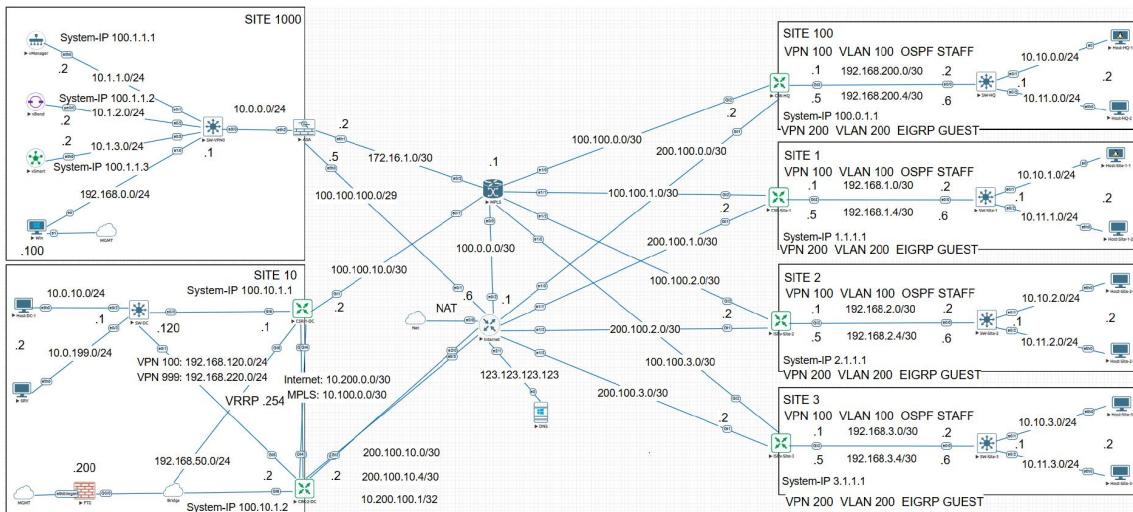


LAB: SERVICE CHAINING

I. Sơ đồ



Tên Thiết Bị	Username	Password	Version
vManage	admin	Admin	20.06.1
vBond	admin	Admin	20.06.1
vSmart	admin	Admin	20.06.1
cEdge(CSR1000v)	admin	Admin	17.03.04a
cEdge(C8000v)	admin	Admin	17.06.01a
cEdge(ISRv)	admin	Admin	17.02.02
FTD	Admin	Admin	7.4.1
ASA	Admin	Admin	915-16-k8
PC		Test123	Windows10

II. Yêu Cầu:

- Viết một chính sách Service Chaining để các dữ liệu phải được xử lý ở Firewall site DC

III. Thực hiện:

Trong giao diện GUI vManage, chọn Configuration -> Templates

Cisco vManage

Dashboard (highlighted)

Configuration (highlighted)

Templates (highlighted)

CERTIFICATE STATUS
0 Warning 0 Invalid

LICENSING
6 Total Devices 0 Licensed Devices

Transport Interface Distribution

< 10 Mbps	28
10 Mbps - 100 Mbps	0
100 Mbps - 500 Mbps	0
> 500 Mbps	0

View Percent Utilization

Transport Health (Total 6)

Transport Health (Type: By Loss)

Warning Error

Detach Devices CSR1000v_DC_VRRP

Cisco vManage

Select Resource Group

Configuration - Templates

Device (selected)

Feature

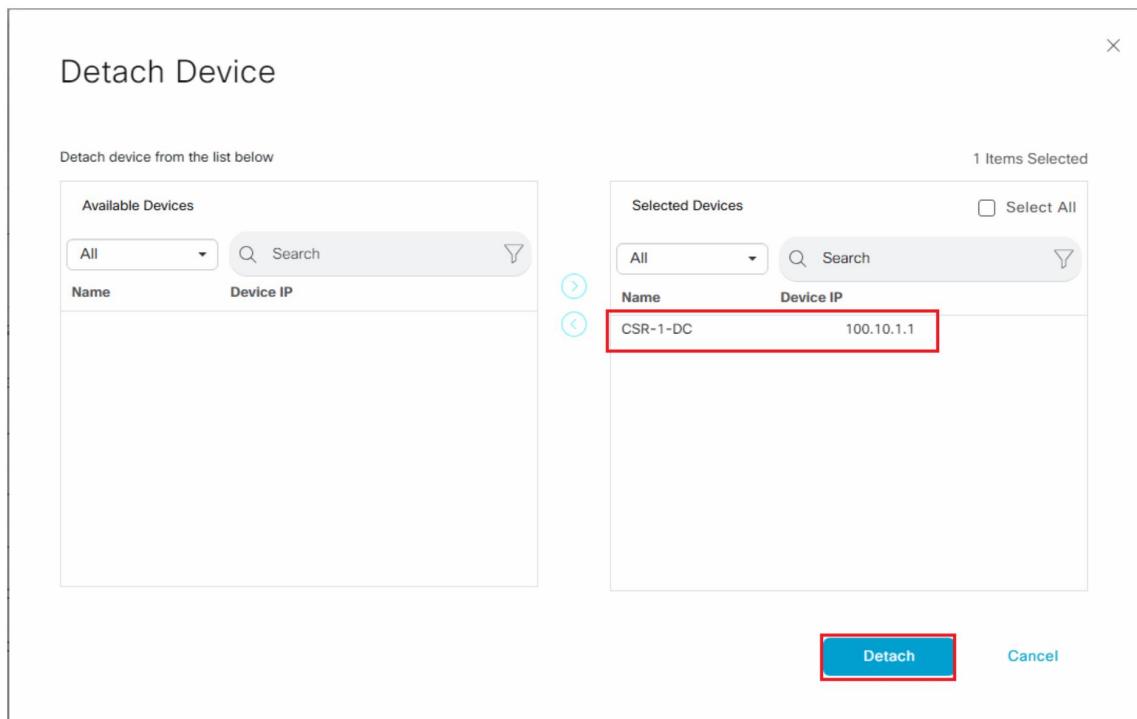
Create Template

Template Type: Non-Default

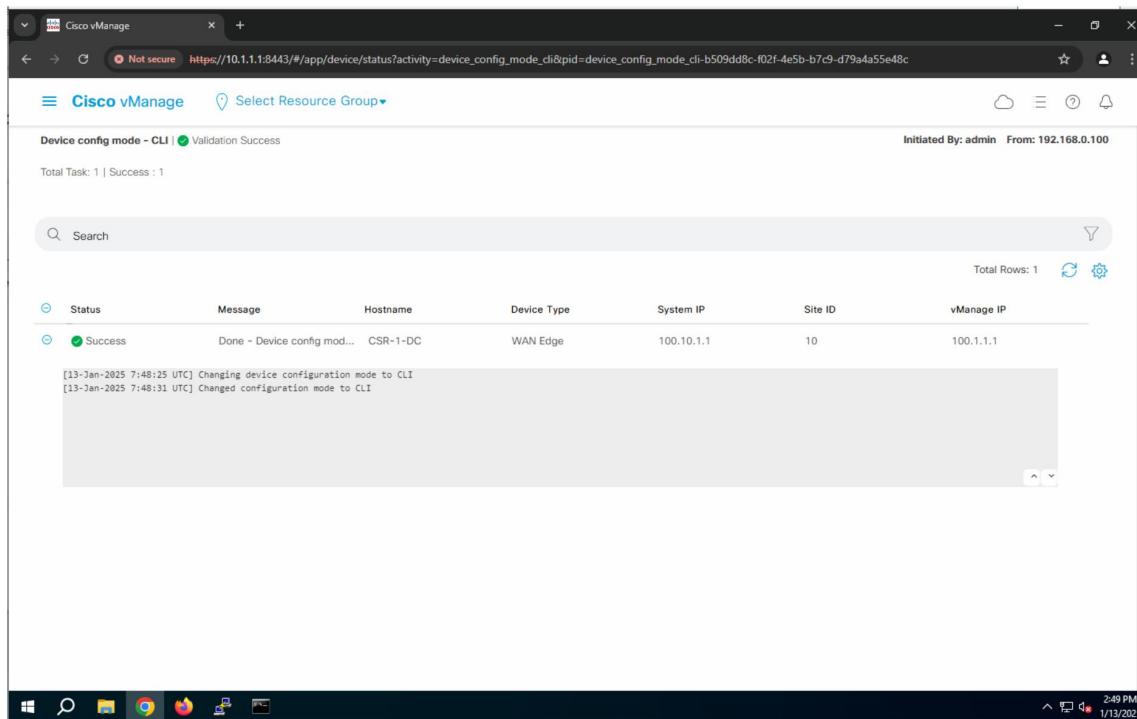
Name ...	Description	Type ...	Device Mode...	Device Role ...	Resource Group	Feature Templates	Draft Mode	Devices Attached	User
ISRv..._...	ISRv_Site-2	Feature	ISRv	SDWAN Edge	global	18	Disabled	1	admin ***
ISRv..._...	ISRv_Site-3	Feature	ISRv	SDWAN Edge	global	18	Disabled	1	admin ***
vSmart..._...	vSmart_Template	Feature	vSmart	SDWAN Edge	global	9	Disabled	1	admin ***
CSR1..._...	CSR1000v_DC_VRRP	Feature	CSR1000v	SDWAN Edge	global	17	Disabled	1	admin ***
CSR1..._...	CSR1000v_Site-1	Feature	CSR1000v	SDWAN Edge	global	18	Disabled	1	admin ***
C800..._...	C8000v_DC_VRRP	Feature	C8000v	SDWAN Edge	global	20	Disabled	1	admin ***
C800..._...	C8000v_HQ	Feature	C8000v	SDWAN Edge	global	19	Disabled	1	admin ***

Detach Devices (highlighted)

Chọn CSR-1-DC và Detach



Detach thành công



Quay lại Configuration -> Templates

The screenshot shows the Cisco vManage Main Dashboard. On the left, the navigation menu is open, with 'Configuration' and 'Templates' both highlighted with red boxes. The main dashboard area displays various status metrics and charts related to network devices and connectivity.

Detach Devices C8000v_DC_VRRP

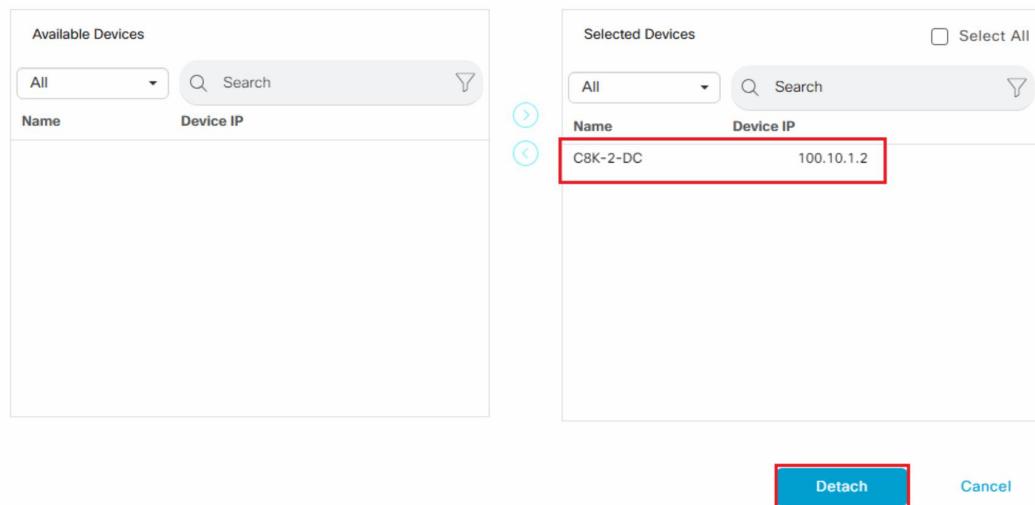
The screenshot shows the 'Configuration - Templates' page in Cisco vManage. A table lists various device templates. One row, 'C800... C8000v_DC_VRRP', is selected and highlighted with a red box. A context menu is open over this row, with the 'Detach Devices' option highlighted with a red box. Other options in the menu include Edit, View, Delete, Copy, Enable Draft Mode, Attach Devices, Change Resource Group, Export CSV, and Change Device Values.

Chọn C8K-2-DC và Detach

Detach Device

Detach device from the list below

1 Items Selected



Available Devices

All Search

Name Device IP

Selected Devices

All Search

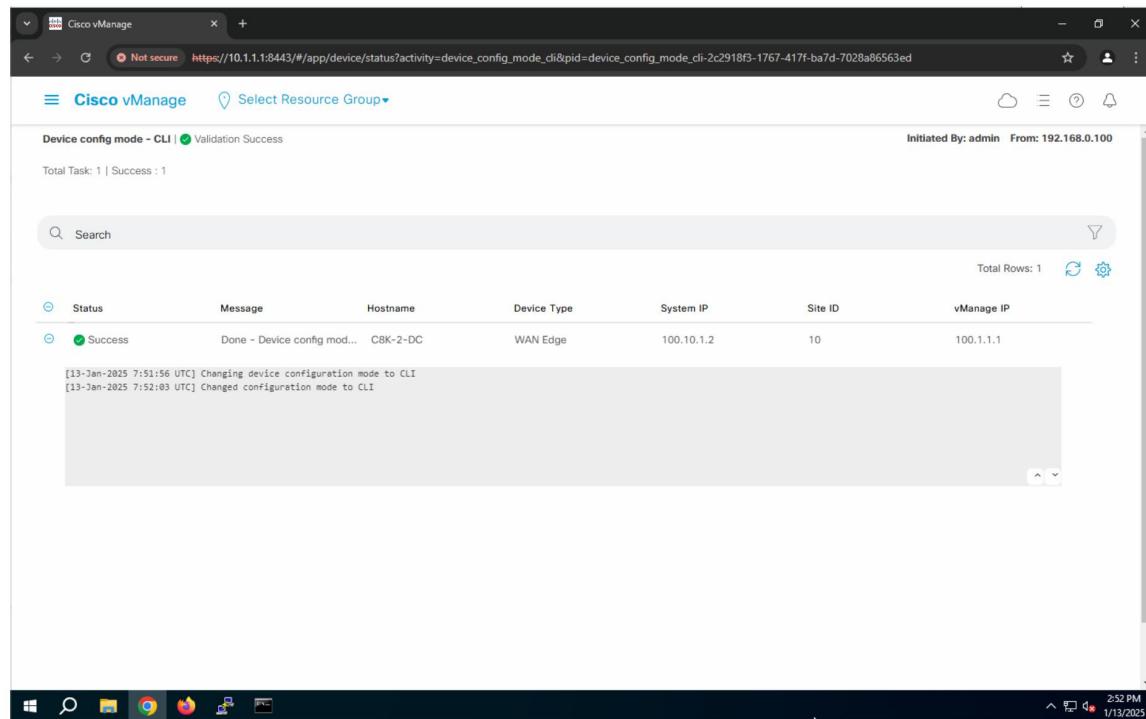
Name Device IP

C8K-2-DC 100.10.1.2

Select All

Detach Cancel

Detach thành công



Cisco vManage Select Resource Group

Device config mode - CLI | Validation Success

Initiated By: admin From: 192.168.0.100

Total Task: 1 | Success : 1

Search

Status Message Hostname Device Type System IP Site ID vManage IP

Success Done - Device config mode... C8K-2-DC WAN Edge 100.10.1.2 10 100.1.1.1

[13-Jan-2025 7:51:56 UTC] Changing device configuration mode to CLI
[13-Jan-2025 7:52:03 UTC] Changed configuration mode to CLI

Quay lại Configuration -> Templates

The screenshot shows the Cisco vManage interface. The left sidebar has a 'Configuration' section highlighted with a red box. The main dashboard displays various metrics and charts related to device status, licensing, and transport interface distribution.

Chọn Feature

The screenshot shows the 'Configuration - Templates' page. The top navigation bar has a 'Feature' tab highlighted with a red box. The main area displays a table of templates, with the 'Feature' tab selected in the top navigation bar.

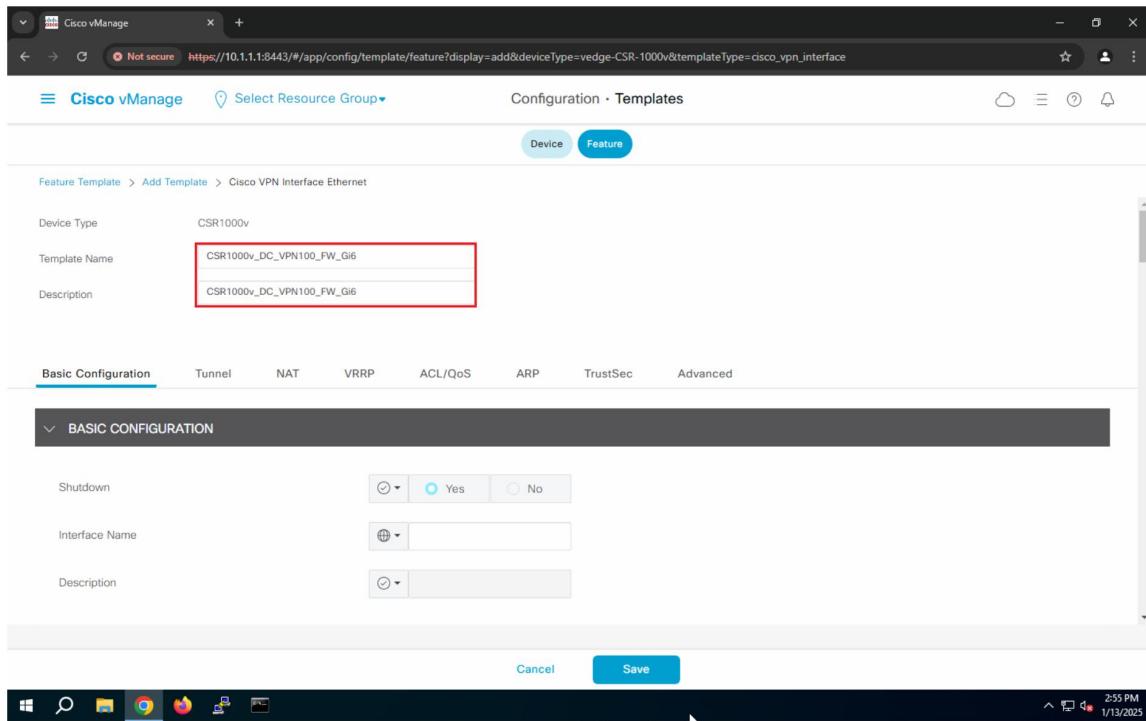
Name ...	Description	Type ...	Device Mode...	Device Role ...	Resource Group	Feature Templates	Draft Mode	Devices Attached	Updated By	
ISRV_...	ISRV_Site-2	Feature	ISRV	SDWAN Edge	global	18	Disabled	1	admin	***
ISRV_...	ISRV_Site-3	Feature	ISRV	SDWAN Edge	global	18	Disabled	1	admin	***
vSmar...	vSmart_Template	Feature	vSmart	SDWAN Edge	global	9	Disabled	1	admin	***
CSR1...	CSR1000v_DC_VRRP	Feature	CSR1000v	SDWAN Edge	global	17	Disabled	0	admin	***
CSR1...	CSR1000v_Site-1	Feature	CSR1000v	SDWAN Edge	global	18	Disabled	1	admin	***
C800...	C8000v_DC_VRRP	Feature	C8000v	SDWAN Edge	global	20	Disabled	0	admin	***
C800...	C8000v_HQ	Feature	C8000v	SDWAN Edge	global	19	Disabled	1	admin	***

Chọn Add Template

Name	Description	Type	Device Model	Device Templates	Resource Group	Devices Attached	Updated By	Last Updated
C8000v_2_DC_...	C8000v_2_DC_VPN100	Cisco VPN	C8000v	1	global	0	admin	12 Jan 2025 4:1...
C8000v_AAA	C8000v_AAA	Cisco AAA	C8000v	2	global	1	admin	12 Jan 2025 4:0...
C8000v_HQ_EI...	C8000v_HQ_EIGRP	EIGRP	C8000v	1	global	1	admin	12 Jan 2025 4:0...
C8000v_HQ_V...	C8000v_HQ_VPN0_Gi3	Cisco VPN Inter...	C8000v	1	global	1	admin	12 Jan 2025 4:0...
C8000v_HQ_V...	C8000v_HQ_VPN100	Cisco VPN	C8000v	1	global	1	admin	12 Jan 2025 4:0...
C8000v_HQ_V...	C8000v_HQ_VPN100_Gi...	Cisco VPN Inter...	C8000v	1	global	1	admin	12 Jan 2025 4:0...
C8000v_HQ_V...	C8000v_HQ_VPN200	Cisco VPN	C8000v	1	global	1	admin	12 Jan 2025 4:0...

Chọn CSR1000v và chọn Cisco VPN Interface Ethernet

Điền tên cho Interface Template

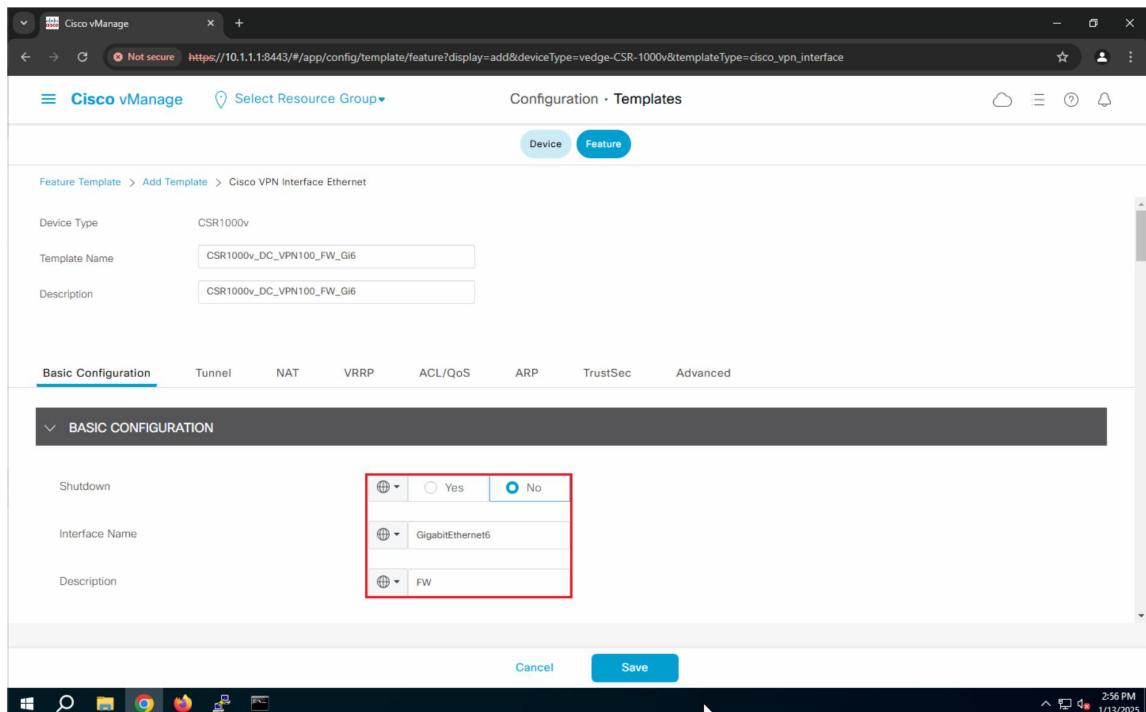


Điền như hình:

Shutdown: No

Interface Name: GigabitEthernet6

Description: FW



Ipv4 Address/prefix-length: 192.168.50.1/24 và chọn Save

Chọn Add Template

Name	Description	Type	Device Model	Device Templates	Resource Group	Devices Attached	Updated By	Last Updated
C8000v_2_DC_...	C8000v_2_DC_VPN100	Cisco VPN	C8000v	1	global	0	admin	12 Jan 2025 4:1...
C8000v_AAA	C8000v_AAA	Cisco AAA	C8000v	2	global	1	admin	12 Jan 2025 4:0...
C8000v_HQ_Ei...	C8000v_HQ_EIGRP	EIGRP	C8000v	1	global	1	admin	12 Jan 2025 4:0...
C8000v_HQ_V...	C8000v_HQ_VPN0_Gi3	Cisco VPN Inter...	C8000v	1	global	1	admin	12 Jan 2025 4:0...
C8000v_HQ_V...	C8000v_HQ_VPN100	Cisco VPN	C8000v	1	global	1	admin	12 Jan 2025 4:0...
C8000v_HQ_V...	C8000v_HQ_VPN100_Gi...	Cisco VPN Inter...	C8000v	1	global	1	admin	12 Jan 2025 4:0...
C8000v_HQ_V...	C8000v_HQ_VPN200	Cisco VPN	C8000v	1	global	1	admin	12 Jan 2025 4:0...

Chọn C8000v và chọn Cisco VPN Interface Ethernet

The screenshot shows the Cisco vManage web interface. The URL is <https://10.1.1.8443/#/app/config/template/feature?display=add>. The 'Feature Template > Add Template' page is displayed. The 'Device' tab is active. In the 'Select Devices' dropdown, 'c8' is typed, and 'C8000v' is selected. In the 'VPN' section, there are several templates: 'Cisco Secure Internet Gateway (SIG)', 'Cisco VPN', 'Cisco VPN Interface Ethernet' (which is highlighted with a red box), 'Cisco VPN Interface GRE', 'Cisco VPN Interface IPsec', 'VPN Interface Cellular', 'VPN Interface DSL PPPoA', 'VPN Interface DSL PPPoE', and 'VPN Interface Ethernet PPPoE'. The 'Cisco VPN Interface Ethernet' template is specifically highlighted.

Điền tên Interface Template

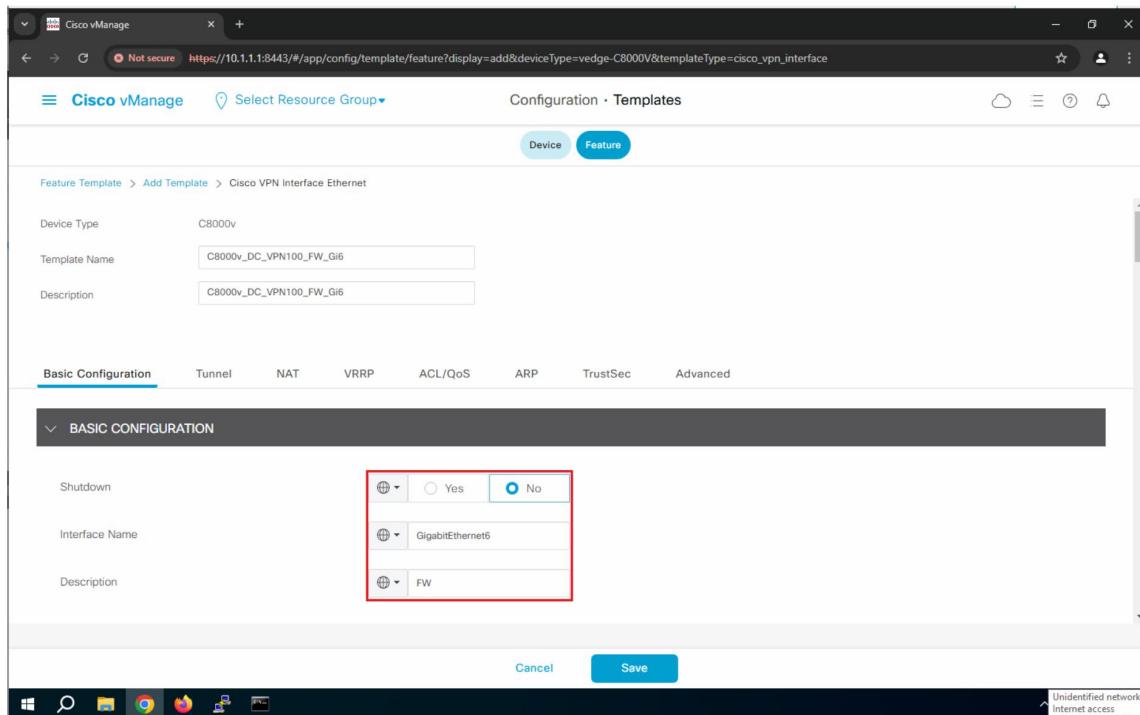
The screenshot shows the 'Cisco vManage' interface with the URL https://10.1.1.8443/#/app/config/template/feature?display=add&deviceType=vedge-C8000V&templateType=cisco_vpn_interface. The 'Feature Template > Add Template > Cisco VPN Interface Ethernet' page is shown. The 'Device Type' is set to 'C8000v'. The 'Template Name' field contains 'C8000v_DC_VPN100_FW_Gi6' and is highlighted with a red box. The 'Description' field also contains 'C8000v_DC_VPN100_FW_Gi6' and is highlighted with a red box. The 'Basic Configuration' tab is selected. Under 'BASIC CONFIGURATION', the 'Shutdown' dropdown is set to 'Yes'. The 'Interface Name' and 'Description' fields are empty. At the bottom, there are 'Cancel' and 'Save' buttons, with 'Save' being highlighted.

Điền như hình:

Shutdown: No

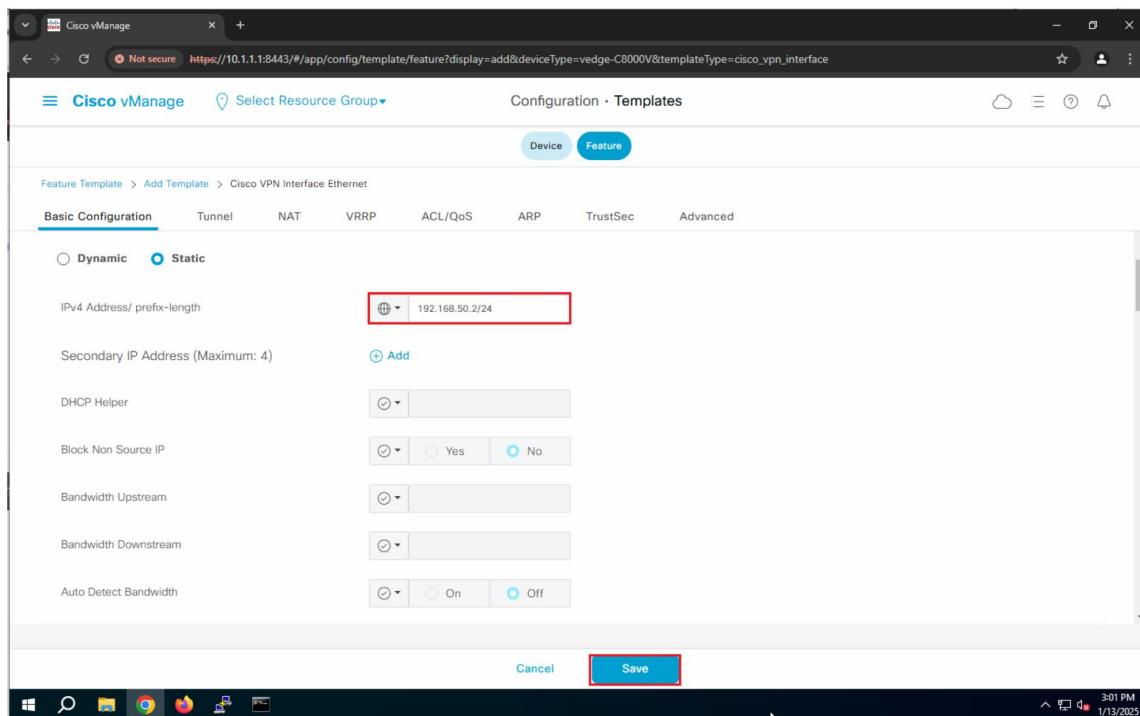
Interface Name: GigabitEthernet6

Description: FW



The screenshot shows the Cisco vManage web interface for creating a new feature template. The 'Basic Configuration' tab is selected. In the 'BASIC CONFIGURATION' section, the 'Shutdown' field is set to 'No', 'Interface Name' is set to 'GigabitEthernet6', and 'Description' is set to 'FW'. A red box highlights the 'Interface Name' and 'Description' fields.

Ipv4 Address/prefix-length: 192.168.50.2/24 và chọn Save



The screenshot shows the 'Basic Configuration' tab selected in the Cisco vManage interface. Under 'IPv4 Address/ prefix-length', the value '192.168.50.2/24' is entered and highlighted with a red box. The 'Save' button at the bottom right is also highlighted with a red box.

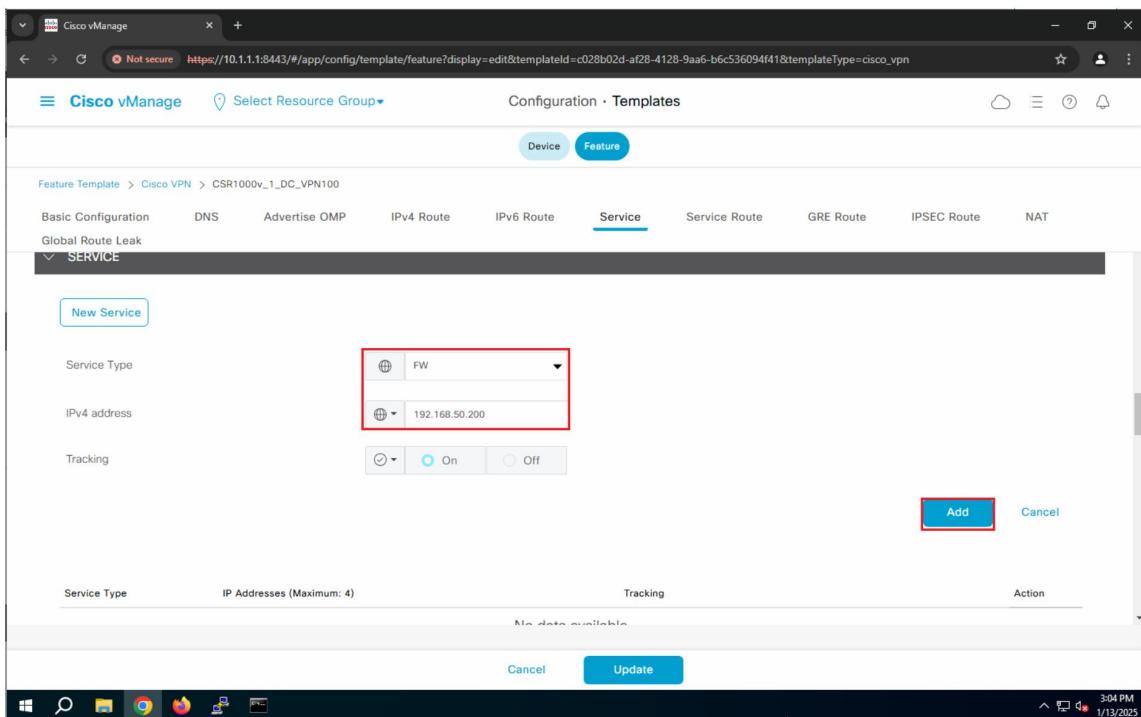
Chọn Edit Template CSR1000v_1_DC_VPN100

Name	Description	Type	Device Model	Device Templates	Resource Group	Devices Attached	Updated By	Actions
C8000v_VPN...	C8000v_VPN0_Lo1_DC	Cisco VPN I...	C8000v	1	global	0	admin	View
CSR1000v_...	CSR1000v_1_DC_VPN0_Gi5	Cisco VPN I...	CSR1000v	1	global	0	admin	View
CSR1000v_...	CSR1000v_1_DC_VPN100	Cisco VPN	CSR1000v	1	global	0	admin	Edit Change Device Models Change Resource Group Delete Copy
CSR1000v_...	CSR1000v_1_DC_VPN100_Gi5.100_...	Cisco VPN I...	CSR1000v	1	global	0	admin	View
CSR1000v_...	CSR1000v_1_DC_VPN999	Cisco VPN	CSR1000v	1	global	0	admin	View
CSR1000v_...	CSR1000v_1_DC_VPN999_Gi5.999_...	Cisco VPN I...	CSR1000v	1	global	0	admin	View
CSR1000v_...	CSR1000v_AAA	Cisco AAA	CSR1000v	2	global	1	admin	View

Ở phần Service chọn New Service

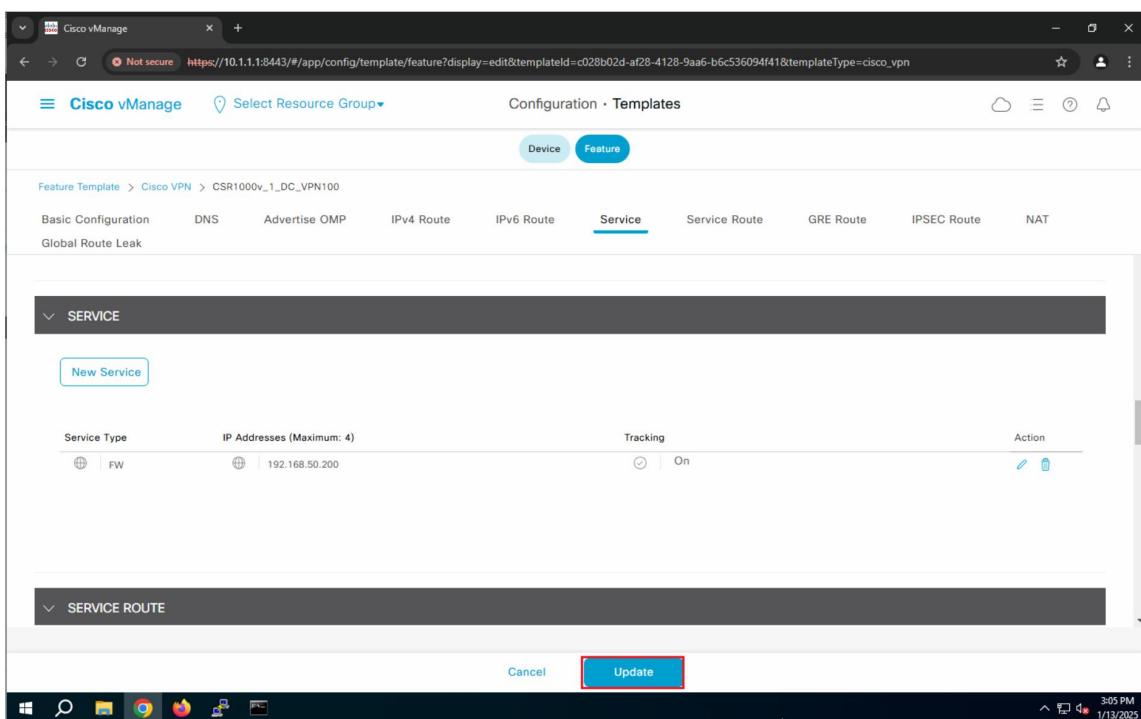
Service Type	IP Addresses (Maximum: 4)	Tracking	Action
No data available			

Chọn Service Type FW, Ipv4 address: 192.168.50.200 và chọn Save



The screenshot shows the Cisco vManage web interface. The URL is https://10.1.1.1:8443/#/app/config/template/feature?display=edit&templateId=c028b02d-af28-4128-9aa6-b6c536094f41&templateType=cisco_vpn. The main title is 'Configuration - Templates'. Under 'Feature Template > Cisco VPN > CSR1000v_1_DC_VPN100', the 'Service' tab is active. A 'New Service' button is visible. In the configuration section, 'Service Type' is set to 'FW' and 'IPv4 address' is set to '192.168.50.200'. The 'Tracking' section has 'On' selected. The 'Add' button is highlighted with a red box. Below the form, a table shows a single entry: Service Type 'FW', IP Addresses '(Maximum: 4)' '192.168.50.200', Tracking 'On', and Action buttons. The bottom status bar shows the date and time as 1/13/2025 at 3:04 PM.

Chọn Update



The screenshot shows the same Cisco vManage interface after the service has been added. The 'Update' button is highlighted with a red box. The rest of the interface is identical to the previous screenshot, showing the configuration form and the table with one entry.

Chọn Edit Template C8000v_2_DC_VPN100

Name	Description	Type	Device Model	Device Templates	Resource Group	Devices Attached	Updated By	Last Updated
C8000v_2...	C8000v_2_DC_VPN0_Gi5_VRRP	Cisco VP...	C8000v	1	global	0	admin	12 Jan 2025 4:0...
C8000v_2...	C8000v_2_DC_VPN100	Cisco VPN	C8000v	1	global	0	admin	12 Jan 2025 4:1...
C8000v_2...	C8000v_2_DC_VPN100_Gi5_100_VRRP	Cisco VP...	C8000v	1	global	0	admin	12 Jan 2025 4:1...
C8000v_2...	C8000v_2_DC_VPN999	Cisco VPN	C8000v	1	global	0	admin	12 Jan 2025 4:1...
C8000v_2...	C8000v_2_DC_VPN999_Gi5_999_VRRP	Cisco VP...	C8000v	1	global	0	admin	12 Jan 2025 4:1...
C8000v_...	C8000v_AAA	Cisco AAA	C8000v	2	global	1	admin	12 Jan 2025 4:0...
C8000v_...	C8000v_DC_VPN100_FW_Gi6	Cisco VP...	C8000v	0	global	0	admin	13 Jan 2025 3:0...

Ở phần Service chọn New Service

Basic Configuration	DNS	Advertise OMP	IPv4 Route	IPv6 Route	Service	Service Route	GRE Route	IPSEC Route	NAT
Global Route Leak					Service				

SERVICE

New Service

Service Type	IP Addresses (Maximum: 4)	Tracking	Action
No data available			

SERVICE ROUTE

New Service Route

Cancel Update

Service Type: FW, Ipv4 address: 192.168.50.200 và chọn Add

Chọn Update

Chọn Device

Name	Description	Type	Device Model	Device Templates	Resource Group	Devices Attached	Updated By	Last Updated
C8000v_2_DC_VPN100	C8000v_2_DC_VPN100	Cisco VPN	C8000v	1	global	0	admin	13 Jan 2025 3:1...
C8000v_AAA	C8000v_AAA	Cisco AAA	C8000v	2	global	1	admin	12 Jan 2025 4:0...
C8000v_HQ_EIG...	C8000v_HQ_EIGRP	EIGRP	C8000v	1	global	1	admin	12 Jan 2025 4:0...
C8000v_HQ_VP...	C8000v_HQ_VPN0_Gi3	Cisco VPN Interf...	C8000v	1	global	1	admin	12 Jan 2025 4:0...
C8000v_HQ_VP...	C8000v_HQ_VPN100	Cisco VPN	C8000v	1	global	1	admin	12 Jan 2025 4:0...
C8000v_HQ_VP...	C8000v_HQ_VPN100_Gi...	Cisco VPN Interf...	C8000v	1	global	1	admin	12 Jan 2025 4:0...
C8000v_HQ_VP...	C8000v_HQ_VPN200	Cisco VPN	C8000v	1	global	1	admin	12 Jan 2025 4:0...

Chọn Edit CSR1000v_DC_VRRP

Name ...	Description	Type ...	Device Mode... Role ...	Resource Group	Feature Templates	Draft Mode	Devices Attached	Updated By	Last Updated
ISRV_...	ISRV_Site-2	Feature	ISRV	SDWAN Edge	global	18	Disabled	1	admin 3:10 PM 1/13/2025
ISRV_...	ISRV_Site-3	Feature	ISRV	SDWAN Edge	global	18	Disabled	1	admin 3:10 PM 1/13/2025
vSmart...	vSmart_Template	Feature	vSmart	SDWAN Edge	global	9	Disabled	1	admin 3:10 PM 1/13/2025
CSR1...	CSR1000v_DC_VRRP	Feature	CSR1000v	SDWAN Edge	global	17	Disabled	0	admin 3:11 PM 1/13/2025
CSR1...	CSR1000v_Site-1	Feature	CSR1000v	SDWAN Edge	global	18	Disabled	1	admin 3:11 PM 1/13/2025
C800...	C8000v_DC_VRRP	Feature	C8000v	SDWAN Edge	global	20	Disabled	0	admin 3:11 PM 1/13/2025
C800...	C8000v_HQ	Feature	C8000v	SDWAN Edge	global	19	Disabled	1	admin 3:11 PM 1/13/2025

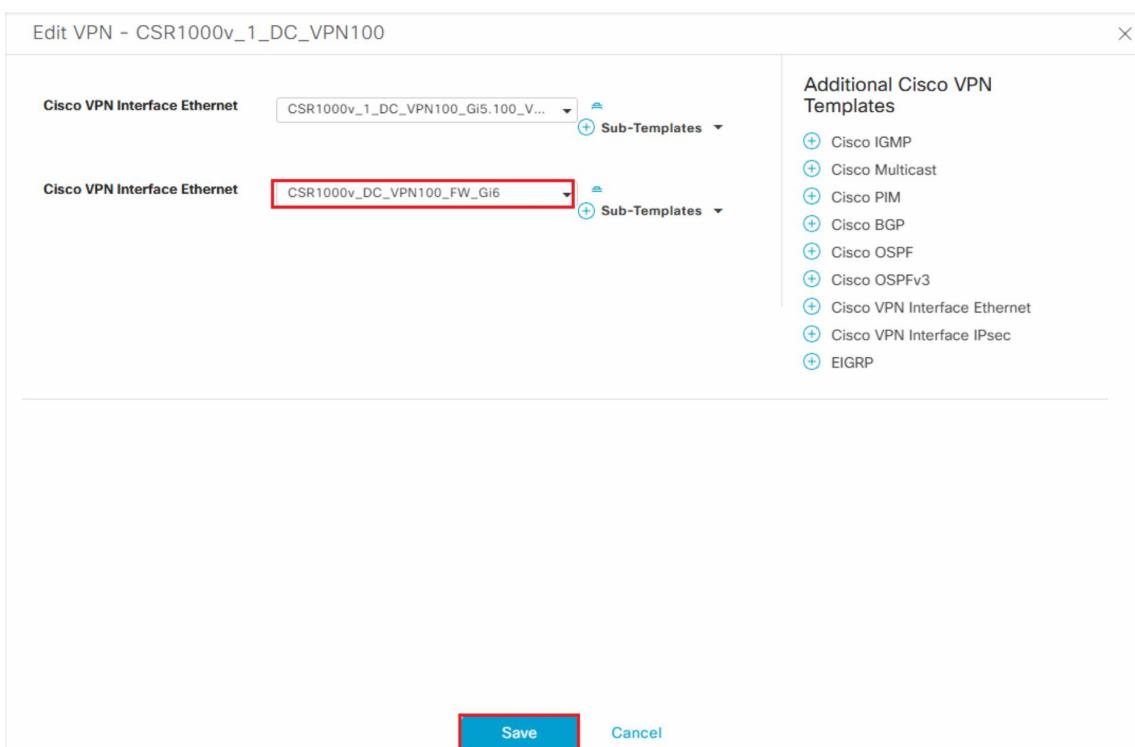
Chọn Edit CSR1000v_1_DC_VPN100

The screenshot shows the Cisco vManage web interface. The URL is https://10.1.1.1:8443/#/app/config/template/device/feature/edit?templateId=2fdf6b00-7749-4d65-9de1-cc7821772425&attached=false. The page title is 'Cisco vManage' and the sub-page title is 'Configuration - Templates'. The 'Service VPN' tab is selected. The main table has columns: ID, Template Name, Sub-Templates, and Actions (Edit, Copy Sub-Templates, More). Two rows are listed: 'c028b02d-af28-4128-9aa6-b6c536094f41' (Template Name: CSR1000v_1_DC_VPN100, Sub-Templates: Cisco VPN Interface Ethernet) and '78914517-3084-41a1-a5d2-172ec3ea92e2' (Template Name: CSR1000v_1_DC_VPN999, Sub-Templates: Cisco VPN Interface Ethernet). The 'Edit' button for the first row is highlighted with a red box.

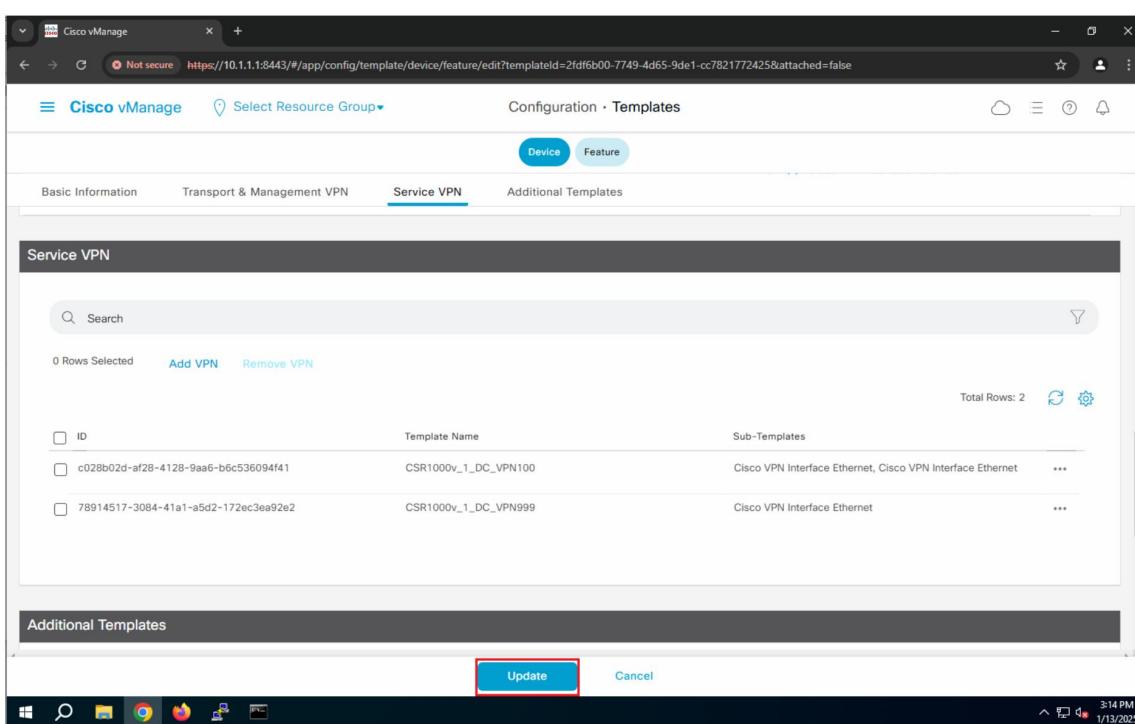
Chọn Cisco VPN Interface Ethernet

The screenshot shows the 'Edit VPN - CSR1000v_1_DC_VPN100' dialog box. At the top, it says 'Edit VPN - CSR1000v_1_DC_VPN100'. Below that is a 'Cisco VPN Interface Ethernet' dropdown menu. To its right is a 'Sub-Templates' dropdown menu showing 'CSR1000v_1_DC_VPN100_Gi5.100_V...'. On the right side of the dialog, there is a sidebar titled 'Additional Cisco VPN Templates' with a list of options: Cisco IGMP, Cisco Multicast, Cisco PIM, Cisco BGP, Cisco OSPF, Cisco OSPFv3, Cisco VPN Interface Ethernet, Cisco VPN Interface IPsec, and EIGRP. The 'Cisco VPN Interface Ethernet' option is highlighted with a red box.

Chọn CSR1000v_DC_VPN100_FW_Gi6 và chọn Save



Chọn Update



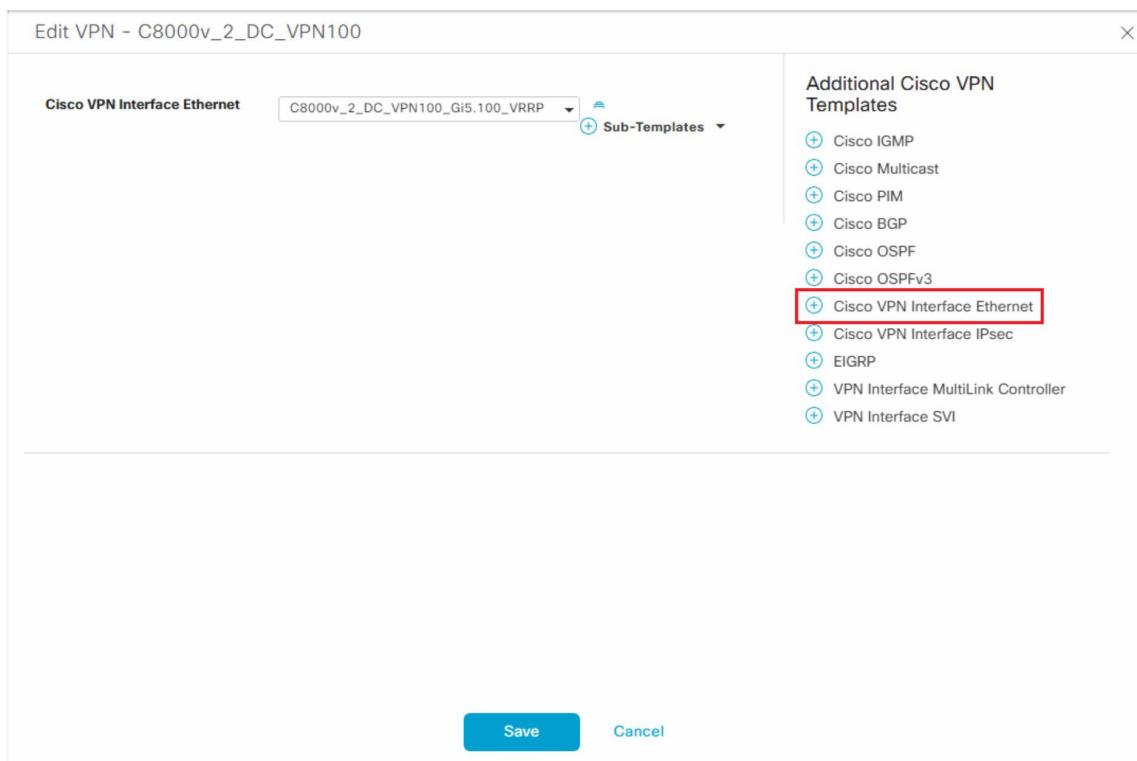
Chọn Edit C8000v_DC_VRRP

Name ...	Description	Type ...	Device Mode...	Device Role ...	Resource Group	Feature Templates	Draft Mode	Devices Attached	Updated By
ISRV...	ISRV_Site-2	Feature	ISRV	SDWAN Edge	global	18	Disabled	1	admin ***
ISRV...	ISRV_Site-3	Feature	ISRV	SDWAN Edge	global	18	Disabled	1	
vSmar...	vSmart_Template	Feature	vSmart	SDWAN Edge	global	9	Disabled	1	
CSR1...	CSR1000v_DC_VRRP	Feature	CSR1000v	SDWAN Edge	global	18	Disabled	0	
CSR1...	CSR1000v_Site-1	Feature	CSR1000v	SDWAN Edge	global	18	Disabled	1	
C800...	C8000v_DC_VRRP	Feature	C8000v	SDWAN Edge	global	20	Disabled	0	admin ***
C800...	C8000v_HQ	Feature	C8000v	SDWAN Edge	global	19	Disabled	1	admin ***

Chọn Edit C8000v_2_DC_VPN100

ID	Template Name	Sub-Templates
684feeeb-2280-4ac9-90eb-fba329e48ee5	C8000v_2_DC_VPN100	Cisco VPN Interface Ethernet
e1f3c946-bab0-40e9-86b0-7393e69bb05e	C8000v_2_DC_VPN999	Cisco VPN Interface Ethernet

Chọn Cisco VPN Interface Ethernet



Edit VPN - C8000v_2_DC_VPN100

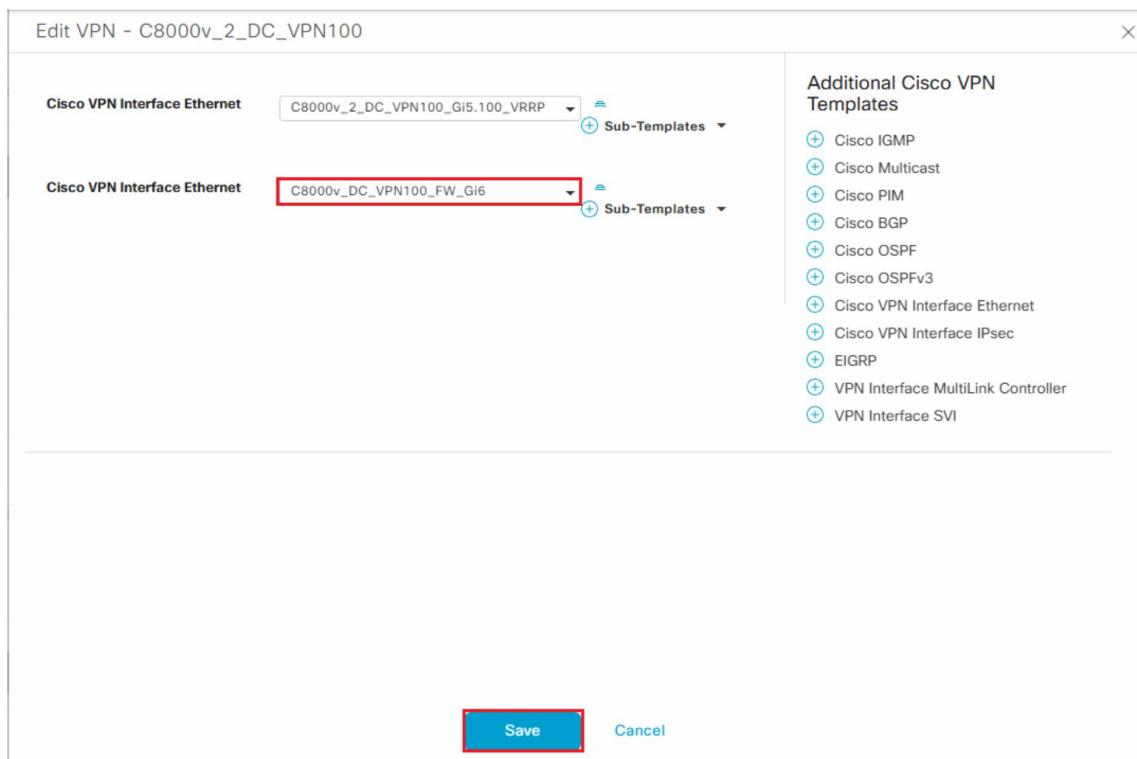
Cisco VPN Interface Ethernet C8000v_2_DC_VPN100_Gi5.100_VRRP Sub-Templates

Additional Cisco VPN Templates

- + Cisco IGMP
- + Cisco Multicast
- + Cisco PIM
- + Cisco BGP
- + Cisco OSPF
- + Cisco OSPFv3
- + **Cisco VPN Interface Ethernet**
- + Cisco VPN Interface IPsec
- + EIGRP
- + VPN Interface MultiLink Controller
- + VPN Interface SVI

Save Cancel

Chọn C8000v_DC_VPN100_FW_Gi6 và chọn Save



Edit VPN - C8000v_2_DC_VPN100

Cisco VPN Interface Ethernet C8000v_2_DC_VPN100_Gi5.100_VRRP Sub-Templates

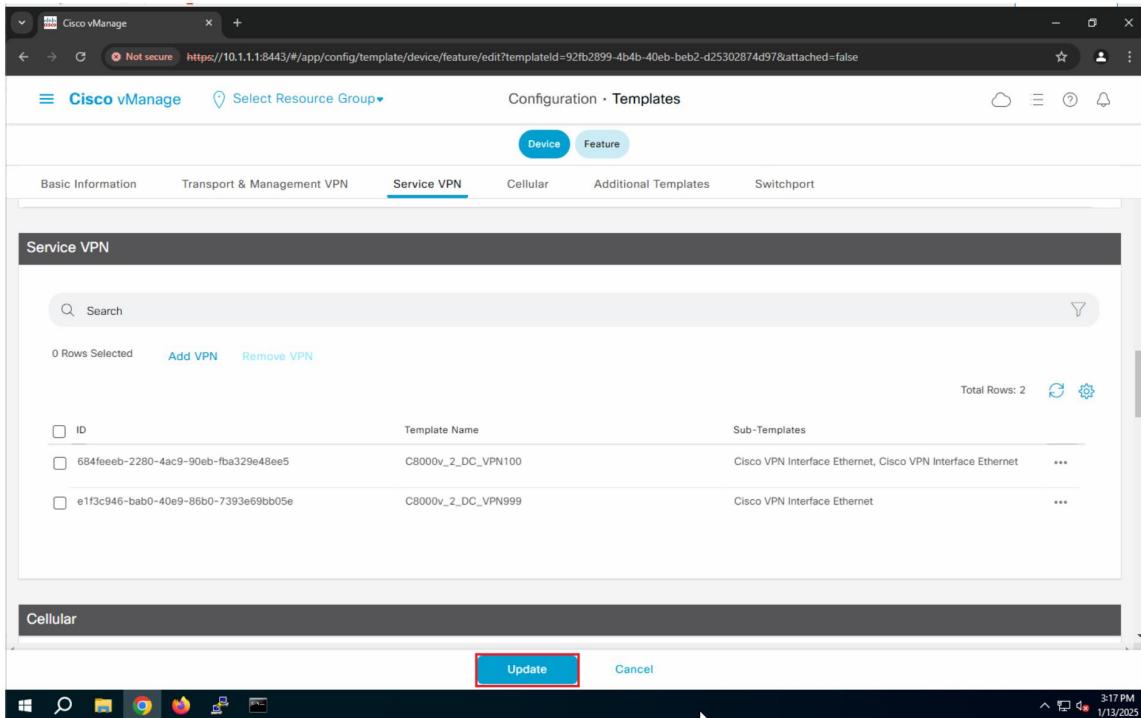
Cisco VPN Interface Ethernet C8000v_DC_VPN100_FW_Gi6 Sub-Templates

Additional Cisco VPN Templates

- + Cisco IGMP
- + Cisco Multicast
- + Cisco PIM
- + Cisco BGP
- + Cisco OSPF
- + Cisco OSPFv3
- + Cisco VPN Interface Ethernet
- + Cisco VPN Interface IPsec
- + EIGRP
- + VPN Interface MultiLink Controller
- + VPN Interface SVI

Save Cancel

Chọn Update

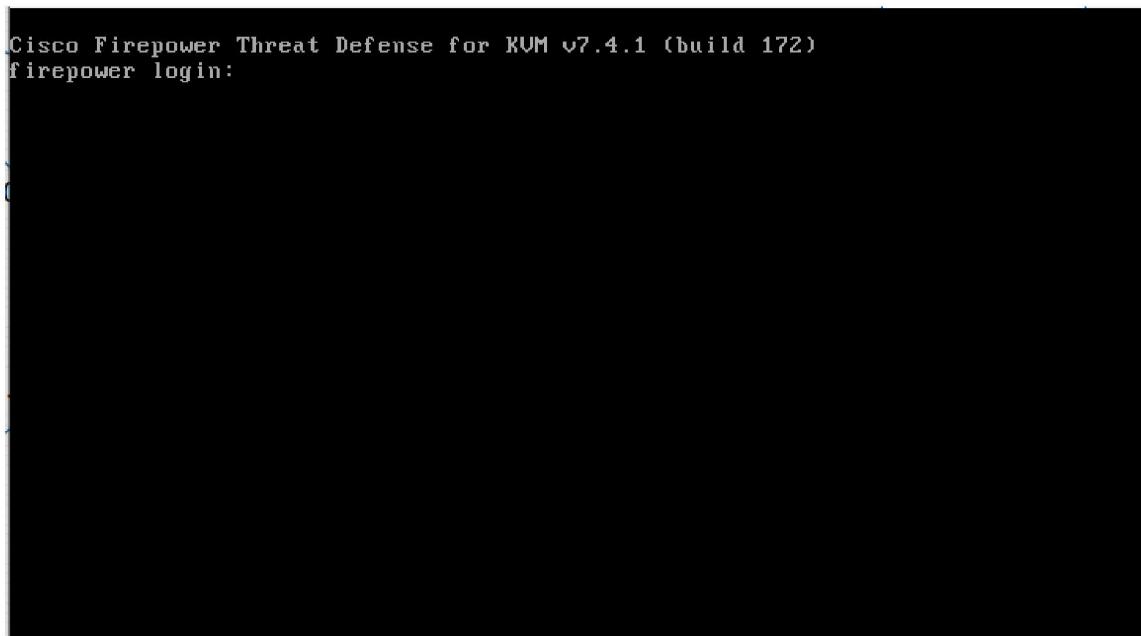


The screenshot shows the Cisco vManage web interface. The URL is https://10.1.1.1:8443/#/app/config/template/device/feature/edit?templateId=92fb2899-4b4b-40eb-beb2-d25302874d97&attached=false. The page title is Configuration - Templates. Under the Service VPN tab, there are two entries:

ID	Template Name	Sub-Templates
684feeeb-2280-4ac9-90eb-fba329e48ee5	C8000v_2_DC_VPN100	Cisco VPN Interface Ethernet, Cisco VPN Interface Ethernet
e1f3c946-bab0-40e9-86b0-7393e69bb05e	C8000v_2_DC_VPN999	Cisco VPN Interface Ethernet

At the bottom of the table, there are 'Update' and 'Cancel' buttons. The 'Update' button is highlighted with a red box.

Ở giao diện FTD, chúng ta đăng nhập với admin/Admin123



Chọn Enter và Chọn Enter

```
You must accept the EULA to continue.  
Press <ENTER> to display the EULA: Enter  
End User License Agreement  
  
Effective: May 10, 2022  
  
Secure Firewall Terms and Conditions  
By clicking 'Accept' below or using this Cisco Technology, you agree that such  
use is governed by the Cisco End User License Agreement and applicable Product  
Specific Terms available at:  
https://www.cisco.com/c/en/us/about/legal/cloud-and-software/software-terms.html  
  
You also acknowledge that you have read the Cisco Privacy Statement at:  
https://www.cisco.com/c/en/us/about/legal/privacy-full.html  
  
If you are a Cisco partner accepting on behalf of an end customer, you must  
inform the end customer that the EULA applies to such end customer's use of the  
Cisco Technology and provide the end customer with access to all relevant terms.  
If you do not have authority to bind your company and its affiliates, or if you  
do not agree with the terms of the EULA, do not click 'Accept' and do not use  
the Cisco Technology.  
  
Please enter 'YES' or press <ENTER> to AGREE to the EULA: Enter
```

Đổi password

```
Please enter 'YES' or press <ENTER> to AGREE to the EULA:  
  
System initialization in progress. Please stand by.  
For system security, you must change the admin password before configuring this  
device.  
  
Password must meet the following criteria:  
- At least 8 characters  
- At least 1 lower case letter  
- At least 1 upper case letter  
- At least 1 digit  
- At least 1 special character such as @#*-_*!  
- No more than 2 sequentially repeated characters  
- Not based on a simple character sequence or a string in password cracking dict  
ionary  
Enter new password: VnPro@123  
Confirm new password: VnPro@123  
Password successfully changed for the admin user.  
  
You must configure the network to continue.  
Configure at least one of IPv4 or IPv6 unless managing via data interfaces.  
Do you want to configure IPv4? (y/n) [y]:
```

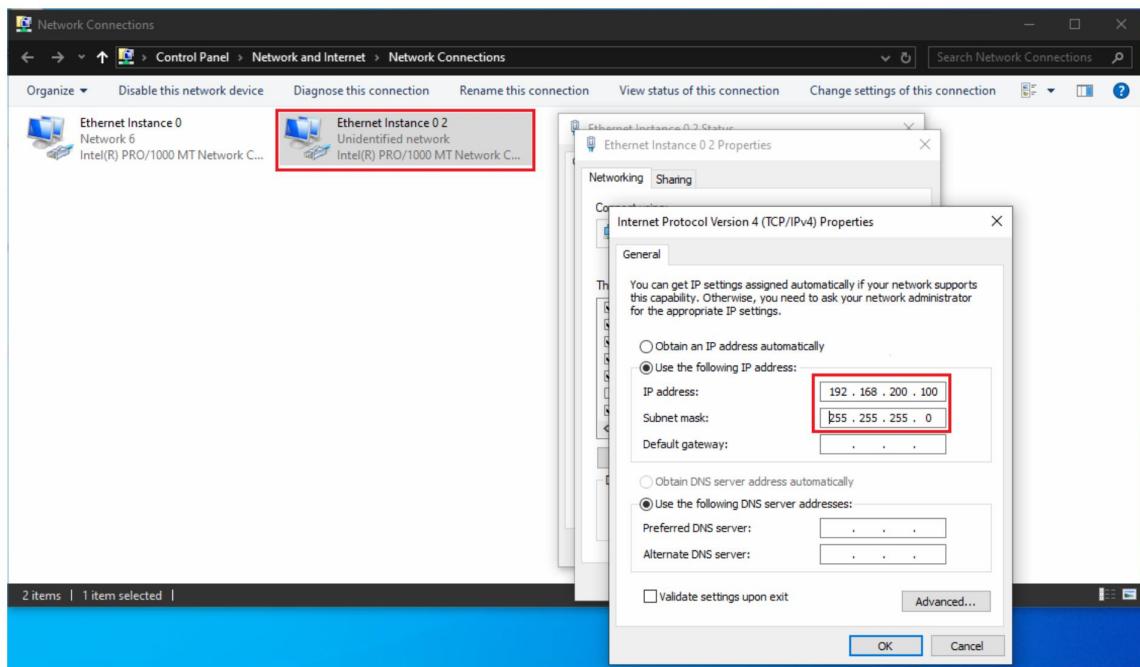
Sau đó điền thông tin như hình

```
Password successfully changed for the admin user.

You must configure the network to continue.
Configure at least one of IPv4 or IPv6 unless managing via data interfaces.
Do you want to configure IPv4? (y/n) [y]: y
Do you want to configure IPv6? (y/n) [n]: 
Configure IPv4 via DHCP or manually? (dhcp/manual) [manual]: manual
Enter an IPv4 address for the management interface [192.168.45.45]: 192.168.200.200
Enter an IPv4 netmask for the management interface [255.255.255.0]: 
Enter the IPv4 default gateway for the management interface [192.168.45.1]: 192.168.200.1
Enter a fully qualified hostname for this system [firepower]: FTD
Enter a comma-separated list of DNS servers or 'none' [208.67.222.222,208.67.220.220,2620:119:35::35]: 123.123.123.123
Enter a comma-separated list of search domains or 'none' []:
If your networking information has changed, you will need to reconnect.
For HTTP Proxy configuration, run 'configure network http-proxy'

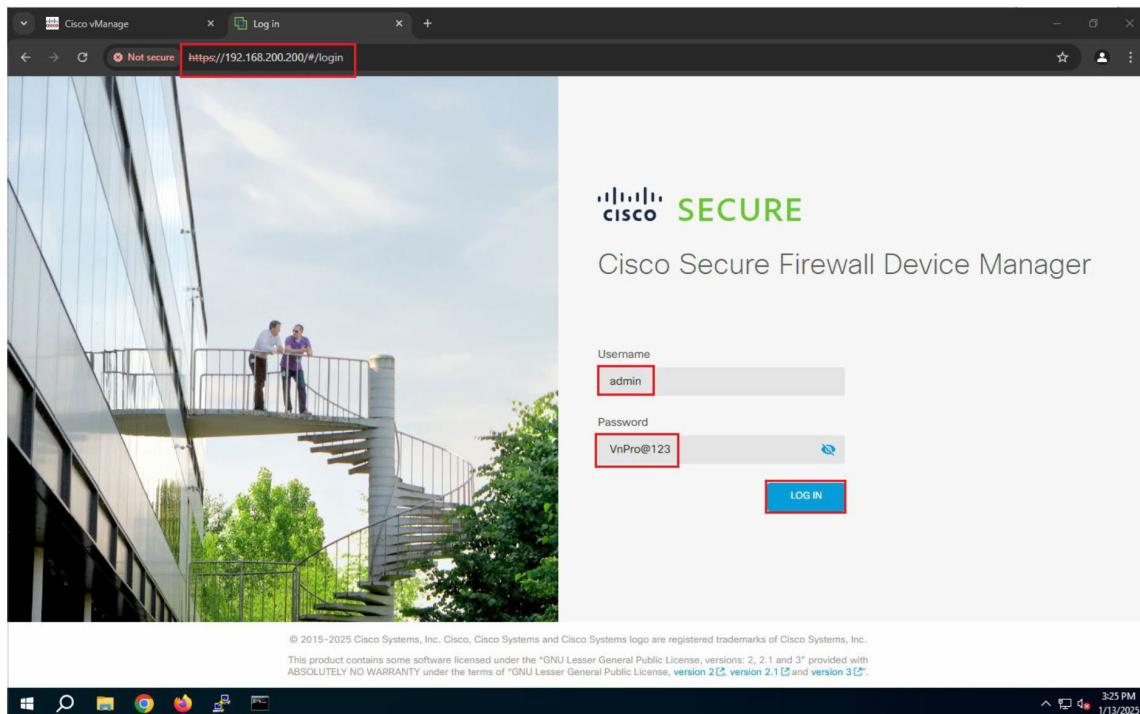
Manage the device locally? (yes/no) [yes]: yes
Configuring firewall mode to routed
```

Sau đó cấu hình ip cho card mạng thứ 2 của WIN-PC

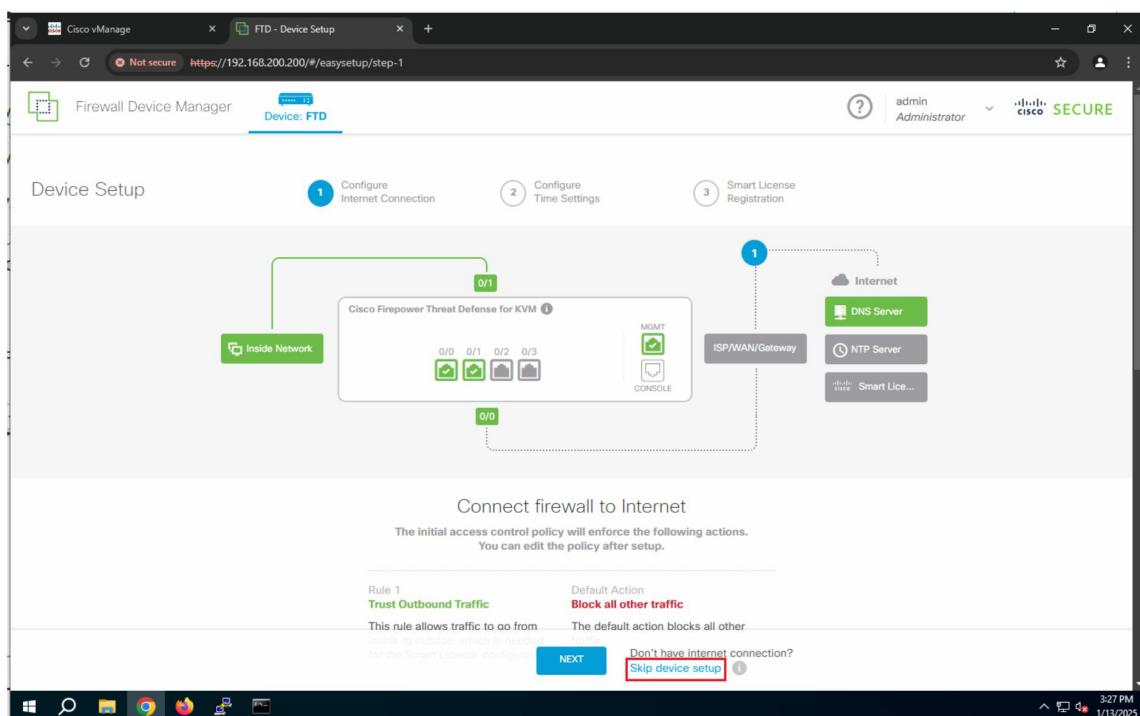


Mở một tab Google mới, nhập địa chỉ quản trị FTD: <https://192.168.200.200>

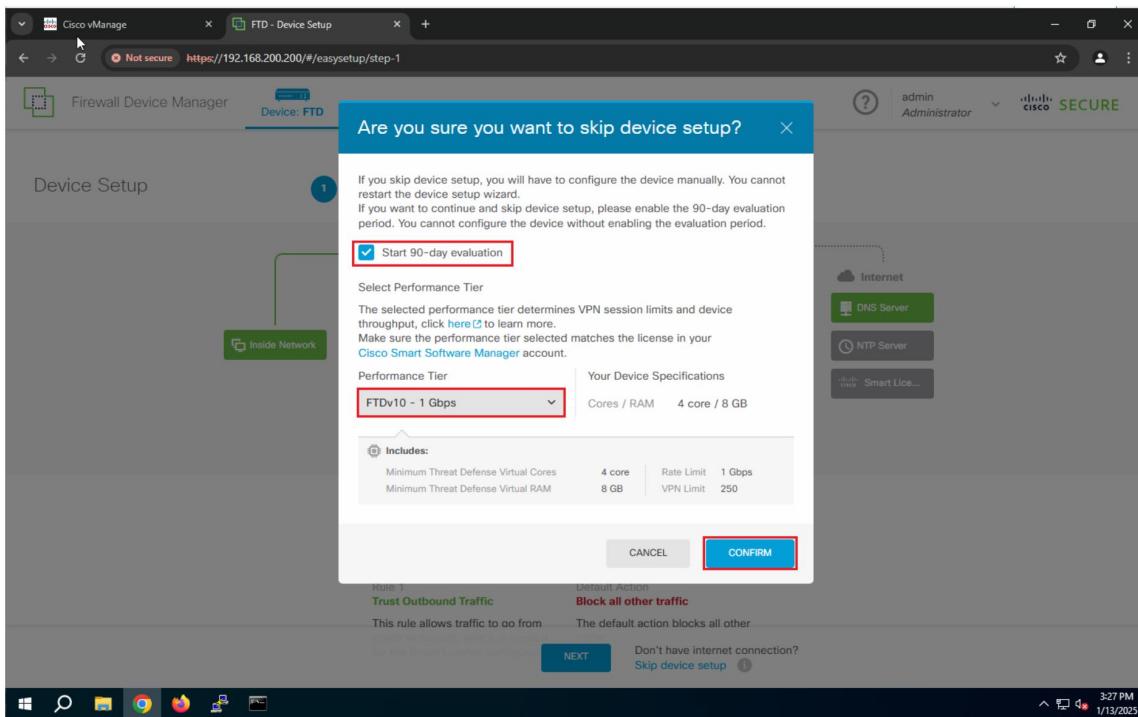
Sau đó đăng nhập admin/VnPro@123 và chọn Login



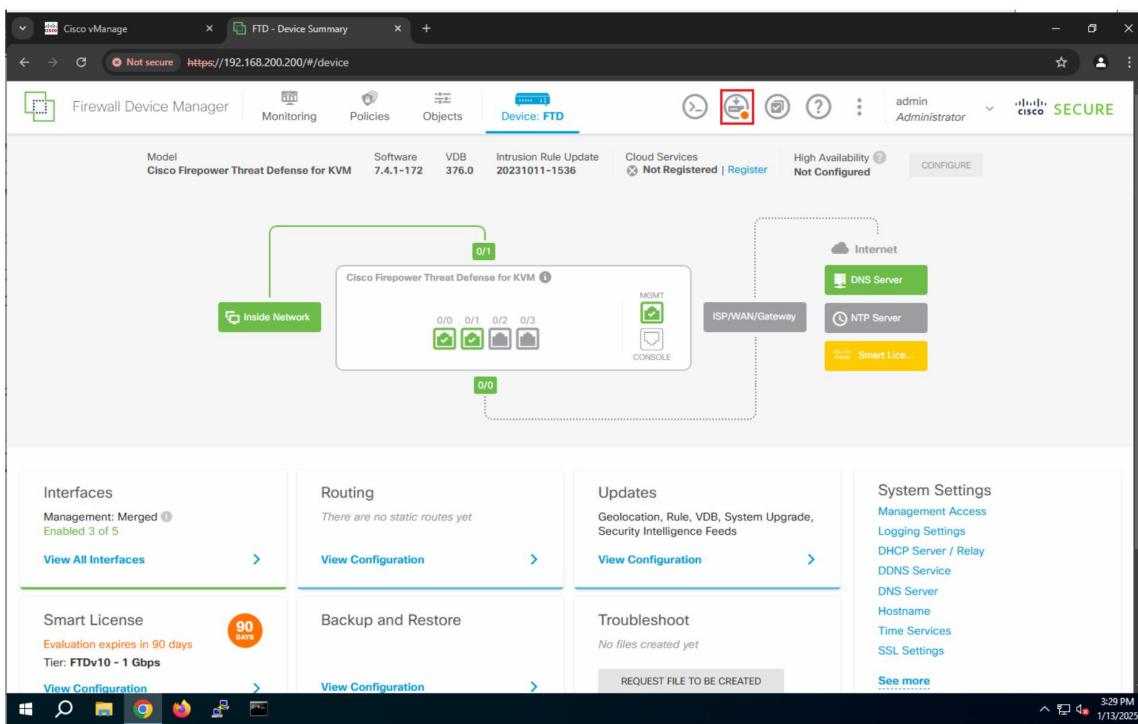
Chọn Skip device setup



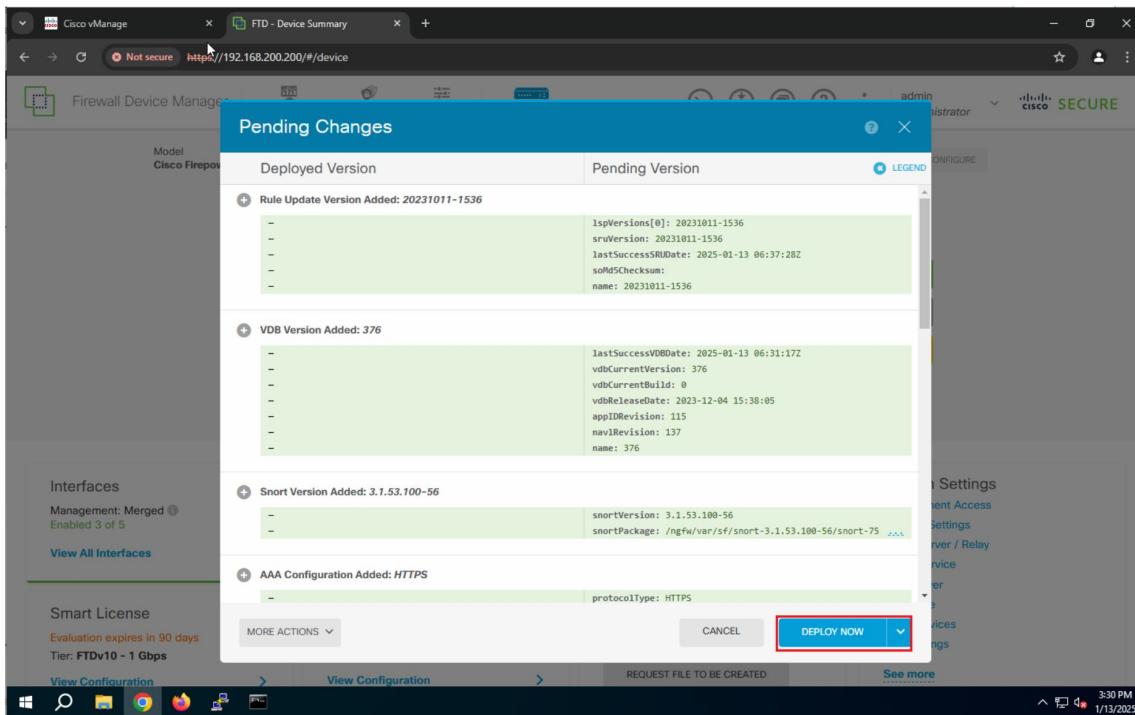
Tích như hình và chọn Confirm



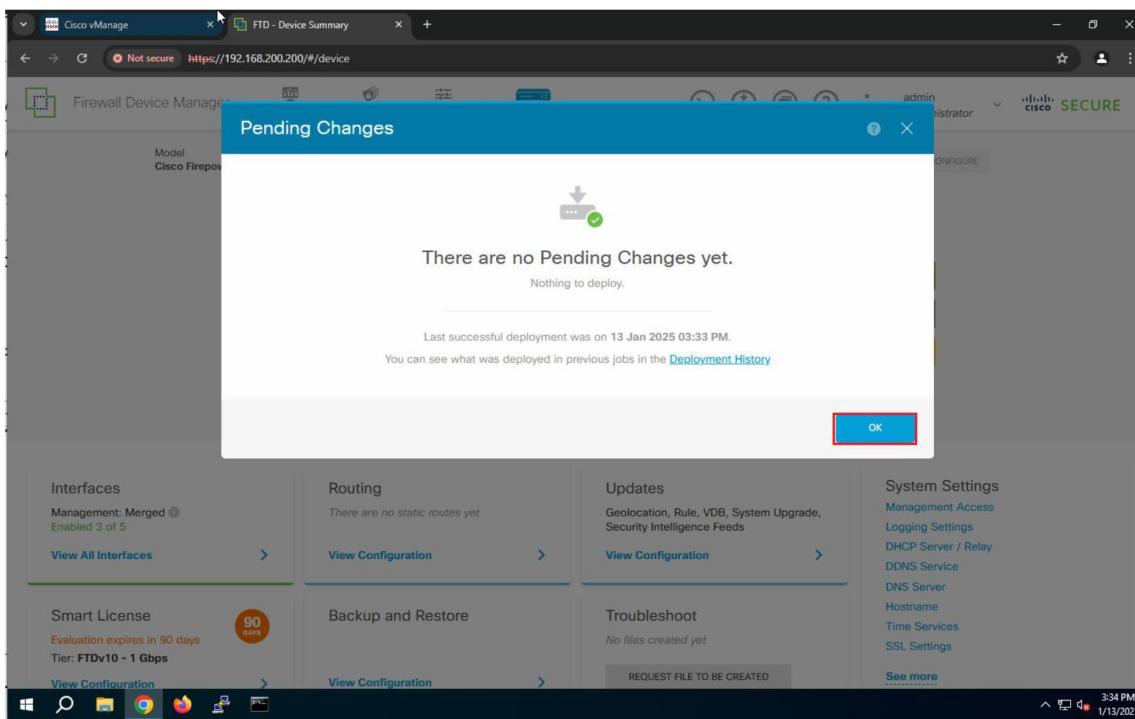
Tích chọn Deployment



Chọn Deploy Now



Chọn OK



Chọn View All Interfaces

The screenshot shows the Cisco vManage interface for a device named "FTD". The top navigation bar includes Firewall Device Manager, Monitoring, Policies, Objects, and Device: FTD. The main content area displays the device summary for "Cisco Firepower Threat Defense for KVM" with software version 7.4.1-172 and VDB 376.0. It shows an intrusion rule update from 20231011-1538, cloud services status, and high availability settings. Below this is a network diagram with interfaces G0/1 (inside network), G0/0 (ISP/WAN/Gateway), and management ports. A callout highlights the "View All Interfaces" button in the "Interfaces" section of the sidebar.

Xóa cấu hình G0/1 và chọn Edit G0/0

The screenshot shows the Cisco vManage interface for the "Interfaces" tab of the FTD device. It lists five interfaces: GigabitEthernet0/0, GigabitEthernet0/1, GigabitEthernet0/2, GigabitEthernet0/3, and Management0/0. The "Edit" icon for GigabitEthernet0/0 is highlighted with a red box. The table columns include NAME, LOGICAL NAME, STATUS, MODE, IP ADDRESS, STANDBY ADDRESS, MONITOR FOR HA, and ACTIONS.

NAME	LOGICAL NAME	STATUS	MODE	IP ADDRESS	STANDBY ADDRESS	MONITOR FOR HA	ACTIONS
> <input checked="" type="checkbox"/> GigabitEthernet0/0	outside	<input checked="" type="checkbox"/>	Routed			Enabled	
> <input type="checkbox"/> GigabitEthernet0/1		<input type="checkbox"/>	Routed			Enabled	
> <input type="checkbox"/> GigabitEthernet0/2		<input type="checkbox"/>	Routed			Enabled	
> <input type="checkbox"/> GigabitEthernet0/3		<input type="checkbox"/>	Routed			Enabled	
> <input checked="" type="checkbox"/> Management0/0	management	<input checked="" type="checkbox"/>	Routed	192.168.200.200 <small>Static</small>	Not Applicable	Enabled	

Chọn Type Static, điền IP: 192.168.50.200/255.255.255.0 và chọn OK

GigabitEthernet0/0
Edit Physical Interface

Interface Name Mode Status

outside Routed

Most features work with named interfaces only, although some require unnamed interfaces.

Description

IPv4 Address IPv6 Address Advanced

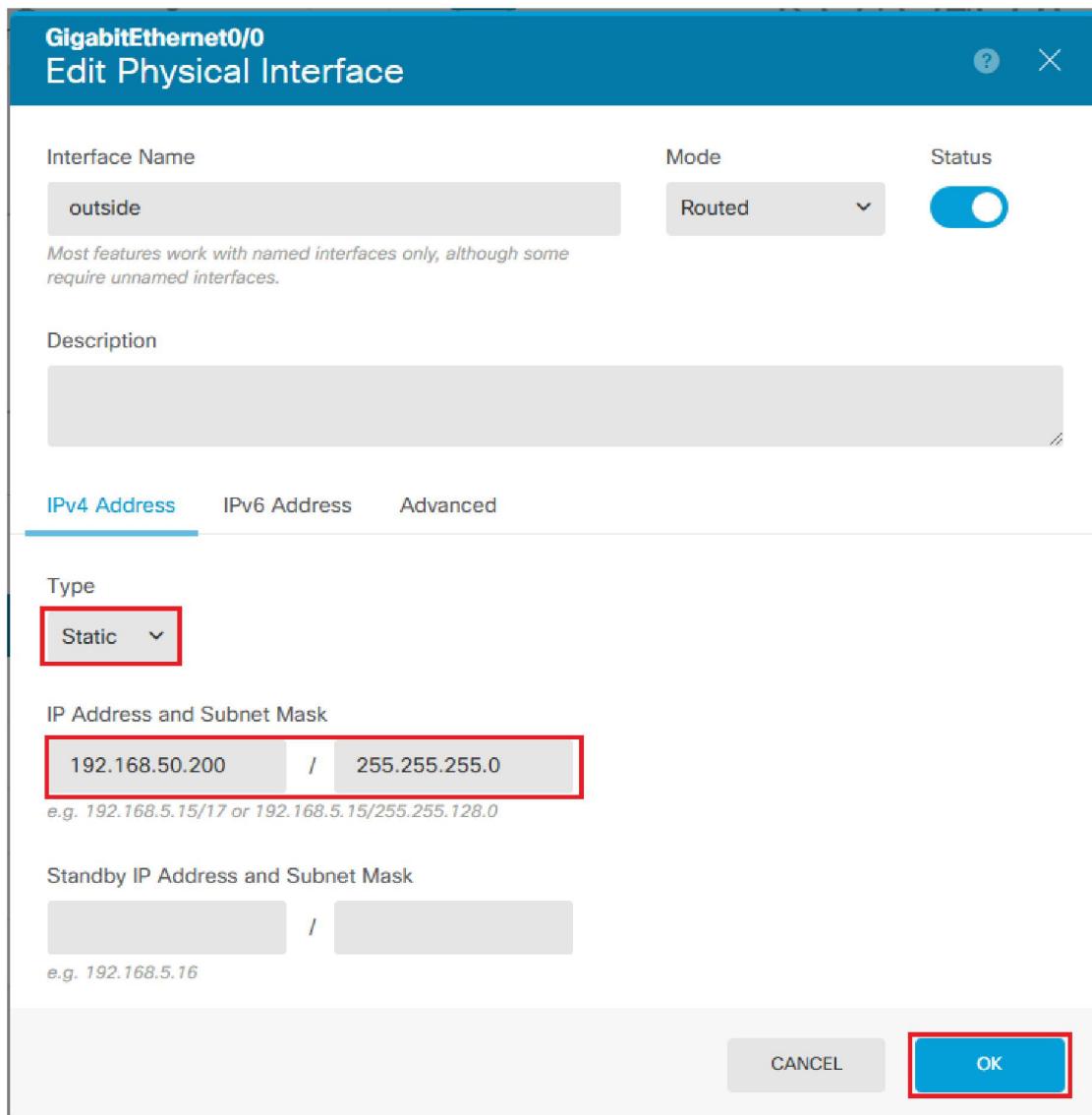
Type Static

IP Address and Subnet Mask 192.168.50.200 / 255.255.255.0

e.g. 192.168.5.15/17 or 192.168.5.15/255.255.128.0

Standby IP Address and Subnet Mask /
e.g. 192.168.5.16

CANCEL OK



Chọn View Configuration Routing

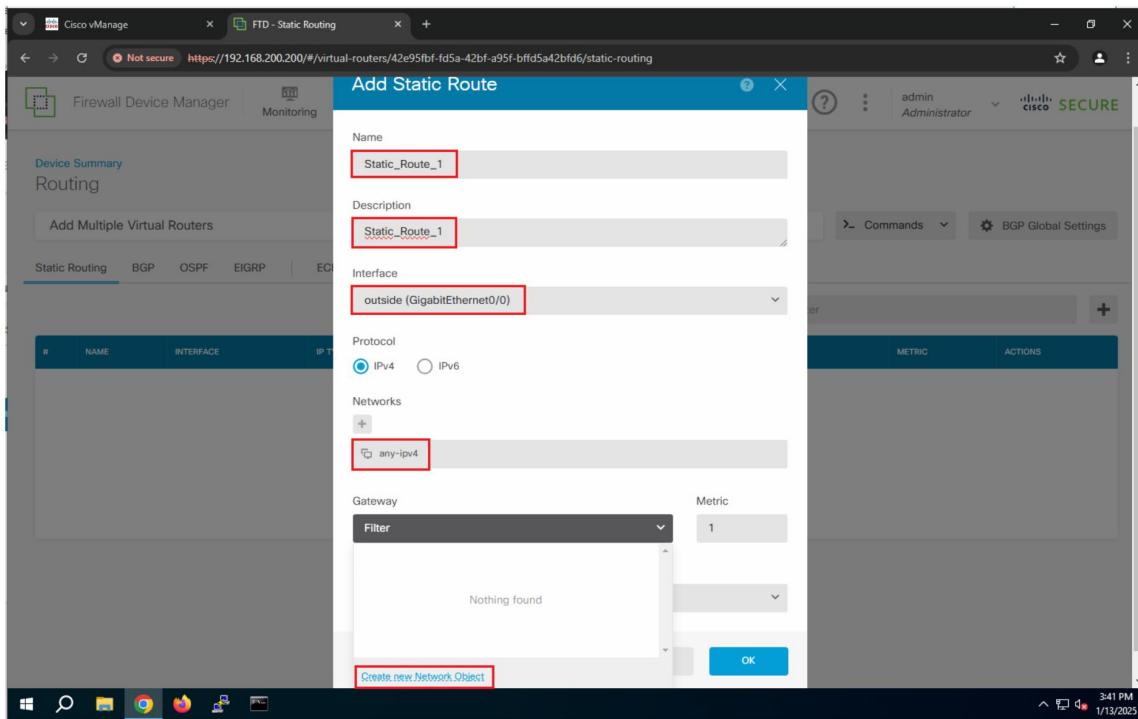
The screenshot shows the Cisco vManage interface for a Cisco Firepower Threat Defense for KVM device. The top navigation bar includes tabs for Firewall Device Manager, Monitoring, Policies, Objects, and Device: FTD. The Device: FTD tab is selected. Below the tabs, device details are displayed: Model Cisco Firepower Threat Defense for KVM, Software 7.4.1-172, VDB 376.0, Intrusion Rule Update 20231011-1536, Cloud Services Not Registered | Register, and High Availability Not Configured. A configuration icon labeled 'CONFIGURE' is also present.

The main content area displays a network diagram with the device as the central node. It shows interfaces 0/0, 0/1, 0/2, 0/3, and CONSOLE. A note indicates 'No interface named "inside"'. To the right, there are icons for Internet, DNS Server, NTP Server, and Smart License. Below the device diagram, several cards provide quick access to management functions: Interfaces, Routing (View Configuration highlighted with a red box), Updates, System Settings, Smart License, Backup and Restore, Troubleshoot, and REQUEST FILE TO BE CREATED.

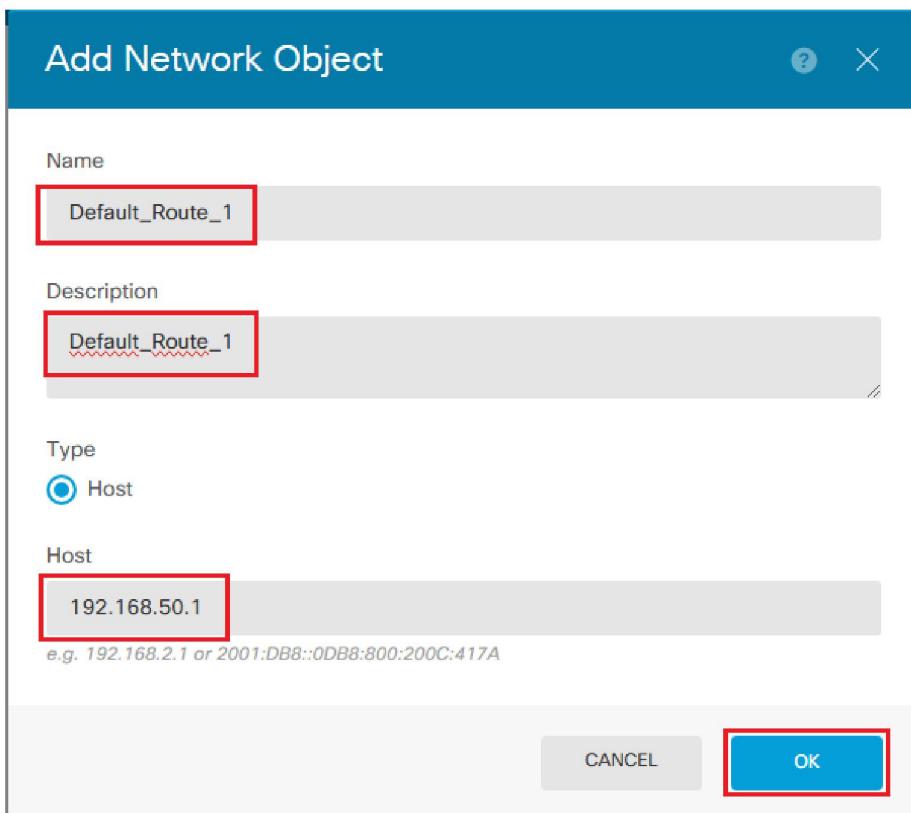
Chọn Create Static Route

The screenshot shows the Cisco vManage interface for static routing configuration. The top navigation bar includes tabs for Firewall Device Manager, Monitoring, Policies, Objects, and Device: FTD. The Device: FTD tab is selected. Below the tabs, the 'Device Summary' and 'Routing' sections are visible. Under Routing, the 'Static Routing' tab is selected. A message states 'There are no static routes yet.' followed by 'Start by creating the first static route.' A prominent blue 'CREATE STATIC ROUTE' button is highlighted with a red box.

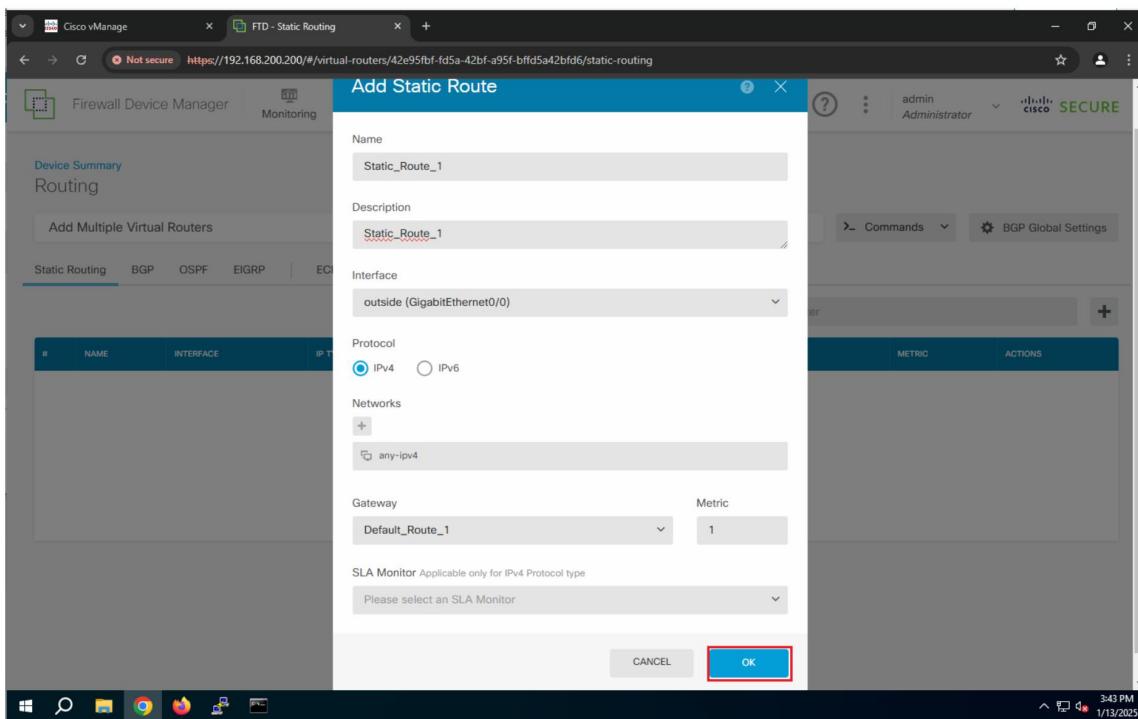
Điền như hình và chọn Create new Network Object



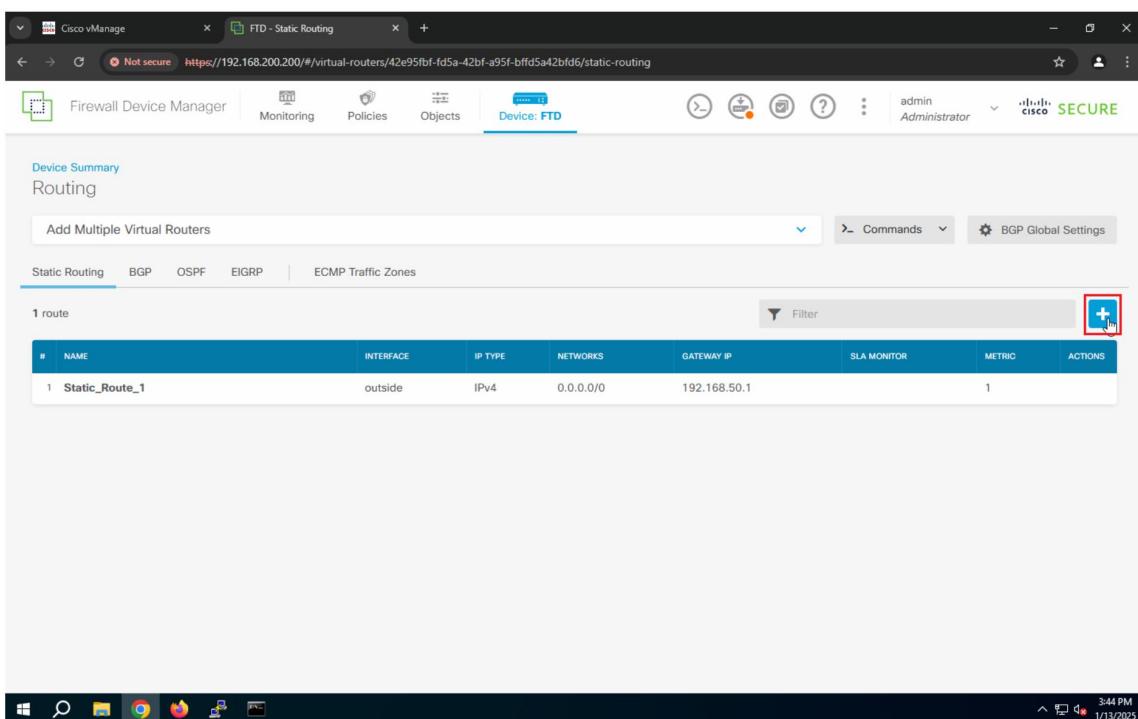
Điền như hình và chọn OK



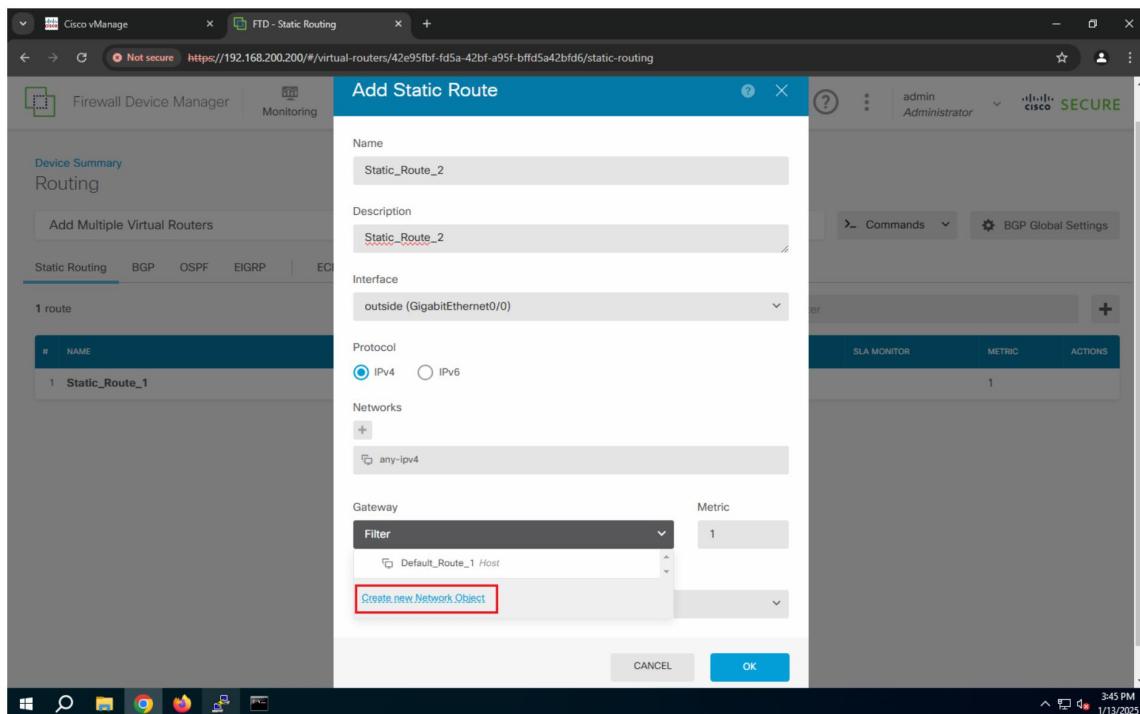
Chọn OK



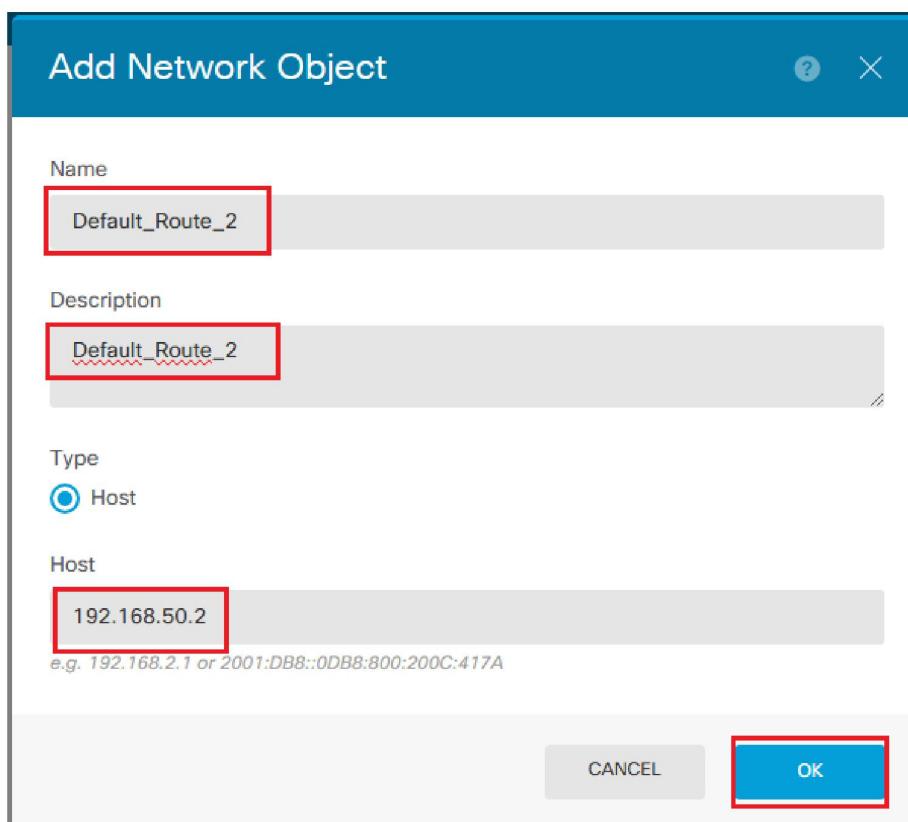
Chọn Add new Satic Routing



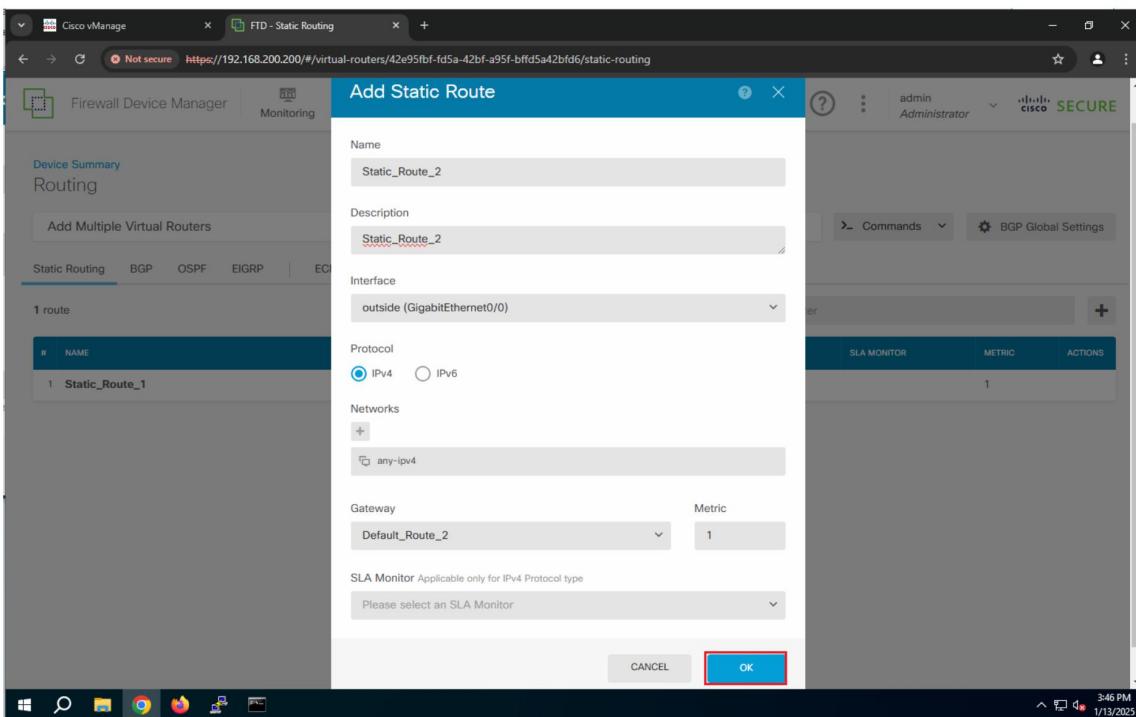
Dièn nhu hình và chọn Create new Network Object



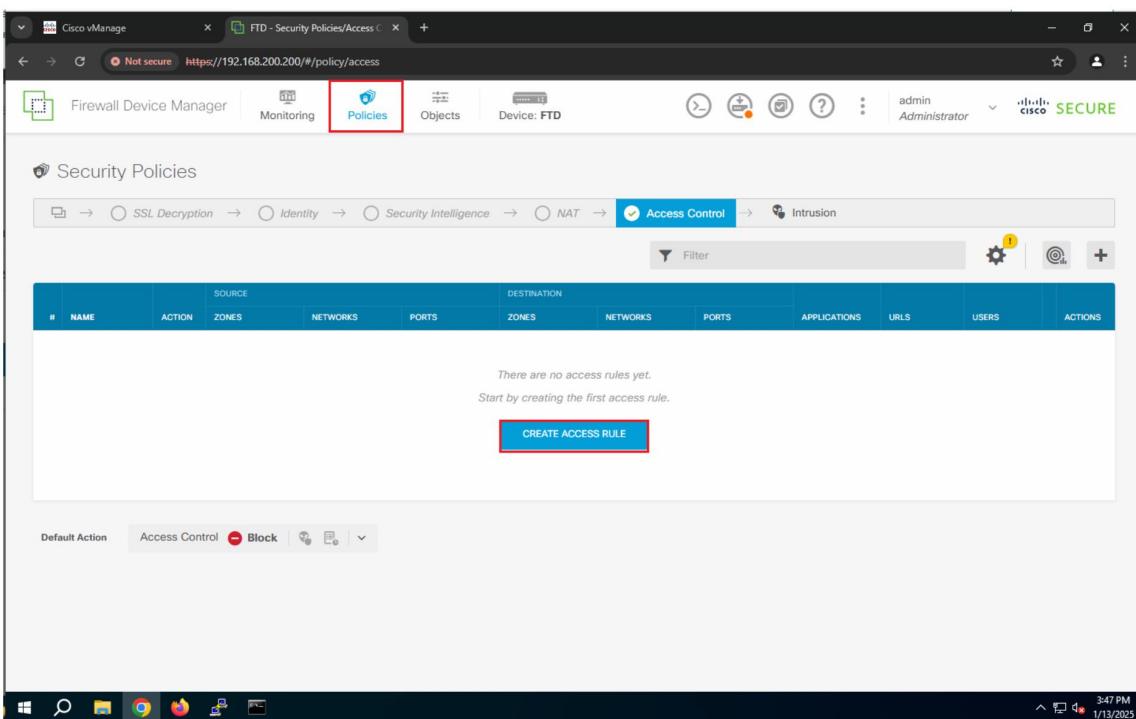
Dièn nhu hình và chọn OK



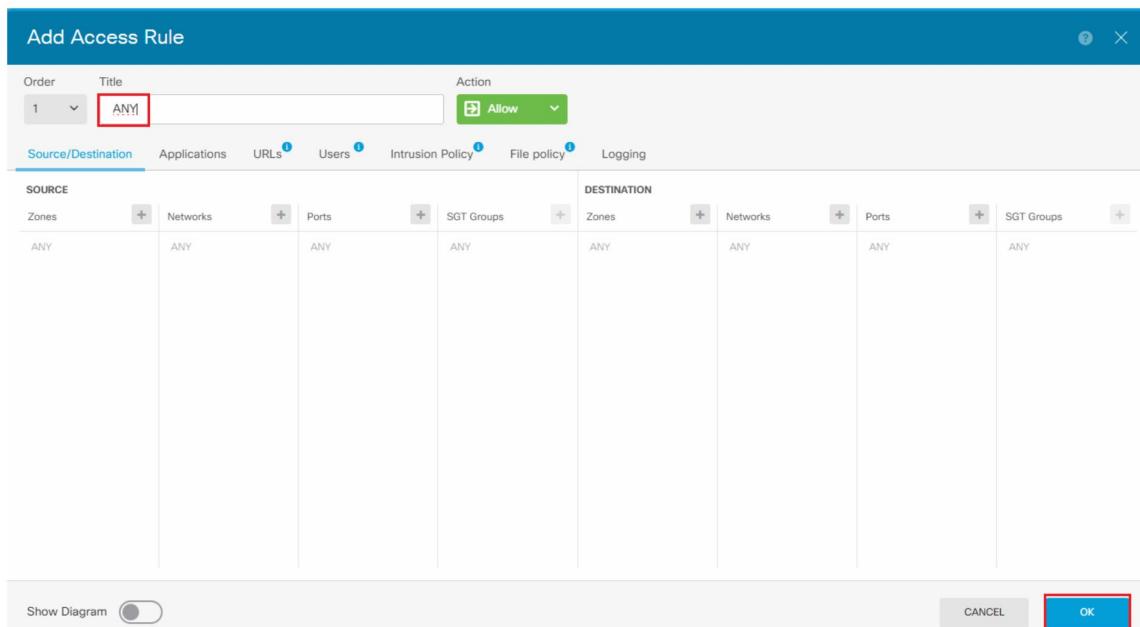
Chọn Ok



Chọn Policies và chọn Create Access Rule



Điền tên Access Rule: ANY và chọn OK



Add Access Rule

Order	Title	Action
1	ANY	Allow

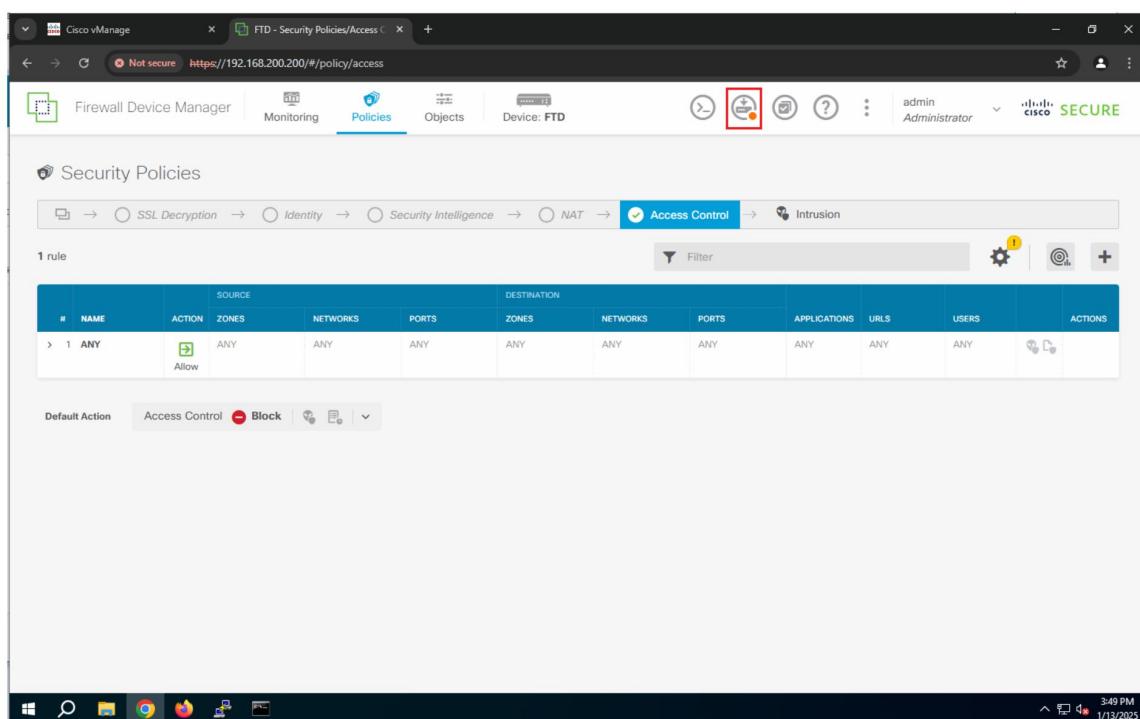
Source/Destination Applications URLs¹ Users¹ Intrusion Policy¹ File policy¹ Logging

SOURCE DESTINATION

Zones	Networks	Ports	SGT Groups	Zones	Networks	Ports	SGT Groups
ANY	ANY	ANY	ANY	ANY	ANY	ANY	ANY

Show Diagram CANCEL OK

Chọn Deployment



Cisco vManage FTD - Security Policies/Access Policies Monitoring Objects Device: FTD admin Administrator SECURE

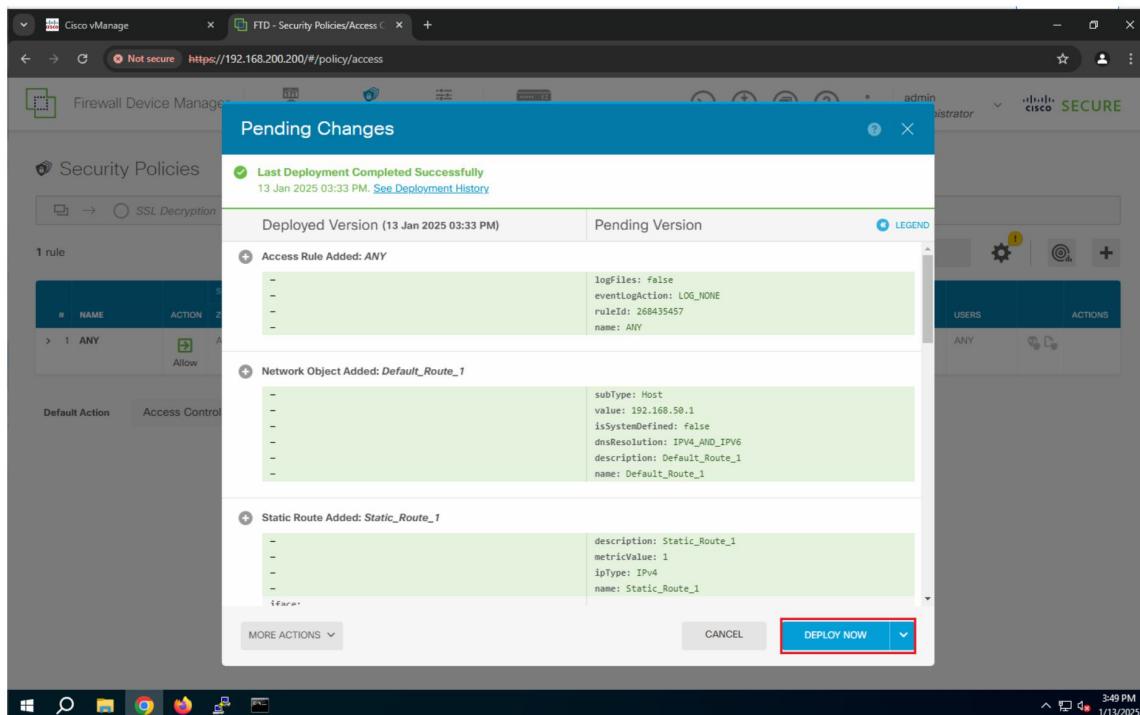
Security Policies

1 rule

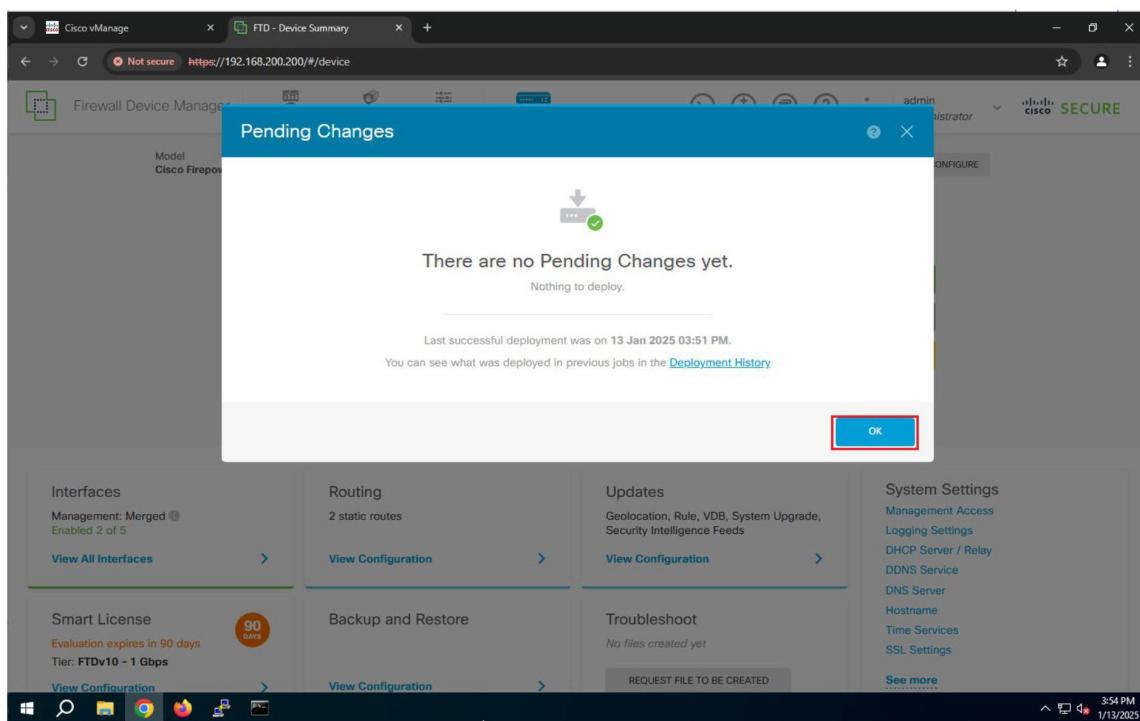
#	NAME	ACTION	SOURCE ZONES	NETWORKS	PORTS	DESTINATION ZONES	NETWORKS	PORTS	APPLICATIONS	URLS	USERS	ACTIONS
>	1 ANY	Allow	ANY	ANY	ANY	ANY	ANY	ANY	ANY	ANY	ANY	

Default Action Access Control Block

Chọn Deploy Now



Deploy thành công, chọn OK



Quay lại vManage

Chọn Attach Device CSR1000v_DC_VRRP

Name ...	Description	Type ...	Device Mode...	Device Role ...	Resource Group	Feature Templates	Draft Mode	Devices Attached	User	Action
ISRv...	ISRv_Site-2	Feature	ISRv	SDWAN Edge	global	18	Disabled	1	admin	...
ISRv...	ISRv_Site-3	Feature	ISRv	SDWAN Edge	global	18	Disabled	1	admin	...
vSmar...	vSmart_Template	Feature	vSmart	SDWAN Edge	global	9	Disabled	1	admin	...
CSR1...	CSR1000v_DC_VRRP	Feature	CSR1000v	SDWAN Edge	global	18	Disabled	0	admin	...
CSR1...	CSR1000v_Site-1	Feature	CSR1000v	SDWAN Edge	global	18	Disabled	1	admin	...
C800...	C8000v_DC_VRRP	Feature	C8000v	SDWAN Edge	global	21	Disabled	0	admin	...
C800...	C8000v_HQ	Feature	C8000v	SDWAN Edge	global	19	Disabled	1	admin	...

Chọn CSR-1-DC và chọn Attach

Attach Devices

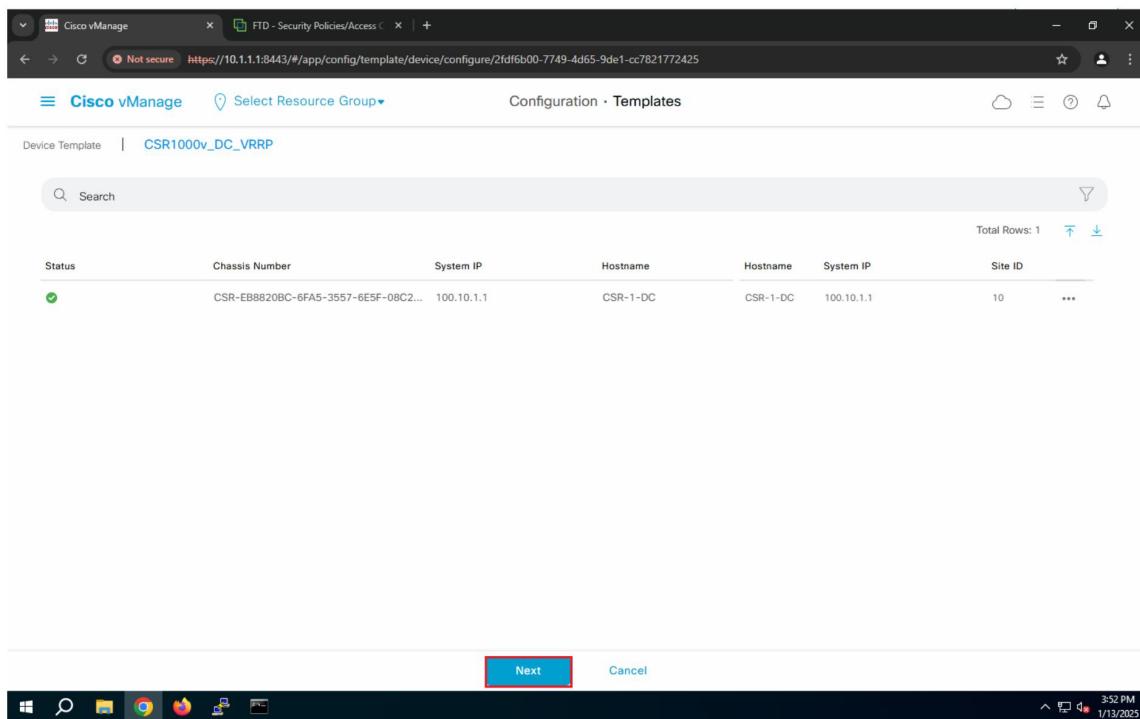
Attach device from the list below

Available Devices	Selected Devices
All	All
Name	Name
CSR-05243A81-BD3E-C76B-6CF3-B5893F100D399	CSR-05243A81-BD3E-C76B-6CF3-B5893F100D399
CSR-38FAFFE1-66CF-74C5-EB2A-C6CBC5A4728A	CSR-38FAFFE1-66CF-74C5-EB2A-C6CBC5A4728A
CSR-3DE7683F-119E-170C-F1F0-E529DFA8BBDE	CSR-3DE7683F-119E-170C-F1F0-E529DFA8BBDE
CSR-4AC77297-5692-E86D-0F0C-9A30B906EFEF	CSR-4AC77297-5692-E86D-0F0C-9A30B906EFEF
CSR-4E405FFA-3C79-F94B-DAF9-C58EF04C3ADA	CSR-4E405FFA-3C79-F94B-DAF9-C58EF04C3ADA
CSR-6E4D05FA-3A15-9BE5-1093-727F0DF36D93	CSR-6E4D05FA-3A15-9BE5-1093-727F0DF36D93
CSR-A77A7607-0CFD-FB18-8FF8-4837CDA2EAD3	CSR-A77A7607-0CFD-FB18-8FF8-4837CDA2EAD3
CSR-Site-1	CSR-Site-1
1.1.1.1	1.1.1.1

1 Items Selected

Attach Cancel

Chọn Next

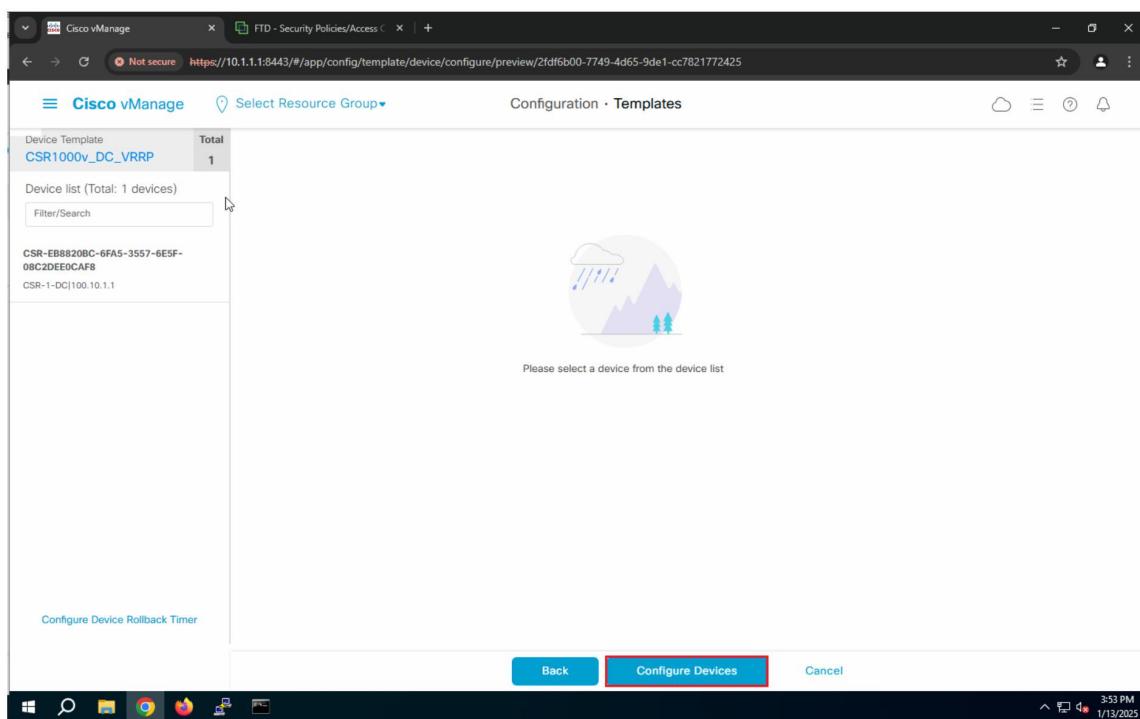


The screenshot shows the Cisco vManage web interface. The URL is https://10.1.1.8443/#/app/config/template/device/configure/2fdf6b00-7749-4d65-9de1-cc7821772425. The page title is "Configuration - Templates". The sub-page title is "Device Template" and "CSR1000v_DC_VRRP". There is a search bar and a "Total Rows: 1" indicator. A table displays the following data:

Status	Chassis Number	System IP	Hostname	Hostname	System IP	Site ID
✓	CSR-EB8820BC-6FA5-3557-6E5F-08C2...	100.10.1.1	CSR-1-DC	CSR-1-DC	100.10.1.1	10 ***

At the bottom right of the table area, there are "Next" and "Cancel" buttons. The "Next" button is highlighted with a red box.

Chọn Configure Devices



The screenshot shows the Cisco vManage web interface. The URL is https://10.1.1.8443/#/app/config/template/device/configure/preview/2fdf6b00-7749-4d65-9de1-cc7821772425. The page title is "Configuration - Templates". The sub-page title is "Device Template" and "CSR1000v_DC_VRRP". The "Total" count is 1. The "Device list (Total: 1 devices)" section shows one entry: CSR-EB8820BC-6FA5-3557-6E5F-08C20EE0CAF0. The configuration preview area shows a small icon of a mountain with rain and a lightning bolt. Below it, a message says "Please select a device from the device list". At the bottom, there are "Back", "Configure Devices", and "Cancel" buttons. The "Configure Devices" button is highlighted with a red box.

Attach Device thành công

The screenshot shows the Cisco vManage interface with the title "Push Feature Template Configuration" and a status message "Validation Success". It displays a table of tasks with one entry:

Status	Message	Chassis Number	Device Model	Hostname	System IP	Site ID	vManage IP
Success	Done - Push Feature T... CSR-EB8820BC-6FA5... CSR1000v			CSR-1-DC	100.10.1.1	10	100.1.1.1

Below the table, a log window shows the following entries:

```
[13-Jan-2025 8:53:49 UTC] Configuring device with feature template: CSR1000v_DC_VRRP
[13-Jan-2025 8:53:50 UTC] Checking and creating device in vManage
[13-Jan-2025 8:53:50 UTC] Generating configuration from template
[13-Jan-2025 8:53:58 UTC] Device is online
[13-Jan-2025 8:53:58 UTC] Updating device configuration in vManage
[13-Jan-2025 8:53:59 UTC] Sending configuration to device
[13-Jan-2025 8:54:10 UTC] Completed template push to device.
```

Quay lại Configuration -> Template

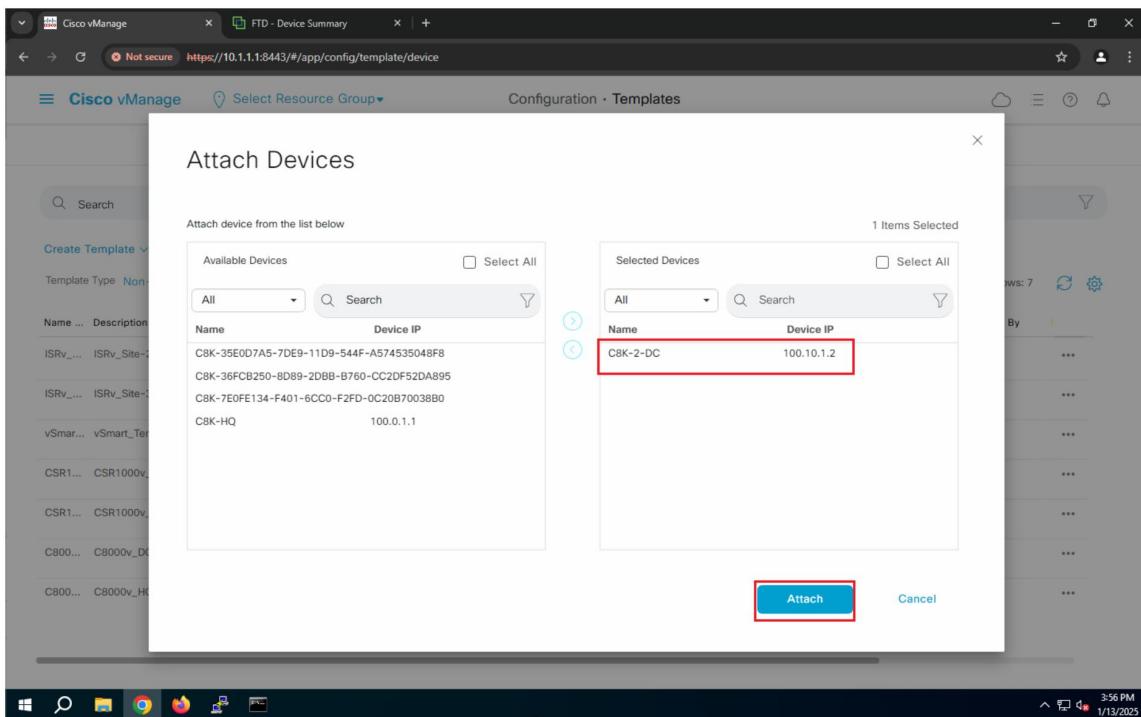
Chọn Attach Devices C8000v_DC_VRRP

The screenshot shows the Cisco vManage interface with the title "Configuration · Templates". It displays a table of templates with one entry highlighted and a context menu open:

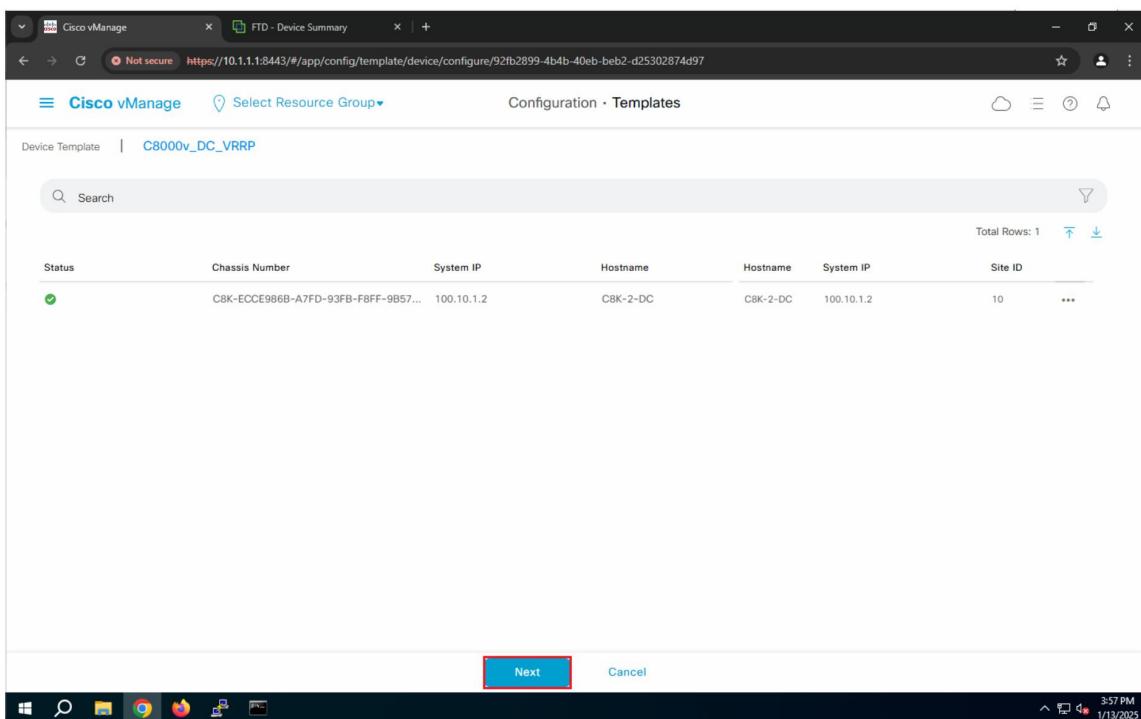
Name ...	Description	Type ...	Device Mode...	Device Role ...	Resource Group	Feature Templates	Draft Mode	Devices Attached	Updated By
ISRV_...	ISRV_Site-2	Feature	ISRV	SDWAN Edge	global	18	Disabled	1	admin
ISRV_...	ISRV_Site-3	Feature	ISRV	SDWAN Edge	global	18	Disabled	1	admin
vSmart...	vSmart_Template	Feature	vSmart	SDWAN Edge	global	9	Disabled	1	admin
CSR1...	CSR1000v_DC_VRRP	Feature	CSR1000v	SDWAN Edge	global	18	Disabled	1	admin
CSR1...	CSR1000v_Site-1	Feature	CSR1000v	SDWAN Edge	global	18	Disabled	1	admin
C800...	C8000v_DC_VRRP	Feature	C8000v	SDWAN Edge	global	21	Disabled	0	admin
C800...	C8000v_HQ	Feature	C8000v	SDWAN Edge	global	19	Disabled	1	admin

The context menu for the selected row (C8000v_DC_VRRP) includes options: Edit, View, Delete, Copy, Enable Draft Mode, Attach Devices (which is highlighted with a red box), Change Resource Group, and Export CSV.

Chọn C8K-2-DC và chọn Attach



Chọn Next



Chọn Configure Devices

The screenshot shows the Cisco vManage interface. On the left, a sidebar displays a device template named 'C8000v_DC_VRRP' with a total count of 1. Below it, a list shows one device: 'C8K-ECCE986B-A7FD-93FB-F8FF-9857C75EEF93' with the IP '100.10.1.2'. In the center, there's a decorative graphic of a mountain under a cloudy sky. Below the graphic, a message says 'Please select a device from the device list'. At the bottom, there are three buttons: 'Back', 'Configure Devices' (which is highlighted with a red box), and 'Cancel'. The status bar at the bottom right shows the date as 1/13/2025.

Attach Devices thành công

The screenshot shows the Cisco vManage interface after the configuration task has been completed. The top status bar indicates 'Validation Success'. The main area displays a table of task results with one row: 'Success' status, 'Template successfully ...' message, chassis number 'C8K-ECCE986B-A7FD...', device model 'C8000v', hostname 'CBK-2-DC', system IP '100.10.1.2', site ID '10', and vManage IP '100.1.1.1'. Below the table, a log window shows the configuration process: 'Configuring device with feature template: C8000v_DC_VRRP', 'Checking and creating device in vManage', 'Generating configuration from template', 'Device is online', 'Updating device configuration in vManage', 'Sending configuration to device', and 'Successfully notified device to pull configuration'. The status bar at the bottom right shows the date as 1/13/2025.

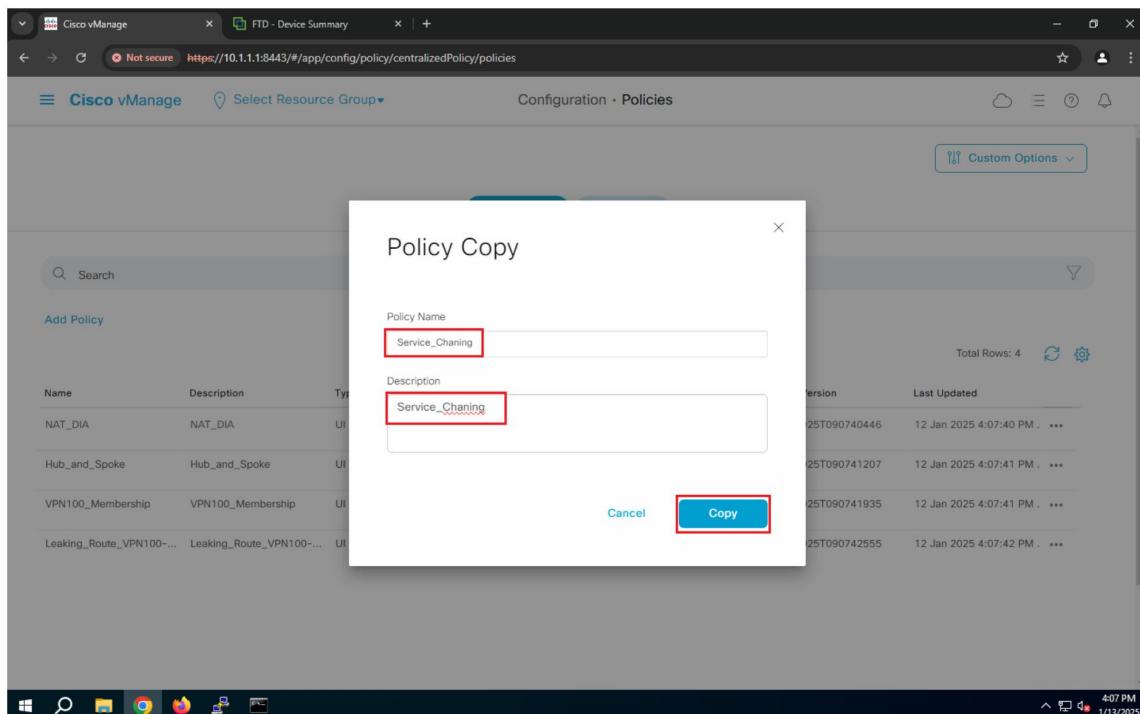
Chọn Configuration -> Policies

The screenshot shows the Cisco vManage web interface. The left sidebar has a 'Configuration' section with a red box around it. Within 'Configuration', there is another red box around the 'Policies' item. The main content area displays a table of policies, with one row selected. The table columns are Model, Hostname, System IP, Site ID, and vManage IP. The selected row shows Model: C8K-2-DC, Hostname: C8K-2-DC, System IP: 100.10.1.2, Site ID: 10, and vManage IP: 100.1.1.1.

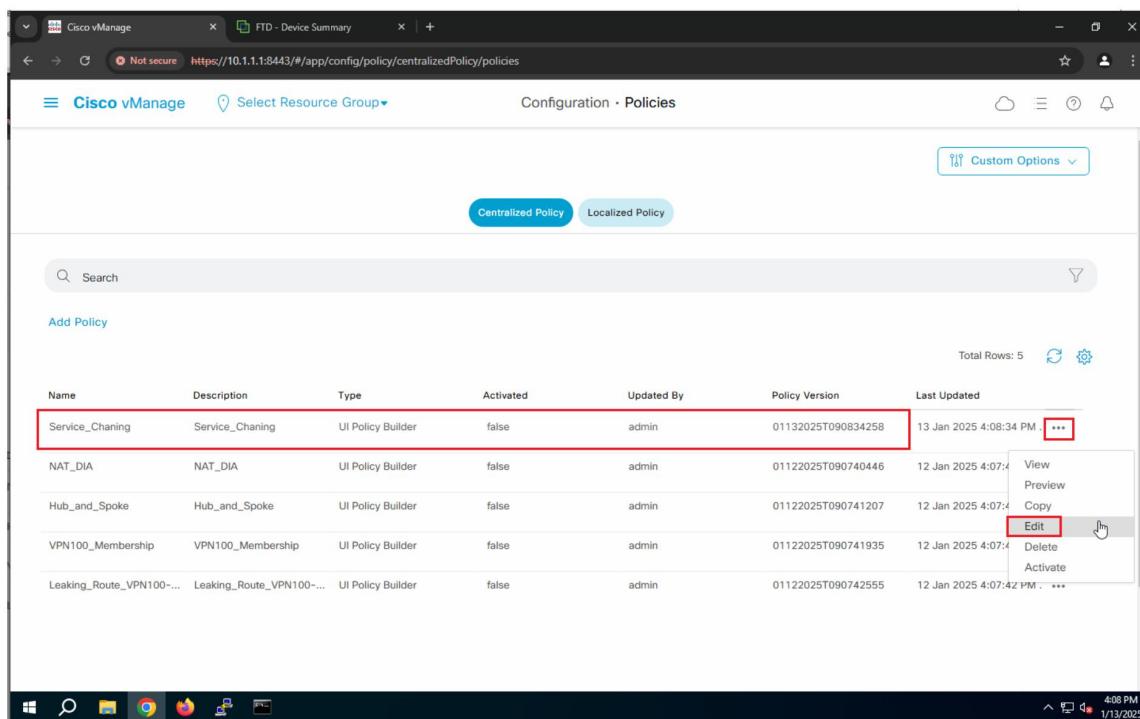
Chọn Copy Policy Hub_and_Spoke

The screenshot shows the Cisco vManage web interface on the 'Policies' page. A policy named 'Hub_and_Spoke' is selected and highlighted with a red box. A context menu is open over the selected row, with the 'Copy' option highlighted with a red box. The table columns are Name, Description, Type, Activated, Updated By, Policy Version, and Last Updated. The selected row shows Name: Hub_and_Spoke, Description: Hub_and_Spoke, Type: UI Policy Builder, Activated: false, Updated By: admin, Policy Version: 01122025T090741207, and Last Updated: 12 Jan 2025 4:07:41 PM.

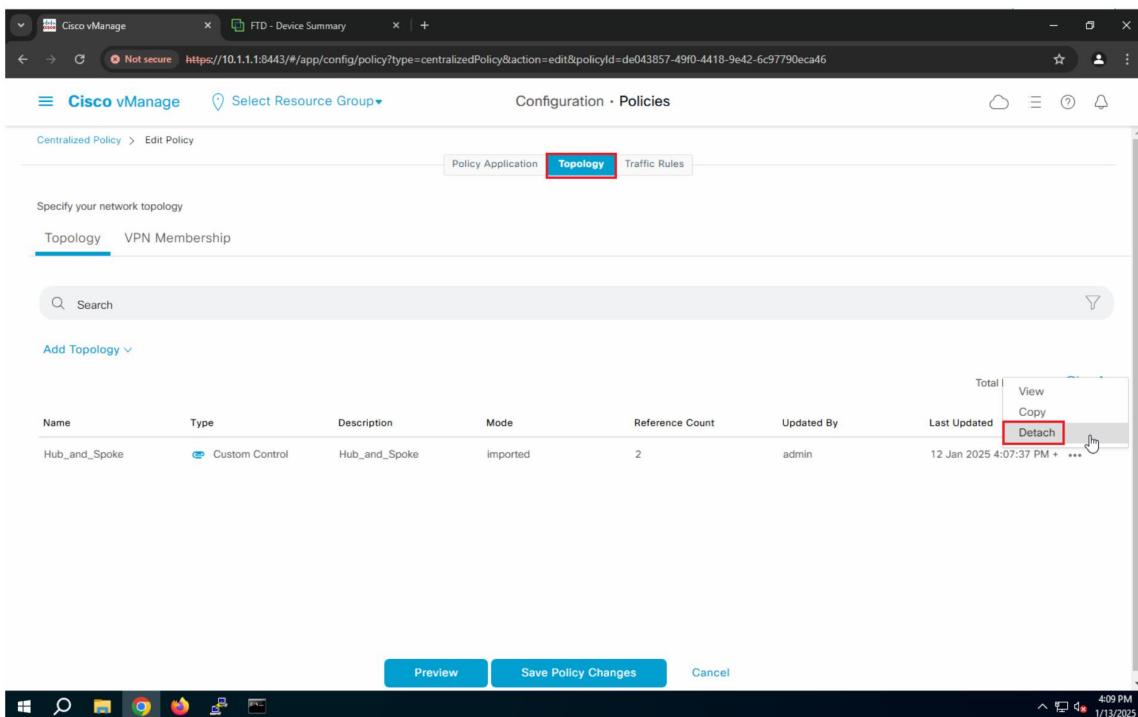
Điền tên Service_Chaining và chọn Copy



Chọn Edit Policy Service_Chaining

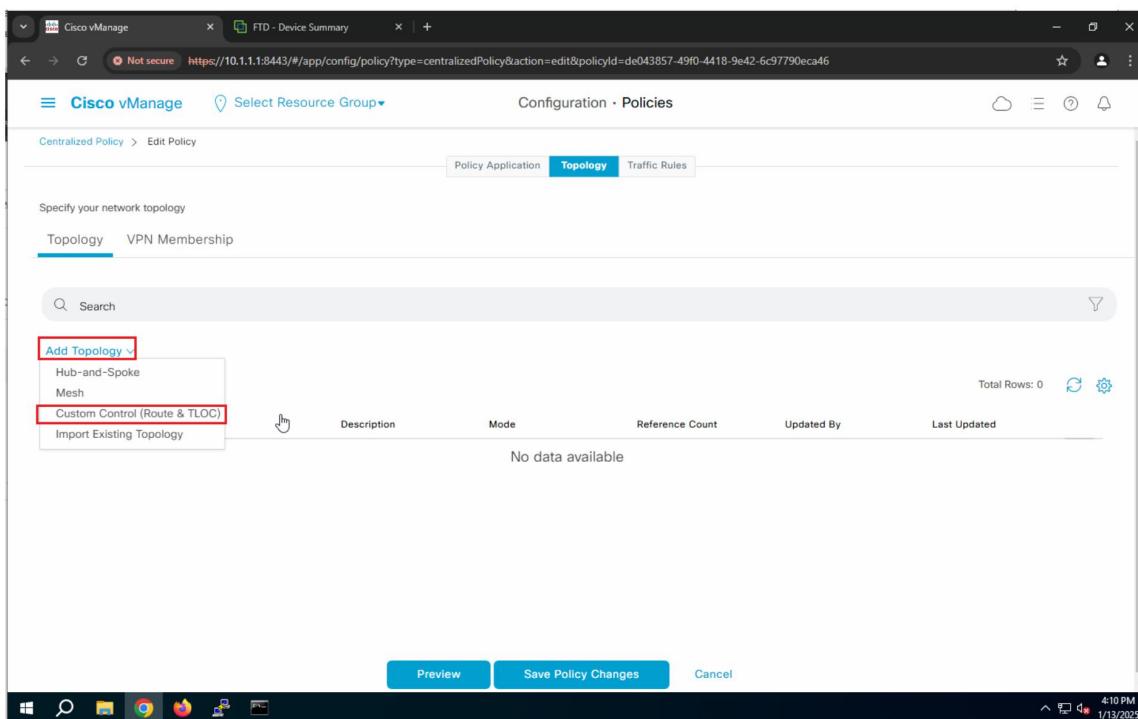


Chọn Topology và chọn Detach_Hub_and_Spoke



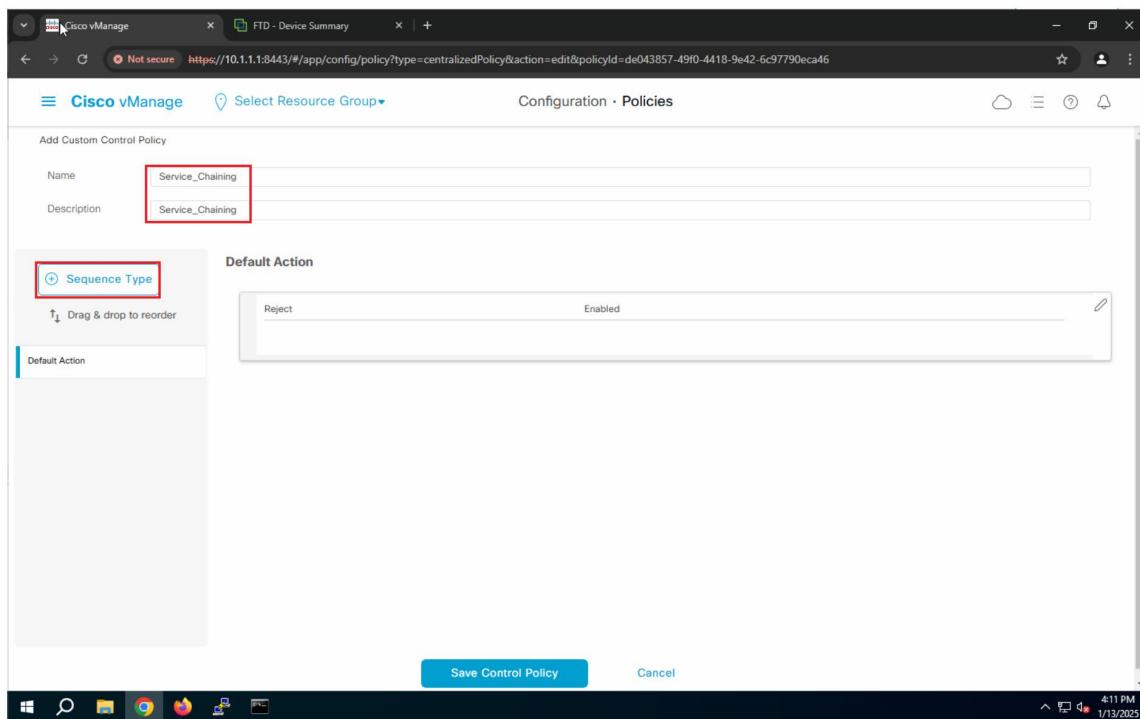
The screenshot shows the Cisco vManage web interface. The user is navigating through the 'Centralized Policy' section, specifically the 'Edit Policy' configuration. The 'Topology' tab is selected. A table lists network topologies, with one entry named 'Hub_and_Spoke'. To the right of this entry, a context menu is open, and the 'Detach' option is highlighted with a red box and a cursor click icon. At the bottom of the screen, there are standard Windows taskbar icons.

Chọn Add Topology và chọn Custom Control



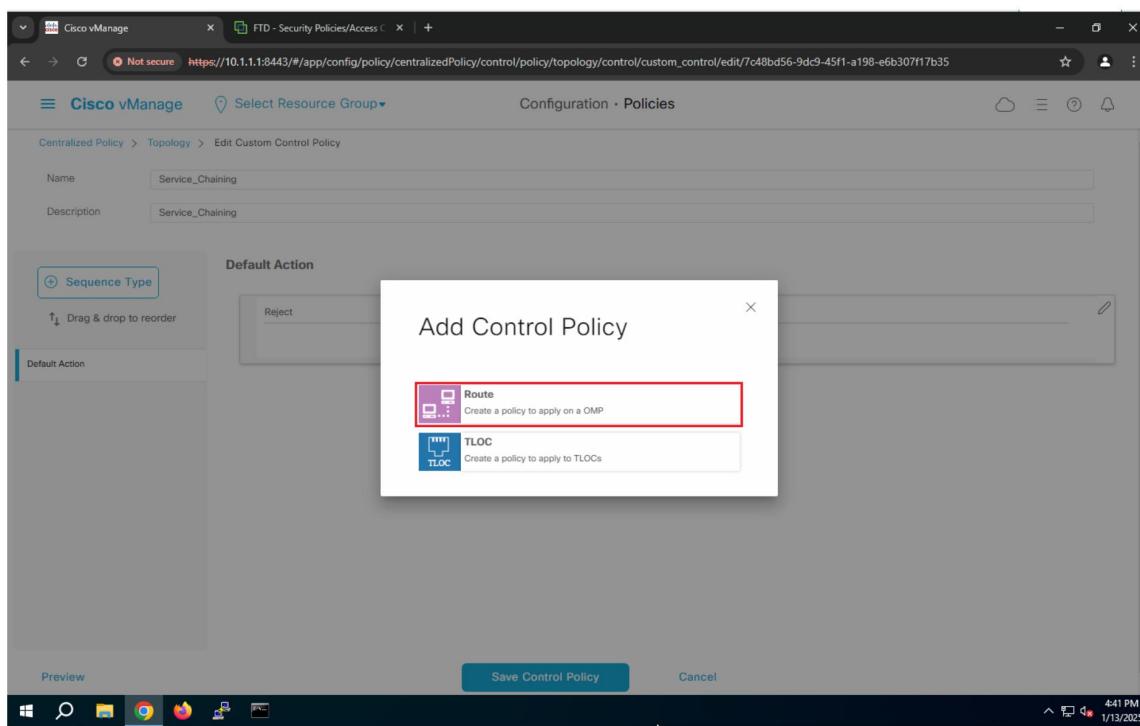
This screenshot continues from the previous one, showing the 'Add Topology' dropdown menu. The 'Custom Control (Route & TLOC)' option is selected and highlighted with a red box. The rest of the interface remains the same, showing the 'Topology' table with the 'Hub-and-Spoke' entry and the Windows taskbar at the bottom.

Điền tên Service_Chaining và chọn Sequence Type



The screenshot shows the Cisco vManage web interface. A new policy is being created with the name 'Service_Chaining'. Under the 'Default Action' section, the 'Sequence Type' button is highlighted with a red box. The 'Default Action' dropdown is set to 'Reject' and 'Enabled'. At the bottom right of the dialog, there are 'Save Control Policy' and 'Cancel' buttons.

Chọn Route



The screenshot shows the 'Add Control Policy' dialog box. It lists two options: 'Route' and 'TLOC'. The 'Route' option is highlighted with a red box. Both options have a description below them: 'Create a policy to apply on a OMP' for Route and 'Create a policy to apply to TLOCs' for TLOC. The background shows the main configuration screen for a 'Service_Chaining' policy.

Chọn Sequence Rule

The screenshot shows the Cisco vManage web interface for editing a custom control policy. The main title is 'Configuration - Policies'. Under 'Centralized Policy > Topology > Edit Custom Control Policy', the policy name is 'Service_Chaining' and its description is 'Service_Chaining'. The 'Route' section is active, showing a 'Sequence Rule' tab which is highlighted with a red box. Below it, there's a note: 'Drag and drop to re-arrange rules' and a 'Drag & drop to reorder' instruction. On the left, there's a sidebar with 'Sequence Type' and 'Route' options. At the bottom, there are 'Save Control Policy' and 'Cancel' buttons.

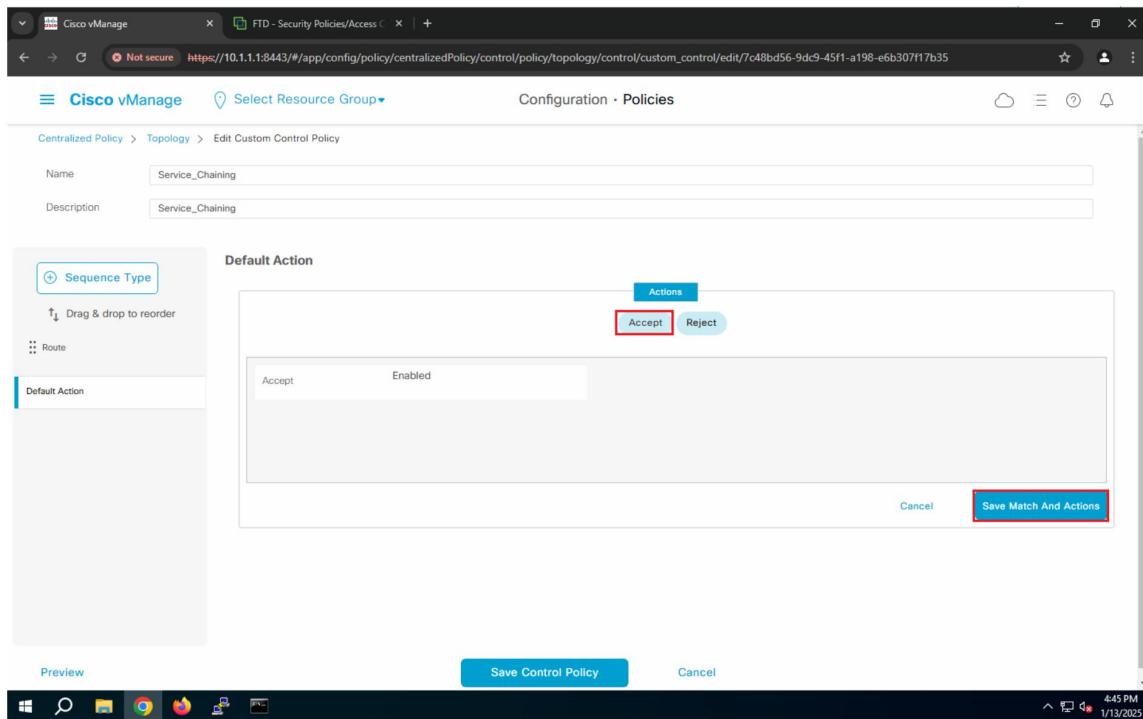
Actions chọn Accept và chọn Service

This screenshot continues from the previous one, showing the 'Edit Custom Control Policy' screen. The 'Sequence Rule' tab is still selected. In the 'Actions' row, the 'Accept' button is highlighted with a red box. The 'Service' tab is also highlighted with a red box. Other tabs in the 'Actions' row include 'Reject', 'Community', 'Export To', 'OMP Tag', 'Preference', 'TLOC Action', and 'TLOC'. The 'Protocol' dropdown is set to 'IPv4'. The 'Match' section is visible above the actions. The 'Match Conditions' and 'Actions' sections are shown below. The 'Actions' section for 'Accept' includes fields for 'Service Type', 'VPN', 'TLOC IP', 'Color', and 'Encapsulation'. At the bottom, there are 'Save Control Policy' and 'Cancel' buttons.

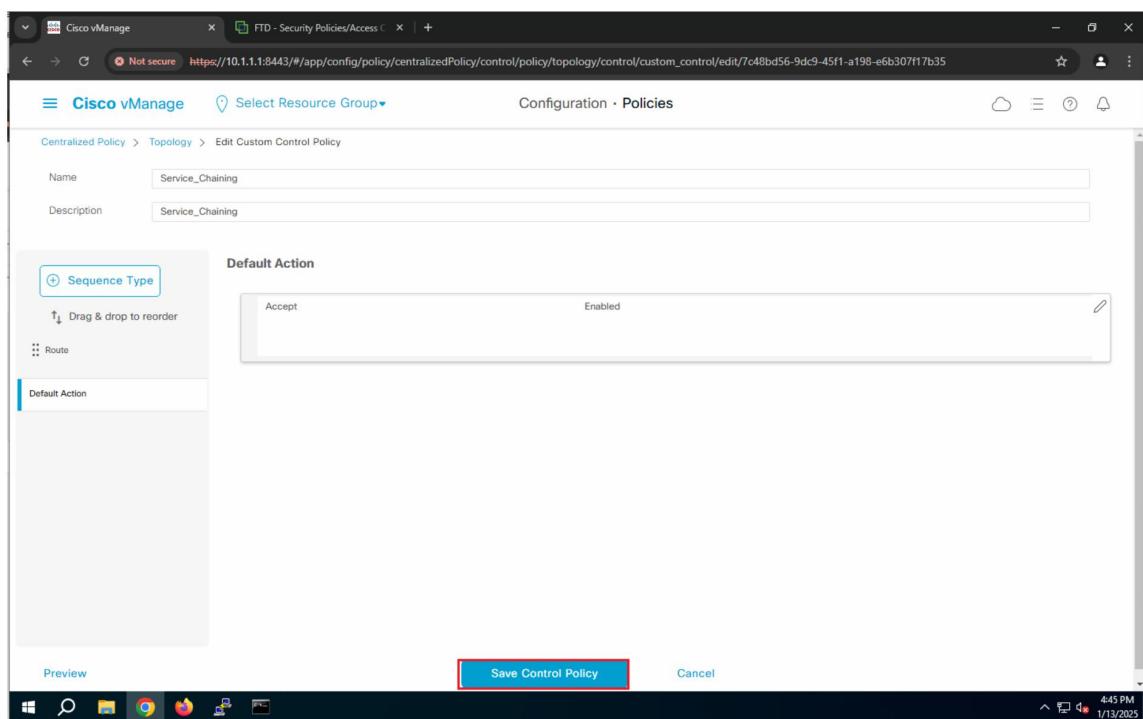
Service: Firewall, Service VPN: 100, Encapsulation: IPSEC và chọn Save Match And Actions

Chọn Default Action

Actions chọn Accept và chọn Save Match And Actions



Chọn Save Control Policy



Chọn Policy Application

The screenshot shows the Cisco vManage interface for managing policies. The title bar indicates the URL is <https://10.1.1.1:8443/#/app/config/policy?type=centralizedPolicy&action=edit&policyId=de043857-49f0-4418-9e42-6c97790eca46>. The main navigation bar has tabs for 'Policy Application' (which is selected and highlighted in red), 'Topology', and 'Traffic Rules'. Below the tabs, there is a search bar and a table displaying one policy entry:

Name	Type	Description	Mode	Reference Count	Updated By	Last Updated
Service_Chaining	Custom Control	Service_Chaining	imported	1	admin	13 Jan 2025 4:46:28 PM + ***

At the bottom of the screen, there are three buttons: 'Preview', 'Save Policy Changes', and 'Cancel'. The status bar at the bottom right shows the time as 4:46 PM and the date as 1/13/2025.

Chọn New Site List

The screenshot shows the Cisco vManage interface for creating a new site list. The title bar indicates the URL is <https://10.1.1.1:8443/#/app/config/policy?type=centralizedPolicy&action=edit&policyId=de043857-49f0-4418-9e42-6c97790eca46>. The main navigation bar has tabs for 'Policy Application' (selected), 'Topology', 'Application-Aware Routing', 'Traffic Data', and 'Cflowd'. Below the tabs, there is a form to enter a new policy name and description, and a table to manage site lists:

Direction	Site List	Action
	Service_Chaining	CUSTOM CONTROL

A red box highlights the 'New Site List' button located in the top left corner of the site list table area. At the bottom of the screen, there are three buttons: 'Preview', 'Save Policy Changes', and 'Cancel'. The status bar at the bottom right shows the time as 4:47 PM and the date as 1/13/2025.

Outbound Site List chọn Spoke và chọn Add

The screenshot shows the Cisco vManage web interface for configuring centralized policies. The current view is under the 'Topology' tab of the 'Service_Chaining' policy. In the 'Outbound Site List' section, the word 'Spoke' is listed and has a red box around it. At the bottom right of the dialog, there is a large blue 'Add' button which also has a red box around it.

Chọn Save Policy Changes

This screenshot shows the same Cisco vManage interface after the 'Add' operation. The 'Outbound Site List' now contains 'Spoke'. At the bottom of the dialog, the 'Save Policy Changes' button is highlighted with a red box.

Activate Policy Service_Chaining

Name	Description	Type	Activated	Updated By	Policy Version	Last Updated
Service_Chaning	Service_Chaning	UI Policy Builder	false	admin	01132025T090834258	13 Jan 2025 4:49:31 PM
NAT_DIA	NAT_DIA	UI Policy Builder	false	admin	01122025T090740446	12 Jan 2025 4:07:4
Hub_and_Spoke	Hub_and_Spoke	UI Policy Builder	false	admin	01122025T090741207	12 Jan 2025 4:07:4
VPN100_Membership	VPN100_Membership	UI Policy Builder	false	admin	01122025T090741935	12 Jan 2025 4:07:4
Leaking_Route_VPN100-...	Leaking_Route_VPN100-...	UI Policy Builder	false	admin	01122025T090742555	12 Jan 2025 4:07:42 PM

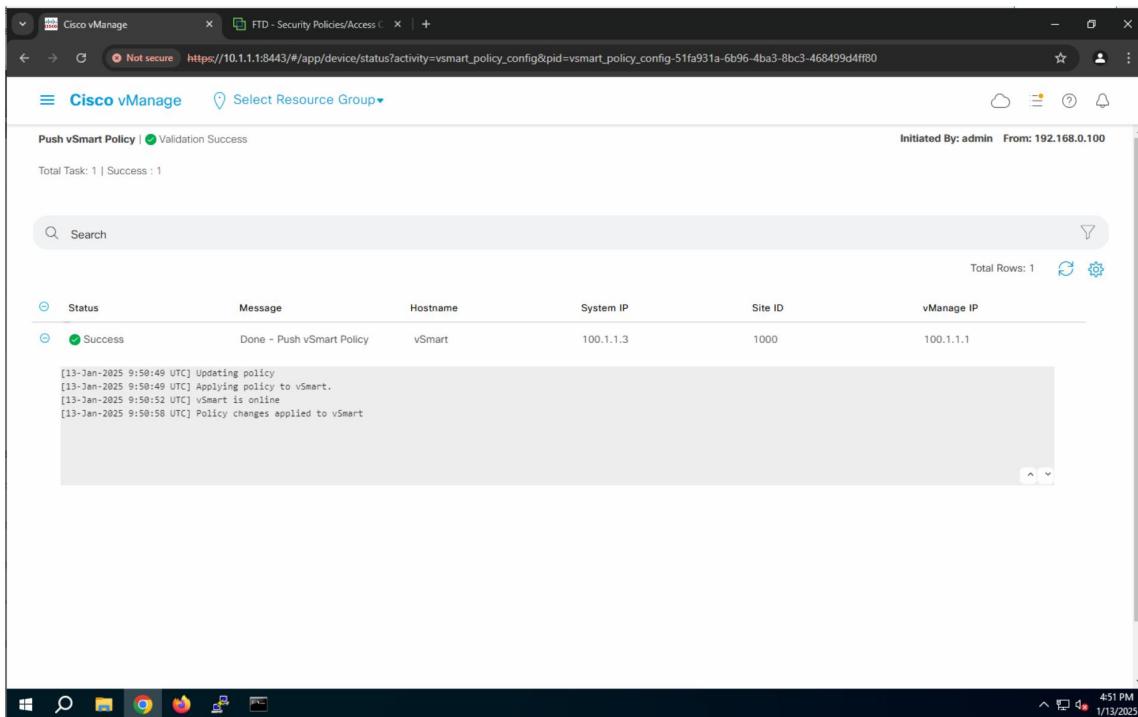
Chọn Activate

Activate Policy

Policy will be applied to the reachable vSmarts:
100.1.1.3

Activate **Cancel**

Activate Policy thành công



The screenshot shows a browser window titled "Cisco vManage" with the URL https://10.1.1.1:8443/#/app/device/status?activity=vsmart_policy_config&pid=vsmart_policy_config-51fa931a-6b96-4ba3-8bc3-468499d4ff80. The page displays a success message: "Push vSmart Policy | Validation Success". It shows one task completed: "Total Task: 1 | Success : 1". A table lists the task details:

Status	Message	Hostname	System IP	Site ID	vManage IP
Success	Done - Push vSmart Policy	vSmart	100.1.1.3	1000	100.1.1.1

Below the table, a log window shows the following entries:

```
[13-Jan-2025 9:58:49 UTC] Updating policy
[13-Jan-2025 9:58:49 UTC] Applying policy to vSmart.
[13-Jan-2025 9:58:52 UTC] vSmart is online
[13-Jan-2025 9:58:58 UTC] Policy changes applied to vSmart
```