VSE Deployment Using Cisco Nexus 1000VE Manager vCenter Plugin

This chapter contains the following sections:

Cisco Nexus 1000VE Manager vCenter Plugin Software Requirements

This section lists Cisco Nexus 1000VE Manager vCenter plugin software requirements.

Note Cisco Nexus 1000VE Manager vCenter Plugin is Flex based on vCenter versions 6.0, 6.5, and 6.7U1, and HTML5 based plugin for vCenter version 6.5U2 and above.

Table 1: Cisco Nexus 1000VE Manager VCenter Plugin Software Requirements

Platform	Recommended Release
VMware vCenter	• 6.5 U2 Linux Appliance • 6.5 U2 Windows • 6.7 U1 Linux Appliance • 6.7 U1 Windows • 6.7 U2 Linux Appliance • 6.7 U2 Windows • 6.7 U3 Linux Appliance • 6.7 U3 Windows
Cisco Nexus 1000VE VSM	5.2(1)SV5(1.3)

Installing the Cisco Nexus 1000VE Manager vCenter Plugin

This section describes how to install the Cisco Nexus 1000VE vCenter Plugin. Ensure that you have HTTPS connection between the vCenter and Cisco Nexus 1000VE VSM to download the plugin directly from the VSM.

If you cannot establish HTTPS connection between vCenter and Cisco Nexus 1000VE VSM, you can use alternate method of hosting the Cisco Nexus 1000VE vCenter Plugin zip file to a Web Server. You need to download the plugin zip from Cisco Nexus 1000VE VSM available at `https://<N1KVE-VSM-IP>/` and place it on the Web Server path accessible through HTTPS. There are two plugins, that is Flex based (supported on vCenter 6.0/6.5/6.7U1) and HTML5 based (supported on vCenter 6.5U2 or above). You must download the corresponding plugin according to currently installed vCenter version.

Before you begin, note the following:

- Ensure that you have Python environment (version 3.7.0 or greater) in your network.
- Ensure that you have copied the deploy_n1kve_plugin_v3.py script to a python environment where pyvmomi package is installed.

You can use one of the following two methods to install the Cisco Nexus 1000VE vCenter Plugin:.

Installing the Cisco Nexus 1000VE Manager vCenter Plugin - Method 1

Procedure

Step 1 Download the deploy_n1kve_plugin_v3.py python script from `https://<N1KVE-VSM-IP>/` to the Python environment.

Example:

Step 2 Run the Python script, deploy_n1kve_plugin_v3.py, to register the N1KVE Manager vCenter plugin and enter the following details when prompted:

- vCenter IP: IP address of the VMware vCenter server to install the plugin.

- vCenter Username: User with administrator privileges.

- Password: password.

- Plugin zip file URL: URL where the vCenter downloads the plugin. There are two zip files corresponding Flex(6.0/6.5/6.7) and for HTML for vCenter (6.5u2 or above). Please provide respective file path depending upon your vCenter version and preference.

  - If vCenter can reach Cisco Nexus 1000VE VSM over HTTP/HTTPS, then provide the URL similar to `http://N1KVE-VSM-IP/vcplugin/n1kve-vcenter-plugin-flex-1.0.3.zip` for flex based vSphere client or `http://N1KVE-VSM-IP/vcplugin/n1kve-vcenter-plugin-html-2.0.1.zip` for HTML5 based vSphere client (Supported for vCenter v6.5u2 or above).

  - If the Zip file is placed in any other webserver, then provide the URL for the same. For example, `http://WEB-SERVER-IP/Relative-path-if-any-to-Zip-file/n1kve-vcenter-plugin-flex-1.0.3.zip` for flex based vSphere client OR `http://WEB-SERVER-IP/Relative-path-if-any-to-Zip-file/n1kve-vcenter-plugin-html-2.0.1.zip` for HTML based vSphere client.

  - If the Zip file is placed in any other webserver, then provide the URL for the same `https://<WEB-SERVER-IP>/<Relative-path-if-any-to-Zip-file>/n1kve-vcenter6.X-plugin-1.0.2.zip`

  Note Ensure you have not renamed the .zip file.

- HTTPS Server Thumbprint(fingerprint): If you are using HTTPS, enter the HTTPS SHA1 Thumbprint from the Web Server else leave this field empty. For more information about how to retrieve HTTPS SHA1 Thumbprint, see Retrieving HTTPS SHA1 Thumbprint.

```
C:\>python deploy_n1kve_plugin_v3.py

================================================================
.:|:..:|:. Cisco Systems Inc
================================================================
N1KVE Plugin for the vSphere Web Client deployment tool
----------------------------------------------------------------
NOTE: Please go through the DeployPlugin-ReadMe.txt file on your VSM and ensure that all
the pre-requisites are taken care of.

In order to install the N1KVE Plugin for the vSphere Web Client,
the following wizard will prompt you the following information:

- vCenter IP : The IP address of the vCenter where the plugin needs to be installed.
```

```
- vCenter Username / password : SSO login credentials
- vCenter Username / password : The login information of a user with root privileges
- Plugin version number : The version of the plugin to deploy
- Plugin zip file URL : The URL where the vCenter will be able to download the N1KVE Plugin
  zip archive (HTTP or HTTPS).
- Https server Thumbprint: The SHA thumbprint of the HTTPS server where the zip archive is
  located

vCenter IP: 10.126.129.75
vCenter Username: administrator@vsphere.local
Password:
Plugin zip file URL: http://10.126.129.100/vcplugin/n1kve-vcenter-plugin-html-2.0.1.zip
Select one of the following:-
1. Windows VCenter
2. VCenter Server Appliance
Enter 1 or 2
Choice: 1
Administrator password:
Successful connection to 10.126.129.75
Connecting to the vCenter 10.126.129.75...
Fetching service instance content ...
Checking the API version ...
Checking if any version of HTML plugin is already present ...
Installing the plugin ...

The plugin information was successfully installed on the vCenter 10.126.129.75


--- Please Read ---
The information provided was successfully pushed to the vCenter, but plugin installation
is not over.
You need to login into the vSphere Web Client and check for the Cisco N1KVE Plugin icon to
 ensure that the installation is successful
If the plugin does not appear in the UI, check the vSphere Web Client log file to see what
 went wrong
Checking if all files were installed successfully...
Pushing files to the VCenter. Please wait for sometime...
It is considered that all VCenter related files are installed in C drive...

Please restart vmon service from the task manager
```

Step 3   Log into the vSphere Web Client after the registration process completes. If you were logged into vSphere Web Client before the script was run, logout and login again back. For Flex based vSphere clients, the plugin appears as theCisco Nexus 1000VE Manager icon and is added under the **Operations and Policies** section on the **Home** tab. For HTML5 based vSphere clients, the plugin appears as The Cisco Nexus 1000VE Manager icon and is added under **Main Menu** > **Shortcuts**.

Note   First login to VMware vSphere Web Client may take longer because the vCenter downloads and deploys the plugin from the Web Server.

Installing the Cisco Nexus 1000VE Manager vCenter Plugin - Method 2

Procedure

Step 1   Log into VMware vCenter Managed Object Browser (MOB).

Step 2   Click **Content** under the **Properties** section.

Step 3   Click **Extension Manger**.

Step 4   Under **Methods**, click **RegisterExtensions** to open **Register Extension Pop-up**.

Step 5   Copy the following information by changing the version, URL, serverThumbprint tags according to your setup and then paste it in the **Value** Text field:

uu

- For Flex based vSphere clients, use following extension key:

```
<extension>
    <description>
        <label>N1KVE Plugin</label>
        <summary>Deployment for the N1KVE plugin</summary>
    </description>
    <key>com.cisco.plugin.n1kveui</key>
    <company>Cisco Systems Inc.</company>
    <version>1.0.3</version>
    <server>
        <url>https://10.126.129.212/vcplugin/n1kve-vcenter-plugin-flex-1.0.3.zip</url>
        <description>
            <label>N1KVE plugin</label>
            <summary>N1KVE vSphere Client plugin</summary>
        </description>
        <company>Cisco Systems Inc.</company>
        <type>vsphere-client-serenity</type>
        <adminEmail>string</adminEmail>

<serverThumbprint>6c:47:83:8f:18:e2:a6:12:c7:f1:ce:ac:72:e2:6c:c9:a2:b5:70:05</serverThumbprint>

    </server>
    <client>
        <version>1.0.3</version>
        <description>
            <label>N1KVE plugin</label>
            <summary>N1KVE vSphere Client plugin</summary>
        </description>
        <company>Cisco Systems Inc.</company>
        <type>vsphere-client-serenity</type>
        <url>https://10.126.129.212/vcplugin/n1kve-vcenter6.5-plugin-1.0.3.zip</url>
    </client>
    <lastHeartbeatTime>2019-05-16T00:00:00Z</lastHeartbeatTime>
    <shownInSolutionManager>false</shownInSolutionManager>
</extension>
```

- For HTML based vSphere clients use following extension key:

```
<extension>
    <description>
        <label>N1KVE Plugin</label>
        <summary>Deployment for the N1KVE plugin</summary>
    </description>
    <key>com.cisco.n1kve.plugin</key>
    <company>Cisco Systems Inc.</company>
    <version>2.0.1</version>
    <server>
        <url>https://10.126.129.212/vcplugin/n1kve-vcenter-plugin-html-2.0.1.zip</url>
        <description>
            <label>N1KVE plugin</label>
            <summary>N1KVE vSphere Client plugin</summary>
        </description>
        <company>Cisco Systems Inc.</company>
        <type>vsphere-client-serenity</type>
```

```
            <adminEmail>string</adminEmail>

 <serverThumbprint>3D:E7:9A:85:01:A9:76:DD:AC:5D:83:1C:0E:E0:3C:F6:E6:2F:A9:97</serverThumbprint>

      </server>
      <client>
         <version>2.0.1</version>
         <description>
            <label>N1KVE plugin</label>
            <summary>N1KVE vSphere Client plugin</summary>
         </description>
         <company>Cisco Systems Inc.</company>
         <type>vsphere-client-serenity</type>
         <url>https://10.126.129.212/vcplugin/n1kve-vcenter-plugin-html-2.0.1.zip</url>
      </client>
      <lastHeartbeatTime>2018-01-10T00:00:00Z</lastHeartbeatTime>
      <shownInSolutionManager>false</shownInSolutionManager>
   </extension>
```

Step 6 Click **Invoke method** to register the plugin with the VMware vCenter. You must log out and logi in again into the VMware vCenter inorder to apply the changes.

Step 7 Logout from VMware vCenter and login again into VMware vCenter. The plugin tool initiates automatically.

Retrieving HTTPS SHA1 Thumbprint

You need HTTPS SHA1 Thumbprint for secured communication between vCenter and VSM.

Using Firefox to Retrieve HTTPS SHA1 Thumbprint

Follow these intruction so retreive HTTPS SHA1 Thumbprint using Firefox:

1. Open the following URL in the Web browser: `https://<N1KVE-VSM-IP>/`.

2. Click the **Lock** icon on the address bar.

3. Click on the arrow on the right, and click on **More Information**.

4. Click **View Certificate** button in the **Page Info** dialog-box.

5. Copy the content of the **SHA1 Fingerprint** field on the **Certificate Viewer** dialog-box

Using Google Chrome to Retrieve HTTPS SHA1 Thumbprint

Follow these intruction so retreive HTTPS SHA1 Thumbprint using Google Chrome:

1. Open the following URL in the Web browser: `https://<N1KVE-VSM-IP>/`.

2. Click the **Lock** icon on the address bar or the Not Secure icon besides the URL.

3. Click **Certificate** in the drop-down list.

4. Scroll down to the Thumbprint Field and copy the content.

5. Click the **Details** tab in the pop-up window.

Installing VSE Using the Cisco Nexus 1000VE Manager vCenter Plugin

Complete these steps to install VSE using Ciso Nexus 1000VE Manager vCenter plugin. You can also use the migrate option avialble on the Nexus 1000VE Manager vCenter plugin to install VSEs and to migrate the configuration from all existing Nexus 1000V instances.

Note   The installation procedure is the same for the Flex and HTML based plugins.

Before you begin

- Ensure that you have configured a static IP pool or a DHCP server in the VMware vCenter. If both, a static IP pool and a DHCP server are configured, static IP pool is considered.You must make sure that the IP pool contains enough number of IP addresses to assign to all VSEs. If none are selected or no network profiles are mapped, then the DHCP server is used.

- Ensure that VSM is already deployed.

- The network IP address pool for the VSE must be configured with a maximum of one DNS server IP address.

Procedure

Step 1   Navigate to **Home** on VMware vCenter Web Client. If a content library has already been created with the required VSE image, go to Step 6. If not, proceed to step 2.

Step 2   On the **Navigator** Pane, click **Content Libraries** to open the **Content Libraries** page. For some HTML based vCenter client versions where the content libraries are not supported, use Flex based vCenter client to import the same.

Step 3   On the **Getting Started** tab, click **Create new content library**.

Step 4   In the **New Content Library** dialog box, do the following:

a) On the **Name and Location** page, enter the content library name in the **Name** text field and select vCenter Server IP address from the **vCenter Server** drop-down list

b) Click **Next**.

c) On the **Configure content library** page, verify that the default option, **Local content library** is selected

d) Click **Next**.

e) On the **Add Storage** page, choose the **Select a datastore** option and from the **Filter** tab, select a storage location.

f) Click **Next**.

g) On the **Ready to complete** page, click **Finish**.

h) On the **Navigator** tab, select the new content library that you just created

i) On the **Getting Started** tab, under **Basic Tasks** section, click **Import Item** to open **New Content Library – Import Library Item** dialog box

j) Choose **Local file** option and click **Browse** and navigate to the location of the VSE OVF file. Select the VSE OVF file and click **Open**.

k) In the **Select referenced files** dialog box, select the OVF referenced files and click **Open**.

l) On the **Select referenced files** dialog box, click **Ok**.

m) On the **New Content Library – Import Library Item** dialog-box, click **Ok**.

n) On the **Home** page, click **Recent Tasks** tab at the bottom to check VSE file upload progress.

Step 5   Navigate to **Home** tab on VMware vSphere Web Client.

Step 6   Click **N1KVE Manager**, and enter the VMware vCenter password and click **Login**. The N1KVE Manager page opens.

Step 7   On the **Installation** tab, select a data center from the **Select a DC** drop-down list.

Step 8   Select a N1KVE vDS from the **Select a VDS** drop-down list to list the available Hosts.

Step 9   Select the check-box for a Host from the list of Hosts and click Physical Adapter icon to open **Select PNICS for Outside VDS** dialog-box

Step 10   In the **Select PNICSs for OUTSIDE VDS** dialog box, select a physical adapter and click **Submit**.

Step 11   Select an OVF file from the **OVF File** drop-down list.

Step 12   Enter VSM IP address for **VSM IP** text field.

Step 13   Enter domain Id for **Domain ID** text field.

Step 14   Select an uplink port profile from the **Uplink Port Profile** drop-down list.

Step 15   Select a management port group from the **Management Port Group** drop-down list.

Step 16   Select **Auto** for **Datastore** drop-down list.

Step 17   Enter VSE administrator password in the **VSE Admin Password** text-field.

Step 18   Confirm the password in the **Confirm Password** text field.

Step 19   Click **Install**.

Step 20   In the **Install** dialog box, click **Yes**.

You can check the installation progress in the **Recent Tasks** tab at the bottom of VMware vCenter.

Unsupported Features

Cisco Nexus 1000VE Release 5.2(1)SV5(1.3) does not support the following features:

- Link Aggregation Control Protocol (LACP)

- L3 Forwarding

- Dynamic Host Configuration Protocol (DHCP)

- Netflow

- Network Segmentation Manager