by system

Click on 'SYSTEM' card, the Data Center Facility System page will show up.

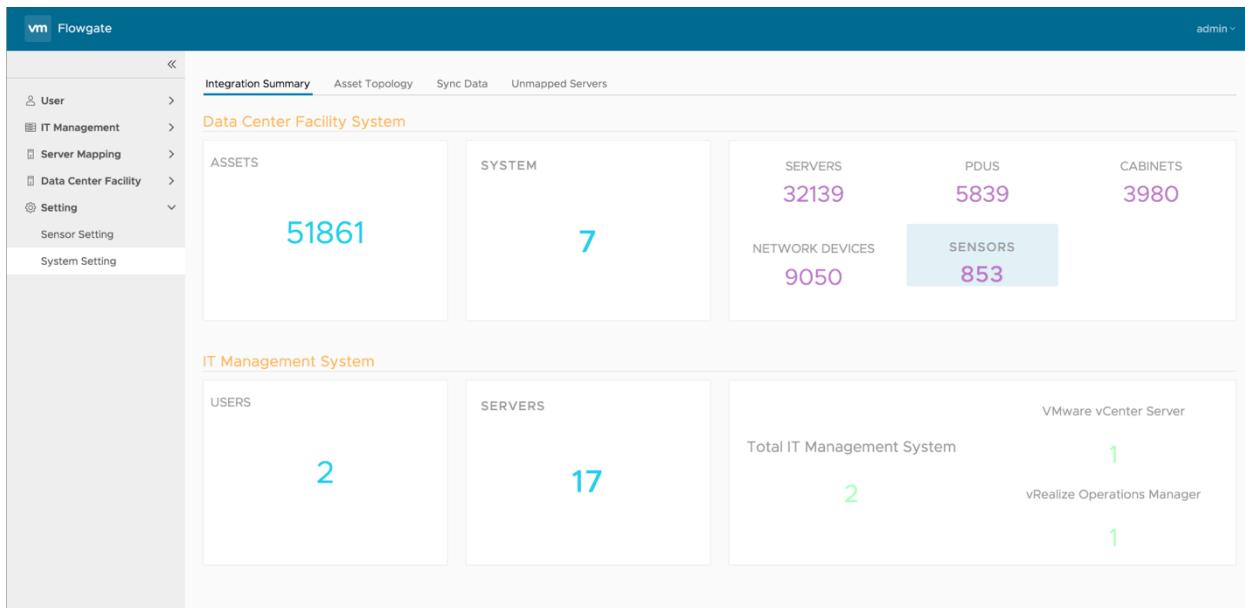


The facility information will be displayed group by system. If a facility items showed up in different systems, it will only count once in the total number.

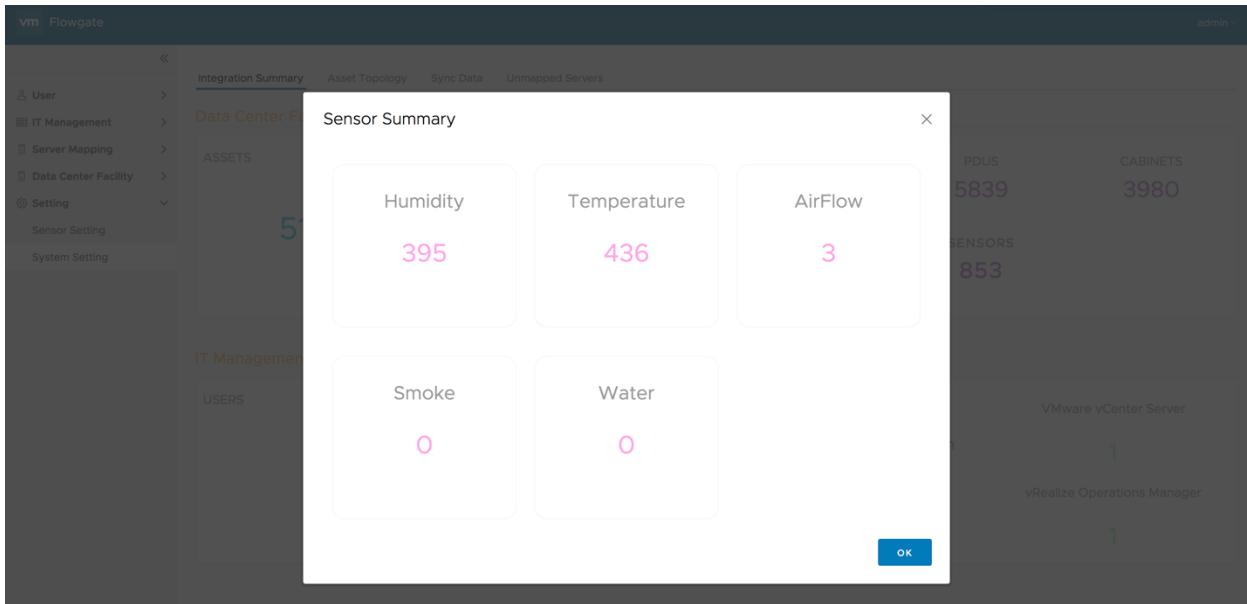


### View Sensor summary

Click the 'SENSORS' card will show the sensor summary.

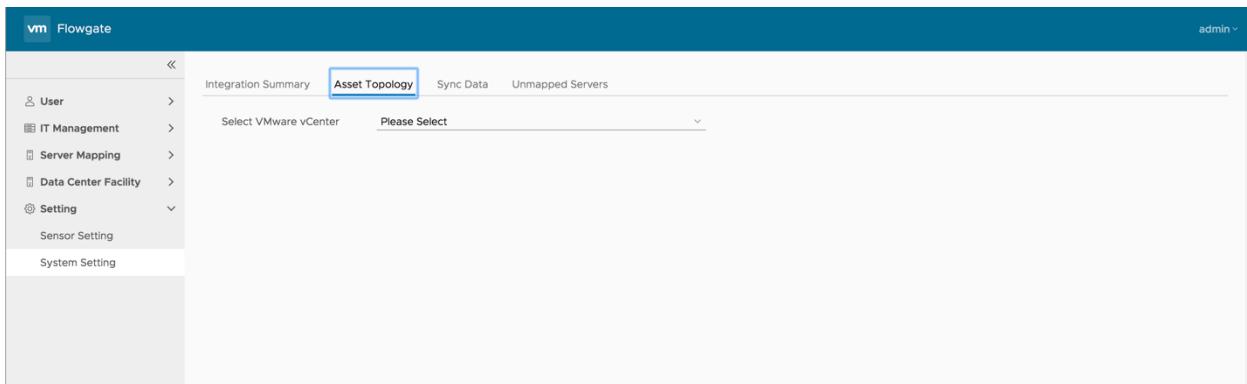


Currently it only counts the humidity, temperature, airflow, smoke and water sensors. More sensor type will be supported later.

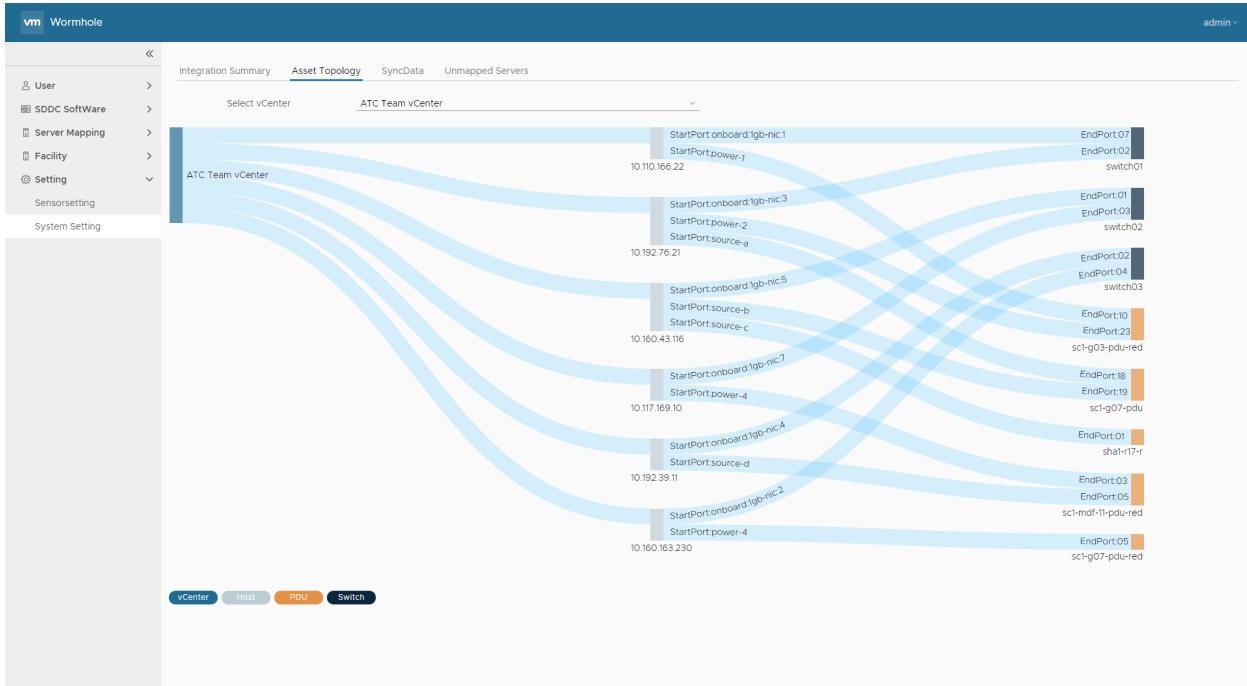


### [View Asset Topology by vCenter](#)

Click “System Setting -> Asset Topology”, select a vCenter server. It will display the asset topology for the vCenter

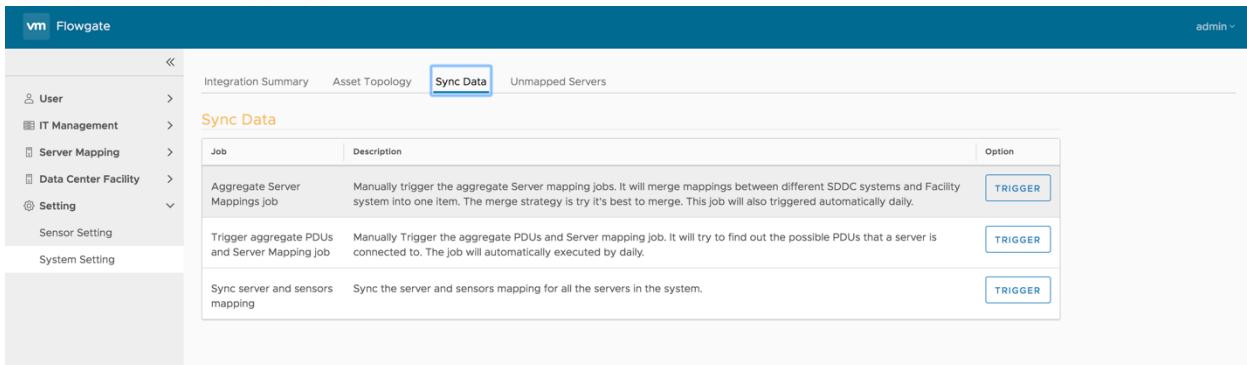


Servers, PDU and switch connection information. Take host 10.192.76.21 for example from the topology diagram we can see that it connects to network switch “switch02” on port 02. It also connects to PDU sc1-g03-pdu-red on port 23 and PDU sc1-g07-pdu on port 18 as the follow figure shows.



## Sync Data

### Aggregate Server Mapping job



This job is used for aggregate server mapping items between different IT systems. Administrator can run this job to reduce the mapping items.

This job will automatically be executed weekly. Administrator can trigger it manually anytime when required.

For example, if an ESXi host is managing by vCenter A and vROPs B. Both vCenter A and vROPs B registered to Flowgate. Flowgate will create two mapping items for the same ESXi host. When the job runs it will merge the two items into one.

### Aggregate PDUs and Server Mapping job

**“Setting->System Setting ->SyncData”** Click the “**TRIGGER**” button for the “Trigger aggregate PDUs and Server Mapping job”

This Job is used to create the mappings between PDUs and Server.

After you trigger this job. You can find that PDUs filed in vCenter will be filled. Please **NOTE** this job will also be automatically executed hourly in the backend.

Before running the job, you will find the Asset.PDUs field in the Custom Attributes section is empty.

The screenshot shows the vSphere Web Client interface for host 10.110.166.22. The 'Summary' tab is selected. In the 'Custom Attributes' section, the 'Asset.PDUs' field is empty. Other visible attributes include:

Attribute	Value
Asset.Assetname	cloud-sha1-esx2
Asset.PDUs	
Asset.Switches	cloud-sw01-sha1:08,cloud-sw02-sha1:07,cloud-fc01-sha1:05,cloud-sw03-sh...
AutoDeploy.MachineIdentity	
Location.Building	KIC Plaza III
Location.Cabinet	R17
Location.Cabinetnumber	17
Location.City	Shanghai
Location.Country	China
Location.Floor	11th
Location.Region	APAC
Location.Room	Shanghai Lab

After running the job, the Asset.PDUs field is filled with value "sha1-r17-l, sha1-r17-r". it means it connected to two PDU. "sha1-r17-l, sha1-r17-r" are the names of the two PDU.

**Host Summary**

**Hardware**

Attribute	Value
Asset.AssetName	cloud-sha1-esx2
Asset.PDUs	sha1-r17-l,sha1-r17-r
Asset.Switches	cloud-sw01-sha1:08,cloud-sw02-sha1:07,cloud-fc01-sha1:05,cloud-sw03-sh...
AutoDeploy.MachineIdentity	
Location.Building	KIC Plaza III
Location.Cabinet	R17
Location.Cabinethnumber	17
Location.City	Shanghai
Location.Country	China
Location.Floor	11th
Location.Region	APAC
Location.Room	Shanghai Lab

**Configuration**

**Custom Attributes**

**Update Manager Compliance**

## Sync Server and Sensor Mapping Job

This job is used to create the mapping between the sensors in datacenter and servers. Flowgate will use some most possible algorithm to calculate the sensors that can indicate the servers' environment.

This job will also be running hourly in the backend automatically. But you can always trigger it manually when required.

## List UN-mapped servers

List out all the servers that not mapped to a facility asset yet. Usually this mean that Flowgate cannot automatically create the mapping between a host in IT system and a server in the facility system.

**vm Flowgate**

**Integration Summary Asset Topology Sync Data Unmapped Servers**

**PULL UNMAPPED SERVERS**

server
10.161.17.242
10.117.168.104
10.160.43.16
10.117.170.201
10.192.64.244
10.192.86.4

When this happened it usually mean there are some data mismatch between the facility systems. Facility system administrator can use this to check the related system.

### Asset Name and IP Mapping

The screenshot shows the 'AssetName and IP Mapping' tab selected in the top navigation bar. On the left, a sidebar menu includes 'User', 'IT Management', 'Server Mapping', 'Data Center Facility', 'Setting', and 'System Setting'. The main content area has a search bar with 'IP' and a 'SEARCH' button. Below it are two buttons: '+ ADD' and 'BATCH ADD'. A table header row contains 'IP' and 'Asset Name'. The main content area displays a message: 'We couldn't find any mapping!' with a magnifying glass icon. At the bottom right, there is a pagination control showing '10' and '1/0'.

In Flowgate we use IP address and assetName to create the connections between IT system and Facility system. In case that we don't have IPAM system(eg, Infoblox) , we can manully create the mapping relations here.

### Create Mapping

- Click ADD button.
- Input a valid IP address.
- Type the AssetName, select the right one from the dropdown list.
- Click "Save" to save the mapping.

The screenshot shows a modal dialog titled 'Asset Name And IP Mapping'. It has fields for 'IP' (10.5.26.3) and 'Asset Name' (cloud). A dropdown list shows a filtered list of asset names starting with 'cloud'. At the bottom are 'CANCEL' and 'SAVE' buttons.

### Search Mappings by IP

- Input an IP address
- Click "SEARCH" button

The screenshot shows the Flowgate application interface. The top navigation bar includes 'vm Flowgate' on the left and 'admin' on the right. Below the navigation is a sidebar with categories: User, IT Management, Server Mapping, Data Center Facility, and Setting. The main content area has tabs: Integration Summary, Asset Topology, Sync Data, Unmapped Servers, and AssetName and IP Mapping, with 'AssetName and IP Mapping' selected. A search bar contains '10.5.26.3' and a 'SEARCH' button. Below the search bar are 'ADD', 'BATCH ADD', and 'EDIT' buttons. A table lists asset mappings with columns for IP and Asset Name. One row is selected: '10.5.26.3' and 'w2-esxcloud-013'. At the bottom are pagination controls: '10', a dropdown, '<', '1/1', and '>'.

## Edit Mapping

1. Select a mapping item.
2. Click “EDIT” button
3. Input the new mapping information.

This screenshot shows the same Flowgate interface as the previous one, but with a different state. The 'EDIT' button is now highlighted. In the table, the row for '10.5.26.3' and 'w2-esxcloud-013' is highlighted in blue, indicating it is selected for editing. The other rows ('10.89.26.54' and 'prmh-nx-perf-server155') are unselected.

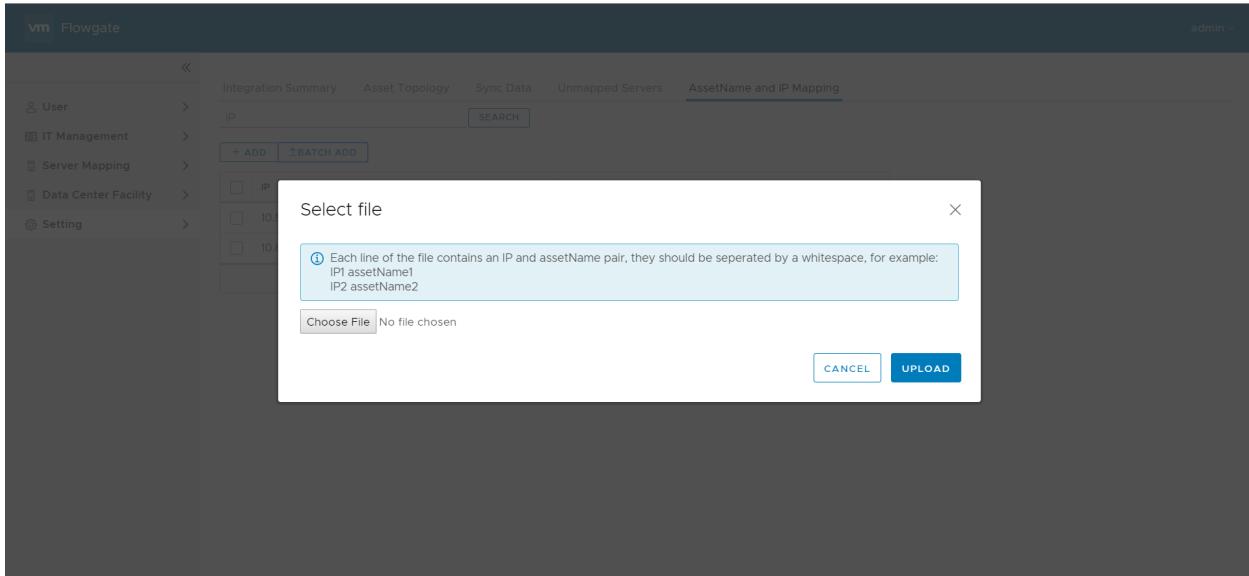
## Delete a mapping

1. Select a mapping item.
2. Click “DELETE” button

IP	Asset Name
<input checked="" type="checkbox"/> 10.5.26.3	w2-esxcloud-013
<input type="checkbox"/> 10.89.26.54	prmh-nsx-perf-server155

## Batch add mappings

1. Click “BATCH ADD” button



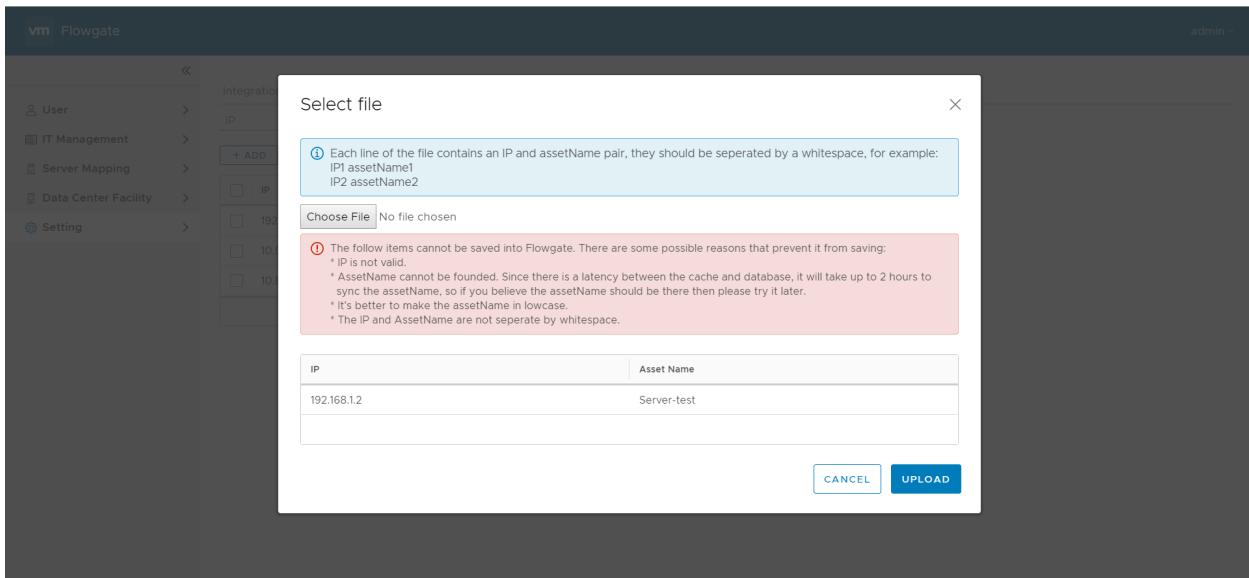
2. Select a mapping file contains IP addresses and hostnames.

Each line of the file should only contain one IP and AssetName pair, they should be separated by a whitespace, for example:

IP1 assetName1  
IP2 assetName2

3. Click “UPLOAD” button to import the mappings.

4. In case you see the follow screen, it means that some item in the file are not valid. Please check it accordingly and import the failed items again.



## User Guide for IT System administrator

### IT system integration

IT System admin can integrate their IT systems to Flowgate, after that Flowgate will push facility data to IT system accordingly.

Type	Server Url	Name	Description	Login Username	Verify Cert	Status
VCENTER	10.160.30.134	ATC Team vCenter	vCenter Server for ATC team	administrator@vsphere.local\se		ACTIVE
VRO	10.110.165.239	ATC Team vROps Server	ATC Team vROps Server	admin	false	ACTIVE

### Integrate with vROPS

1. Navigate to **IT Management -> VMware** and click the “**ADD NEW INTEGRATION**” button
2. Select the server Type: **vRealize Operation Manager**.
3. Input the server IP (or FQDN)
4. Give a name for this Integration
5. Input server username and password.
6. For the **VerifyCert** option. If your vRealize Operation Manager use a self-signed certificate, you should choose “no” which means not verify the certificate. Otherwise Flowgate will not be able to connect to the server.
7. Click “**SUBMIT**” to finish the integration.

Repeat step 1-7 if you have more than one vRealize Operation Manager servers.

### Integrate with vCenter

1. Navigate to **IT Management -> VMware** and click the “**ADD NEW INTEGRATION**” button
2. Select the server Type: **vCenter Server**.
3. Input the server IP (or FQDN)
4. Give a name for this Integration
5. Input server username and password.
6. For the **VerifyCert** option. If your vCenter server use a self-signed certificate, you should choose “no” which means not verify the certificate. Otherwise Flowgate will not be able to connect to the server.
7. Click “**SUBMIT**” to finish the integration.

If you have more vCenter servers, then repeat the above step 1-7.

Content For Integration

Type \* vCenter Server

Server \* 10.160.30.134

Name \* ATC vCenter Server

Description vCenter Server For ATC Test

Username \* administrator@vsphere

Password \*\*\*\*\*

VerifyCert  Yes  No

SUBMIT CANCEL

## View/Manage Server Mapping

After register IT systems, you can view the server mapping information in Server Mapping section.

Content For Server Mapping

Server Type vRealize Operations Manager

Server vrops

vRealize Operations Manager Host Name	vRealize Operations Manager VM Entity Object ID	Asset	Operation
10.185.16.57	host-52		ACTIONS
10.78.233.143	host-33		ACTIONS
10.185.16.57	host-65		ACTIONS
10.186.20.177	host-86		ACTIONS

## Create Mapping:

By default, the server mapping will be created automatically by Flowgate. In case of the system cannot create the mapping. Flowgate provide manually mapping functionality. User can search the Asset by name and then create the mapping.

### Mapping Server Asset

1. Click “ACTION” -> “Mapping Server asset”
2. Search the Server Asset by name.
3. Select the right server and click OK( you can identify the server by Location, SN, Tag, Cabinet information, etc)

vm Flowgate sddcuser ▾

IT Management ▾

- VMware
- Azure
- OpenStack
- Server Mapping** ▾
- Server Mapping

Content For Server Mapping

Server Type: vRealize Operations Manager Server: vrops

vRealize Operations Manager Host Name	vRealize Operations Manager VM Entity Object ID	Asset	Operation
10.185.16.57	host-52		
10.78.233.143	host-33		
10.185.16.57	host-65		
10.186.20.177	host-86		

ACTIONS ▾

- Mapping Server asset
- Mapping PDU asset
- Mapping Sensor asset
- Mapping Switch asset
- Delete

5 < 1/1 >

vm Flowgate sddcuser ▾

IT Management ▾

- VMware
- Azure
- OpenStack
- Server Mapping** ▾
- Server Mapping

Select Assets

cloud SEARCH MappedAsset:  cloud-qa-blr-srv-17

Asset Name	Asset Source	Serial Number	Tag	Manufacturer	Model	Location	Cabinet Name	Cabinet Unit Position	Pkus
cloud-city	stg-nlyte	4397HK2	249386	DellEMC	DellEMC PowerEdge R740xd	NASA,USA,Palo Alto,PROM B,1st,Prim B (Prim B Lab)	J10	5	
cloud-qa-blr-srv-17	stg-nlyte	SGH016XLYB	051156	Hewlett-Packard	HP ProLiant BL465c G6	APAC,India,Bangalore,Kalyani Magnum,2nd,BLR-KM-LAB	B00	0	
cloud-qa-blr-srv-27	stg-nlyte	SGH016XLYJ	051165	Hewlett-Packard	HP ProLiant BL465c G6	APAC,India,Bangalore,Kalyani Magnum,2nd,BLR-KM-LAB	B00	0	
cloud-qa-blr-srv-29	stg-nlyte	SGH016XLY7	051166	Hewlett-Packard	HP ProLiant BL465c G6	APAC,India,Bangalore,Kalyani Magnum,2nd,BLR-KM-LAB	B00	0	
cloud-qa-blr-srv-31	stg-nlyte	SGH016XMO1	051167	Hewlett-Packard	HP ProLiant BL465c G6	APAC,India,Bangalore,Kalyani Magnum,2nd,BLR-KM-LAB	B00	0	

CANCEL OK

### Update server mapping

1. Click “ACTION” -> “Mapping Server asset”
2. Search the Server Asset By name.
3. Select the new Server Asset and click OK.

Content For Server Mapping

vRealize Operations Manager Host Name	vRealize Operations Manager VM Entity Object ID	Asset	Operation
10.185.16.57	host-52	cloud-qa-blr-srv-17	<b>ACTIONS</b>
10.78.233.143	host-33		Mapping Server asset
10.185.16.57	host-65		Mapping PDU asset
10.186.20.177	host-86		Mapping Sensor asset
			Mapping Switch asset
			Delete

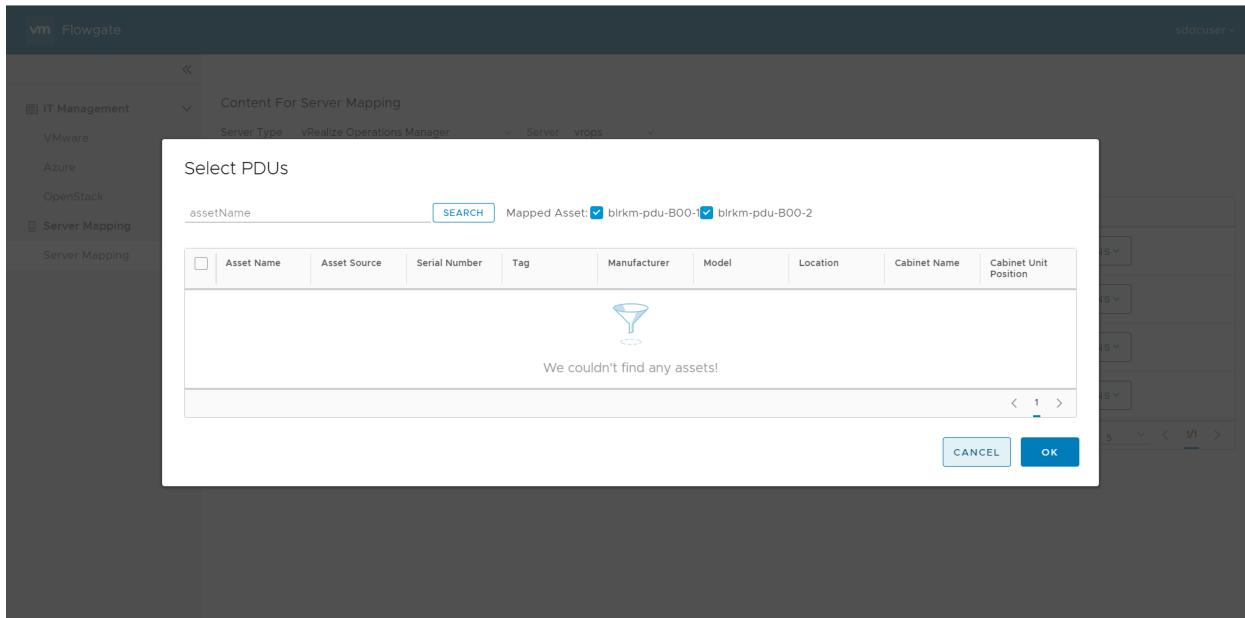
- If you just want to cancel the mapping, you can uncheck the “check box” after the “SEARCH” button then click “OK”.

Select Assets

assetName	SEARCH	MappedAsset:						
cloud-city	stg-nlyte	4397HK2	249386	DellEMC	DellEMC PowerEdge R740xd	NASA,USA,Palo Alto,PROM B,1st,Prim B (Prim B Lab)	J10	5
cloud-qa-blr-srv-17	stg-nlyte	SGH016XLYB	051156	Hewlett-Packard	HP ProLiant BL465c G6	APAC,India,Bangalore,Kalyani Magnum,2nd,BLR-KM-LAB	B00	0
cloud-qa-blr-srv-27	stg-nlyte	SGH016XLYJ	051165	Hewlett-Packard	HP ProLiant BL465c G6	APAC,India,Bangalore,Kalyani Magnum,2nd,BLR-KM-LAB	B00	0
cloud-qa-blr-srv-29	stg-nlyte	SGH016XLY7	051166	Hewlett-Packard	HP ProLiant BL465c G6	APAC,India,Bangalore,Kalyani Magnum,2nd,BLR-KM-LAB	B00	0
cloud-qa-blr-srv-31	stg-nlyte	SGH016XM01	051167	Hewlett-Packard	HP ProLiant BL465c G6	APAC,India,Bangalore,Kalyani Magnum,2nd,BLR-KM-LAB	B00	0

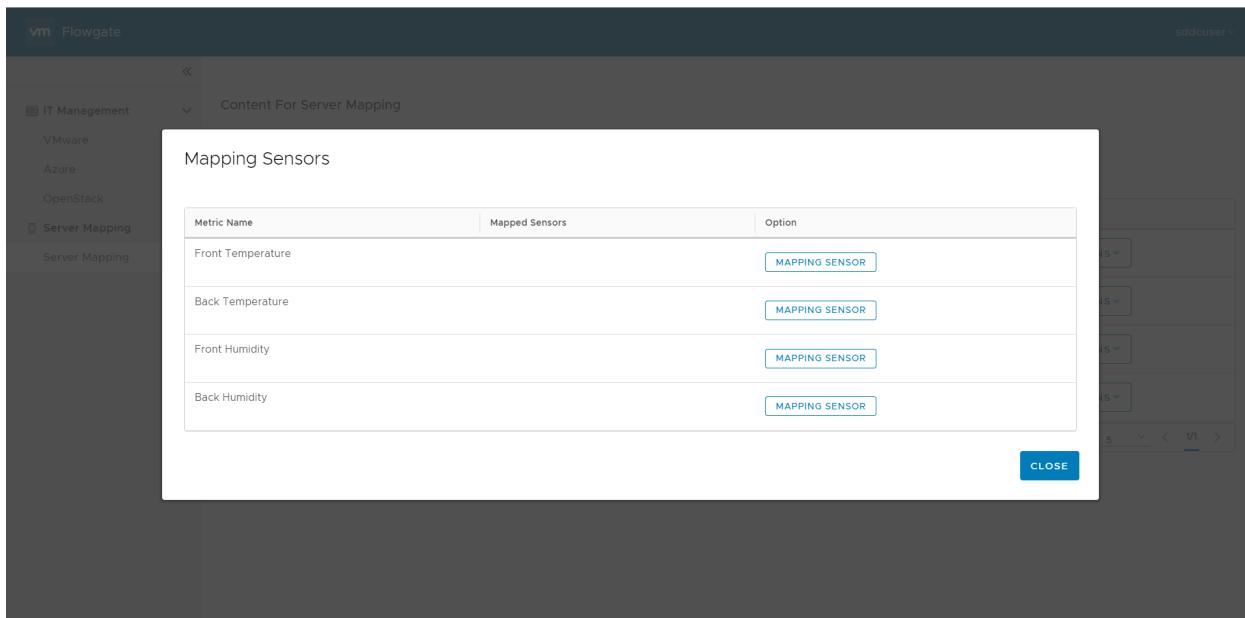
### Mapping PDUs for Server

- Click “ACTION” -> “Mapping PDU asset”
- Search the PDU by name.
- Select the PDUs that connected to the Server. You need to contact your Datacenter Operator to get the correct PDU items.
- Click “OK” to Save the mapping.

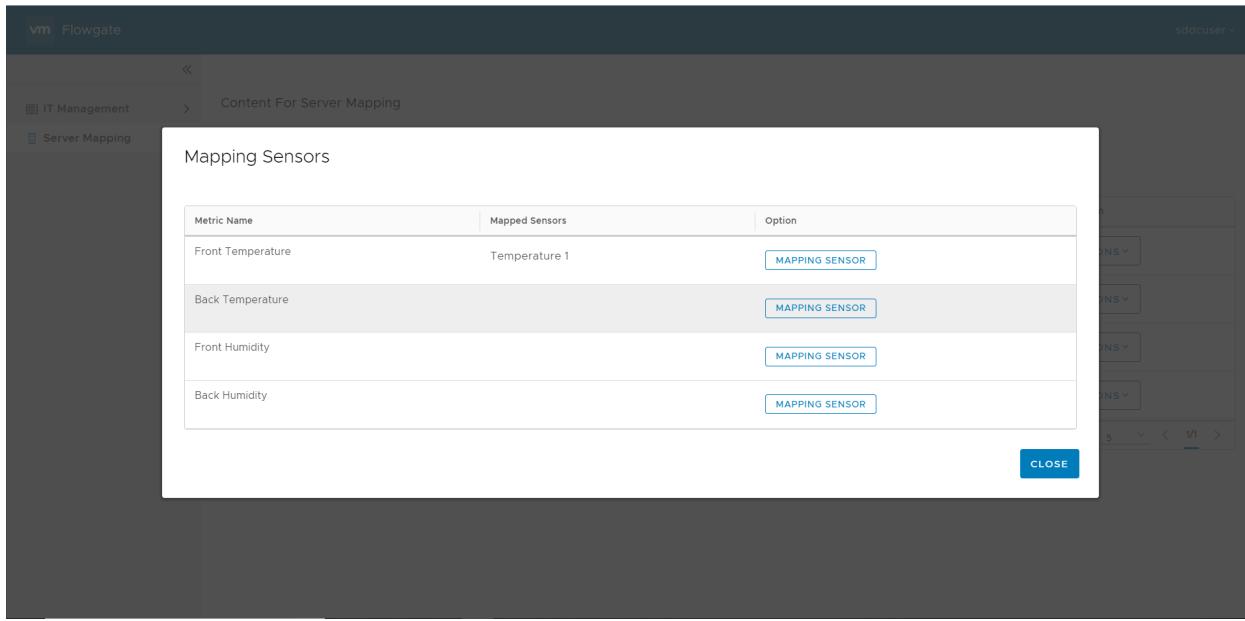
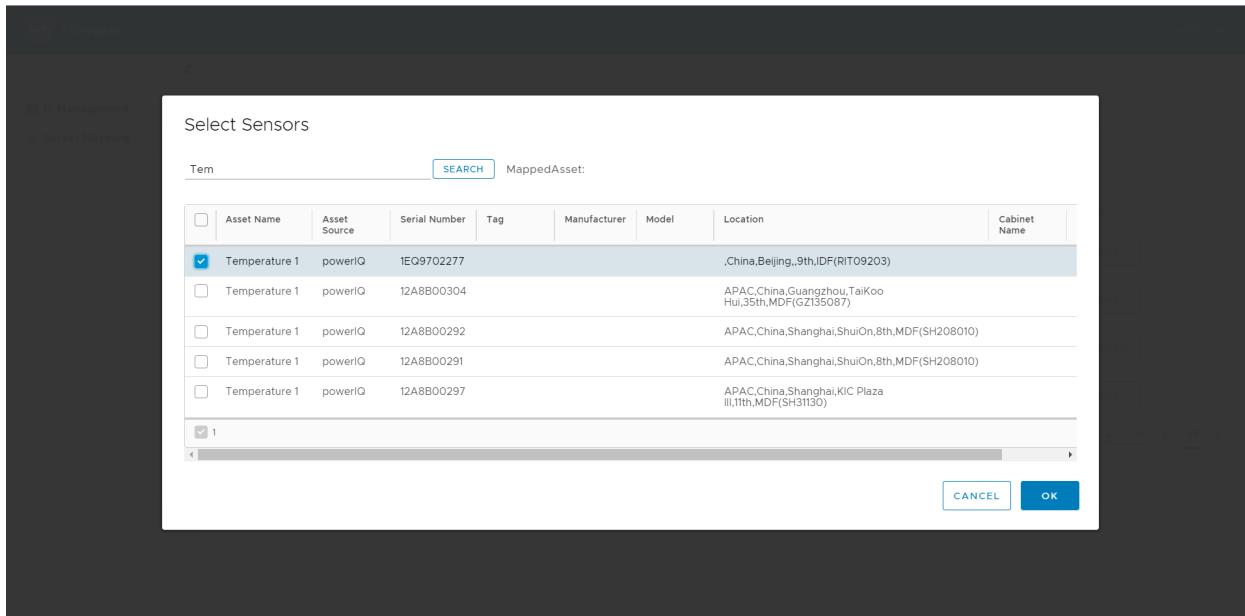


## Mapping Sensors for Server

1. Select a Metric and click the “MAPPING SENSOR” button.

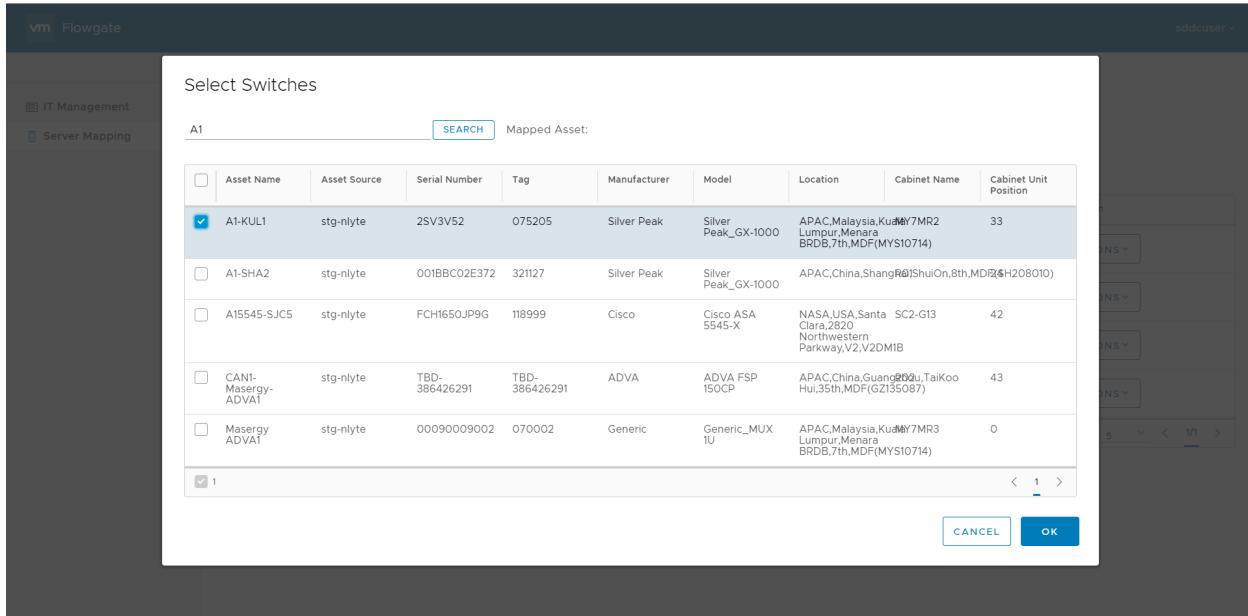


2. Search the sensor by name.
3. Select the sensor for the metric and click “OK”.



### Mapping Switches for Server

1. Click “ACTION” -> “Mapping Switch asset” button
2. Search switches by name.
3. Select the switches connected to the server and click OK.

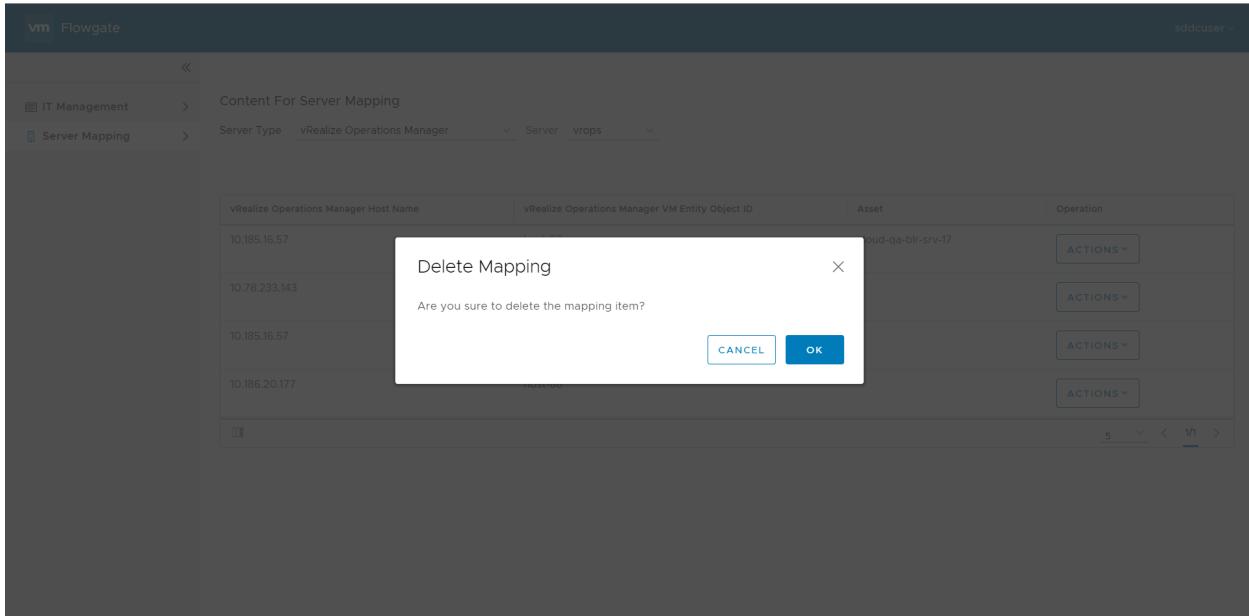


## Delete Server Mapping

1. Click “ACTIONS” -> “Delete” button.

vRealize Operations Manager Host Name	vRealize Operations Manager VM Entity Object ID	Asset	Operation
10.185.16.57	host-52	cloud-qa-blr-srv-17	<b>ACTIONS</b>
10.78.233.143	host-33		<b>ACTIONS</b>
10.185.16.57	host-65		Mapping Server asset Mapping PDU asset Mapping Sensor asset Mapping Switch asset
10.186.20.177	host-86		<b>Delete</b>

2. Click OK button in the confirm dialog.



## IT System Integration Management

### *Edit*

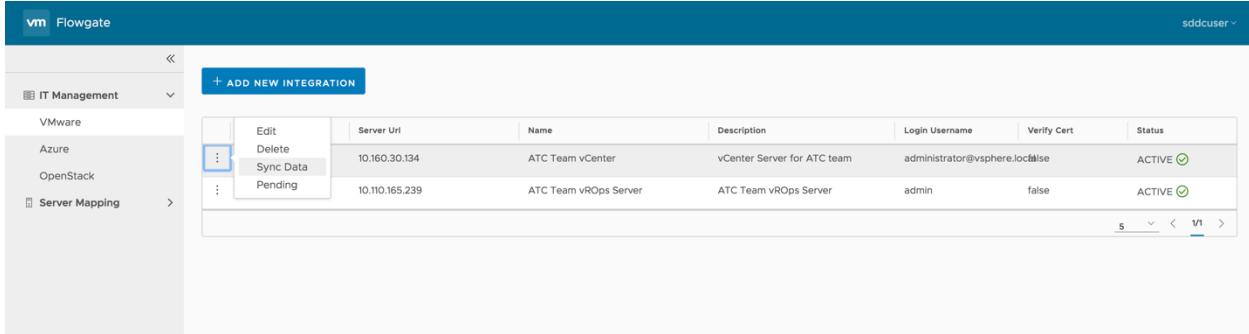
Click the “Dot Button” and select the “Edit” menu to update the integration information when needed.

### *Delete*

Click the “Dot Button” and select “Delete” menu to delete an integration.

### *Sync data*

User can force Flowgate to push the latest data to its IT system on demand. By default, Flowgate will push the last data to IT system every 5 minutes.



### *Pending an Integration.*

User can suspend an integration on demand. When an integration in pending status it will not sending data anymore.

### *Re-Active an Integration.*

User can re-active an integration which is in ERROR or Pending status

Validate data

### vCenter

After create an integration you can view host's metadata in the Customer attributes section.

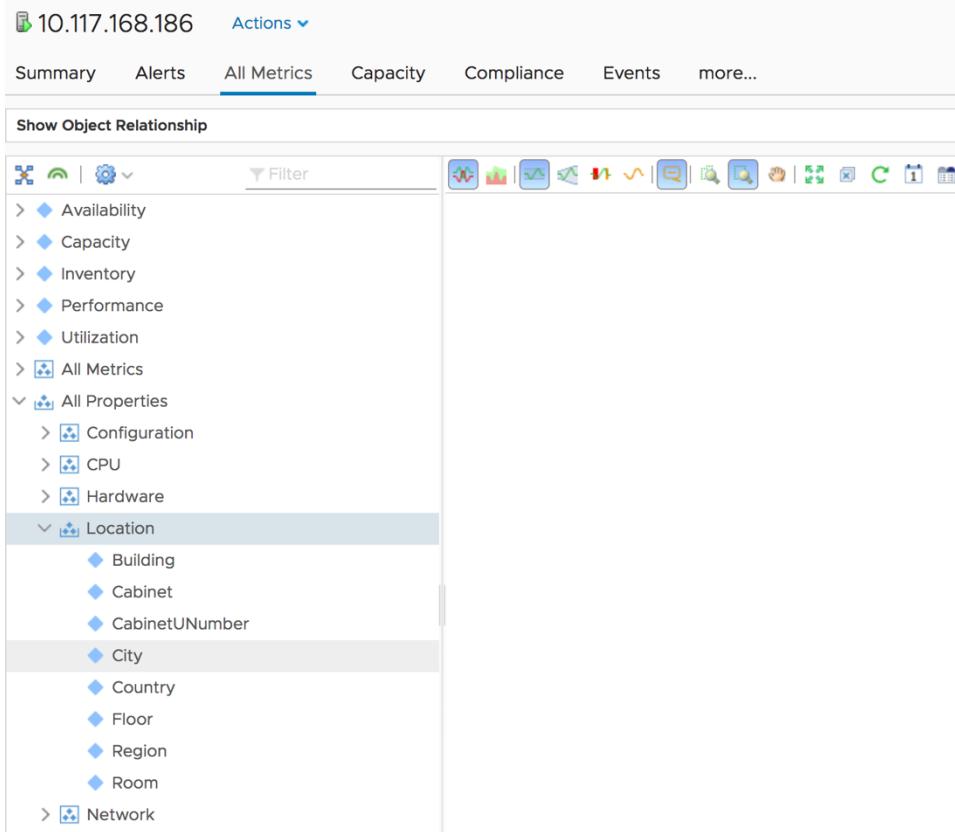
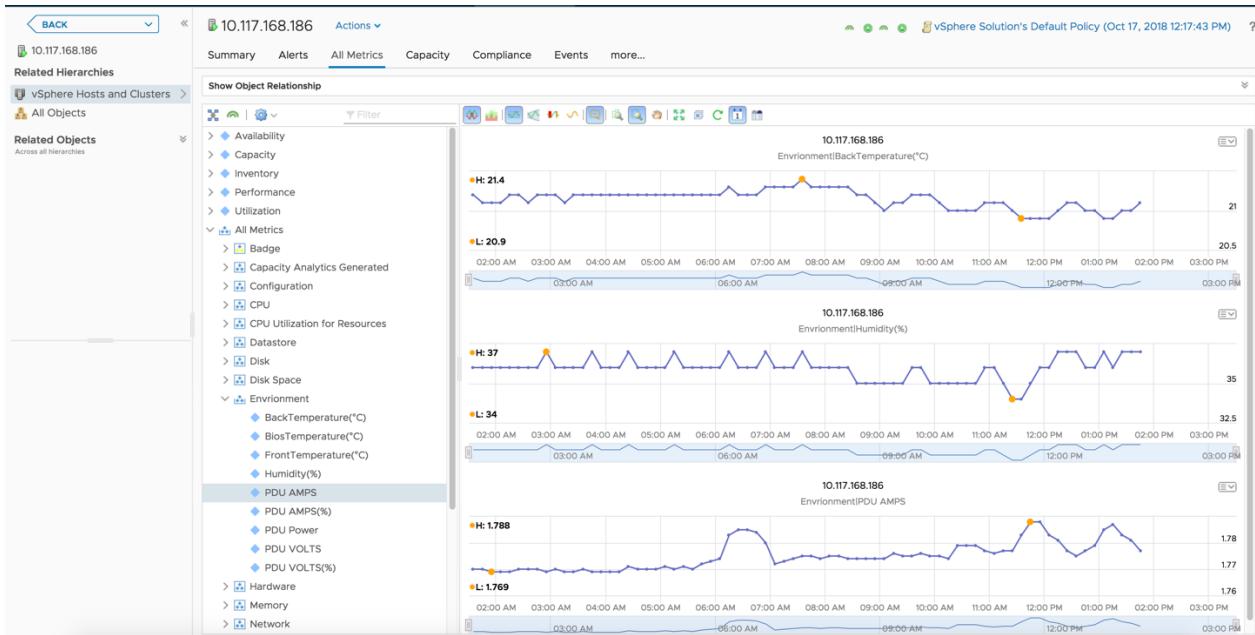
The screenshot shows the vCenter interface for a host named '10.110.166.22'. The 'Summary' tab is selected. The top section displays basic host information: Hypervisor (VMware ESXi, 6.5.0, 4564106), Model (Dell Inc. PowerEdge R610), Processor Type (Intel(R) Xeon(R) CPU X5660 @ 2.80GHz), Logical Processors (24), NICs (4), and Virtual Machines (2). It also shows the host state as 'Connected' and uptime of '63 days'. A Dell logo is present. Below this, a yellow banner indicates that 'ESXi Shell for the host has been enabled' and 'SSH for the host has been enabled', with 'Suppress Warning' buttons. The main content area is divided into 'Hardware' and 'Configuration' tabs. The 'Tags' section under Hardware lists a single tag: 'Cluster host loc...' (Category: WormholeAsset, Description: 'This host in the...'). The 'Custom Attributes' section under Configuration lists various location details:

Attribute	Value
Asset.Assetname	cloud-sha1-esx2
Asset.PDUs	sha1-r17-l,sha1-r17-r
Asset.Switches	cloud-sw01-sha1:08,cloud-sw02-sha1:07,cloud-fc01-sha1:05,cloud-sw03-sh...
AutoDeploy.MachineIdentity	KIC Plaza III
Location.Building	R17
Location.Cabinet	17
Location.Cabinetnumber	17
Location.City	Shanghai
Location.Country	China
Location.Floor	11th
Location.Region	APAC
Location.Room	Shanghai Lab

The 'Update Manager Compliance' section shows a status of '--'. Buttons for 'Scan ...' and 'Detailed Status' are at the bottom right.

### vRealize Operation Manager

User can view the environment metrics in the metric section. You can also view the host's metadata in the property section. User can create alert base on the new metrics feed by Flowgate.



By default, Flowgate has created 3 predefined alerts for user.

## API

User can view the API DOC on the right up corner. Fully functional restful API for all Flowgate functionalities.

Verb	Usage
GET	Used to retrieve a resource
POST	Used to create a new resource
PATCH	Used to update an existing resource, including partial updates
DELETE	Used to delete an existing resource

Status code	Usage
200 OK	The request completed successfully
201 Created	A new resource has been created successfully. The resource's URI is available from the response's Location header
204 No Content	An update to an existing resource has been applied successfully

## User Profile

User can change the password in the User Profile page.

vm Flowgate

sddcuser ▾

Content for User

UserName \* sddcuser

E-mail \* sddcuser@vmware.com

Password New Password

Confirm Password Confirm Password

SUBMIT BACK

Log out

User Profile

Api Doc

Content for User

UserName \* sddcuser

E-mail \* sddcuser@vmware.com

Password New Password

Confirm Password Confirm Password

SUBMIT BACK

sddcuser ▾

Log out

User Profile

Api Doc