VERTIV.

vSphere Plugin

Installer/User Guide

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Technical Support Site

If you encounter any installation or operational issues with your product, check the pertinent section of this manual to see if the issue can be resolved by following outlined procedures.

Visit https://www.vertiv.com/en-us/support/ for additional assistance.

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1 Product Overview

Vertiv™ vSphere Plugin is a thermal management application that enables you to view the air conditioning data of Vertiv™ Thermal Insight in vSphere. It also provides alarms alerts from Thermal Insight.

1.1 Features and Advantages

Features and advantages of the plugin are:

- Simple deployment and operation
- Centralized access to air conditioning readings
- Upload refrigeration device alarms to vSphere and users can configure relevant measures to protect the server
- Monitoring capabilities

1.2 Supported vSphere Version

vSphere 6.7 and 7.0.

1.3 Thermal Insight Version

Thermal Insight 1.0.0 and above.

1.4 System Requirements

The following are hardware and software pre-requisites for the installation of the vSphere plugin.

1.4.1 Hardware

- A normal vSphere environment, with at least one cluster and three servers under vSphere
- At least one server to run a virtual machine with 2CPU, 2G memory and 8G hard disk

1.4.2 Network

- Plugin network to access Thermal Insight
- Plugin to run in the vSphere network environment

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2 Installation

2.1 User Account Registration

If vSphere Plugin is the first Vertiv software you want to download, then you need to register on the Vertiv software download portal. After registration, you can download and install the latest version of the application.

NOTE: A user can download the software if they already have an account.

2.1.1 Registration

1. Navigate to www.Vertiv.com in the web browser and hover your mouse over the Support tab.
2. Click *Software/Firmware Updates*, then click the *Software Product Downloads* menu option. The Software Download page appears. Locate the Vertiv™ Thermal Insight Software Download on the page.
3. Click *View Details* and click the *Register* menu option.

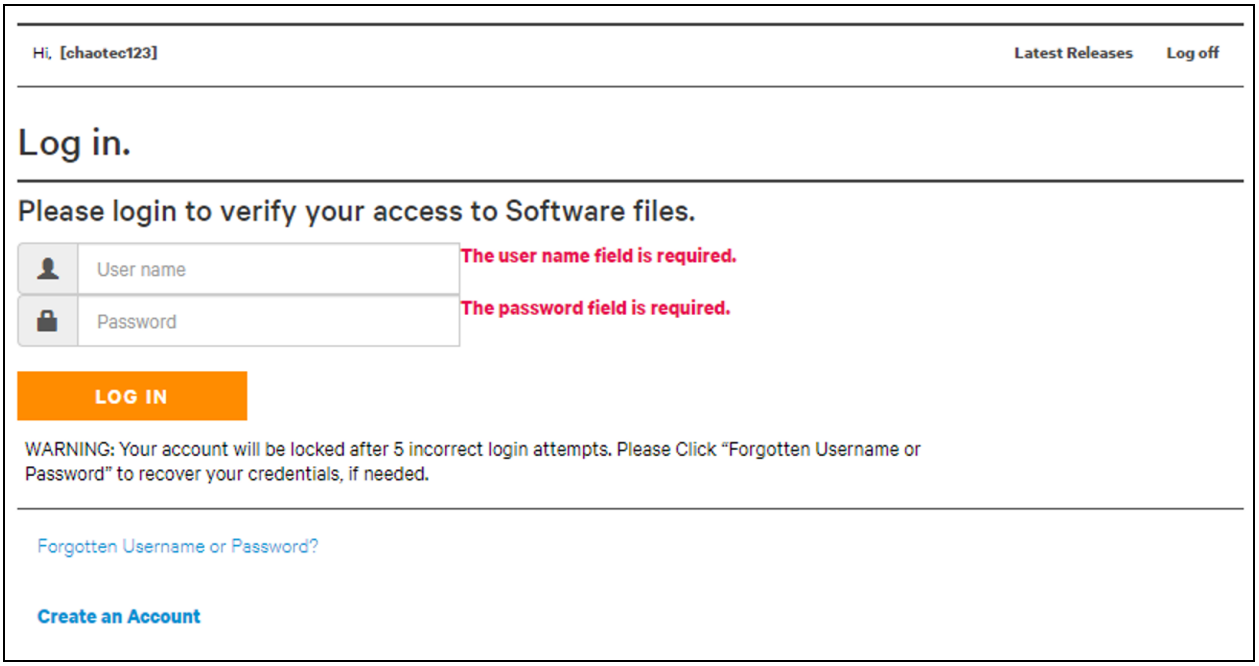
NOTE: Do not close the web page. The web page automatically refreshes and displays a registration form, Create an Account for Infrastructure Management Software registration form. Use this form to enter account activation code.

4. Enter the mandatory field details, provide a valid email address, and agree to the terms of use. Click the *Create Account*.
5. An activation code is sent to the email address you provided. Check your email.
6. Enter the activation code in the Code field on the Create an Account for Infrastructure Management Software registration form and click *Submit*.

2.1.2 Download the vSphere Plugin

1. Follow the step 1 and 2 as mentioned in Registration above . Click *vSphere Plugin* for Thermal Insight.
2. A new window appears in the browser as shown in Figure 2.1 on the next page.

Figure 2.1 Log in Window



3. After entering the previously registered User name and Password, click the *LOG IN* button.
4. Click the *Download* option. Once the application is downloaded, you can install the thermal management application.

NOTE: For more information on account registration and application download, refer to the Software Download section of Vertiv™ Thermal Insight User Manual SL-71140.

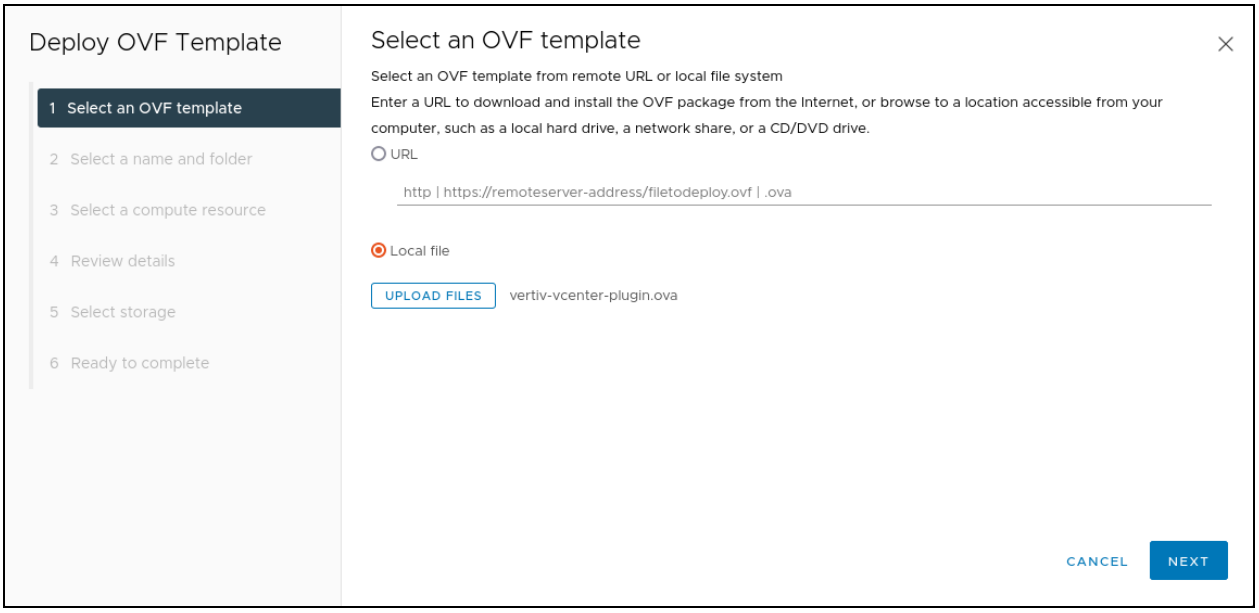
2.2 vSphere Plugin Installation

Follow these steps to install the vSphere plugin to generate a virtual machine and set the IP address of the virtual machine manually or automatically.

1. Enter vSphere, select a host, deploy the plugin service, and upload the plugin package.

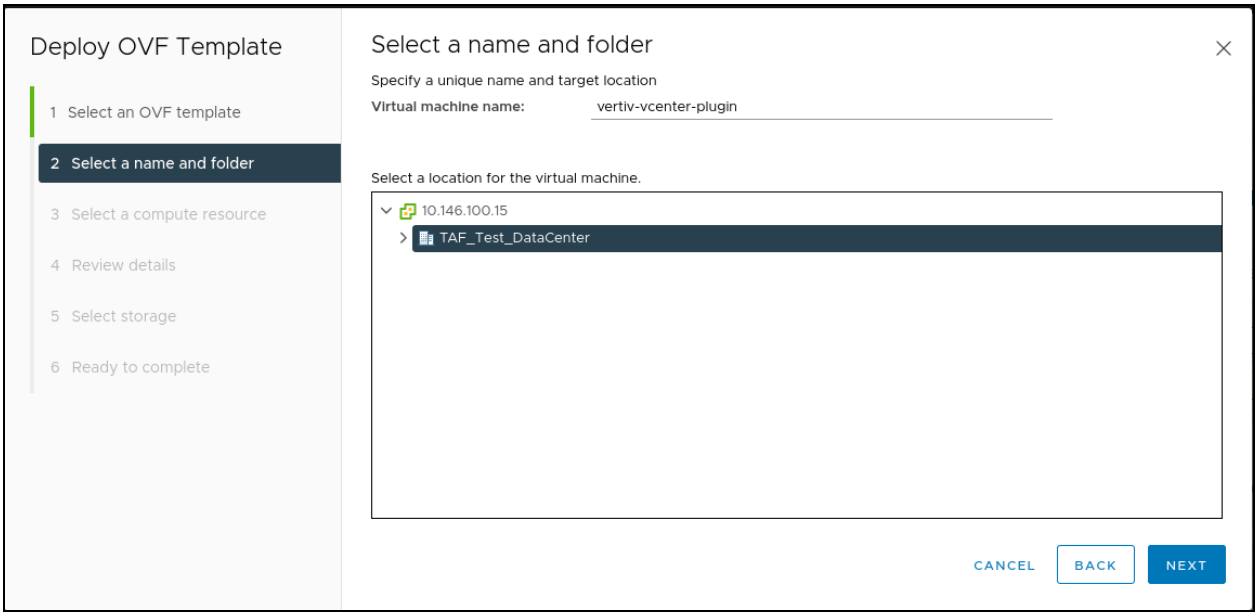
NOTE: Ensure that you have downloaded the plugin installation package and OVA file from the www.Vertiv.com.

Figure 2.2 Uploading Installation Package



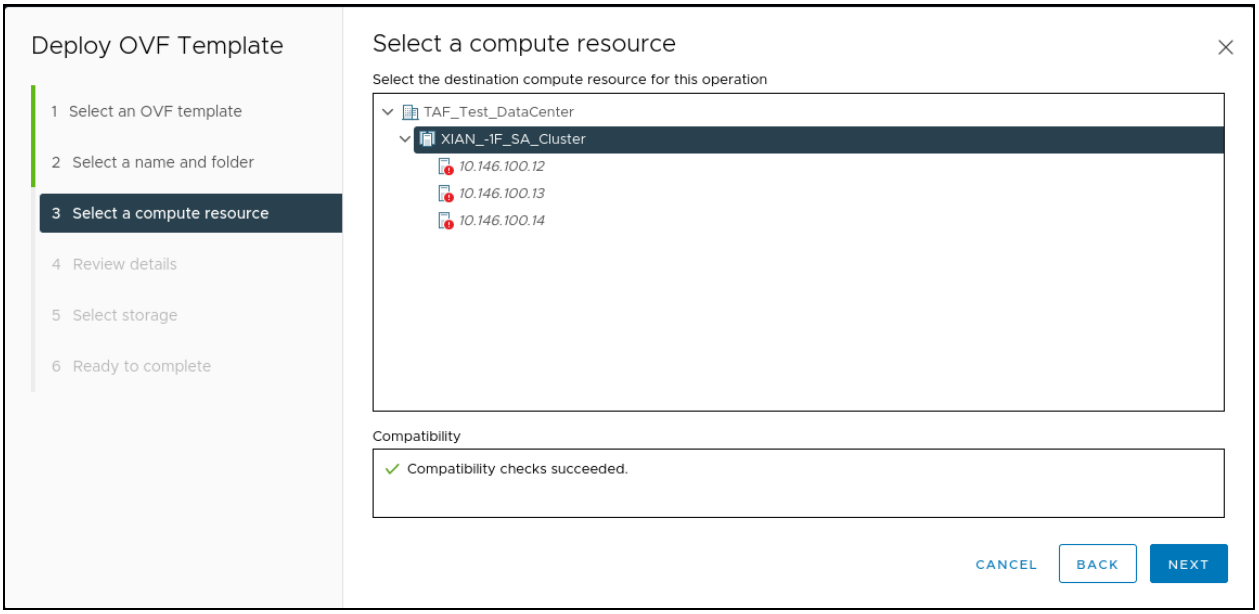
2. Select the name and folder of the plugin virtual machine by specifying a unique name and target location.

Figure 2.3 Virtual Machine Name - Plugin Setup



3. Select the host on which the virtual machine is deployed.

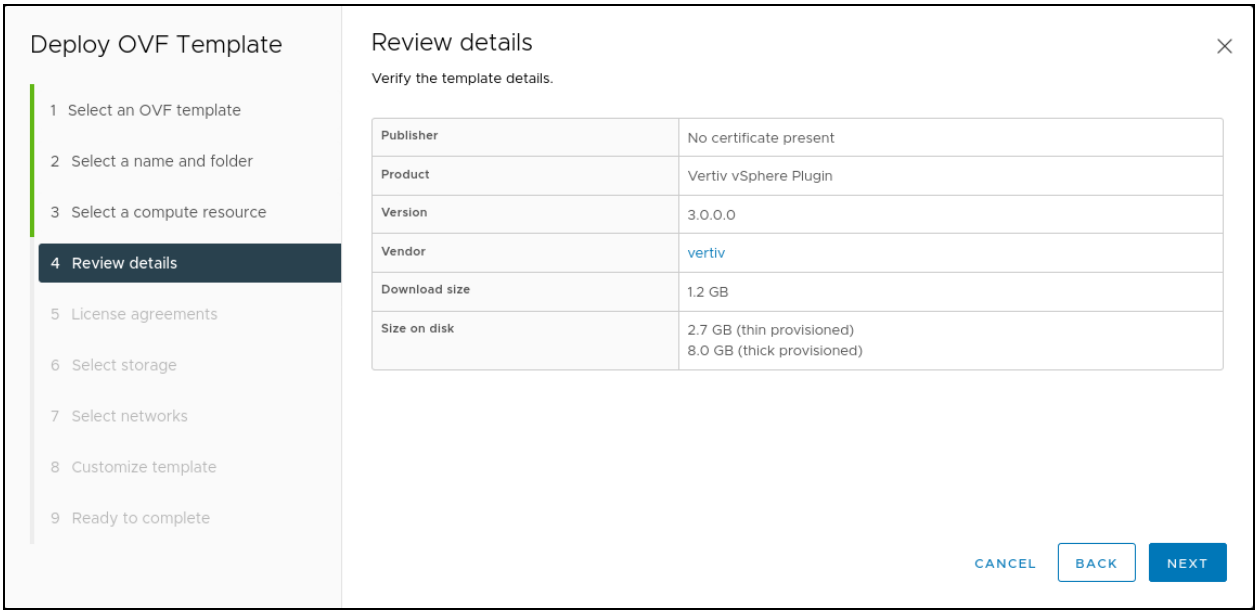
Figure 2.4 Selecting the Host



NOTE: Select the Host for which virtual machine is installed on Windows.

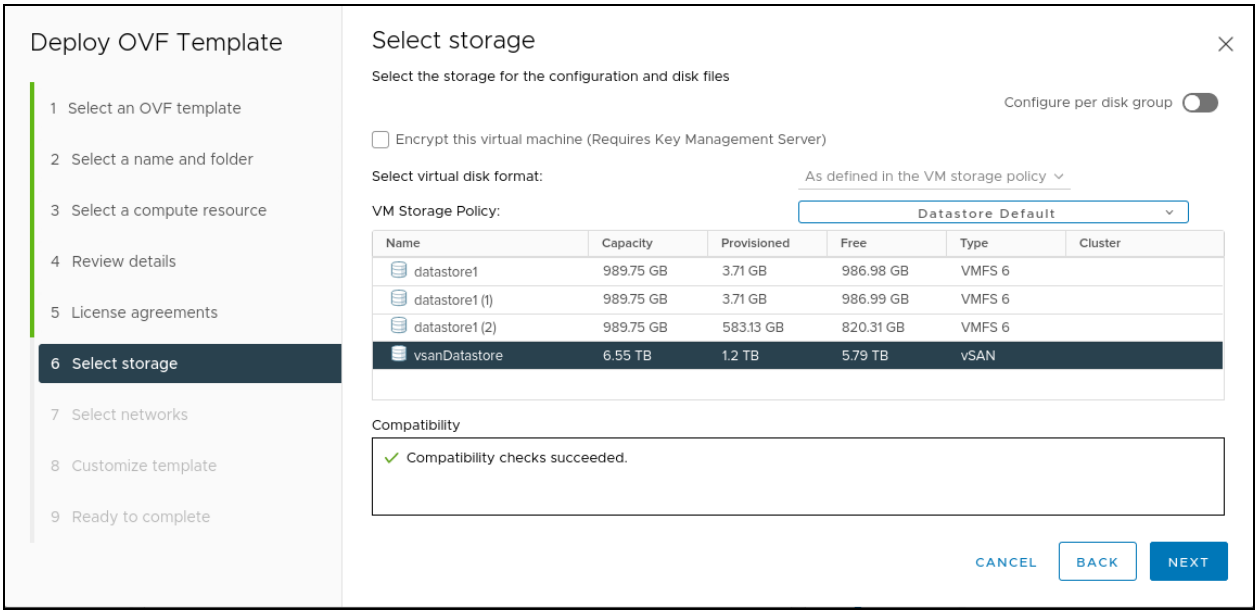
4. View the details of the plugin upload.

Figure 2.5 Installation Package Information



5. Select the storage device on which the virtual machine is installed. Typically, it is installed on the vSAN store.

Figure 2.6 Virtual Machine Storage Selection



6. Set up the virtual machine network. Specify the correct network configuration as follows:

NOTE: Do not enter the network configuration if the DHCP service is available.

NOTE: Do not fill the field of Host Name, IP Address, Netmask Prefix, and Gateway if you dynamically obtain the IP through DHCP.

a. The IP Address, Netmask Prefix, Gateway, and DNS parameters only function if the Hostname is entered.
b. **Hostname:** Enter the host name if you need to set the IP statically.
c. **IP Address:** Enter the IP Address if you need to set the IP statically.
d. **Netmask Prefix:** Enter the Netmask Prefix if you need to set the IP statically.
e. **Gateway:** Enter the Gateway if you need to set the IP statically.
f. Specify the DNS and DNS Domain information in the binary if you need DNS service.
g. **Root Password:** Modify the password corresponding to root used by SSH.

NOTE: If a root password is not provided, the default password vertiv should be used.

h. **Debugging:** Activate debug mode to modify the *photon-customization-debug.log* and the *bootstrap.log* if necessary.

Figure 2.7 Setting Up the Virtual Machine Network

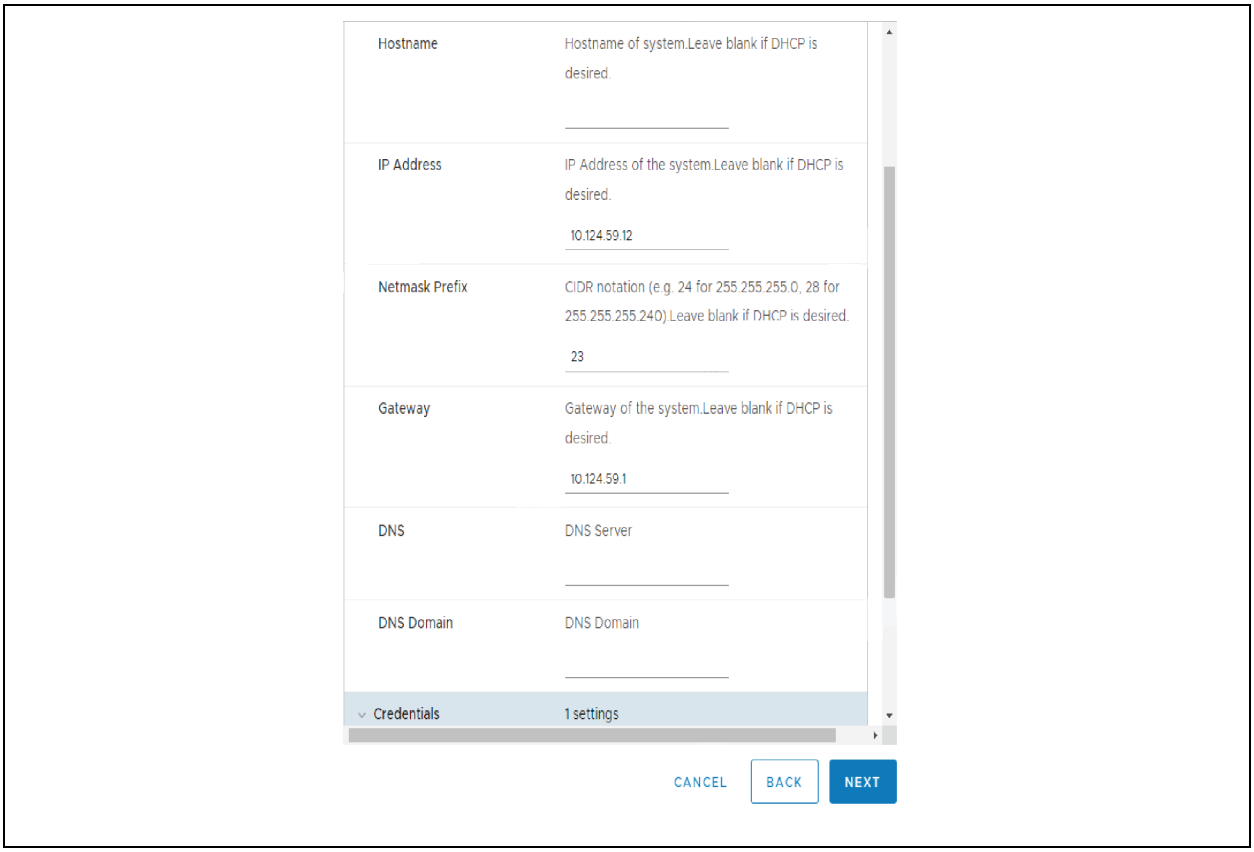


Figure 2.8 Virtual Machine Network Selection

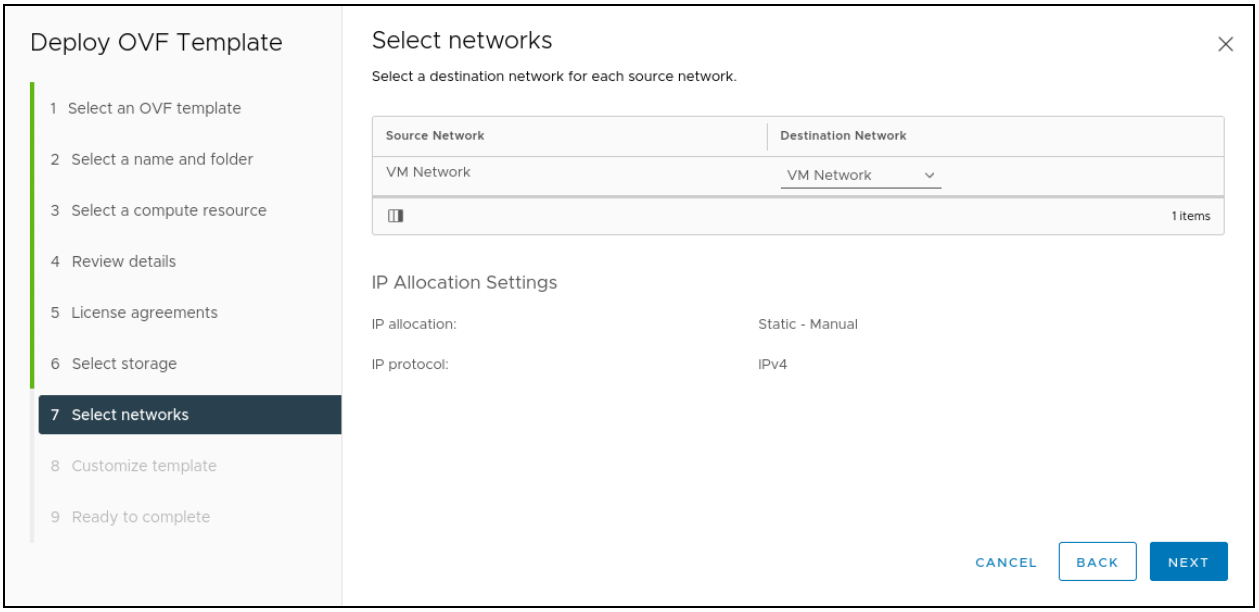


Figure 2.9 Virtual Machine Customize Template

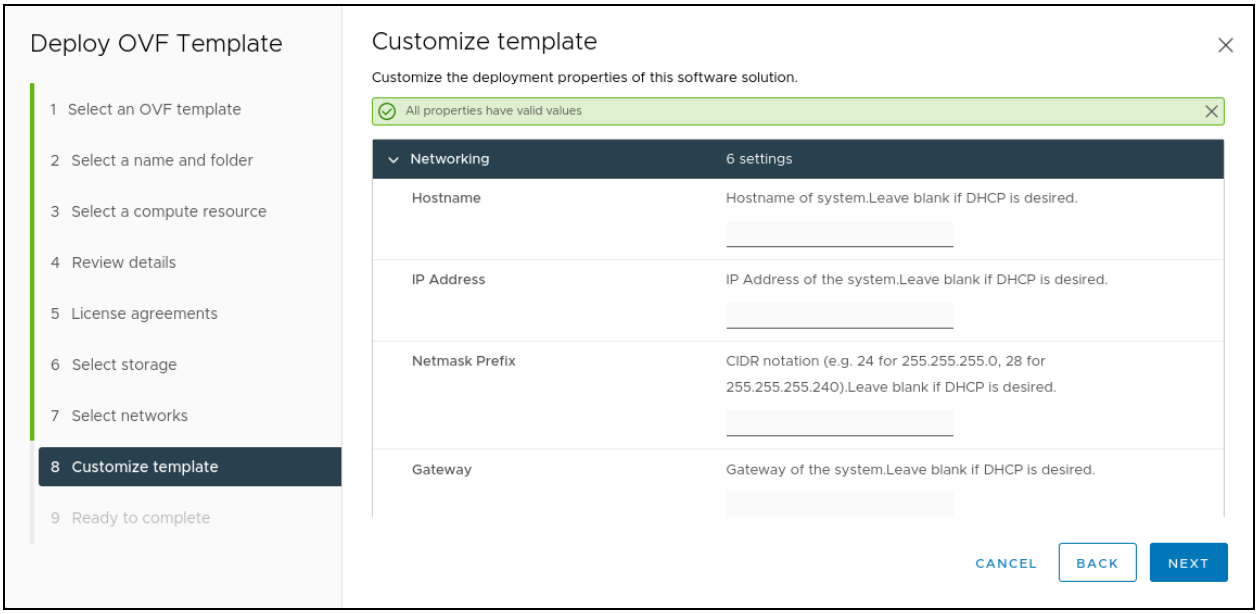
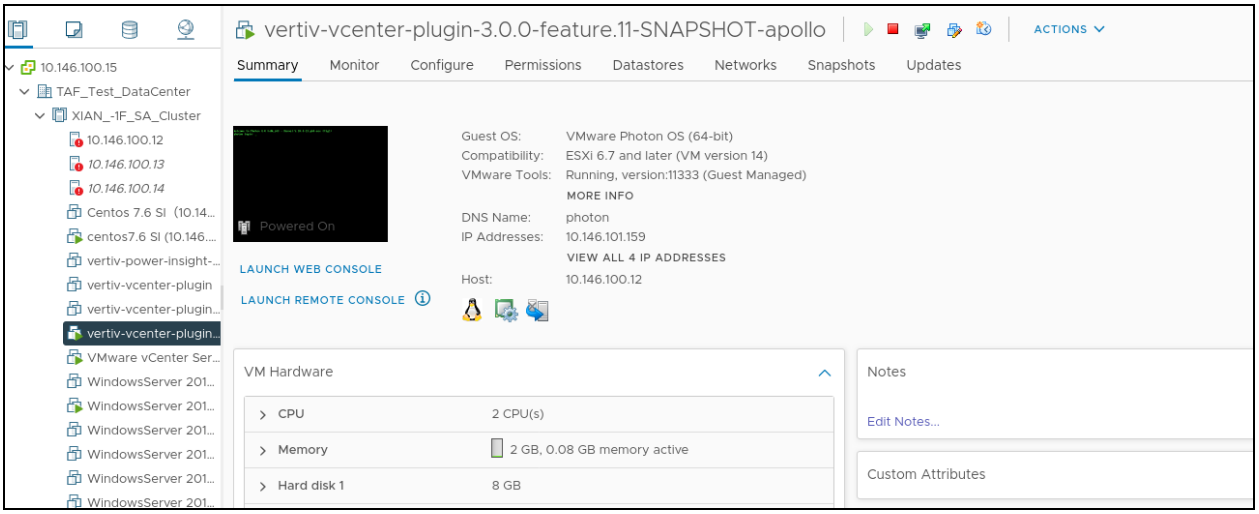


Figure 2.10 Virtual Machine Information View

When DHCP automatically assigns an IP address: After the virtual machine is deployed, start the virtual machine and wait for DHCP to assign an IP address.

If you manually set the IP address: After the virtual machine is deployed, the IP address of the startup virtual machine can be used.

Figure 2.11 Virtual Machine IP Address



7. Login to the plugin registration interface.

After starting the plugin virtual machine, enter the plugin IP address in the browser and enter the plugin service web interface for registration and authentication.

3 Setting Up the Application

3.1 vSphere Plugin Initialization

In order to make the vSphere plugin work properly, and to be able to view the device signals and alarms monitored by the Vertiv software on vSphere through the plugin, and to trigger the actions of the virtual machines or hosts based on the alarms, you need to initialize the vSphere plugin first. In the vSphere mode (mode without the VxRail environment), the vSphere plugin needs to be initialized with information about the Vertiv monitoring software and the vSphere system. In the VxRail-double vSphere mode, the vSpere plugin needs to be initialized with information about the Vertiv monitoring software, the workload vSphere system, and the load VxRail Manager system.

3.1.1 Logging in to plugin

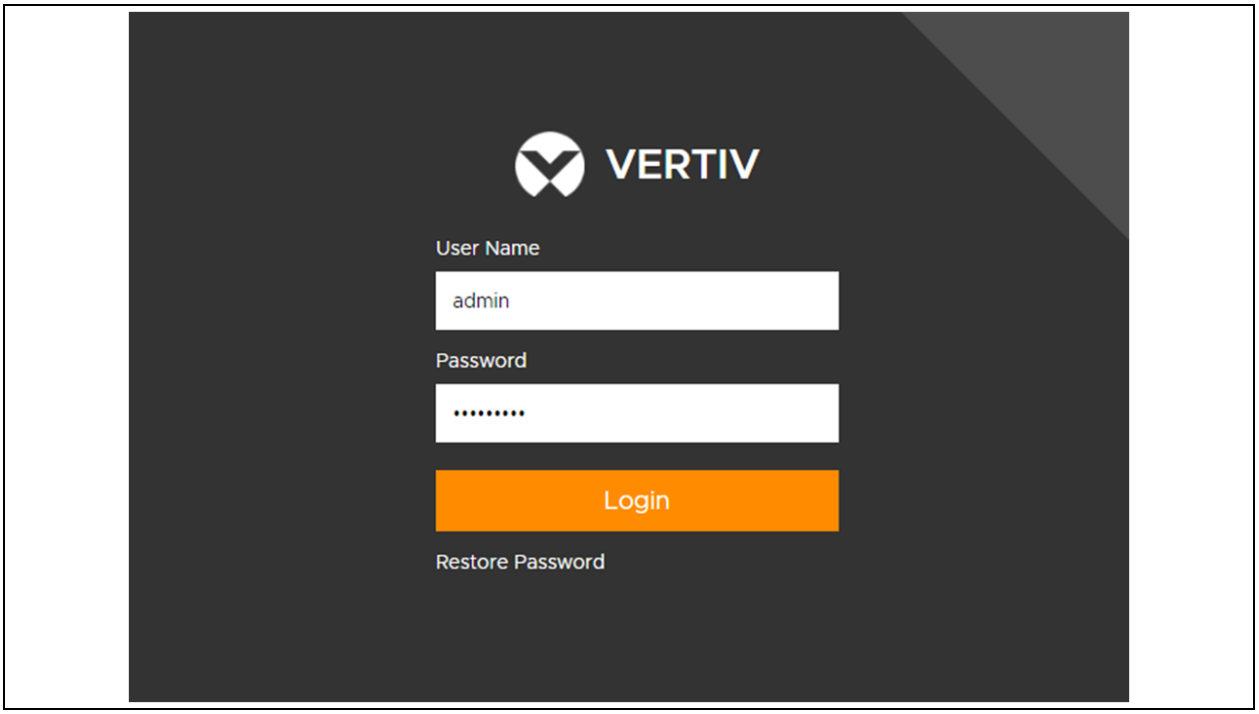
Enter the plugin IP address in the browser to access the web services of plugin, for example: https://1.1.1.3/#/.

1. Enter the User Name and Password to login.

   The default login credentials are:

   - **Default User Name:** admin
   - **Password:** vertiv@1234

Figure 3.1 Login to Plugin Window



2. After logging in the first time with default credentials, you are required to change your password. Change the password in the user drop-down menu in the upper right corner of the interface. The default username, admin, cannot be modified. See Figure 3.2 below and Figure 3.3 below.

Figure 3.2 Change Password for the First Time Window

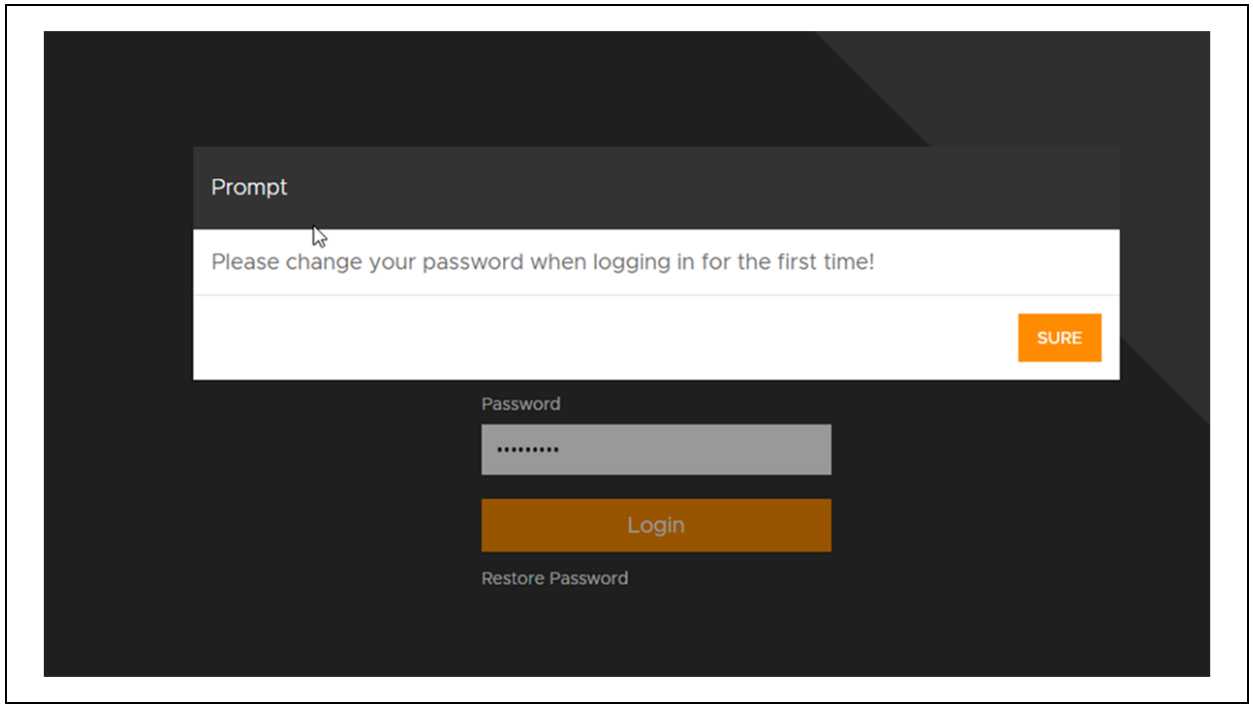
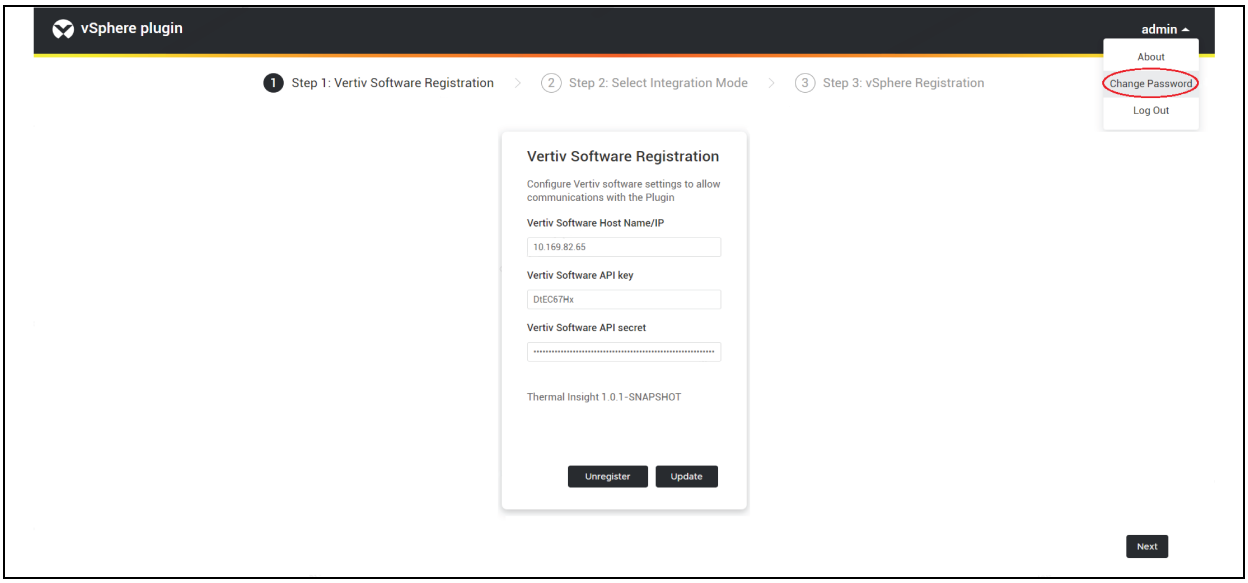
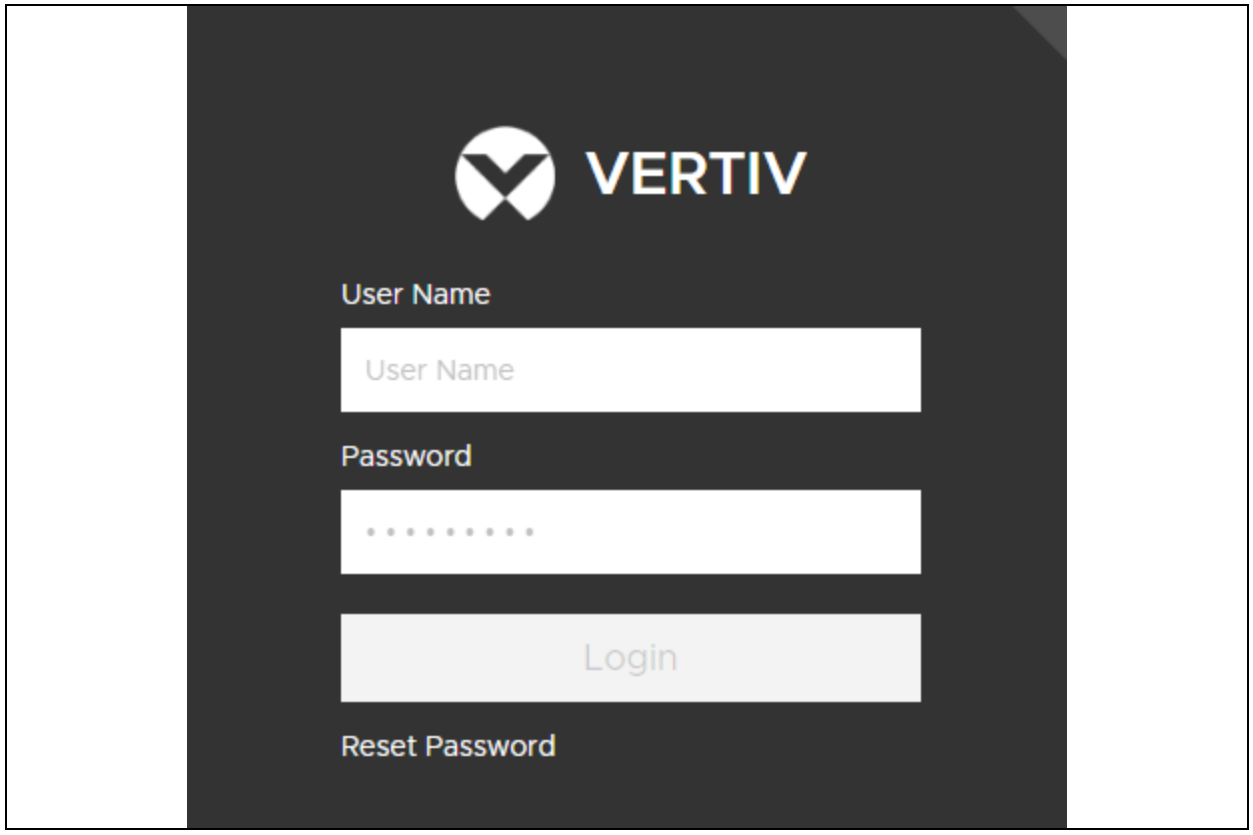


Figure 3.3 Modify Password Window



3. Remember your changed password. If you lose your password, click on the *Restore Password*, and you can reset it to the default password as **vertiv@1234**.

Figure 3.4 Password Reset Screen

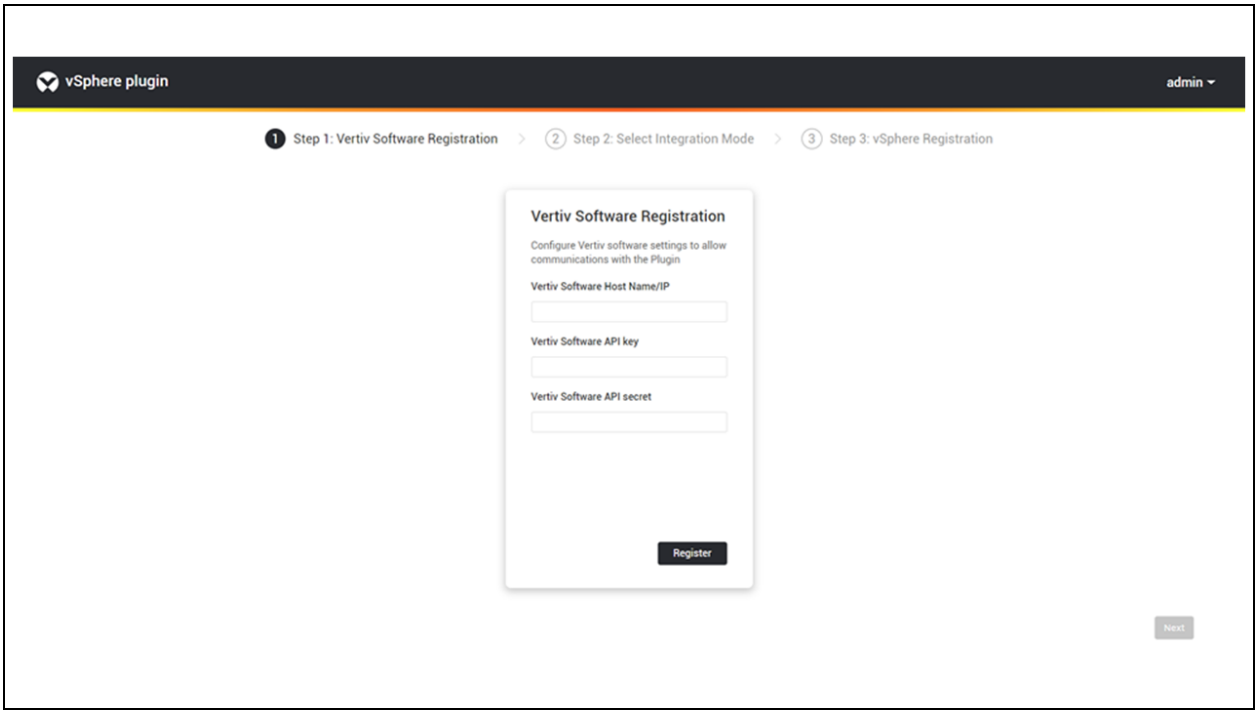


3.1.2 vSphere Mode Initialization

Step 1: Register the Thermal Insight to vSphere plugin.

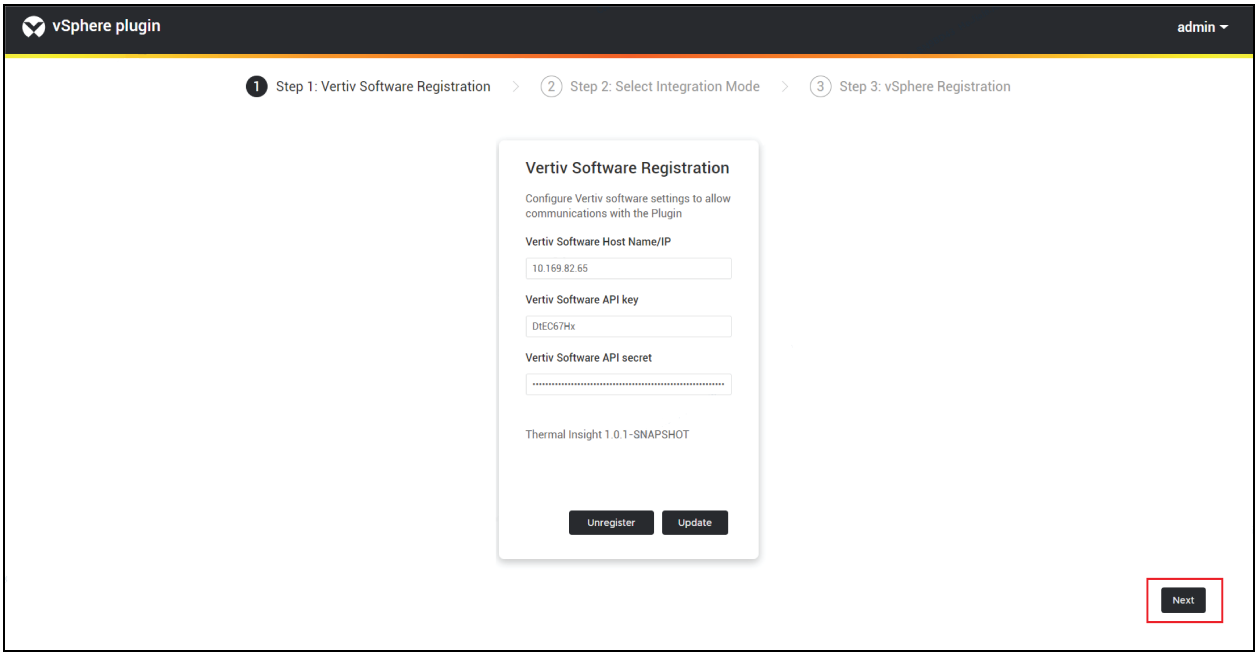
1. Enter the required information in the IP address, Thermal Insight API Key, and Thermal Insight API Secret fields according to the interface prompts.
2. Click *Install* to register.To obtain the Vertiv software API key and the Vertiv software API secret, go to Thermal Insight's System settings and select Integrated Management. For more details, refer to the Vertiv™ Thermal Insight User Manual SL-71140.

Figure 3.5 Plugin Registration Window



After completing registration, click *Next* to enter the Select Integration Mode page, as shown in **Figure 3.6** below.

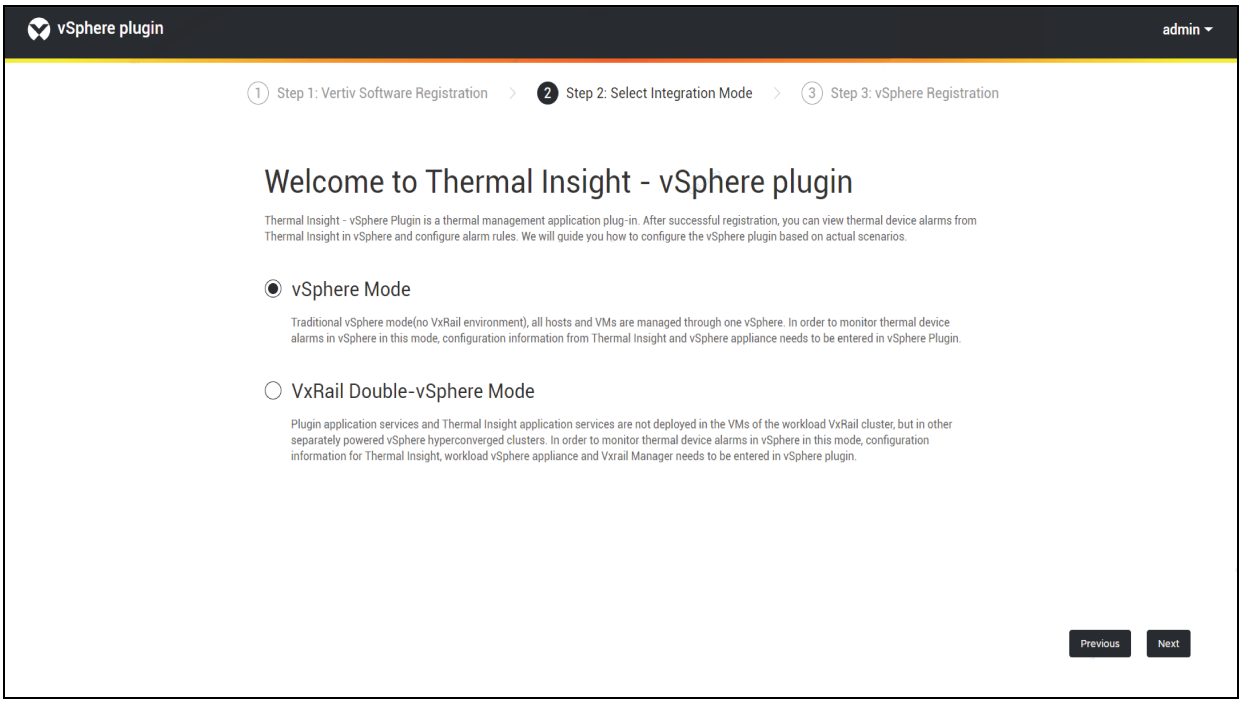
Figure 3.6 Successful Registration Window for Thermal Insight



Step 2: Select the vSphere Mode.

After Thermal Insight is registered, there are two modes to Select Integration Mode: vSphere Mode (selected by default) and VxRail Double-vSphere Mode, as shown in Figure 3.7 below.

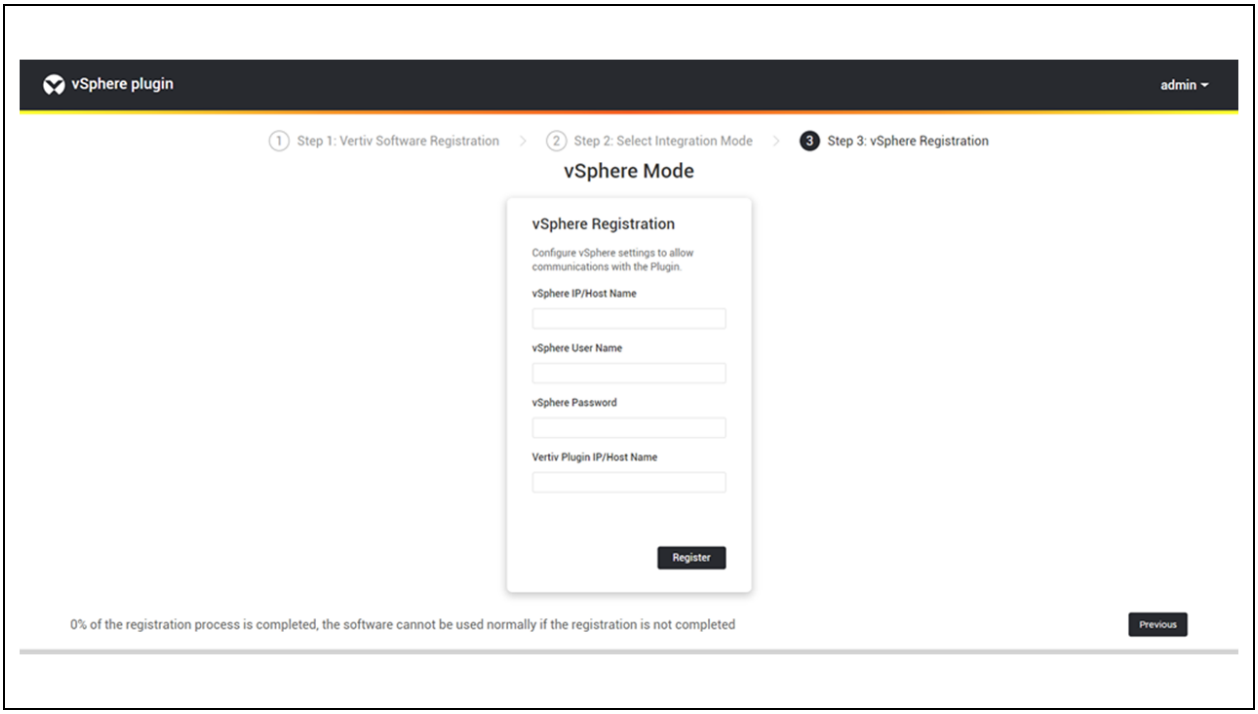
Figure 3.7 Select Integration Mode Window



Step 3: Register the vSphere to Plugin.

- Enter the required information in the vSphere IP/Host Name, vSphere User Name, vSphere Password, and vSphere Plugin IP/Host Name fields.
- Click *Register*.

Figure 3.8 vSphere Mode Registration Window



3.1.3 VxRail Double-vSphere Mode Initialization

To register VxRail Double-vSphere Mode, follow the prompts after logging in to the plugin.

Step 1: Register Thermal Insight to vSphere plugin.

- Enter the required information in the vSphere IP/Host Name, vSphere User Name, vSphere Password, Vertiv Plugin IP/Host Name fields.
- Click *Register*.

Step 2: Select the VxRail Double-vSphere Mode.

After Thermal Insight is registered, there are two modes to Select Integration Mode: vSphere Mode (selected by default) and VxRail Double-vSphere Mode, as shown in Figure 3.7 on the previous page.

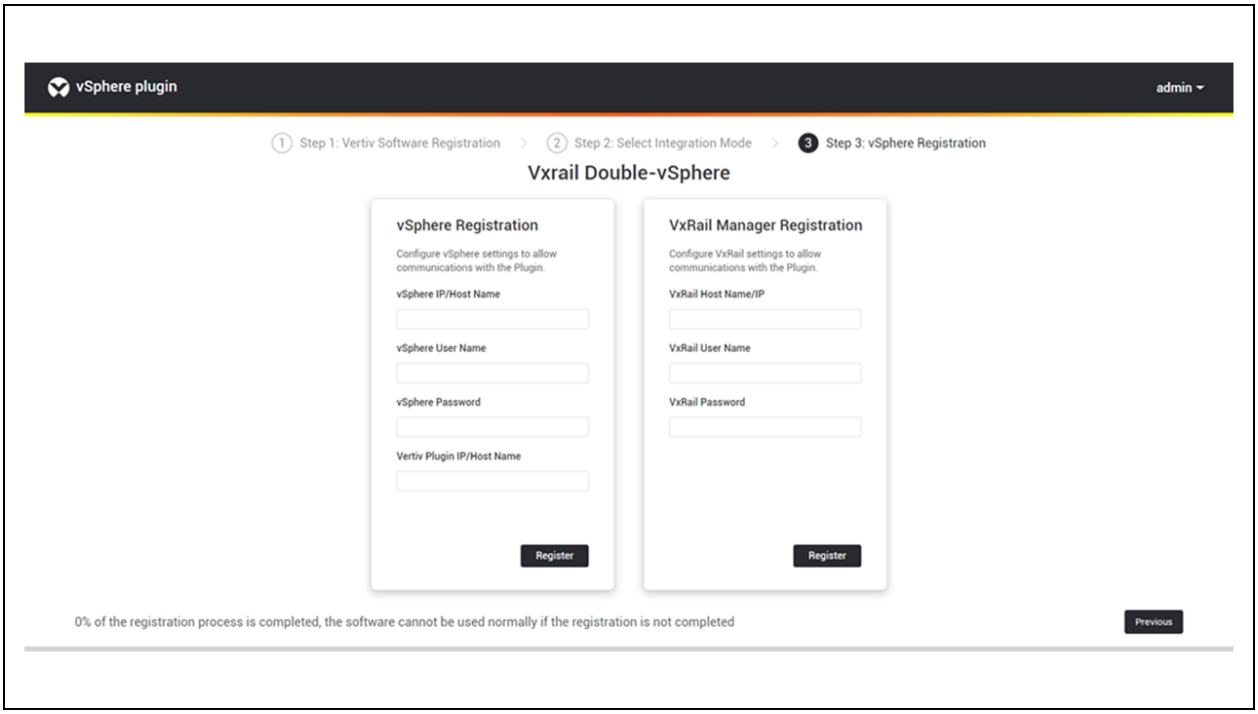
Step 3: Register the vSphere and VxRail to plugin

To register the vSphere, follow the Step 3: Register the vSphere to Plugin. on the previous page .

To register the VxRail Manager:

1. Enter the required information in the VxRail Host Name/IP, VxRail User Name, VxRail Password fields.
2. Click *Register*.

Figure 3.9 Vxrail Double-vSphere Mode Registration Window



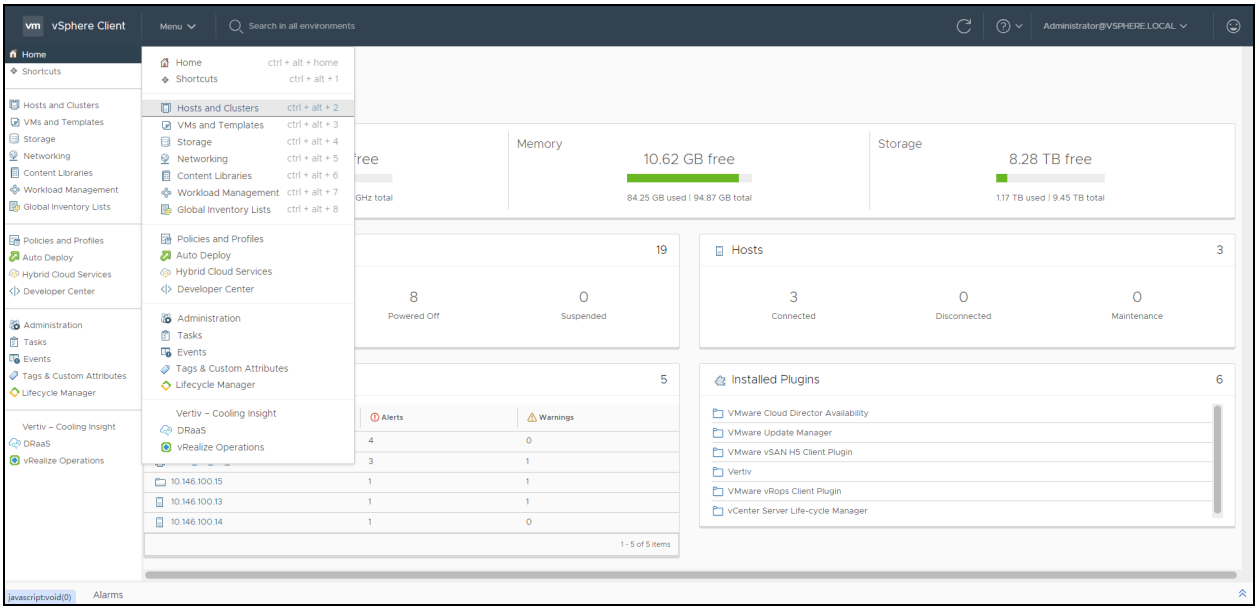
NOTE: If the plugin registration fails, there may be two situations. First, the authentication information entered is incorrect. Confirm the information and try again. Second, the plugin has been registered before. When the plugin was previously uninstalled, the alarm information of the Vertiv air conditioning device was left in vSphere. Enter vSphere to manually delete the global alarm and custom alarm of the Vertiv air conditioning device.

3.2 vSphere Mode

3.2.1 Associate servers and thermal devices

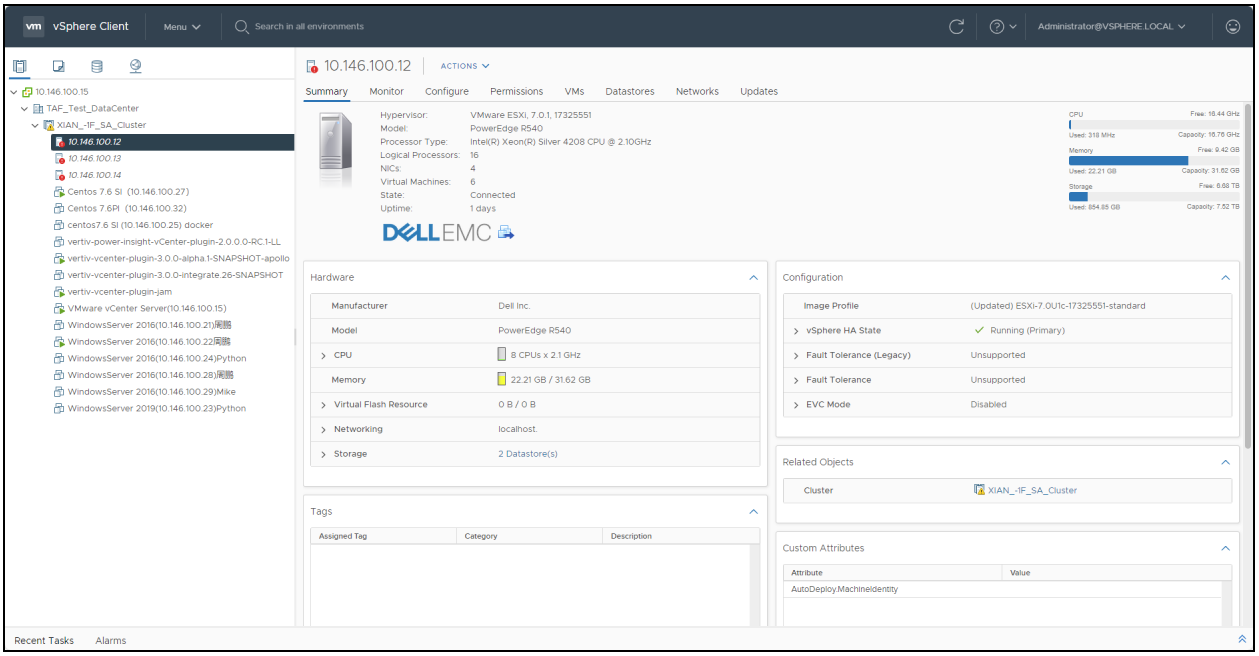
1. From the vSphere interface, click *Menu* at the top of the page. Select the *Host and clusters* option, as shown in Figure 3.10 below.

Figure 3.10 vSphere Menu



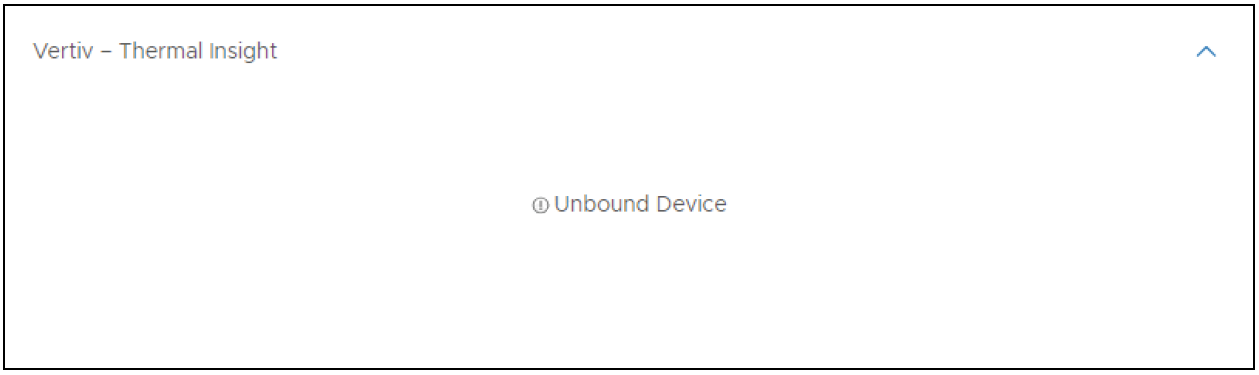
2. Select a host under the cluster and click to enter the current host summary interface. For example, 10.146.100.12 as shown in Figure 3.11 on the facing page.

Figure 3.11 Host Summary Interface



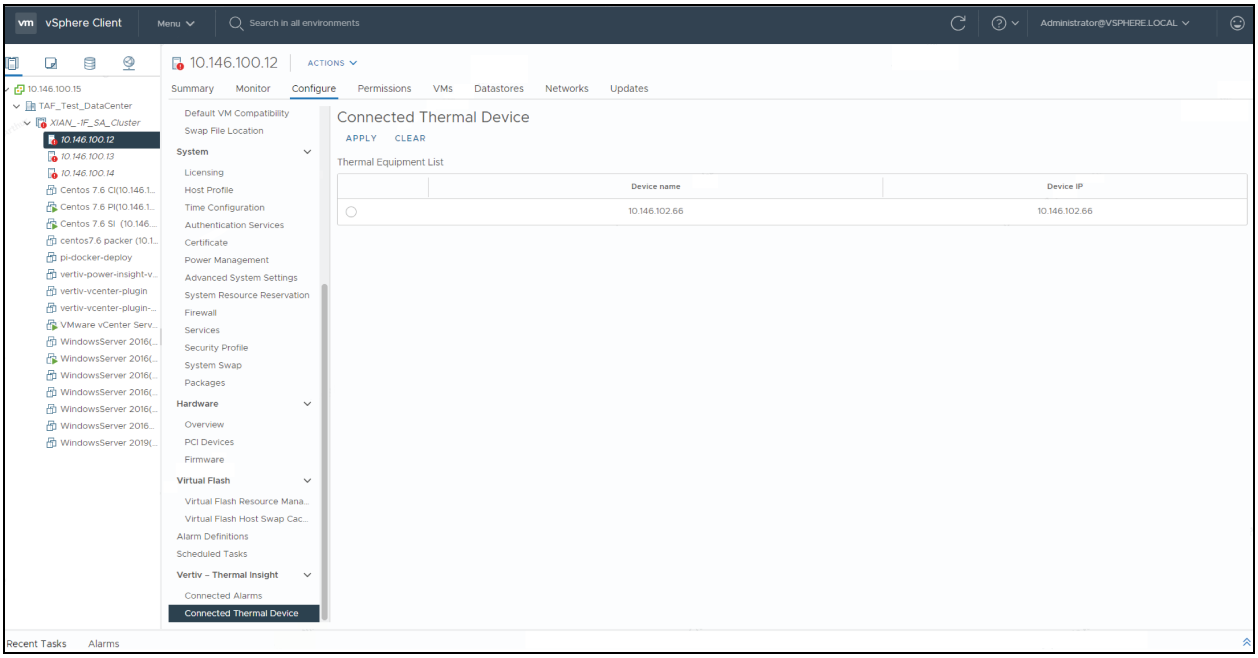
3. If the current host is not connected to the summary interface, the Vertiv-Thermal Insight interfaces prompts that the device is not connected, as shown in **Figure 3.12** below.

Figure 3.12 Summary Screen for Unbound Devices



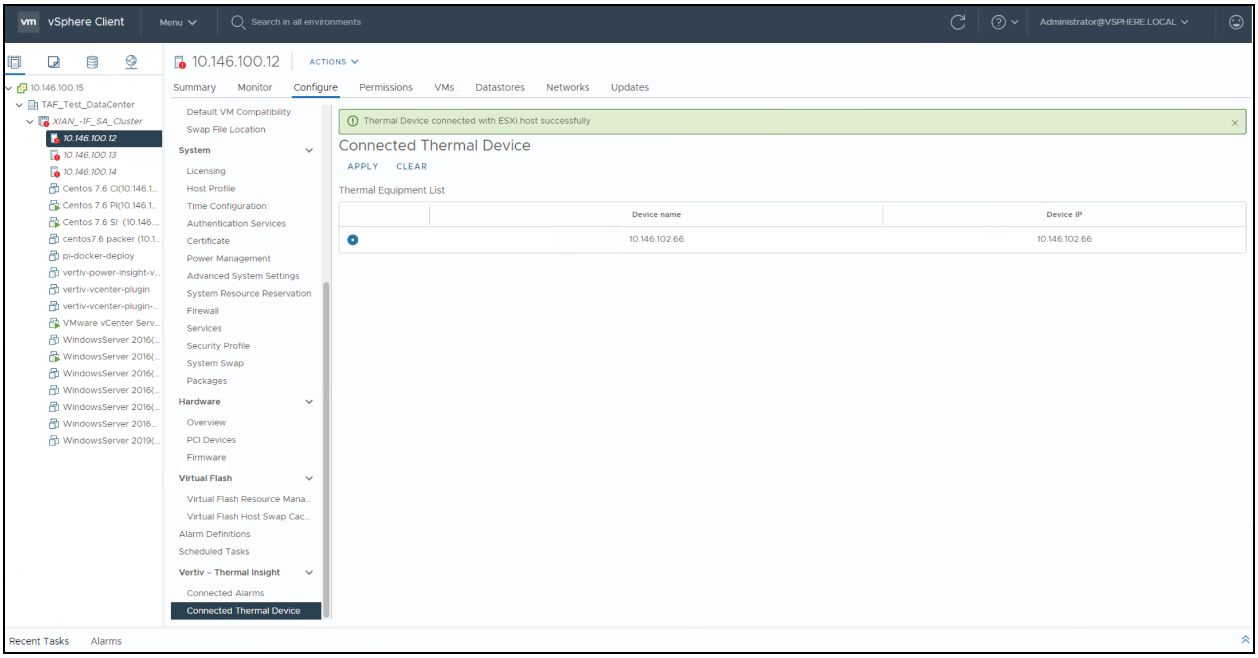
4. Switch to the configuration interface by clicking the Configure tab. Select *Vertiv - Thermal Insight -Connected Thermal Device* in the left menu bar to enter the Vertiv configuration interface. See **Figure 3.13** on the next page.

Figure 3.13 Device Association Interface



5. Figure 3.14 shows Thermal Equipment List. Click the check box from the Thermal Equipment List that needs to be configured. Click *APPLY* in the upper left corner. The pop-up message **Thermal Device connected with ESXi host successfully** is displayed. It indicates that the thermal equipment is connected to the server. Selecting a device and clicking *CLEAR* will unbind the server from the device. See **Figure 3.14** below.

Figure 3.14 Device Binding Successfully



Repeat steps 2 through 5 as needed to bind devices to other hosts.

3.2.2 Setting alarms for a single server

Overview

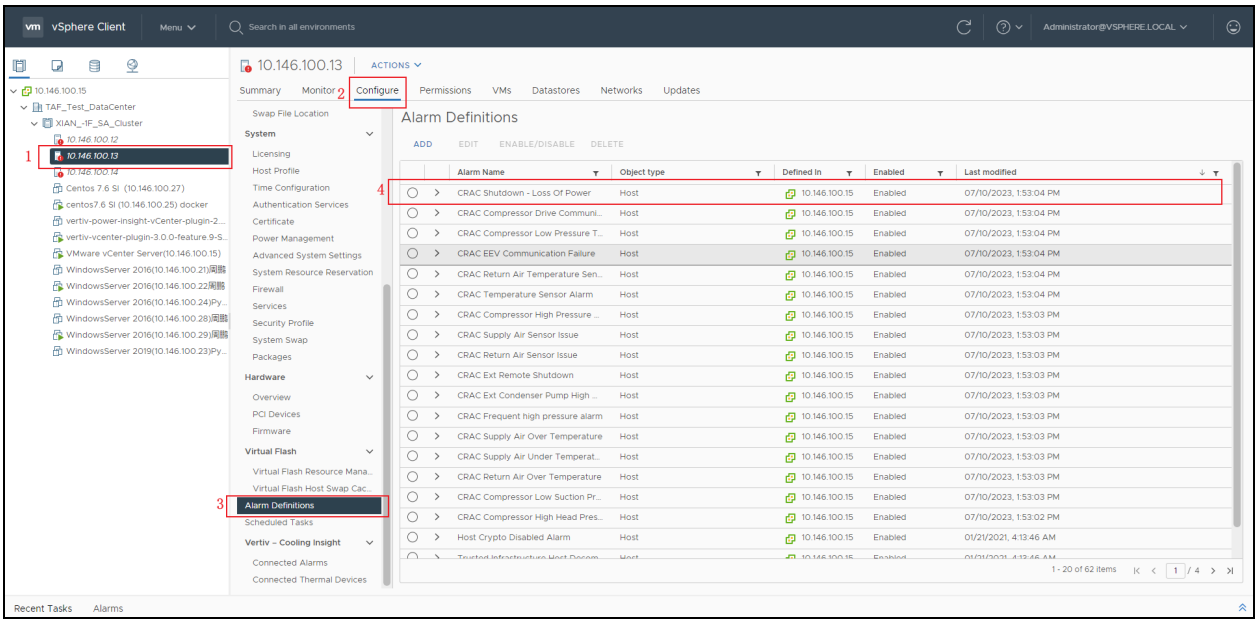
For the host level, we provide two types of alarms:

- Global alarms: These are the default Vertiv refrigeration device alarms installed by the plugin to all hosts under vSphere when it is registered and installed in vSphere. It is not necessary to set the global alarm manually.
- Custom alarms: These alarms need to be selected from the list according to the refrigeration equipment by the device to the host. Only the custom alarms installed on the device can be triggered on vSphere, and the linkage actions preset in the alarm definition can be executed.

Functional module

View global alarms for vSphere level installations. When the plugin is installed, the global alarm gets installed on all hosts in vSphere.

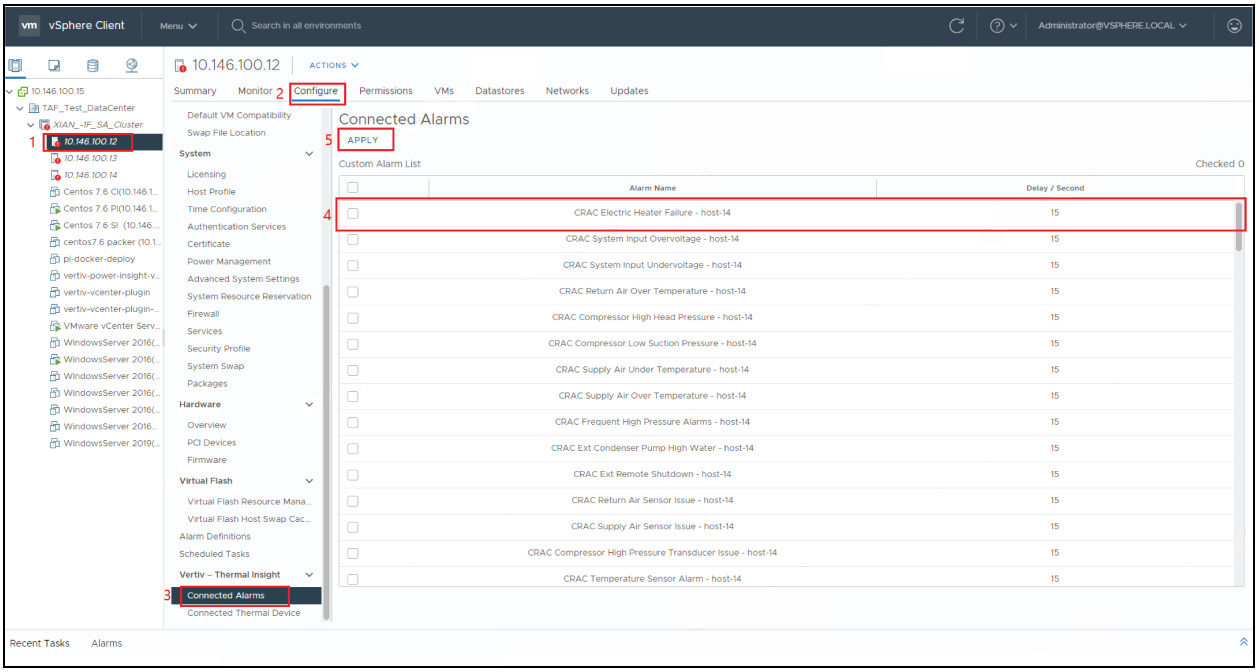
Figure 3.15 Host Installed Global Alarm



To associate a custom alarm on the host:

1. Select *Host* in the left pane. Click the *Configure* tab, and then select *Vertiv - Thermal Insight - Connected Alarms* menu option.
2. In the Connected Alarms page, list of custom alarms is displayed, select the alarm that needs to be installed on the host, and then click *Apply*.

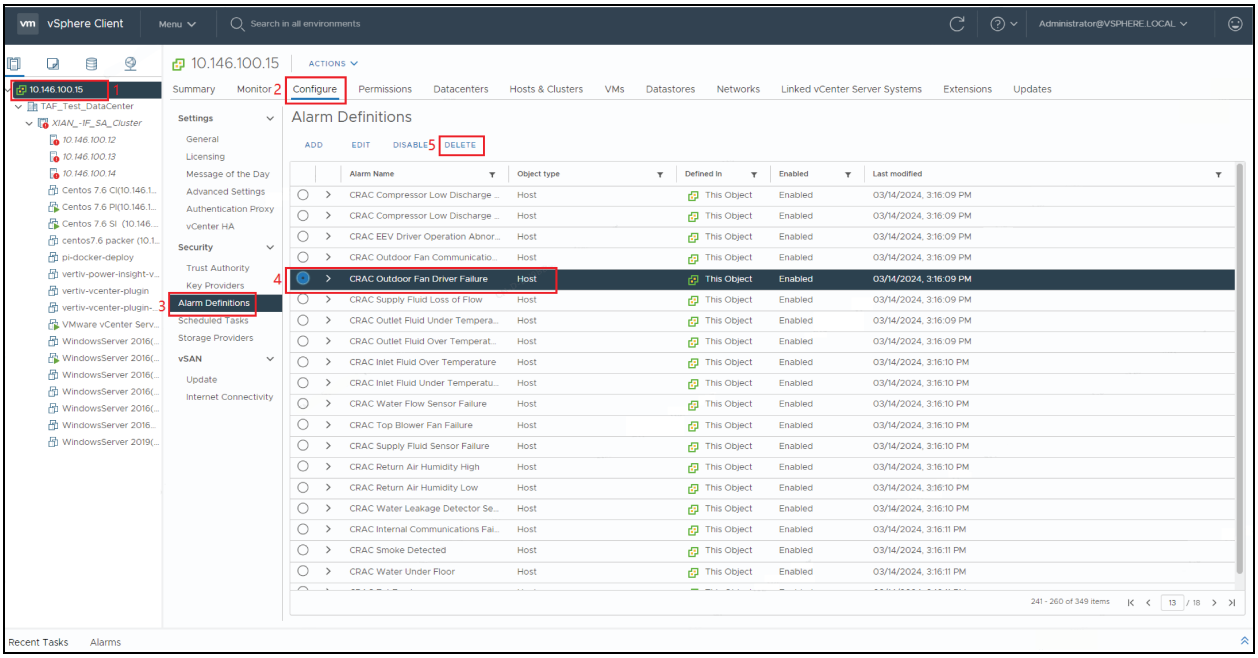
Figure 3.16 Host Association Custom Alarm



There are two ways to cancel the associated alarms:

- Delete the associated custom alarm in the Alarm Definitions page of the host.
- Uncheck the associated custom alarms in the Connected Alarms page, and then click *Apply*.

Figure 3.17 Host Delete Custom Alarm

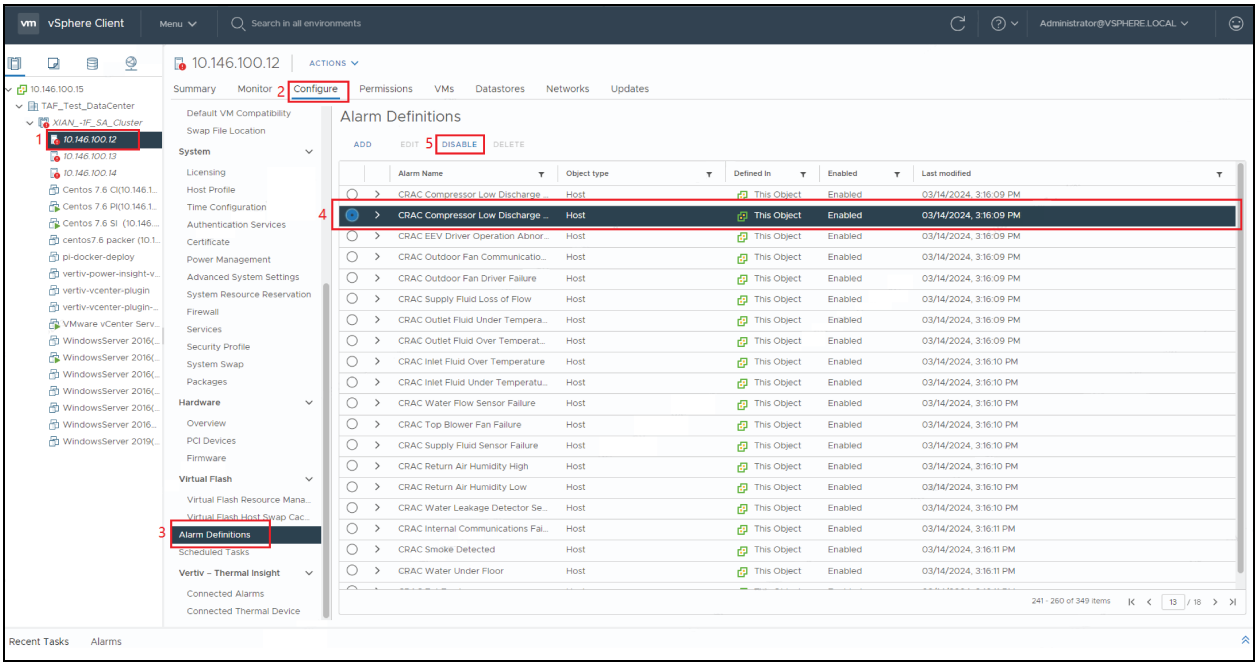


CAUTION: When an alarm occurs on the refrigerant device connected with the host, it must be pre-installed on the host to trigger the alarm on vSphere and then execute the alarm preset action. The alarms installed on the host can be global alarms or manually associated custom alarms.

Some custom alarms may have the same name as global alarms, but their scope of action is different. By default, the global alarms are installed on all hosts and are effective for all hosts. Custom alarms are only effective for the associated Host.

If the global alarm and custom alarm installed by a host have the same name, it is recommended to disable the global alarm manually on the host to avoid conflicts. If you are unable to disable global alarms on the Host, upgrade the vSphere system version to 7.0.

Figure 3.18 Host Alarm

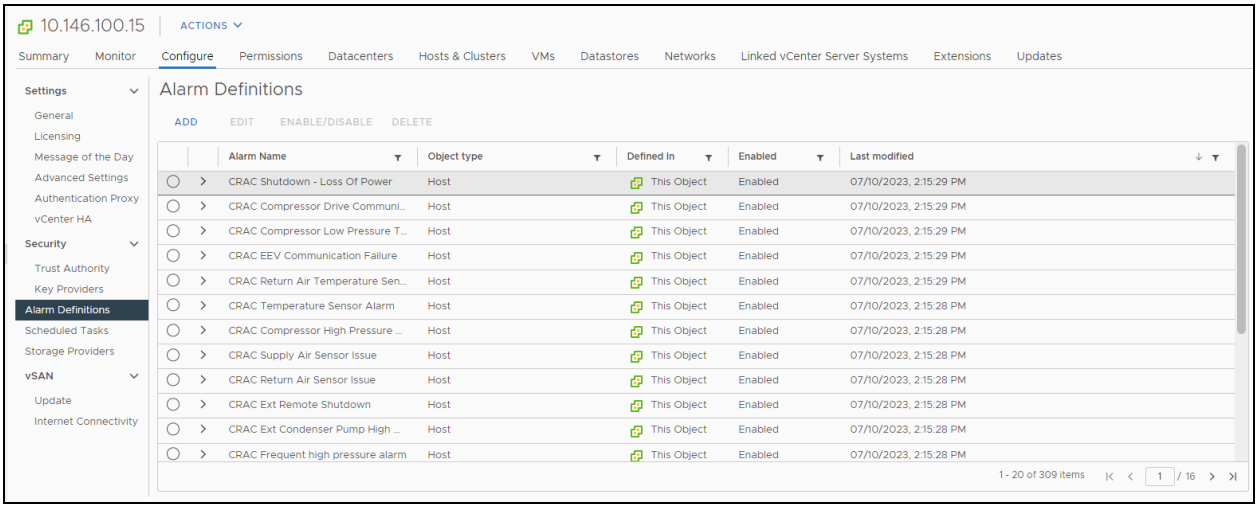


3.2.3 Thermal device alarm

Alarm definition

After the plugin is registered to vSphere, the pre-installed alarms are displayed under the vSphere - Configure - Alarm Definitions page.

Figure 3.19 Alarm Definitions Window



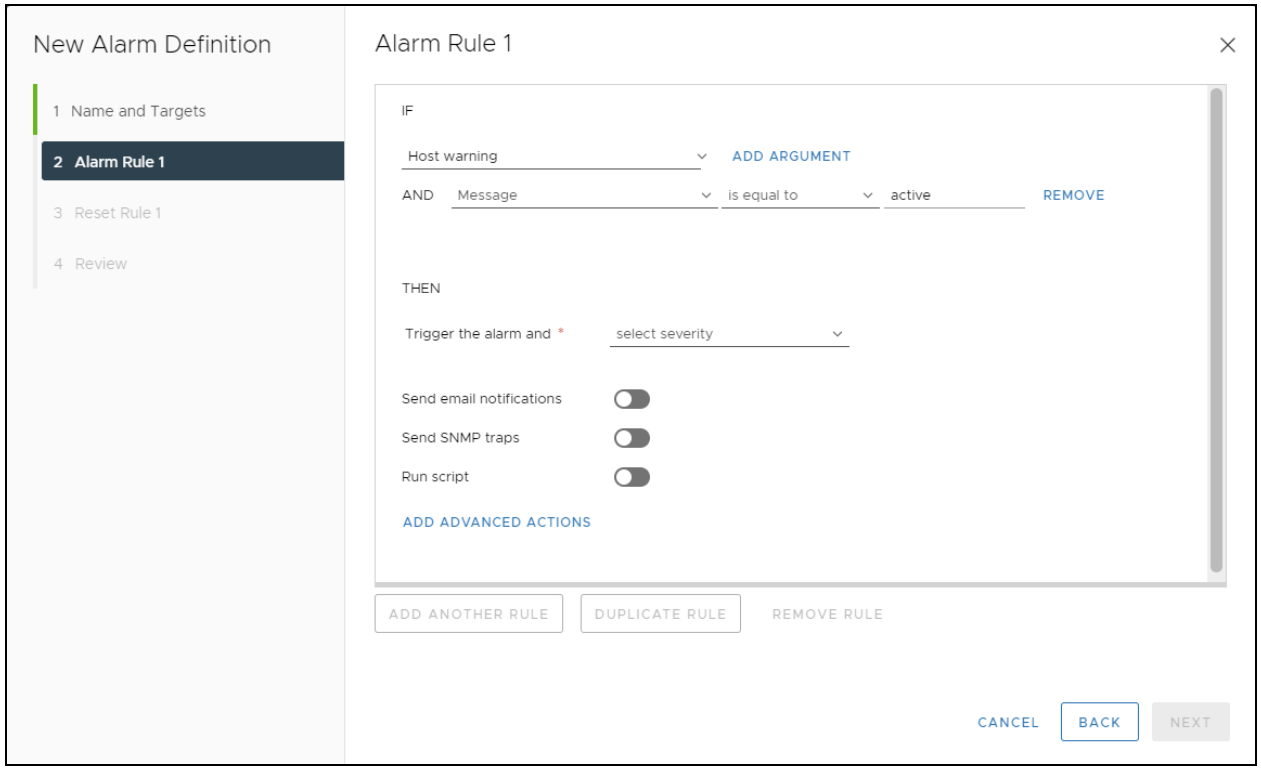
- For the newly added alarm definition, the Object type is the host, and the definition scope is the entire vSphere.
- 10.146.100.15 represents the name of vSphere.
- You can edit, disable/enable, and delete alarm definitions.

You can add some advanced operations to the alert rule when editing alarm rule. These operations are:

- Entering the maintenance mode.
- Adding the exit maintenance mode.

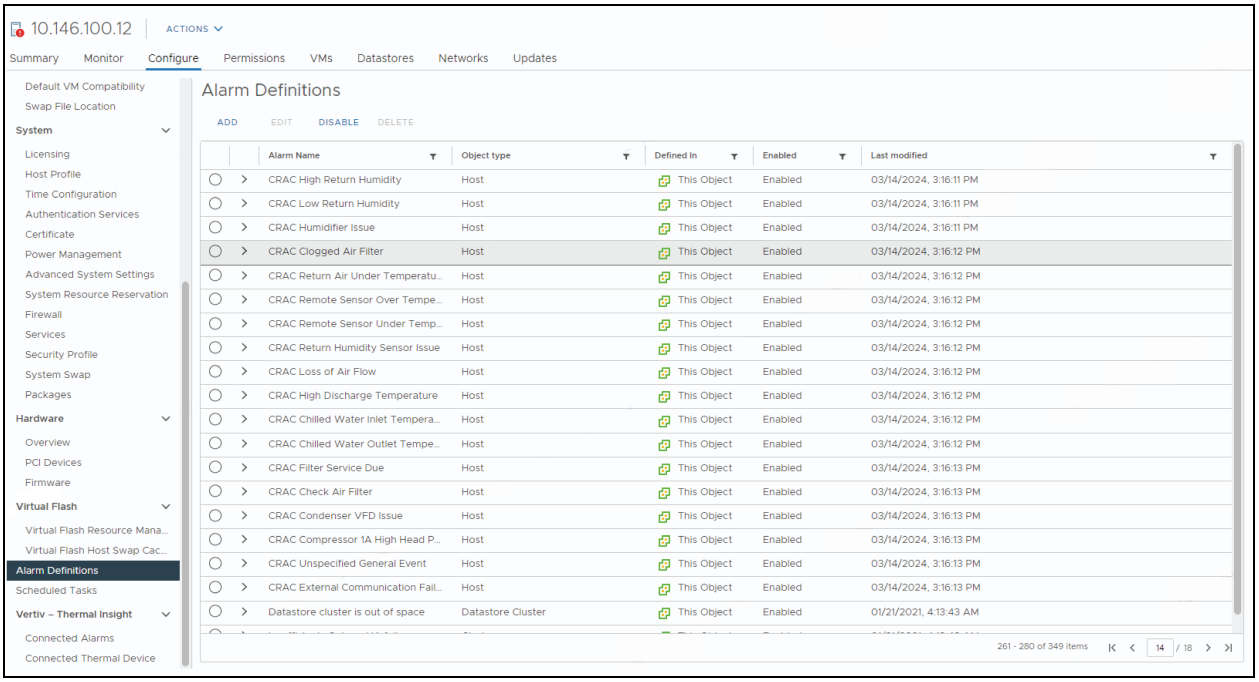
NOTE: Do not modify the IF rules. Otherwise, alarms will not be triggered. See Figure 3.20 below.

Figure 3.20 Edit Alarm Definition Window



After configuring the alarms for a single server, the corresponding alarms will be displayed under the selected Server Configure - Alarm Definitions list.

Figure 3.21 Single Server Alarm Definitions List Window



For newly added alarm definitions, the Object type is the host, and the definition scope is the current server.

NOTE: You can edit, disable/enable, and delete alarm definitions.

You can add advanced operations to the alert rule while editing. These operations are:

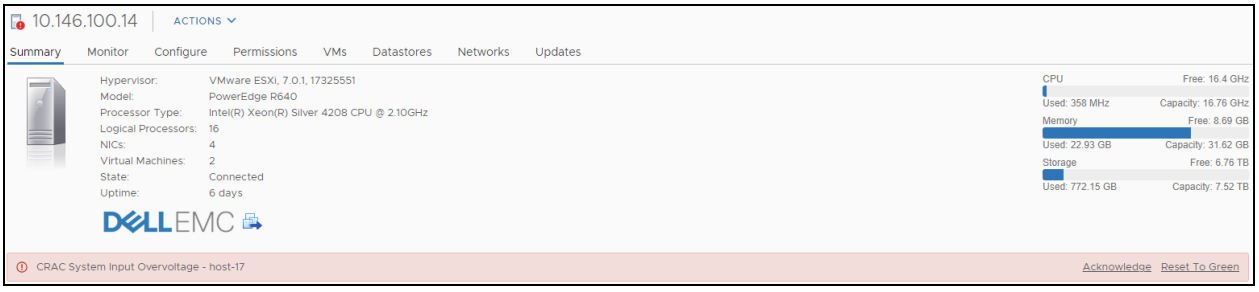
- Entering the maintenance mode
- Adding the exit maintenance mode

NOTE: All operations on this interface are only applicable to the selected server.

Trigger an alarm

After the device is connected as mentioned in vSphere Mode on page 18 , vSphere displays the alarm information received from Thermal Insight.

Figure 3.22 Summary Window



The alarm name is displayed in the Summary tab.

Figure 3.23 Monitoring-All Issue Window

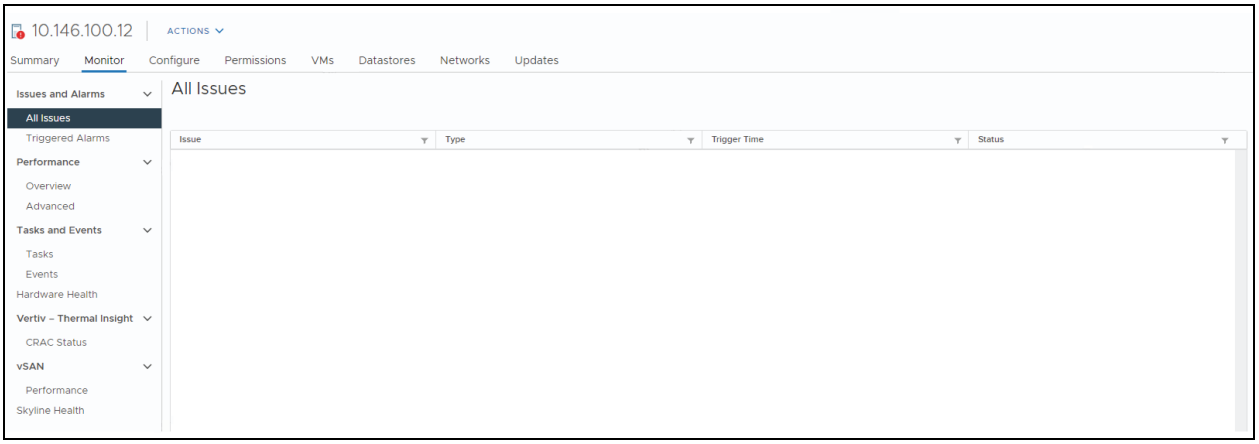
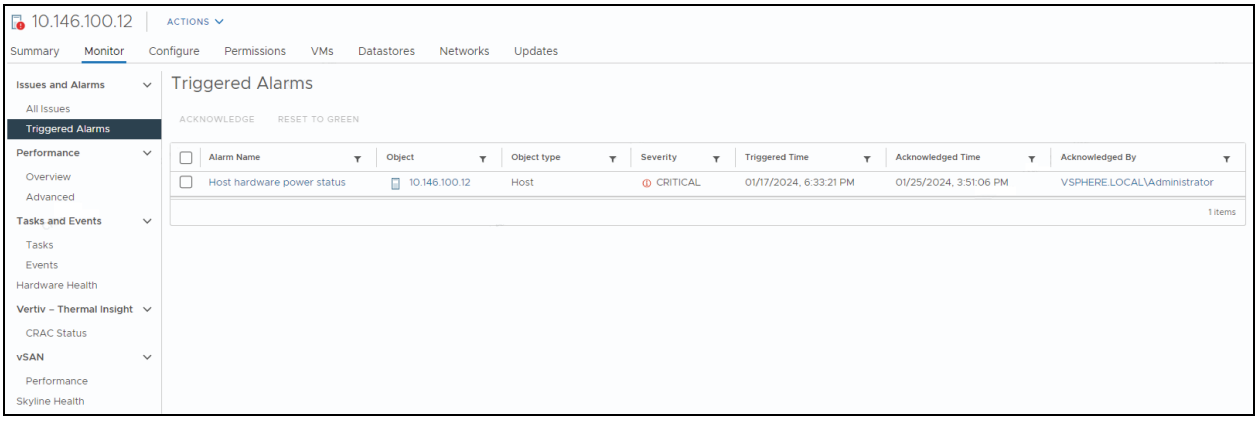


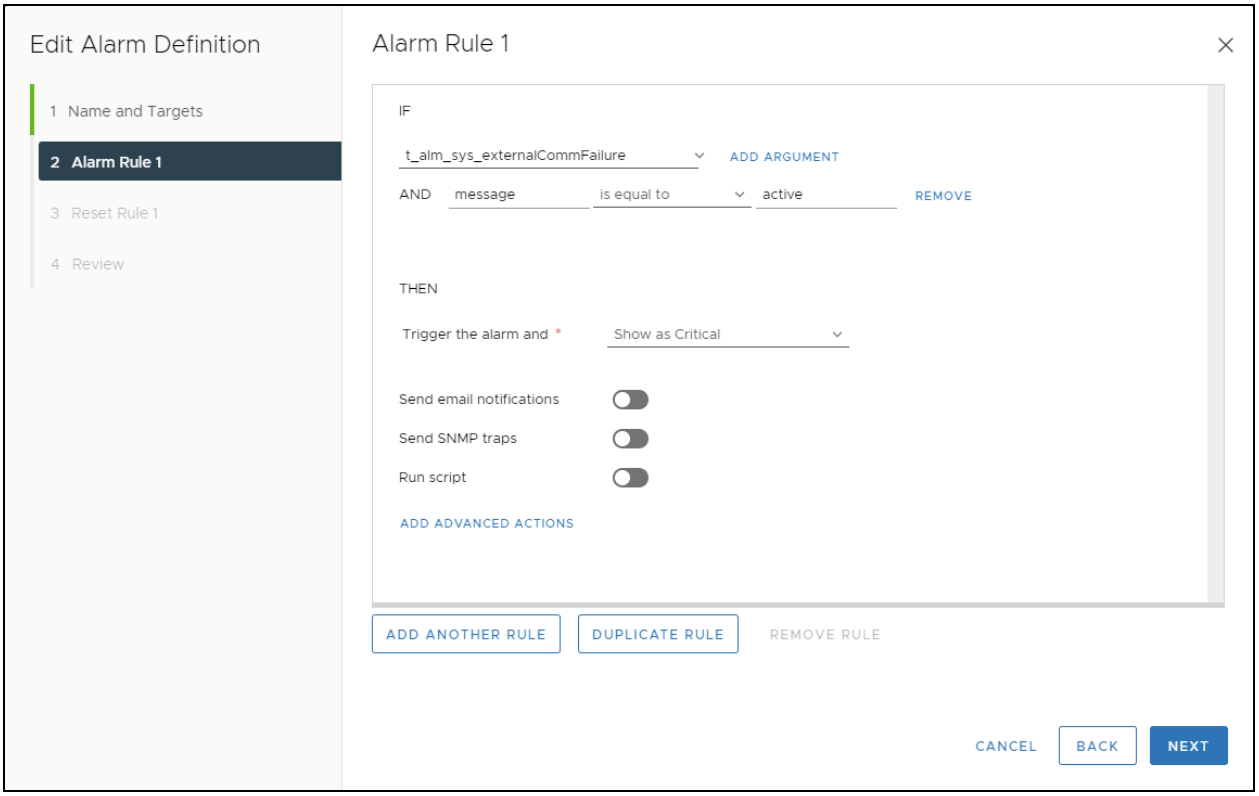
Figure 3.24 Monitoring - Triggered Alarm Window



To view the details of triggered alarms:

1. Click *Monitor* tab, and then select *Issues and Alarms* menu option.
2. Click *Triggered Alarms* option.

Figure 3.25 Alarm Rule Window



When an alarm occurs, the alarm rules are executed, as shown in Figure 3.25 above. For example, an alarm operation is set for sending emails, SNMP traps, run scripts, etc. It indicates that you have configured these options in advance.

NOTE: In this example, the Maintenance mode is selected. Entering the maintenance mode migrates the virtual machines running on the server and then shuts down the server. For more details on the migration strategy of virtual machines, visit https://www.vmware.com/products/vsphere/drs-dpm.html.

End of alarm

When the alarm is over, the alarm information in the Triggered Alarms page will no longer be displayed.

Figure 3.26 Summary Window After an Alarm Ends

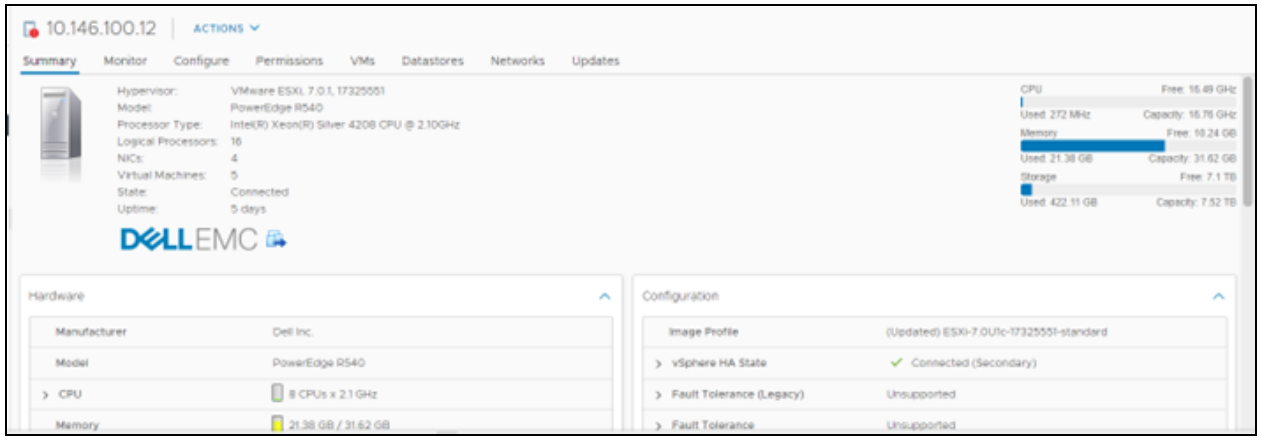
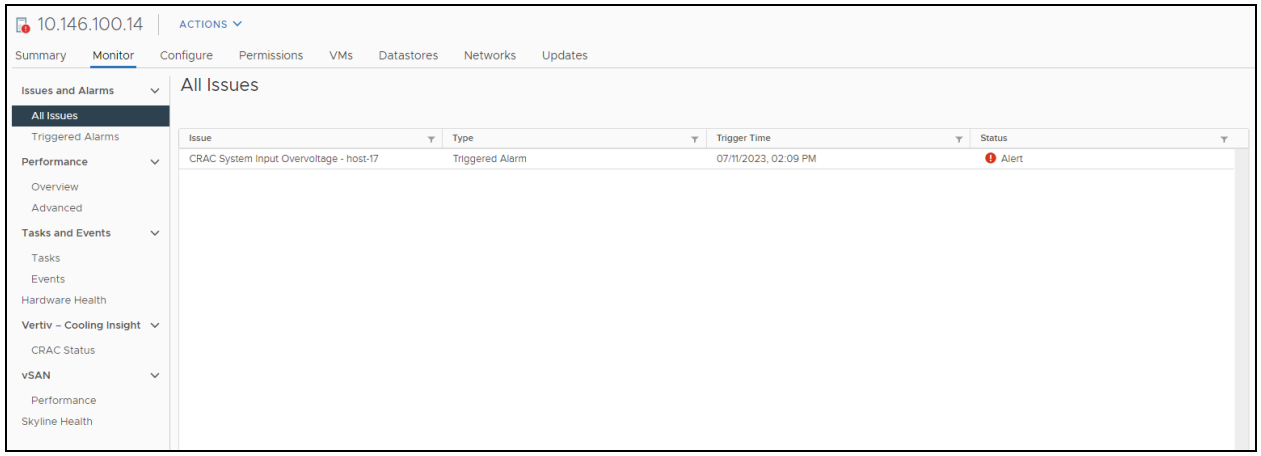
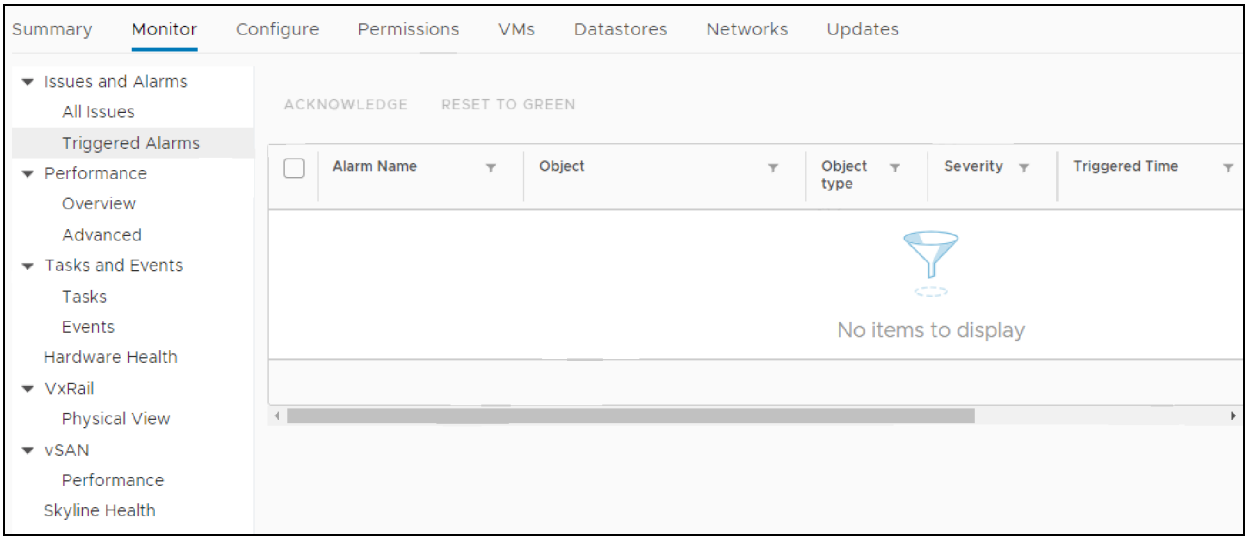


Figure 3.27 Monitor - All Issues Window After the Alarm



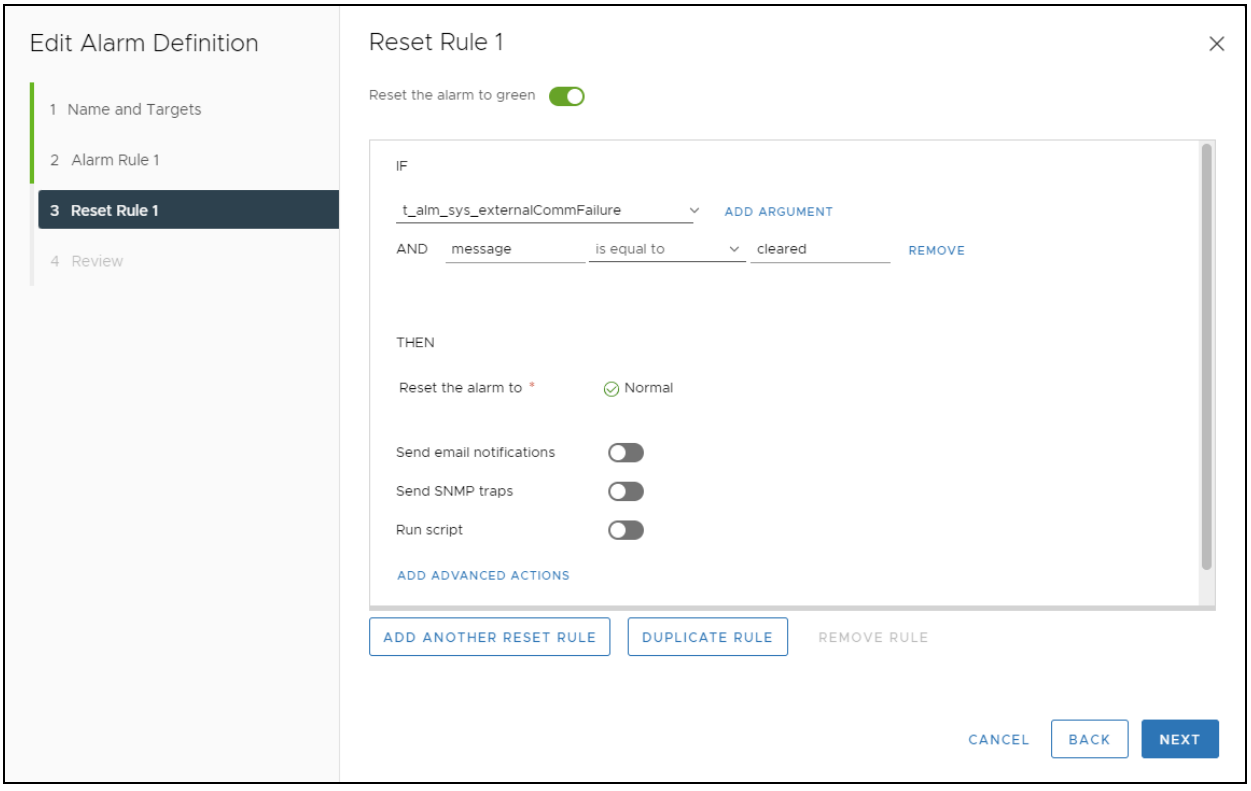
Click the *Monitor* tab and click on the *All Issues* and *Triggered Alarms* under Issues and Alarms to check the list of issues and alarms. You will see the previous CRAC system and input overvoltage alarm is disappeared. See Figure 3.27 aboveand Figure 3.28 on the next page.

Figure 3.28 Monitor - All Issues Window After the Alarm Ends



vSphere will execute the Reset Rule in the Alarm Definition.

Figure 3.29 Reset Rules Window



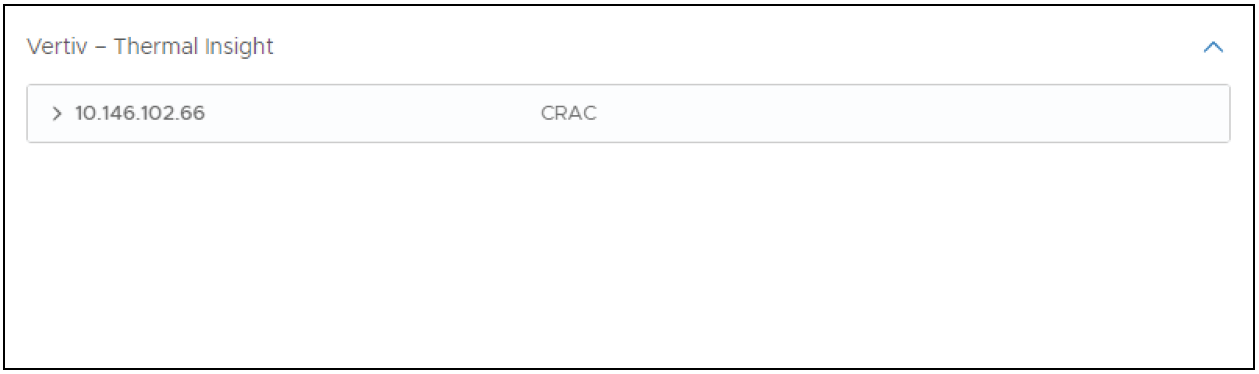
If the user is configured to send emails or scripts, it implies that these actions are executed when the alarm is triggered.

3.2.4 Displaying the Thermal Insight device information

Host level summary interface

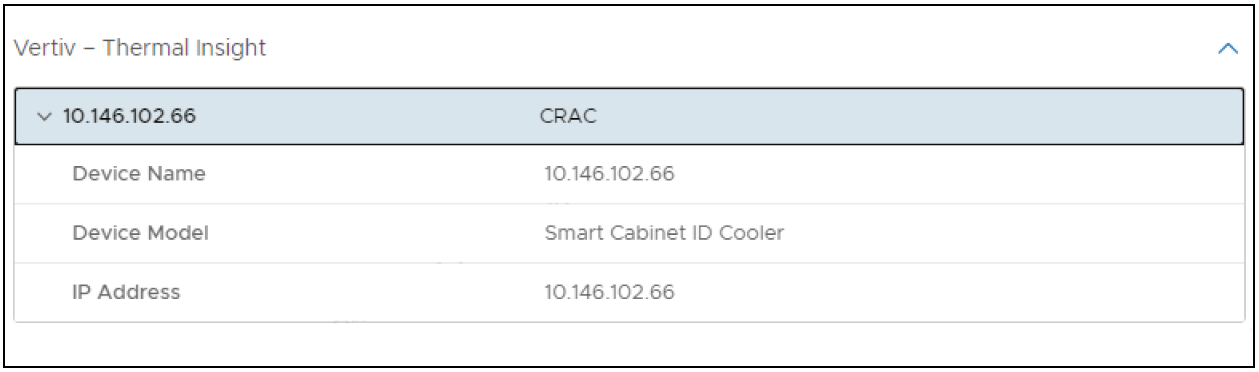
Once the device is connected, click *Summary* to return to the summary interface. The Summary area lists all the devices that are connected to Vertiv – Thermal Insight.

Figure 3.30 Summary Window



Click the **>** sign on the left of the device name view the detailed information of device, as shown in Figure 3.31 below.

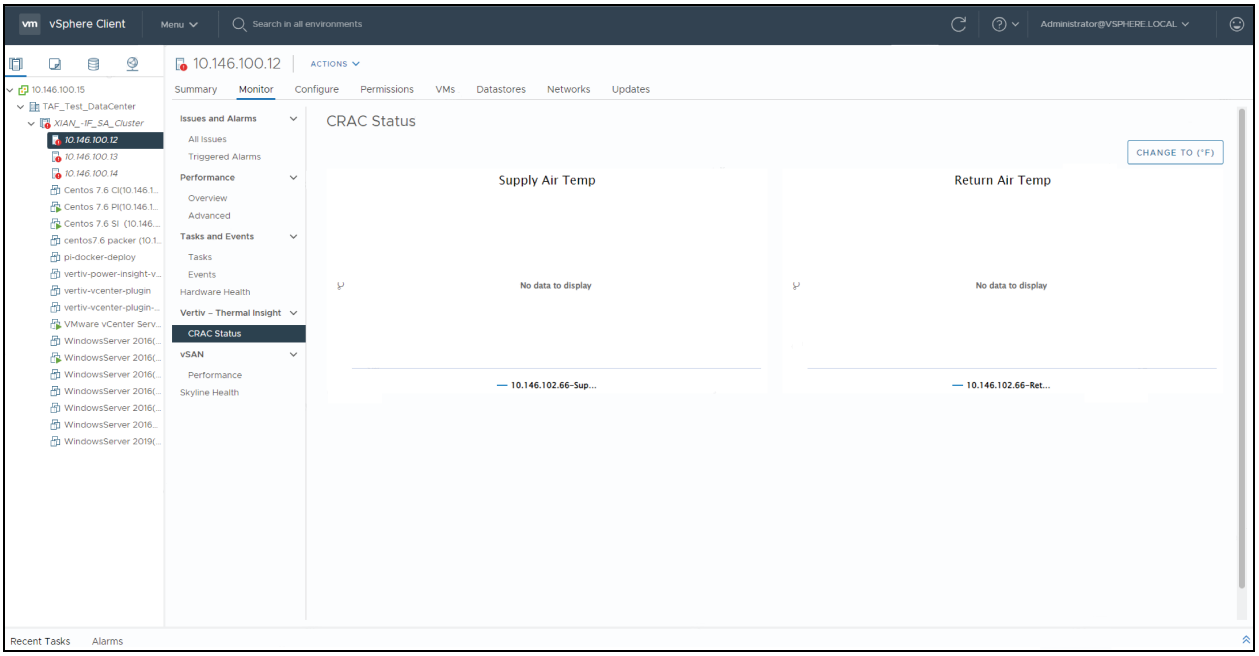
Figure 3.31 Summary Expand Window



Host level monitoring page

To view the refrigerant equipment status, click the *Monitor* tab and select *Vertiv - Thermal Insight - CRAC Status* menu option on the left side of the monitoring page, as shown in Figure 3.32 on the next page.

Figure 3.32 CRAC Status Window

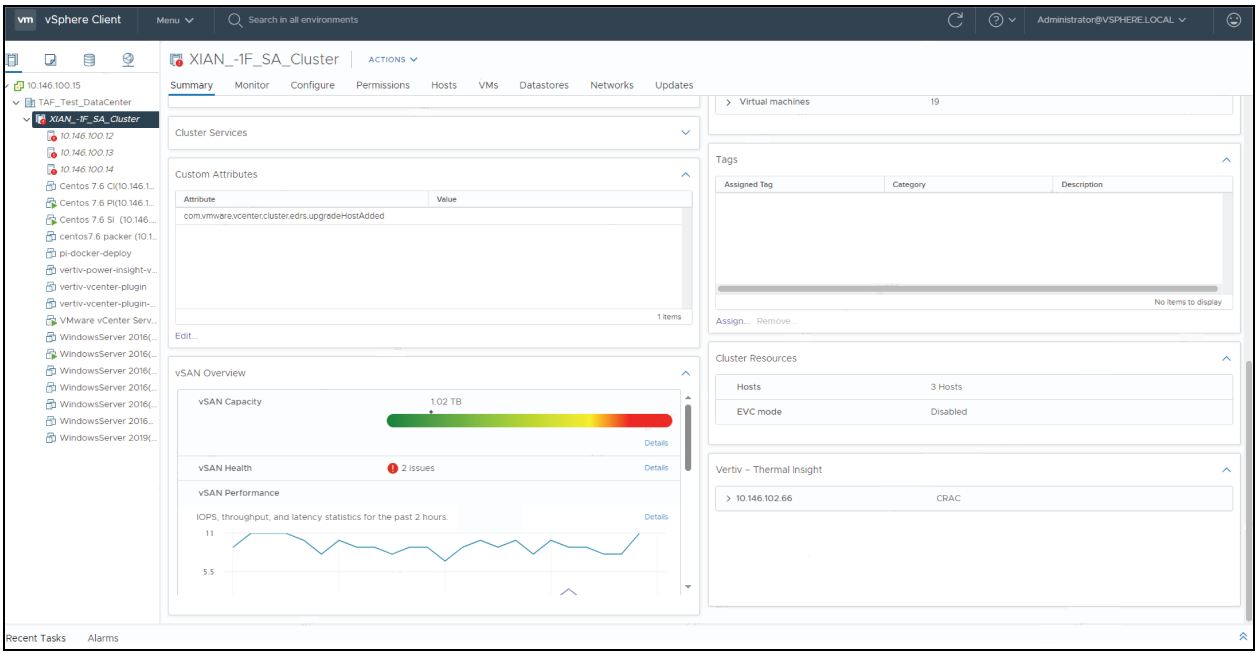


The CRAC Status page displays the CRAC supply air temperature and return air temperature trend through the line chart.

Cluster level summary interface

You can view the thermal devices bound to host under the entire cluster level on the Cluster level Summary page, as shown in Figure 3.33 below.

Figure 3.33 Cluster Level Summary Page

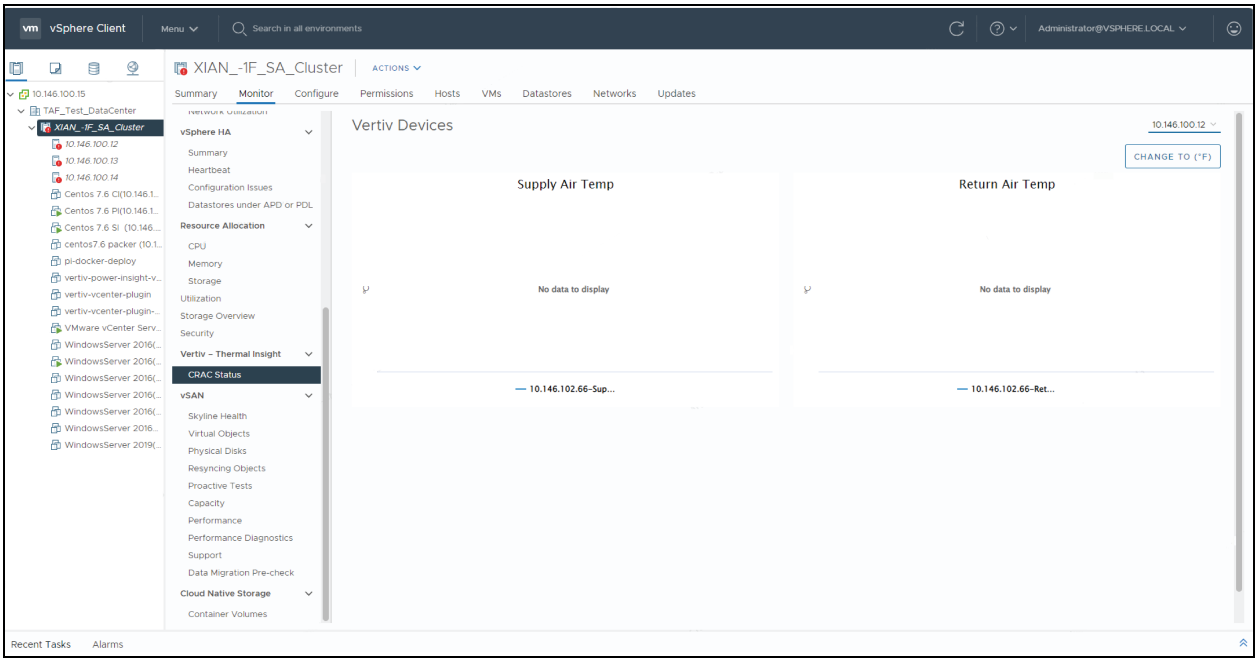


Users can view the summary of all host bound devices on the current page.

Cluster level monitoring page

You can view the refrigerant equipment operation status at cluster level when the current host device is connected. Select the cluster in the left panel, and then click the *Monitor* tab. Now, select *Vertiv - Thermal Insight - CRAC Status* menu option, as shown in Figure 3.34 below.

Figure 3.34 Cluster Level Monitoring CRAC Status Window



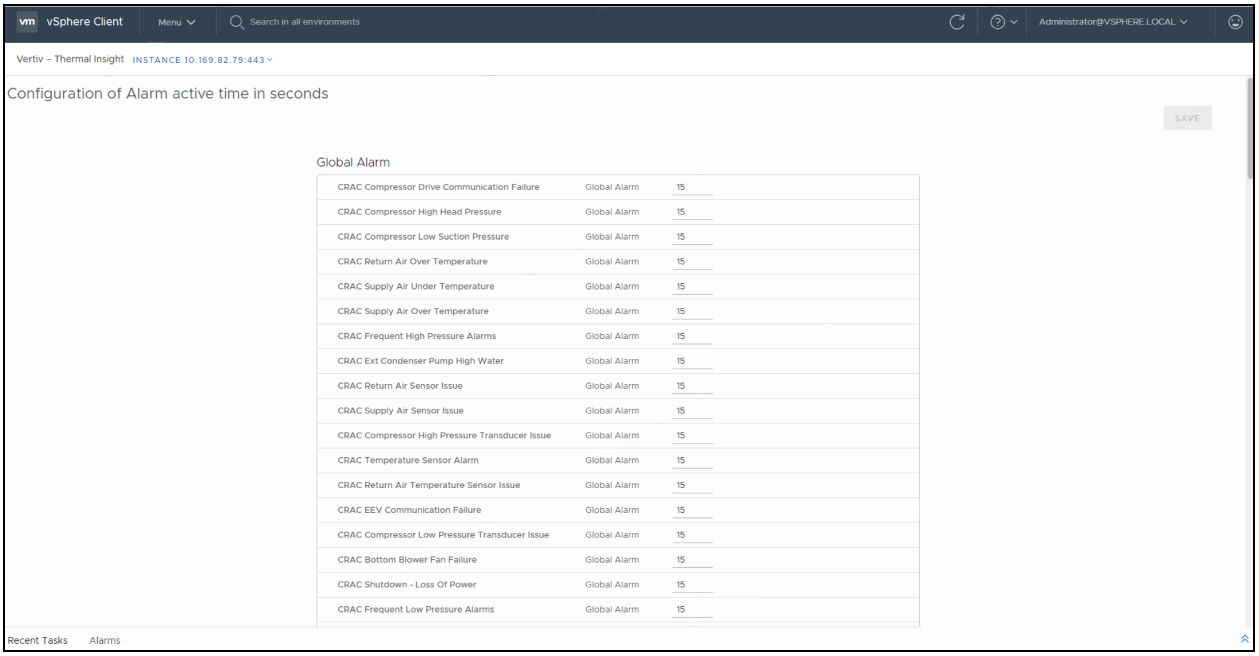
To view the supply air temperature and return air temperature line graph of other host connected to the refrigerant equipment, select a host name in the drop-down box displayed on the top right corner of the page.

3.2.5 Alarm delay

The alarm delay function triggers the alarm rules and prompts the alarm based on the delay time. For unnecessary impact on vSphere, avoid the short interval between the generation and end of the alarm.

You can view the alarm delay interface in the menu Vertiv - Thermal Insight.

Figure 3.35 Vertiv - Thermal Insight Window



Alarm classification

Alarms are classified as:

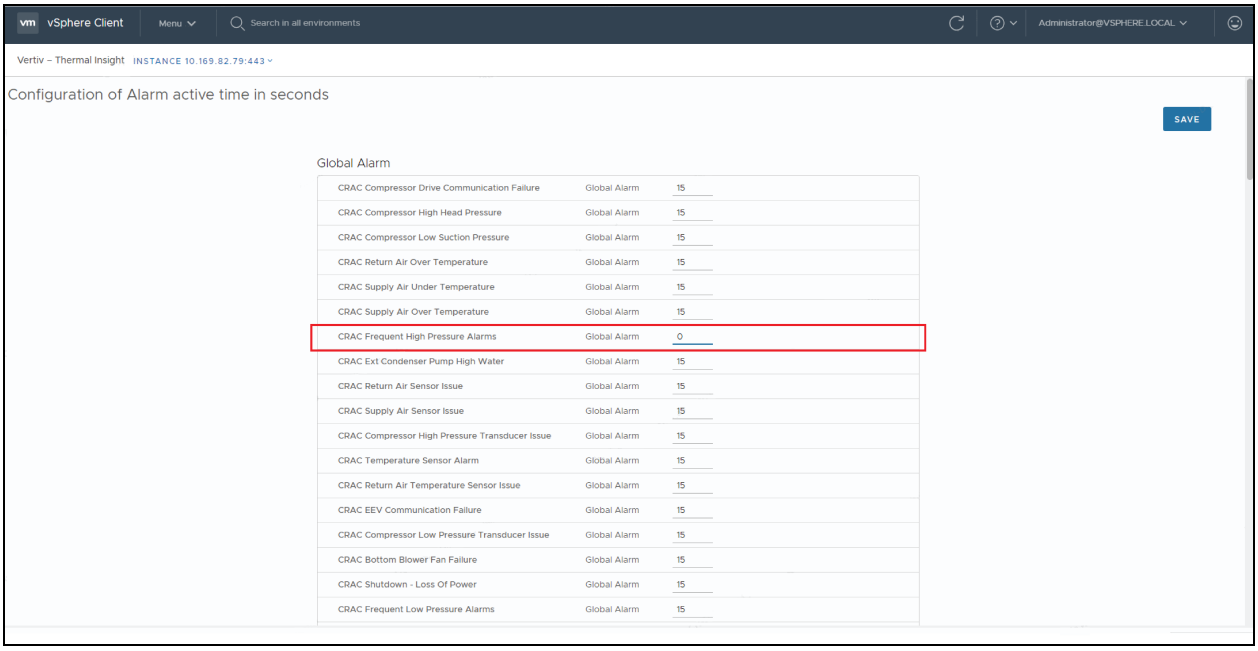
- **Global alarms:** These are the default alarms which gets installed when the plugin is registered to vSphere.
- **Custom alarms:** These are extended alarms. It is used to configure special alarms for a single server.

The alarm data displayed in three columns indicates the alarm name, alarm type, and delay time (in seconds).

Modify delay

To modify the alarm time, enter the delay time (in seconds) in the text box, and then click *Save*.

Figure 3.36 Global Alarm Configuration



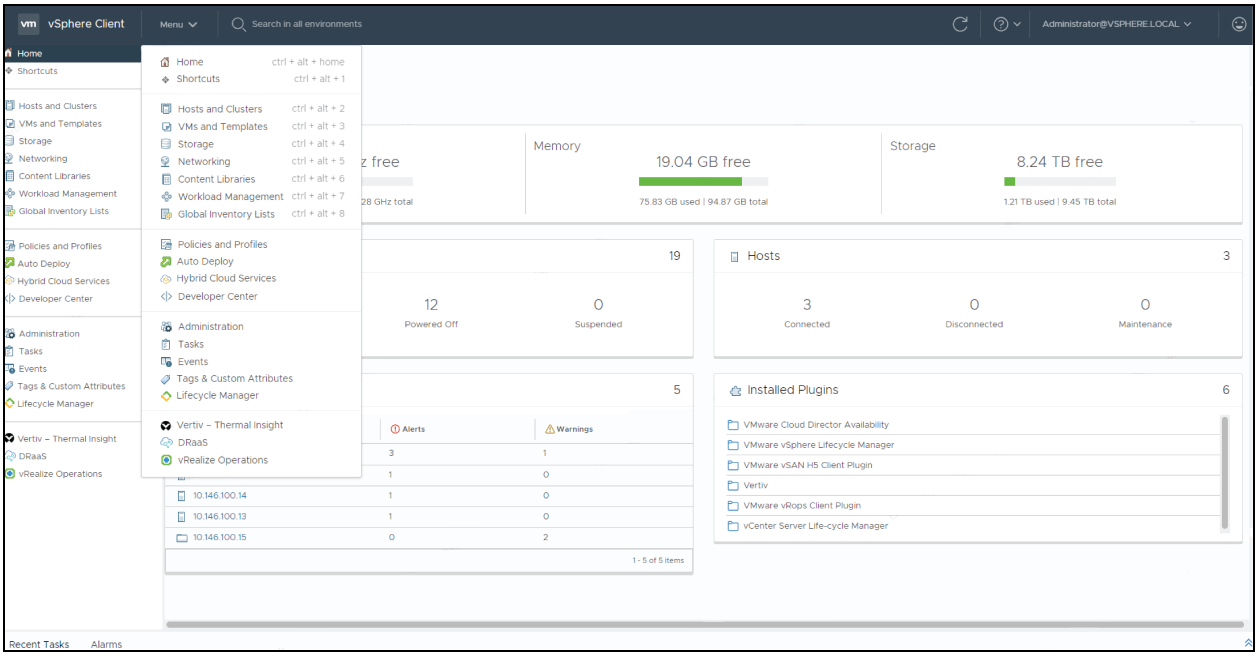
As shown in Figure 3.36 above, the delay time of the CRAC high voltage frequent alarms is modified to 0 seconds. It indicates that the alarm will trigger immediately and the warning rule will be executed.

3.3 VxRail Double-vSphere Mode

3.3.1 Associate VxRail cluster with thermal device

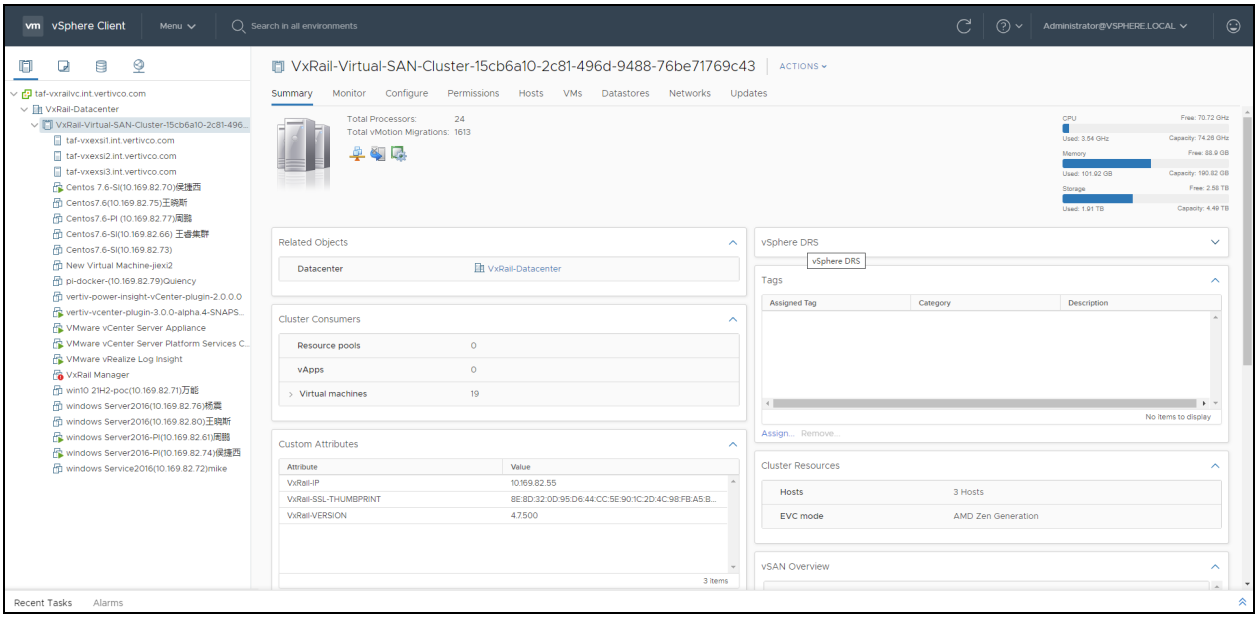
1. From the vSphere interface, click Menu at the top of the page. Select the Host and clusters option, as shown in Figure 3.37 on the next page.

Figure 3.37 vSphere Menu



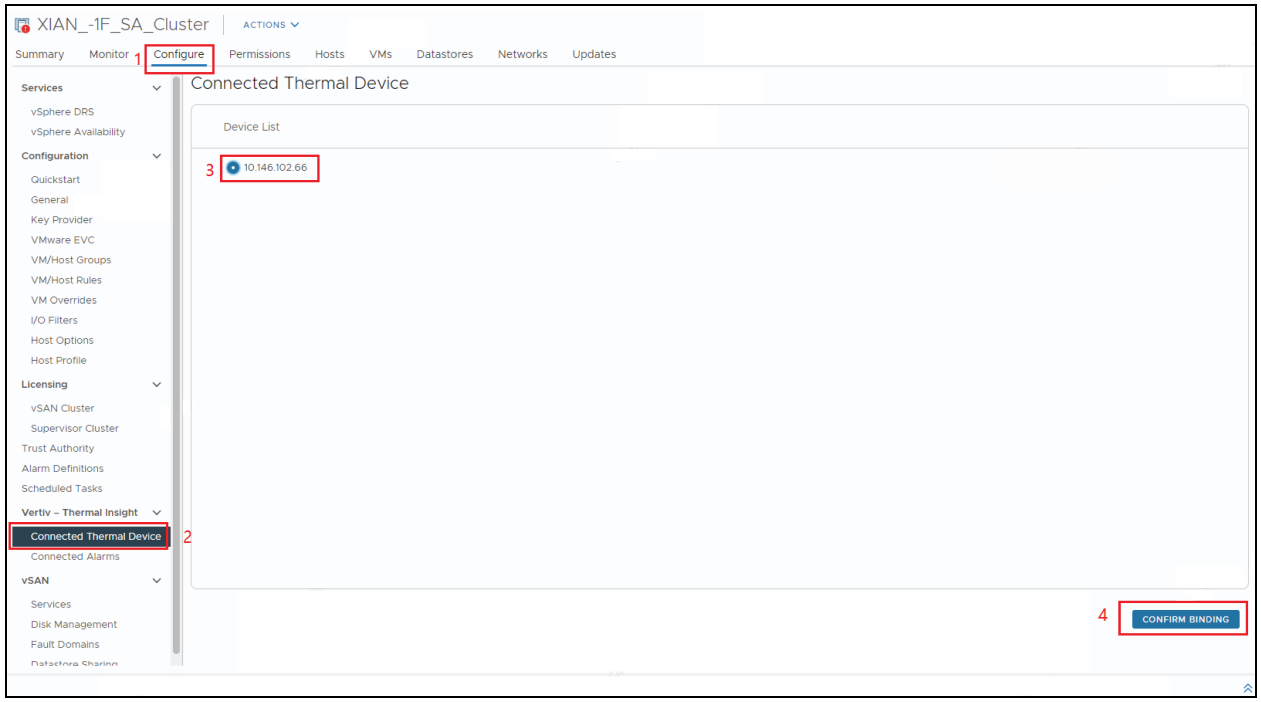
2. Select one of the VxRail cluster from the list and click on it. The VxRail cluster interface will appear on the right side, as shown in **Figure 3.38** below.

Figure 3.38 VxRail Cluster Window



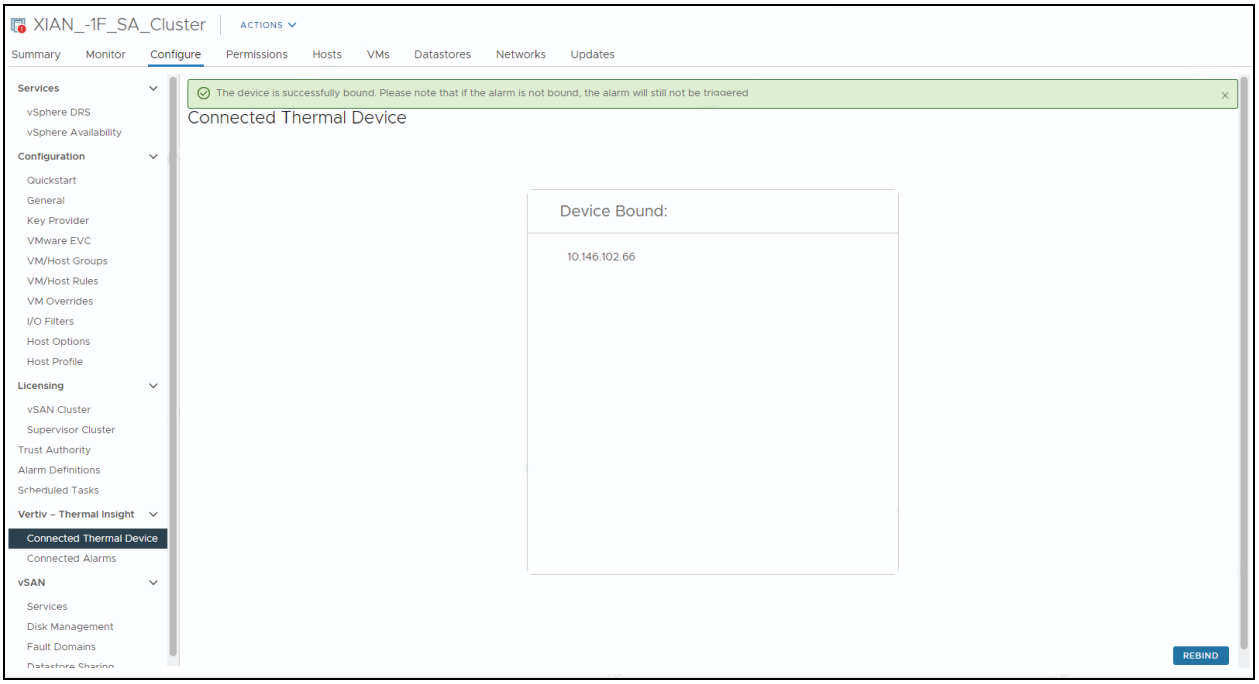
3. From the VxRail cluster interface, click *Configure* and click *Connected Thermal Device* under Vertiv - Thermal Insight. The Connected Thermal Device window will appear. Select the device from the Device List that is used for cooling the current VxRail cluster and click *CONFIRM BINDING*, as shown in **Figure 3.39** on the facing page.

Figure 3.39 Binding Thermal Device



After binding, the pop-up message appears to confirm that the thermal device is connected with the VxRail cluster. In order to trigger actions according to the alarms of thermal device, you also need to bind the alarms of device with the current VxRail cluster.

Figure 3.40 Binding Device Successfully



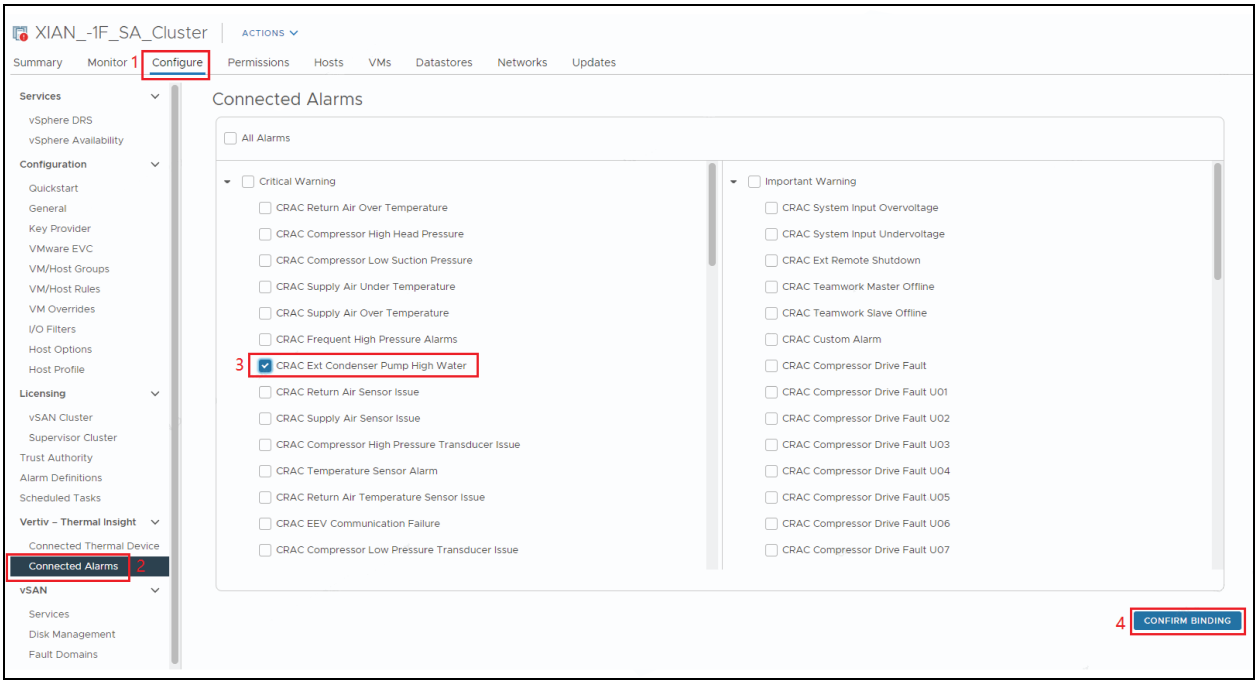
3.3.2 Associate VxRail cluster with alarm of thermal device

After binding the device, you need to manually select critical alarms and important warnings that need to be monitored before you can monitor the alarms of the thermal device in vSphere.

To select the critical alarms and important warning:

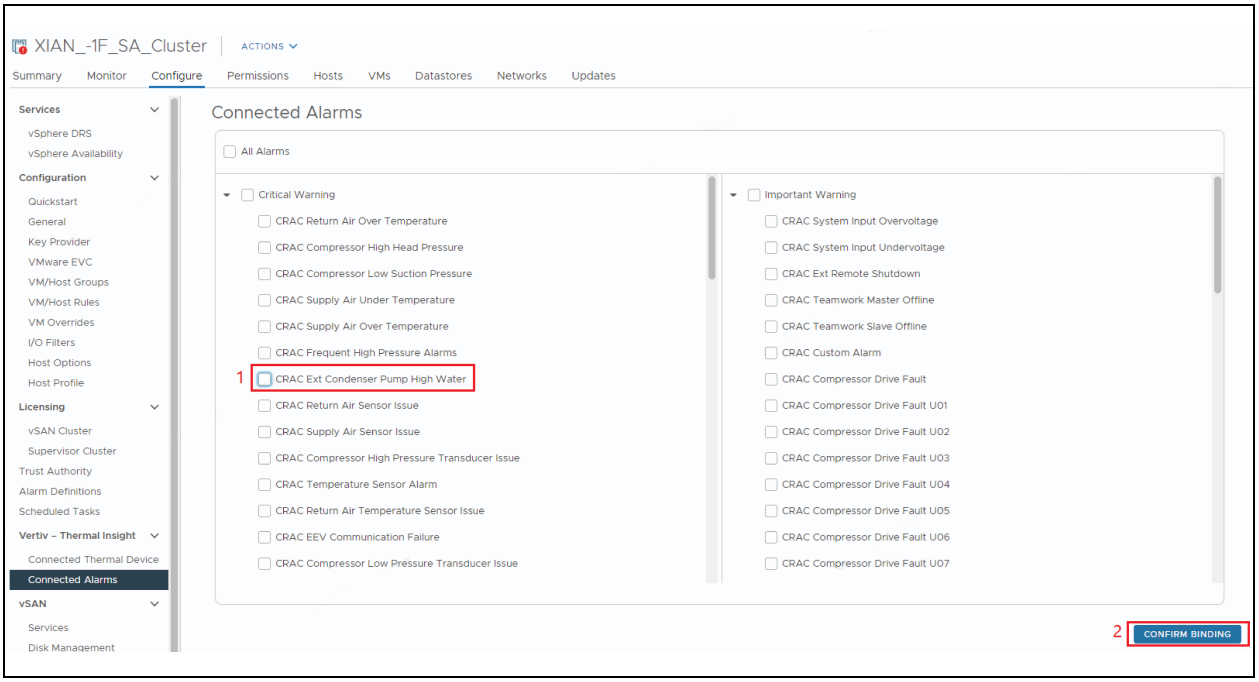
1. Select and click on the VxRail cluster to open the VxRail cluster interface.
2. From the VxRail cluster interface, click *Configure* and click *Connected Alarms* under Vertiv - Thermal Insight. A new window for Connected Alarms will appear.
3. The connected alarms are dived into two type:
    - Critical Alarm
    - Important Warning
4. Click on the checkbox to select the Critical Alarm and Important Warning.
5. Click *CONFIRM BINDING* in the lower right corner to take effect.
6. If the alarms occurring in the thermal device are among the selected alarms, it can now trigger the shutdown of the Vxrail cluster. See Figure 3.41 on the facing page for the alarm binding process.

Figure 3.41 Binding Alarms



To uncheck an alarm that has been bound, click on the checkbox again that has been checked on the same page. Click *CONFIRM BINDING* to uncheck the alarm, as shown in **Figure 3.42** on the next page.

Figure 3.42 Cancelling Bound Alarms



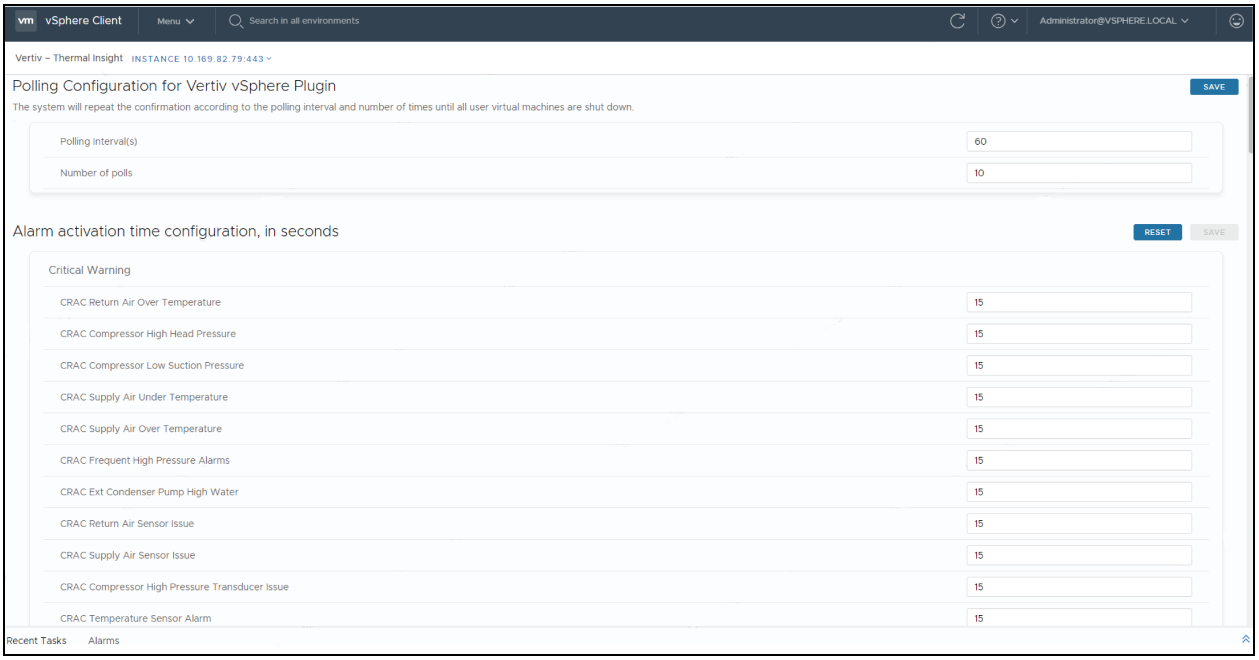
3.3.3 Alarm delay

The alarm delay function allows for the alarm rules and alarms to be triggered after a period of time has elapsed since the actual occurrence of the alarm. This is to avoid unnecessary impact on the VxRail cluster caused by short alarm intervals.

To set the alarm delay function:

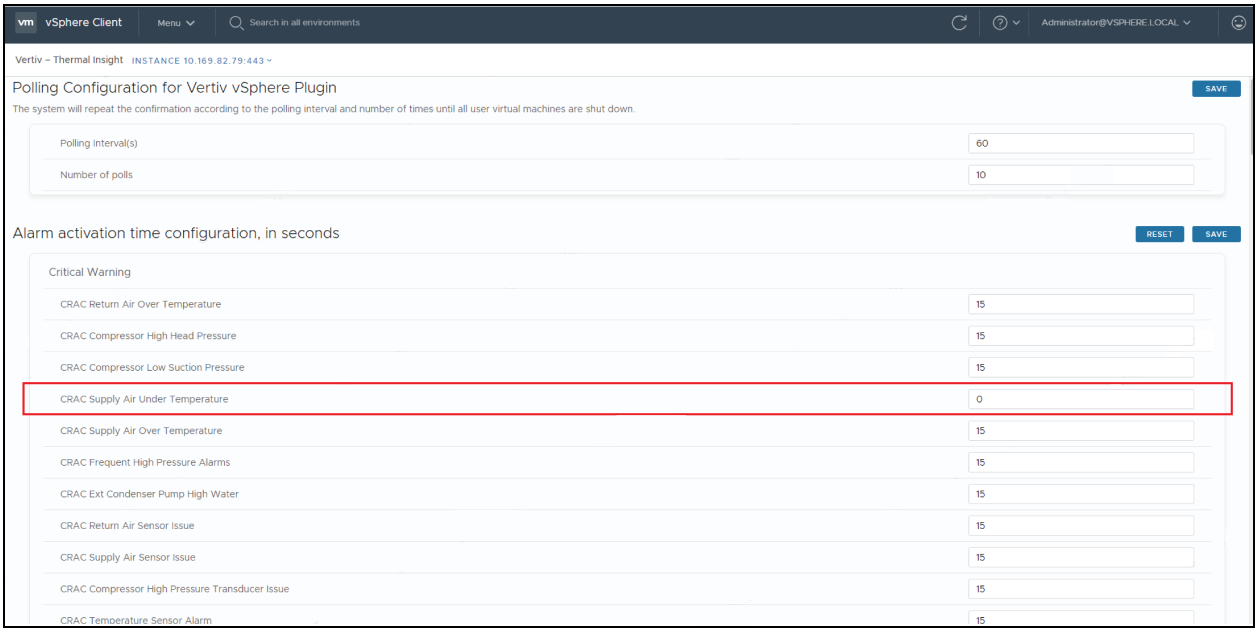
1. Click *Menu* and select Vertiv – Thermal Insight to open the Alarm activation time configuration interface. See Figure 3.43 on the facing page.

Figure 3.43 Alarm Activation Time Configuration



2. You can set the delay time of each alarm. The default delay time of each alarm is 15 seconds, which means if these alarms are triggered and lasted more than 15 seconds, the VxRail cluster shutdown function will be triggered. If the alarms end within 15 seconds, the shutdown process will not be triggered. The maximum configuration period is 86400 seconds (24 hours).

Figure 3.44 Modifying Alarm Delay Time



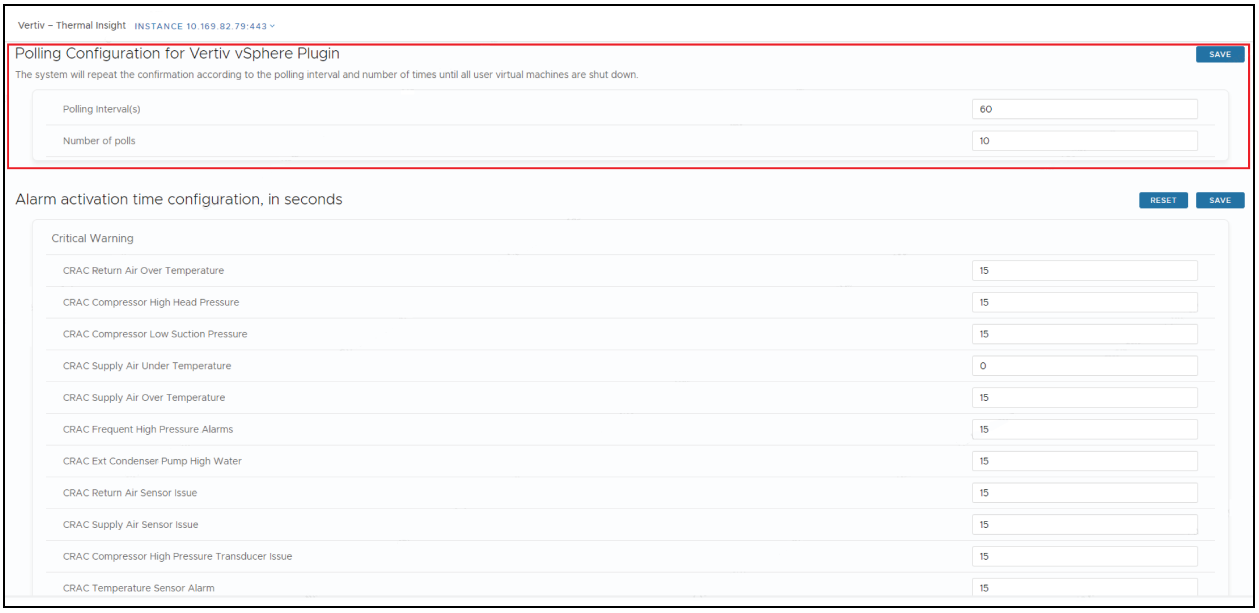
3.3.4 Shutdown polling configuration

When Vertiv vSphere plugin triggers VxRail cluster to shut down, the plugin will shut down the user virtual machine first, and then shut down the system virtual machine and physical cluster. If the user virtual machine cannot be shut down, the subsequent shutdown process will not be performed. Polling is a process to confirm whether the user virtual machine has been shut down completely.

To configure the polling time and interval:

1. Click *Menu*, and click the *Vertiv - Thermal Insight*.
2. The configuration is divided into two parameters: one is the polling intervals (range: 60 to 600, unit: seconds), and the other is the number of polls (range: 5 to 20). Enter the value in the Polling Intervals and Number of polls., see Figure 3.45 on the facing page.

Figure 3.45 Shutdown Polling Configuration Window



3. Click *SAVE* to set the polling configuration. After entering the shutdown process in VxRail Double-vSphere Mode, the plugin will repeatedly seek confirmations from VxRail Manager according to the number of polls and the polling interval until all the virtual machines of the user are shut down.

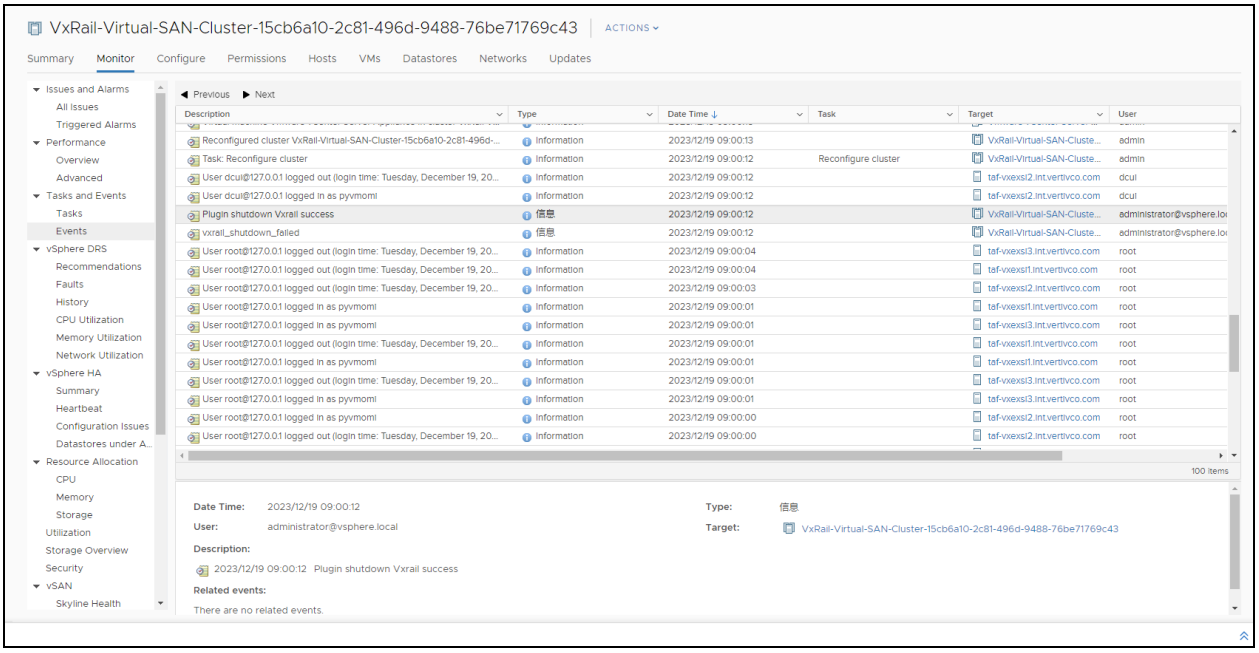
3.3.5 Alarm-Triggered shutdown process

In VxRail Double-vSphere Mode, the VxRail cluster that will be shutdown due to thermal device alarms is called workload VxRail. The Vertiv plugin and Thermal Insight need to be installed in another VxRail cluster environment, called management VxRail.

After the thermal device generates an alarm, if the alarm meets the existing alarm configuration (conforms to the connected thermal devices, the connected alarms, and is not cleared after the alarm delay time has passed), vSphere will display the alarm information received from Thermal Insight and start the shutdown process:

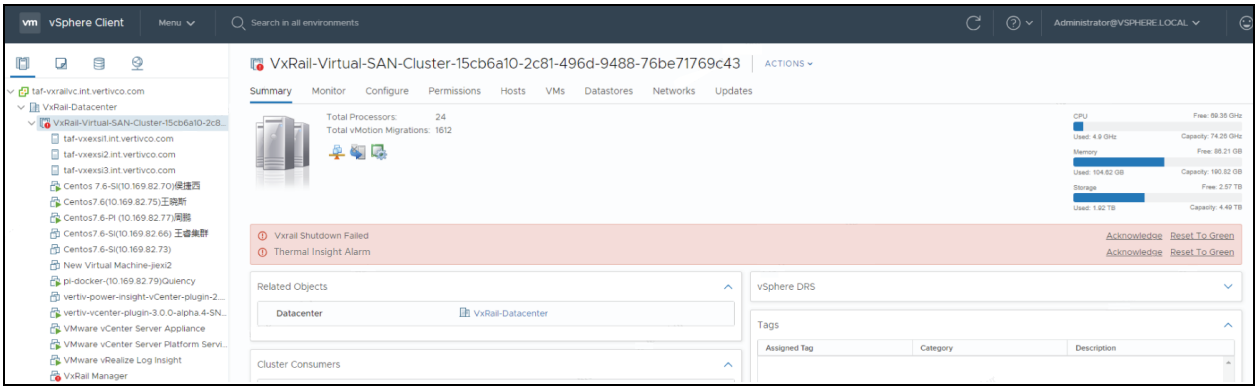
1. The plugin first shuts down all user virtual machines in the workload VxRail, leaving only the system virtual machines running.
2. After the plugin sends a shutdown command to the workload VxRail Manager, it starts to repeatedly confirm with the workload VxRail Manager that whether the entire workload VxRail cluster can be shut down. The settings of the shutdown polling interval and the number of polls described in Shutdown polling configuration on the previous page determine the period of repetitive confirmation.
3. Once the workload VxRail cluster confirms that it can be closed within the pre-defined period, the plugin will start to shut down the entire workload VxRail cluster and push the event log about **Plugin shutdown VxRail cluster success** to the workload vSphere.

Figure 3.46 Plugin Shutdown VxRail Success Log



NOTE: If the specified time is exceeded and it is still impossible to confirm whether the workload VxRail can be closed, then the shutdown operation will be aborted, and the event log VxRail shutdown failed will be pushed to the workload vSphere.

Figure 3.47 VxRail Shutdown Failed Log



4 Troubleshooting

4.1 Uninstall the Software

1. Uninstall all the registered information on the plugin interface, including the vSphere, VxRail Manager, and the Thermal Insight.
2. Shut down the virtual machine on the vSphere interface and delete the virtual machine.

4.2 Common Issue

Table 4.1 Troubleshooting

Issue	Solution
If the plugin alarm is not eliminated after the power supply is recovered.	Check whether the Thermal Insight alarm is cleared first. If not, you can manually end the alarm on Thermal Insight.
In the VxRail Double-vSphere Mode, the workload VxRail can install and run the Thermal Insight plugin to shut down other VxRail clusters.	In this case, you can use the workload VxRail to manage and shut down other VxRail
Plugin registration failure.	The following conditions may cause plugin registration failure: • The authentication information entered is incorrect. In this case, confirm the information and try again. • If you have previously registered the plugin, but an abnormal situation occurs when uninstalling the plugin, the alarm information of the Vertiv device is retained in vSphere, and this information may cause the plugin registration to fail. In this case, enter vSphere first to manually delete the global alarms and custom alarms of the Vertiv device, and then restart the plugin registration process.

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Appendices

Appendix A: Technical Support and Contacts

A.1 Technical Support/Service in the United States

Vertiv Group Corporation

24x7 dispatch of technicians for all products.

1-800-543-2378

Liebert® Thermal Management Products

1-800-543-2378

Liebert® Channel Products

1-800-222-5877

Liebert® AC and DC Power Products

1-800-543-2378

A.2 Locations

United States

Vertiv Headquarters

505 N Cleveland Ave

Westerville, OH 43082

Europe

Via Leonardo Da Vinci 8 Zona Industriale Tognana

35028 Piove Di Sacco (PD) Italy

Asia

7/F, Dah Sing Financial Centre

3108 Gloucester Road, Wanchai

Hong Kong

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