

LAB: VIẾT CÁC TEMPLATE CƠ BẢN CHO VEDGE VÀ ĐẦY CẦU HÌNH CHO CÁC SDWAN VEDGE

I. Sơ đồ



II. Yêu cầu kỹ thuật

Viết các Feature template VPN 0, VPN 0 Interface, VPN 512, Service VPN (VPN 11), Interface VPN 11.

Tạo Device template và đẩy cấu hình cho các vedge ở 3 site

III. Các bước thực hiện

3.1. Viết template cho Transport VPN (VPN 0)

Ở giao diện vManage, vào menu **Configuration > Templates**, chọn tab **Feature** > Chọn **Add**. Bên trong cột **Select Device**, chọn **vEdge Cloud** hoặc có thể chọn bất kỳ loại thiết bị WAN Edge bổ sung nào có thể nằm trong trung tâm dữ liệu. Sau đó chọn VPN như hình vẽ bên dưới.

CÔNG TY TNHH TƯ VÁN VÀ DỊCH VỤ CHUYÊN VIỆT

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Hãy cấu hình **Template Name** và phần mô tả **Description**: Template name: *vEdge_VPN0*



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Description: vEdge_VPN0

E Cisco SD-WAN	Select Resource	Group		Templates	s			\bigcirc \equiv	?
		Configuration Groups	Feature Profiles	Device Templates	Feature Templates				
eature Template > Add Template									
Select Devices	VPN								
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Sau đó, chúng ta cấu hình **VPN ID** 0.

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≡ Cisco SD-WAN	⊘ :	Select Resourc	e Group▼		Templ	ates			\bigcirc	\equiv	0	4
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eature Template > Add Temp	late > VPN											
evice Type	vEdge Cloud	ь										^
emplate Name*	vEdge_VPI	NO										
escription*	vEdge_VP1	NO										
Basic Configuration Route Leak	DNS	Advertise OMF	P IPv4 Route	IPv6 Route	Service	Service Route	GRE Route	IPSEC Route	NA	ΛT		
V BASIC CONFIGURAT	ION											
VPN			• •									
Name			Ø.									
Enhance ECMP Keying			Ø▼ ○ On	O Off								

Bước tiếp theo, trong hình vẽ bên dưới, bên cạnh trường Name, chọn **Global** điền Transport VPN. Trường này có các lựa chọn là:

Global có thể nhập và thay đổi trực tiếp trên tab Feature.

Device Specific sẽ tạo một biến để sau này action có thể nhập, thay đổi giá trị biến mà không cần phải sửa đổi feature template.

Deafault chứa giá trị mặc định và không thể thay đổi.

	-
VPN	0
Name	Transport
Enhance ECMP Keying	⊘ ▼ On Off
Enable TCP Optimization	⊘ ▼ ○ On ○ Off
OMP Admin Distance IPv4	⊘ •

Trong phần Ipv4 Route, chọn New Ipv4 Route và nhập 0.0.0.0/0 vào ô Prefix, chọn Add Next Hop.

mPro		0	CÔNG TY TNHH TƯ VẤN VÀ DỊCH VỤ CHUYÊN VIỆT TRUNG TÂM TIN HỌC VNPRO ĐC: 276 - 278 Ung Văn Khiểm, P.25, Q.Binh Thạnh, Tp Hồ Chí Minh ĐT: (028) 35124257 Hotline: 0933427079 Email: vnpro@vnpro.org
✓ IPv4 ROUTE			
New IPv4 Route			
Optional Prefix	Gateway	Selected Gateway Configuration	Action
		No data available	
✓ IPv4 ROUTE			
New IPv4 Route			
			Mark as Optional Row (i)
Prefix	• • 0.0.0.0/0		
Gateway	• Next Hop		
Next Hop	+ Add Next Hop		
			Add Cancel
Optional Prefix	Gateway	Selected Gateway Configuration	Action

Một cửa sổ hiện lên nhắc thêm Next Hop. Chọn nút Add Next Hop.

Đối với next hop thứ hai, chọn Device Specific và nhập biến địa chỉ IP next hop cho internet (*vpn0_Internet_next_hop_ip_adddress_1*)

Chọn Add



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Next Hop			×
	No Next Hop added, add your first Next Hop		
	Add Next Hop		
		Add	Cancel

Next Hop

Address	Distance	Tracker	
€ 172.16.1.254	⊘ ▼ 1	Ø •	Ū
	✓ 1	⊘ -	Ô
Global	_8]		
Device Specific >	Enter Key		
⊕ Add Next Hop	vpn0_Internet_next_hop_ip_ad		
			Add Cancel

Chọn save để tạo template.

		Pro			CÔNG TY TNHH TƯ VÁN VÀ DỊCH VỤ CHUYÊN VIỆT TRUNG TÂM TIN HỌC VNPRO ĐC: 276 - 278 Ung Văn Khiểm, P.25, Q.Binh Thạnh, Tp Hồ Chí Minh ĐT: (028) 35124257 Hotline: 0933427079 Email: vnpro@vnpro.org
\sim	IPv4 ROU	TE			
	New IPv4	Route			
	Optional	Prefix	Gateway	Selected Gateway Configuration	Action
		.0.0.0/0	Next Hop	2	ℓ [†]

3.2. Viết Feature Template VPN interface (MPLS)

Muc feature templates, chon Add Template.

Cisco SD-WAN	Select Reso	urce Group•	Templates	\bigcirc	≡ ⊘)
		Configuration Groups Feature Prof	files Device Templates Feature Templates			
ature Template > Add Template						
Select Devices	VON					
Q Search by device name	VPN					
ISRv	^					
vEdge 100		Secure Internet Gateway (SIG)	VPN	VPN Interface Bridge		
vEdge 100 B		WAN		LAN		
vEdge 100 M					=	
vEdge 100 WM						
□ vEdge 1000		VPN Interface Cellular	VPN Interface Ethernet 🛛 🖑	VPN Interface GRE		
vEdge 2000		WAN	Management WAN LAN	WAN		
□ vEdge 5000					5	
vEdge Cloud						
🗆 vManage		VPN Interface IPsec	VPN Interface NATPool	VPN Interface PPP		
□ vSmart		WAN	WAN	WAN		

Tạo template VPN Interface và thiết lập như bên dưới:

Select Devices: vEdge Cloud Template: VPN/VPN Interface Ethernet Template Name: vEdge_VPN0_Ge0\1_MPLS Description: vEdge_VPN0_Ge0\1_MPLS

VnPr	(R)				TRUNG TÂM TIN HỌC VNF DC: 276 - 278 Ung Văn Khiêm, P.25, Q.Binh Thạnh, Tp Hồ Chí 1 DT: (028) 35124257 Hotline: 0933427079 Email: vnpro@vnpr
Configuration - Templates Cisc	o≲ x +				~ - Ø ×
→ C ▲ Not secure	https://192.168.1.1:8443/#/app/co	onfig/template/feature?disp	olay=add&deviceTy	pe=vedge-cloud&templateType=vpn-vedge-interface	ie 🖈 🖬 😩 :
≡ Cisco SD-WA	N 💮 Select Resource	e Group •		Templates	
		Configuration Groups	Feature Profiles	Device Templates Feature Templates	
eature Template > Add T	emplate > VPN Interface Ethernet				
Device Type	vEdge Cloud				Í
"emplate Name*	vEdge_VPN0_Ge0/1_MPLS				
	the second se				
vescription*	vEdge_VPN0_Ge0/1_MPLS]		
Basic Configuration	vEdge_VPN0_Ge0/1_MPLS Tunnel NAT V RATION	/RRP ACL/QoS	ARP	802.1X Advanced	
Basic Configuration Basic CONFIGUI	vEdge_VPN0_Ge0/1_MPLS Tunnel NAT V RATION	/RRP ACL/QoS	ARP	802.1X Advanced	
Basic Configuration BASIC CONFIGUI Shutdown Interface Name	vEdge_VPN0_Ge0/1_MPLS Tunnel NAT V RATION	/RRP ACL/QoS	ARP	802.1X Advanced	
Basic Configuration BASIC CONFIGUI Shutdown Interface Name Description	vEdge_VPN0_Ge0/1_MPLS Tunnel NAT V RATION	/RRP ACL/QoS	ARP	802.1X Advanced	
Basic Configuration Basic Configuration BASIC CONFIGUI Shutdown Interface Name Description	VEdge_VPND_Ge0/1_MPLS Tunnel NAT V RATION	/RRP ACL/QoS	ARP No	802.1X Advanced	
Basic Configuration BASIC CONFIGUI Shutdown Interface Name Description	vEdge_VPN0_Ge0/1_MPLS Tunnel NAT V RATION	/RRP ACL/QoS	ARP	802.1X Advanced	

Trong phần Basic Configuration bên cạnh Shut Down, chọn Global và chọn No. Việc này để xác định trạng thái cổng là luôn được mở.

Sau đó chọn Interface Name, chọn Global và nhập tên cổng là ge0/1.

✓ BASIC CONFIGURATION	
Shutdown	⊕ - O Yes O No
Interface Name	⊕ ▼ ge0/1
Description	

Trong phần Basic Configuration bên trong Ipv4 Configuration, chọn Static và bên cạnh Ipv4 Address, chọn Device Specific và nhập tên biến *vpn0_ge0/1_MPLS_if_ipv4_addres*.

mPro		CÔNG TY TNHH TƯ VẤN VÀ DỊCH VỤ CHUYỀN VIỆT TRUNG TÂM TIN HỌC VNPRO ĐC: 276 - 278 Ung Văn Khiểm, P.25, Q.Binh Thạnh, Tp Hồ Chí Minh ĐT: (028) 35124257 Hotline: 0933427079 Email: vnpro@vnpro.org
	-	IPv6
O Dynamic O Static		
IPv4 Address		[vpn0_ge0/1_MPLS_if_ipv4_address]
Secondary IP Address (Maximum: 4)	Global	
	Device Specific >	Enter Key
DHCP Helper	 Default 	/m vpn0_ge0/1_MPLS_if_ipv4_ad

Trong phần Tunnel và bên cạnh Tunnel Interface, chọn Global > On.

Sau đó phần Color chọn Global > mpls.

V TUNNEL	
Tunnel Interface	● - ● On ○ Off
Per-tunnel Qos	⊙ ▼ On Off
Color	⊕ ▼ mpls ▼
Restrict	● • O On ○ Off
Groups	⊘ ▼
Border	⊘ ▼ ○ On ○ Off
Maximum Control Connections	\odot -

Trong phần Tunnel phần Allow Service, All -> On

Allow Service		
All	• • O On	Off
BGP	⊘ ▼ ○ On	O Off
DHCP	⊘ - O On	Off
DNS	⊘ ▼ O On	Off
ICMP	⊘ • On	O Off
NETCONF	⊘ • On	O Off
NTP	⊘ ▼ ○ On	O Off
OSPF	⊘ ▼ On	O Off



Nhấn Save để tạo template.

3.3. Viết Feature Template VPN interface (Internet)

 ${O}$ tab Feature Templates, tim Template vEdge_VPN0_Ge0\1_MPLS > ... > Copy.

E CISCO SD-WAN	Select Resource	rce Group▼		Templa	tes		\bigcirc	=	?	
		Configuration Groups	Feature Profiles	Device Templates	Feature Templates					
Q Search								5	7	
Add Template										
Template Type Non-Defaul	.t 🗸						Total Rows: 2	Ø	¢	
lame	Description	Туре	Device Model	Device Templates	Resource Group	Devices Attached	Updated By	I.		
/Edge_VPN0	vEdge_VPN0	WAN Edge VPN	vEdge Cloud	0	global	0	admin	:		
/Edge_VPN0_Ge0/1_MPLS	vEdge_VPN0_Ge0/1_MPLS	WAN Edge Interface	vEdge Cloud	0	global	0	admin View Edit Change Delete Copy	Device	Mode ce Gr	el ro

Nhập tên và mô tả cho template copy:

Template Name: vEdge_VPN0_Ge0\0_Internet Description: vEdge_VPN0_Ge0\0_Internet Chon copy.

Configuration Templates Casic X +	□ × □ • : ⑦ _\$
C ▲ Not secure Mettype//192.168.11.8443/#/app/config/template/feature Image: Cisco SD-WAN Image: Select Resource Group + Templates Image: Select Resource Group + Templates Image: Select Resource Group + Templates Image: Select Resource Group +	 2 2
Clsco SD-WAN Select Resource Group Templates Templates	
Configuration Groups Feature Profiles Device Templates Feature Templates Add Template Template Copy Total Rows: 2 C Name Description Template Name Devices Attached Updated By 1 vEdge_VPN0 vEdge_VPN0_Ge0/1_MPLS VEdge_VPN0_Ge0/0_Internet 0 admin : . VEdge_VPN0_Ge0/1_MPLS VEdge_VPN0_Ge0/1_MPLS VEdge_VPN0_Ge0/0_Internet 0 admin : .	
Add Template Add Template Template Type Non-Default > Name Description vEdge_VPN0_Geo/1_MPLS vEdge_VPN0_Geo/1_MPLS vEdge_VPN0_Geo/0_internet Description vEdge_VPN0_Geo/1_MPLS vEdge_VPN0_Geo/0_internet Description vEdge_VPN0_Geo/1_MPLS vEdge_VPN0_Geo/0_internet Description vEdge_VPN0_Geo/0_internet Description vEdge_VPN0_Geo/0_internet Description vEdge_VPN0_Geo/0_internet Description vEdge_VPN0_Geo/0_internet Description vEdge_VPN0_Geo/0_internet Description vEdge_VPN0_Geo/0_internet Description vEdge_VPN0_Geo/0_internet Description vEdge_VPN0_Geo/0_internet Description vEdge_VPN0_Geo/0_internet Description vEdge_VPN0_Geo/0_internet Copy Cancel	
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Name Description Ts Template Name Devices Attached Updated By I VEdge_VPN0 vEdge_VPN0_Ge0/1_MPLS vEdge_VPN0_Ge0/0_internet 0 admin : . VEdge_VPN0_Ge0/1_MPLS vEdge_VPN0_Ge0/0_internet 0 admin : . VEdge_VPN0_Ge0/1_MPLS vEdge_VPN0_Ge0/0_internet 0 admin : . VEdge_VPN0_Ge0/0_internet Copy Cancel Cancel Control of the cont	100
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VEdge_VPN0_Ge0/1_MPLS vEdge_VPN0_Ge0/1_MPLS v Description 0 admin :	
vEdge_VPN0_Ge0/0_Internet	
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Copy Cancel	
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Chọn ... > Edit để thay đổi template.

E Cisco SD-WAN	Select Resource	rce Group▼		Templat	es			\bigcirc	Ξ	0
		Configuration Groups	Feature Profiles	Device Templates	Feature Templates					
Q Search										7
Add Template Template Type Non-Default	t v						Total Rov	vs: 3	CD	ŝ
Name	Description	Туре	Device Model	Device Templates	Resource Group	Devices Attached	Updated B	y	ı	
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vEdge_VPN0	vEdge_VPN0	WAN Edge VPN	vEdge Cloud	0	global	0	admi Ec	ew lit		ŀ
vEdge_VPN0_Ge0/1_MPLS	vEdge_VPN0_Ge0/1_MPLS	WAN Edge Interface	vEdge Cloud	0	global	0	admi Ci Do Co	nange L nange F elete opy	lesour	xiode ce Gr

Thay đổi mô tả cổng, biến và color.

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VnPro							ĐC : 276 - 278 U ĐT : (028) 3512	Ung Văn K 4257 Hot	hiêm, F line: 09	P.25, Q	.Binh 7 7079 E	Thạnh Email:
onfiguration - Templates Cisco 🛙 🗙	+								~	_	٥	, 's
C A Not secure h	ttps://192.168.1.1:8443/#/app/co	config/template/feature?dis	splay=edit&template	eld=1b1fe527-790	e-4d07-946a-37d9720e5	265&templateTy	pe=vpn-vedge-ii	nterface	Ê	☆		
E Cisco SD-WAN	○ Select Resource	e Group•		Temp	plates				\bigcirc	Ē	?	4
		Configuration Groups	Feature Profiles	Device Template	es Feature Templates							
eature Template > VPN Interfa	ce Ethernet > vEdge_VPN0_Ge	e0/0_Internet										
evice Type	vEdge Cloud											
mplate Name*	vEdge_VPN0_Ge0/0_Internet											
escription*	vEdge_VPN0_Ge0/0_Internet	VRRP ACL/QoS	ARP	802.1X	Advanced							
asic Configuration BASIC CONFIGURATI Shutdown	vEdge_VPN0_Ge0/0_Internet	VRRP ACL/QoS	ARP	802.1X	Advanced							
escription* asic Configuration BASIC CONFIGURATI Shutdown Interface Name	vEdge_VPN0_Ge0/0_Internet	VRRP ACL/QoS	ARP No	802.1X	Advanced							
escription* asic Configuration BASIC CONFIGURATI Shutdown Interface Name Description	vEdge_VPN0_Ge0/0_Internet	VRRP ACL/QoS	ARP	802.1X	Advanced			-				1
escription*	vEdge_VPN0_Ge0/0_Internet	VRRP ACL/QoS	ARP	802.1X	Advanced							
escription* asic Configuration BASIC CONFIGURATI Shutdown Interface Name Description	vEdge_VPN0_Ge0//0_Internet	VRRP ACL/QoS	ARP	802.1X IDurk Update	Advanced							

IPv4 Address	[vpn0_ge0/0_Internet_if_ipv4_address]
Secondary IP Address (Maximum: 4)	Global
	Device Specific > Enter Key
DHCP Helper	O Default



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V TUNNEL	
Tunnel Interface	On
Per-tunnel Qos	⊘ ▼ On Off
Color	⊕ ▼ biz-internet ▼
Restrict	● • • • • • • • • • • • • • • • • • • •
Groups	
Border	⊘ ▼ ○ On ○ Off
Maximum Control Connections	\odot -

Trong phần NAT chọn Global > On.

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NAT	● • O On Off
Refresh Mode	⊕ ▼ outbound ▼
Log NAT flow creations or deletions	⊘ ▼ ○ On ○ Off
UDP Timeout	Ø▼ 1
TCP Timeout	Ø▼ 60
Block ICMP	⊕ • On Off
Respond To Ping	● • O On Off
NAT Pool Range Start	⊘ •
NAT Pool Range End	⊘ -

Chọn Update để lưu những thay đổi.

3.4. Viết Feature Template VPN quản lý (VPN 512 – Tùy Chọn)

 ${O}$ giao diện v Manage, Configuration > Templates, chọn tab feature.

Chọn Add.

Bên trong cột Select Device, chọn vEdge Cloud hoặc có thể chọn bất kỳ loại thiết bị WAN Edge bổ sung nào có thể nằm trong trung tâm dữ liệu. Sau đó chọn VPN.

mPro			CONG TY TNHH TU VÁN VÁ D TRUNG DC: 276 - 278 Ung Văn Khiêm, P.25, C DT: (028) 35124257 Hotline: 093342	ICH VŲ CHUYEN VIĘ TÂM TIN HỌC VNPR 2.Bình Thạnh, Tp Hồ Chí Min :7079 Email: vnpro@vnpro.0
Configuration - Templates Cisco S 🗙	+			o ×
→ C A Not secure https	x//192.168.1.1:8443/#/app/config/template/feature?c	lisplay=add	<i>È</i> ☆	
≡ Cisco SD-WAN	♦ Select Resource Group •	Templates		?
	Configuration Groups	Feature Profiles Device Templates Feature Templates		
Feature Template > Add Template				
Select Devices	VPN			•
Q Search by device name				
ISRv	A Secure Internet Gatewa	N/ (SIG) VPN a	VPN Interface Bridge	
vEdge 100	WAN		LAN	
vEdge 100 B				
vEdge 100 M				
vEdge 100 WM	VPN Interface Cellu	Ilar VPN Interface Ethernet	VPN Interface GRE	
vEdge 1000	WAN	Management WAN LAN	WAN	
vEdge 2000				1
vEdge 5000				
vEdge Cloud	VPN Interface IPse	VPN Interface NATPool	VPN Interface PPP	
vManage	WAN	WAN	WAN	
				-

Cấu hình Template Name và Description:

Template name: vEdge_VPN512 Description: vEdge_VPN512 Cấu hình VPN ID: 512

V.P.P.	8						CÔN ĐC:	G TY TNHH TU 276 - 278 Ung Văn 1	VÁN V. TRU Khiêm, P.	À DI NG T 25, Q.	CH V CÂM T Bình T	Ų CHUYÊN TIN HỌC VI hạnh, Tp Hồ Cl
)						ĐT:	(028) 35124257 H e	otline: 093	334270)79 En	nail: vnpro@vn
Configuration - Templates Cisco S	× +								~	-	٥	×
→ C ▲ Not secure	https://192.16	8.1.1:8443/#/app/co	nfig/template/feature?dis	play=add&deviceTy	rpe=vedge-cloud&te	mplateType=vpn-vedge			Ê	\Rightarrow		a :
≡ Cisco SD-WAN	⊙ s	Select Resource	Group		Templa	ates			\bigcirc	Ξ	0	4
			Configuration Groups	Feature Profiles	Device Templates	Feature Templates						
Feature Template > Add Temp	plate > VPN											
Device Type	vEdge Cloud	ł										Î
Template Name*	vEdge_VPN	V512										
Description*	vEdge_VPN	V512										
Basic Configuration Route Leak	DNS	Advertise OMP	IPv4 Route	IPv6 Route	Service	Service Route	GRE Route	IPSEC Route	NA	λT		
✓ BASIC CONFIGURAT	ΓΙΟΝ											
VPN			512									
Name			Ø-									
Enhance ECMP Keying			⊘ ▼ ○ On	O Off								
				Cancel	Save	1						

3.5. Viết Feature Template Interface VPN 512

Template Name: vEdge_VPN512_eth0 Description: vEdge_VPN512_eth0

Interface Name: eth0

onfiguration - Templates Cisc							~ 1)
C A Not secure	https://192.168.1.1:8443/#/a	pp/config/template/feature?dis	splay=add&deviceT	ype=vedge-cloud&templateType=vpn-vedge-interface		Ē	H L		
E Cisco SD-WA	N 💮 Select Reso	urce Group•		Templates		\bigcirc	Ξ	0	L,
		Configuration Groups	Feature Profiles	Device Templates Feature Templates					
ature Template > Add Te	emplate > VPN Interface Ethern	iet							
evice Type	vEdge Cloud								
emplate Name*	vEdge_VPN512_eth0]						
ascription*	vEdge_VPN512_eth0								
asic Configuration	Tunnel NAT	VRRP ACL/QoS	ARP	802.1X Advanced					
asic Configuration	Tunnel NAT	VRRP ACL/QoS	ARP	802.1X Advanced					
BASIC CONFIGUE	Tunnel NAT	VRRP ACL/QoS	ARP	802.1X Advanced	-				
BASIC CONFIGUR Shutdown Interface Name	Tunnel NAT	VRRP ACL/QoS	ARP	802.1X Advanced	-				
asic Configuration BASIC CONFIGUR Shutdown Interface Name Description	Tunnel NAT	VRRP ACL/QoS	ARP	802.1X Advanced					
Asic Configuration BASIC CONFIGUE Shutdown Interface Name Description	Tunnel NAT	VRRP ACL/QoS	ARP	802.1X Advanced					
Asic Configuration BASIC CONFIGUR Shutdown Interface Name Description	Tunnel NAT	VRRP ACL/QoS	ARP	802.1X Advanced					
Asic Configuration	Tunnel NAT	VRRP ACL/QoS	ARP No No Data	802.1X Advanced					

Website: www.vnpro.vn | Forum: www.vnpro.org | Video: https://www.youtube.com/@vnpro149



3.6. Viết Feature Template service VPN

Service VPN 11

Configuration > Templates, chuyển qua tab Feature > Add Template.

Cisco SD-WAN	Select Re	source Group •	Templates		?
		Configuration Groups Feature Profile	es Device Templates Feature Templates		
ature Template > Add Template					
Select Devices	VP	N			
Q Search by device name					
ISRv	•				
□ vEdge 100		Secure Internet Gateway (SIG)	VPN (h)	VPN Interface Bridge	
vEdge 100 B					
vEdge 100 M					
vEdge 100 WM		VPN Interface Cellular	VPN Interface Ethernet	VPN Interface GRE	
vEdge 1000		WAN	Management WAN LAN	WAN	
vEdge 2000					
vEdge 5000					
vEdge Cloud		VPN Interface IPsec	VPN Interface NATPool	VPN Interface PPP	
vManage		WAN	WAN	WAN	
□ vSmart	11.2				

Tạo template cho VPN 11 như sau:

Select Devices: vEdge Cloud Template: VPN/VPN Template Name: vEdge_VPN11 Description: vEdge_VPN11

CÔNG TY TNHI	I TƯ VÁN V.	à dịch vụ	CHUYÊN	VIÊT
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		oon noon noon of a paper oo		play additionally	pe reage account					
E Cisco SD-WAN	0	Select Resource	Group		Templ	ates		\bigcirc	0	
			Configuration Groups	Feature Profiles	Device Templates	Feature Templates				
ature Template > Add Tem	plate > VPN									
avice Type	vEdge Clou	ud								
mplate Name*	vEdge_VF	PN11								
ascription*	vEdge_VF	PN11								
toute Leak							II OLO ROULE			
voute Leak	TION						ii olo koute	nai		
VPN	TION		11							
VPN Name	TION		● 111 ⊘ •							
VPN Kame Enhance ECMP Keying	TION		 ⊕ 11 ⊘ ▼ ⊘ ▼ ⊙ ▼ 	O Off						

Nhấn Save để tạo template.

3.7. Viết Feature Template VPN11 interface

Trang Feature Templates, chọn Add Template.

Tạo template cho VPN 11 interface như bên dưới:

Template Name: vEdge_VPN11_Ge0\2 Description: vEdge_VPN11_Ge0\2

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nh, Tp Hồ Chí Minh : vnpro@vnpro.org

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	Configuration Groups Feature Pro	files Device Templates Feature Templates	
Feature Template > Add Template			
Select Devices Q Search by device name	VPN		
ISRv	•		
vEdge 100	Secure Internet Gateway (SIG)	VPN	VPN Interface Bridge
vEdge 100 B	WAN		LAN
vEdge 100 M			
vEdge 100 WM		շրո	
□ vEdge 1000	VPN Interface Cellular	VPN Interface Ethernet	VPN Interface GRE
vEdge 2000	WAN	Management WAN LAN	WAN
□ vEdge 5000			
vEdge Cloud			
vManage	VPN Interface IPsec	VPN Interface NATPool	VPN Interface PPP
□ vSmart	WAN	WAN	WAN
	▼ 4		
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	Select Resource Group	eviceType=vedge-cloud&templateType=vpn-vedge-inte	 ¹ ⊕ ⊕ ⊕ ⁶¹₆₂₂
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	Configuration Groups	Feature Profiles Device Templates Feature Templates	
Feature Template > Add Template >	VPN Interface Ethernet		
			•
		IPv6	
O Dynamic O Static			
IPv4 Address		[vpn11_ge0/2_if_ipv4_address]	
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Block Non Source IP	⊘ ▼	 No 	
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Chon Save

3.8. Tạo một Device Template

Ở giao diện vManage, Configuration > Templates (tab Device).

Chon Create Template > From Feature Template.

Chon Device Model (vEdge Cloud).

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Configuration Groups	Feature Profiles Device Templates Feature Templates	<u>^</u>
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Create Template V From Feature Template	in Fasture Templater Dealt Mode Devices Attached	Total Rows: 0 🧭 蕟
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Nhập Template Name $(vEdge_Multi_Transport_Teamplate),$ Description $(vEdge_Multi_Transport_Template).$

	ttps://192.100.1.1.0445/#/app/coning,	/template/device/feat	ture				Ē	\$		_
E Cisco SD-WAN	Select Resource Gro	oup▼		Templa	tes		\bigcirc	\equiv	0	
	Ca	onfiguration Groups	Feature Profiles	Device Templates	Feature Templat	es				
evice Model*	vEdge Cloud	~								
evice Role*	SDWAN Edge	~								
emplate Name*	vEdge_Multi_Transport_Template									
escription*	vEdge_Multi_Transport_Template									
sic Information										
sic Information										
sic Information	Factory_Default_vEdge_System	a_Templ ▼				Additional System Templates				
sic Information ystem * ogging *	Factory_Default_vEdge_System Factory_Default_Logging_Temp	i_Tempi ▼				Additional System Templates				
sic Information ystem * ogging*	Factory_Default_vEdge_System	n_Templ				Additional System Templates Archive NTP				
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sic Information ystem * ogging*	Factory_Default_vEdge_System Factory_Default_Logging_Temp	h_Templ ▼				Additional System Templates Archive NTP				
sic Information ystem * ogging*	Factory_Default_vEdge_System Factory_Default_Logging_Temp	h_Tempi •				Additional System Templates Archive MTP				



Trong phần Basic Information thì để mặc định nếu có những template tương ứng thì có thể chọn vào.

→ C ▲ Not secur	re https://192.168.1.1:8443/#/app/con	fig/template/device/fea	ture				B			4
≡ Cisco SD-W/	AN 💮 Select Resource (Group v		Templat	es		\bigcirc	Ξ	0	1
		Configuration Groups	Feature Profiles Devic	e Templates	Feature Template	s				
Basic Information	Transport & Management VPN	Service VPN	Additional Template	s						
sic Information										
System *	Factory_Default_vEdge_Syst	em_Templ 👻				Additional System Templates				
Logging*	Factory_Default_Logging_Te	mplate_V01 👻				 Archive NTP 				
AAA	Factory_Default_AAA_Templ	ate 👻	BFD *		Factory_Def	ault_BFD_Template_V01 -				
OMP *	Factory_Default_vEdge_OMP	_Template 👻	Security *		Factory_Def	ault_vEdge_Security_Temp 👻				
			Create	Cancel						

Trong phần Transport & Management VPN, chọn VPN Interface.

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	← → C ▲ Not secure htt	ps://192.168.1.1:8443/#/app/config/template/device/feat	ture	ዸ ☆ 🛛 🚢 :
	≡ Cisco SD-WAN	♦ Select Resource Group	Templates	
		Configuration Groups	Feature Profiles Device Templates Feature Templates	
	Transport & Management	VPN		•
	VPN 0 *	vEdge_VPN0 -	Additional VPN 0 Temp	ates
	VPN Interface	vEdge_VPN0_Ge0/0_Internet	BGP GPF	
	VPN Interface	vEdge_VPN0_Ge0/1_MPLS	Secure Internet Gateway VPN Interface	
			VPN Interface Cellular VPN Interface GRE	
			VPN Interface IPsec VPN Interface PPP	
	VPN 512 *	vEdge_VPN512 -	Additional VPN 512 Ter	nplates
	VPN Interface	vEdge_VPN512_eth0 👻 👼		
	Service VPN			
			Create Cancel	
	🖷 🔎 🗄 🔍 🛢	🖕 🧿 😤		^ @ € d a 8:27 AM

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Đối với VPN 512, chọn mẫu tính năng mới được tạo trong mục sổ ra VPN 512 và trong mục sổ ra VPN Interface trong VPN 512.

Trong phần service VPN, di chuột qua văn bản + service VPN. Một cửa sổ sẽ xuất hiện với một hộp văn bản cho số service VPN mà bạn muốn tạo.

C A Not secure https://19	2.168.1.1:8443/#/app/config/template/device/fe	eature		Ê	☆□	-
Cisco SD-WAN	Select Resource Group •	Templa	ates	\bigcirc	≡ ⊘)
	Configuration Groups	Feature Profiles Device Templates	Feature Templates			
vice VPN						
Q Search					∇	
0 Rows Selected Add VPN	Remove VPN					
				Total Rows: 0	Ø	
ai 🗋	Template Na	me	Sub-Templates			
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 ĐC: 276 - 278 Ung Văn Khiêm, P.25, Q.Binh Thạnh, Tp Hồ Chí Minh

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Add VPN					
	Select VPNs	Select	Sub-Templates		
Select one or more Service VPNs to add:					0 Items Selected
Available VPN Templates	Select All	Se	lected VPN Templat	es	
O Search	∇	Q	Search		∇
ID Template Nam	e	D		Template Name	
9cf7824f-4d65-4280-868c-52abc vEdge_VPN11	-	Ð			
			_		
reate VPN Template		Next	Cancel		
Add VPN					
lude sub-templates to attach to ALL selected service V VPN Interface	Select VPNs PNs: Ge0/2	Selec	t Sub-Templates	Additional VPN Temp BGP IGMP Multicast OSPF PIM VPN Interface VPN Interface Bridge VPN Interface Bridge VPN Interface Brec VPN Interface IPsec VPN Interface Natpool	plates

YnPro			TRUNC DC: 276 - 278 Ung Văn Khiêm, P.25, DT: (028) 35124257 Hotline: 093342	G TÂM TIN HỌC Q.Bình Thạnh, Tp Hồ 27079 Email : vnpro@
Configuration - Templates Cisco 🗄 🗙 🕇 🕂			· -	- 8 ×
→ C ▲ Not secure https://192.168.1.1:8443/#/app/	/config/template/device/feature		@ ☆	
E Cisco SD-WAN 🔗 Select Resource	ce Group •	Templates		0 🗘
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rvice VPN				-
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0 Rows Selected Add VPN Remove VPN				~
0 Rows Selected Add VPN Remove VPN			Total Rows: 1	ç
0 Rows Selected Add VPN Remove VPN	Template Name	Sub-Templates	Total Rows: 1	B
0 Rows Selected Add VPN Remove VPN D ID 9cf7824f-4d65-4280-868c-52abcc39c1e1	Template Name vEdge_VPN11	Sub-Templates VPN Interface	Total Rows: 1	с
0 Rows Selected Add VPN Remove VPN D ID 9cf7824f-4d65-4280-868c-52abcc39c1e1	Template Name vEdge_VPN11	Sub-Templates VPN Interface	Total Rows: 1	
0 Rows Selected Add VPN Remove VPN D ID O 9cf7824f-4d65-4280-868c-52abcc39c1e1	Template Name vEdge_VPN11	Sub-Templates VPN Interface	Total Rows: 1	G
0 Rows Selected Add VPN Remove VPN D ID 9cf7824f-4d65-4280-868c-52abcc39c1e1 ditional Templates	Template Name vEdge_VPN11	Sub-Templates VPN Interface	Total Rows: 1	<i>c</i>
0 Rows Selected Add VPN Remove VPN D ID O 9cf7824f-4d65-4280-868c-52abcc39c1e1 ditional Templates	Template Name vEdge_VPN11	Sub-Templates VPN Interface	Total Rows: 1	C
0 Rows Selected Add VPN Remove VPN D ID D 9cf7824f-4d65-4280-868c-52abcc39c1e1 ditional Templates anner Choose	Template Name vEdge_VPN11	Sub-Templates VPN Interface	Total Rows: 1	
0 Rows Selected Add VPN Remove VPN D ID D Self7824f-4d65-4280-868c-52abcc39c1e1 ditional Templates anner Choose Olicy Choose	Template Name vEdge_VPN11	Sub-Templates VPN Interface	Total Rows: 1	<i>C</i>
0 Rows Selected Add VPN Remove VPN ID	Template Name VEdge_VPN11	Sub-Templates VPN Interface	Total Rows: 1	

Chọn Create để tạo và lưu mẫu thiết bị.

3.9. Triển khai các Device Template tới các bộ định tuyến WAN Edge.

 $Configuration > Templates > tab \ Device > tim \ vEdge_Multi_Transport_Teamplate \ > ... > Attach \ Devices.$

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onfiguration - Templates Cisco 🗧 🗙	+						~	-	٥	×
C A Not secure https://www.	//192.168.1.1:8443/#/ap	p/config/template/device					Ē	☆		:
E Cisco SD-WAN	Select Resource	irce Group▼		Templates			\bigcirc	\equiv	04	3
		Configuration Groups Fe	sature Profiles Device	Templates Feat	ure Templates					Í
Q Search								2	7	
Create Template ~										
Template Type Non-Default V							Total Rows: 1	Ø	ŝ	
Name Description Type	Device Mode De	vice Role Resource Group	Feature Templates	Draft Mode	Devices Attached	Updated By	Last Updated			
vEdge vEdge_Multi_Tr Featu	re vEdge Cloud SD	WAN Edge global	13	Disabled	0	admin	27 Jun 2023 3:3	•••		
							Edit			
							View			
							Delete			
							Attach D	evices	վեղ	
							Change I	Resourc	e Group	
							Export C	SV		

Một cửa sổ hiện lên liệt kê các thiết bị bị có sẵn sẽ được áp dụng cấu hình này. Danh sách các thiết bị chứa tên máy chủ và địa chỉ IP của thiết bị nếu nó được quản lý thông qua vManage hoặc nó sẽ chứa số sê-ri của thiết bị chưa quản lý và không được vManage xác định.

Chọn thiết bị bạn muốn áp dụng cấu hình và chọn mũi tên để di chuyển thiết bị từ Available Devices box sang Selected Devices. Bạn có thể chọn nhiều thiết bị cùng một lúc. Chọn Attach.



Attach Devices

 \times

Available Devices		Select All		Selected Devices		
All	Q Search	∇	_	All 👻	Q Search	5
Name	Device IP		\mathbf{Q}	Name	Device IP	
be5ba729-6684-943c-	1e91-7d6ff296e97b		\otimes			
ecf8966f-55f0-b701-b9	9df-717fe3ca0fd0					
f121e275-5c29-cbce-7	1c1-783ee2126db4					
80060207-b2bd-a5fa-6	91f-72386930a34e					
84c6527e-45e6-c5a8-c	c33c-fff9d8ad42a4					
vbond	1.1.1.2					
vedge1	1.1.10.1					
vedge2	1.1.10.2					
vedge3	1.1.10.3	•				
						-

Tim vedge-site1 > ... > Edit device template

7	C A Not secure https://192.168.1.1:0	9443/#/app/col	ntig/template/device/contigur	e/6fcuu/d1-6380-45bf-6888-b8c83d/68d51	
	Cisco SD-WAN 🔅 Selec	t Resource	Group	Templates	$\bigcirc \equiv \bigcirc$
e Te	mplate vEdge_Multi_Transport_	Template			
Q	Search				Y
					Total Rows: 3 T
S	Chassis Number	System IP	Hostname	IPv4 Address(vpn11_ge0/2_if_ipv4_address)	Address(vpn0_Internet_next_hop_ip_address_1)
9	0b0f3c75-47c5-5e73-a557-9cf97c754274	1.1.10.1	vedge1		
Э	5316bef9-7742-d0c9-1048-df6288bb4e	1.1.10.3	vedge3		Edit Device Tem
Э	168a2add-2c4f-fcb1-6139-1d99df86e22e	1.1.10.2	vedge2		
				Next Cancel	
		_			0-24 AA
6					- E C - 0-34 Al

Một màn hình hiện lên hiển thị danh sách biến. Từ danh sách đó thay đổi biến mà mình muốn.

-		
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2 \$		± :
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s: 3	<u>→</u>	¥
1)		
"		
•		
	vs: 3 _1) 	¥8:3 ₹ .1)

Chọn Update. Sau đó Next để áp dụng các mẫu lên các thiết bị vEdge đã chọn.

Màn hình tiếp theo sẽ cho biết rằng hành động cấu hình sẽ được áp dụng cho một hay nhiều thiết bị được gắn vào một device template. Chọn một device template ở phía trên bên trái sẽ hiển thị cho bạn cấu hình sẽ được đẩy đến bộ định tuyến vEdge (tab Config Preview). Chọn tab Config Diff ở đầu màn hình để xem sự khác biệt trong cấu hình hiện tại so với cấu hình sắp áp dụng.

Chon Configure Devices

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🗧 🔶 C 🔺 Not secure https://192.168.1.1:8443/#/app/config/template/device/configure/8fc007d1-6380-45bf-8a88-b8c83d76ad51										
≡ Cisco SD-WAN	ct Resource (Group 🗸	Templates	0	Ξ	0	()			
Device Template vEdge_Multi_Transport_	_Template									
Q Search						∇				
				Total Rows	: 3	<u>↑</u>	<u>k</u>			
S Chassis Number	System IP	Hostname	IPv4 Address(vpn11_ge0/2_if_ipv4_address)	Address(vpn0_Internet_next_hop_ip_address_1)					
Ob0f3c75-47c5-5e73-a557-9cf97c754274	1.1.10.1	vedge1	192.168.10.254/24	200.200.1.1		••				
5316bef9-7742-d0c9-1048-df6288bb4e	1.1.10.3	vedge3	192.168.30.254/24	200.200.3.1		••				
168a2add-2c4f-fcb1-6139-1d99df86e22e	1.1.10.2	vedge2	192.168.20.254/24	200.200.2.1		••				

		Next Cancel	
🖷 🔎 🛱 😧 🖿 🤞	<u> </u>		^ ⊕ € 4 <mark>≈</mark> 6/27/2023 🖏
🗰 Configuration - Templates Cisco 🗙 🕂			✓ - ₫ X
← → C ▲ Not secure https://19	2.168.1.1:8443/#/app/config/template/device/	/configure/preview/8fc007d1-6380-45bf-8a88-b8c83d76ad51	🖻 🏠 🔲 😩 🗄
≡ Cisco SD-WAN	⑦ Select Resource Group ▼	Templates	
Device Template Total vEdge_Multi_Transport 1 Device list (Total: 3 devices) Filter/Search 0b073c75-4725-5873-a557- gcf97c754274		Please select a device from the device list	
Configure Device Rollback Timer			
		Back Configure Devices	
🔳 🔎 🖽 🔾 🖿	O E		^ 단 값 4 ⁸ 41 AM 6/27/2023 록

Sau khi xác nhận sẽ xuất hiện một bảng thông báo quá trình áp dụng template lên các vEdge đã được chọn trước đó.

ofic	uration Tomplates Circo	. т.					ÐT: (028) 35124257	Hotin	e: 093.	54270	79 ET	nail:	vnpi ×
- mg	C A Not secure +	• • • • • • • • • • • • • • • • • • •	/app/device/status?activity	=push_file_template_conf	iguration&pid=push_featu	re_template_configuration	-c0c66efd-3b59-4757-b492	-17cdb	ė	☆			:
(Cisco SD-WAN	Select Res	ource Group•						\sim	=	\bigcirc	6	5
1	Feature Template Config	uration 🥑 Validation Succ	ess				Initiated By:	admin	From:	192.16	i 8.1. 1	00	
	Search										V	7	
								Total R	lows: 3	Ŕ	3 {	ŝ	
	Status	Message	Chassis Number	Device Model	Hostname	System IP	Site ID	vManag	e IP				
	Success	Done - Push Feature T	0b0f3c75-47c5-5e73	vEdge Cloud	vedge1	2.1.1.1	1	1.1.1.1					
	Success	Done - Push Feature T	5316bef9-7742-d0c9	vEdge Cloud	vedge3	4.1.1.1	3	1.1.1.1					
	Success	Done - Push Feature T	168a2add-2c4f-fcb1	vEdge Cloud	vedge2	3.1.1.1	2	1.1.1.1					

IV. Kiểm tra kết nối giữa các thiết bị

Ta vào từng vEdge show interface description để xem cấu hình đã được đẩy thành công.



🕞 vEdge-Site1 File Edit View Options Transfer Script Tools Window Help 🖏 況 🎧 🏭 🗶 Enter host <Alt+R> 🛛 🗈 🖺 👫 🛛 💁 🎒 🚰 🕉 📍 🔞 🖉 ✓ vManager ✓ vBond ✓ vSmart ✓ vEdge-Site1 × ✓ vEdge-Site2 ✓ vEdge-Site3 vEdge-Site1# show interface description interface vpn 0 interface ge0/0 af-type ipv4 200.200.1.2/30 ip-address if-admin-status σU if-oper-status Uр if-tracker-status NA desc Internet ipv6-admin-status Up interface vpn 0 interface ge0/1 af-type ipv4 172.16.1.1/24 ip-address if-admin-status Up if-oper-status Up if-tracker-status NA desc MPLS ipv6-admin-status Up interface vpn 0 interface ge0/3 af-type ipv4 ip-address if-admin-status Down if-oper-status Down if-tracker-status NA desc None ipv6-admin-status Up interface vpn 0 interface system af-type ipv4 2.1.1.1/32 ip-address if-admin-status Up if-oper-status Up if-tracker-status NA desc None ipv6-admin-status Up interface vpn 11 interface ge0/2 af-type ipv4 192.168.10.254/24 ip-address if-admin-status Up if-oper-status Up if-tracker-status NA desc None

Ready



Trên vEdge ta dùng các lệnh sau để kiểm tra kết nối giữa vEdge:

Dùng lệnh *show control connections* dùng để kiểm tra tình trạng kết nối của vEdge với các thiết bị trong mạng Cisco SD-WAN.

vEdge-Sitel# show control	connections					
EER		CONTROLLER				
PEER PEER PEER	SITE DOMA					
UB		GROUP				
TYPE PROT SYSTEM IP	ID ID	PRIVATE IP		PORT	PUBLIC IP	
ORT ORGANIZATION	LOCAL COLOR	PROXY STATE	UPTIME ID			
vsmart dtls 1.1.1.3				12346		
2346 VnPro	mpls	No up	0:00:17:14 0			
vsmart dtls 1.1.1.3	1000 1			12346		
2346 VnPro	biz-internet					
vbond dtls 0.0.0.0				12346		
2346 VnPro						
vbond dtls 0.0.0.0				12346		
2346 VnPro	biz-internet		0:00:17:19 0			
vmanage dtls 1.1.1.1		10.1.1.1		12746		
2746 VnPro	biz-internet		0:00:17:19 0			
vEdge-Sitel#						



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