

LAB: VIẾT TEMPLATE CẤU HÌNH BGP CHO VEDGE TRONG CISCO SD-WAN

l. Sơ đồ



II. Yêu cầu kỹ thuật

- Thực hiện đấu nối thiết bị và đặt địa chỉ ip như sơ đồ
- Cấu hình các giao thức iBGP trên các Router Site1, Site2, Site3
- Cấu hình một Feature Template: vEdge_BGP để đẩy cấu hình cho các vEdge chạy BGP trong VPN11 (Service VPN).
- Tạo một device template mới gồm Feture Template vEdge_BGP các Feature Template cũ (*vEdge_VPN0, vEdge_VPN0_Ge0/0, vEdge_VPN0_Ge0/1, vEdge_VPN512, vEdge_VPN512_eth0, VPN1, VPN1_Ge0/2*).
- Thực hiện Redistrute BGP vào OMP và Redistribute OMP vào BGP.
- III. Các bước thực hiện

3.1. Cấu hình các giao thức iBGP trên các Router Site1, Site2, Site3 R-Site1

```
interface Ethernet0/0
ip address 192.168.1.2 255.255.255.0
no shutdown
interface Ethernet0/1
ip address 10.10.10.1 255.255.255.0
no shutdown
router bgp 1
network 10.10.10.0 mask 255.255.255.0
```



neighbor 192.168.1.254 remote-as 1

R-Site2

interface Ethernet0/0 ip address 192.168.2.2 255.255.255.0 no shutdown interface Ethernet0/1 ip address 10.10.20.1 255.255.255.0 no shutdown router bgp 2 network 10.10.20.0 mask 255.255.255.0 neighbor 192.168.2.254 remote-as 2

R-Site3

interface Ethernet0/0 ip address 192.168.3.2 255.255.255.0 no shutdown interface Ethernet0/1 ip address 10.10.30.1 255.255.255.0 no shutdown router bgp 3 network 10.10.30.0 mask 255.255.255.0 neighbor 192.168.3.254 remote-as 3

3.2. Tạo một Feature Template cho BGP trong interface Ge0/2 của VPN11

Trong giao diện vManage ta chọn **Configuration > Template > Feature >** Sau đó ta chọn **Add Template**

CÔNG TY TNHH TƯ VÁN VÀ DỊCH VỤ CHUYÊN VIỆT

TRUNG TÂM TIN HỌC VNPRO ĐC: 276 - 278 Ung Văn Khiêm, P.25, Q.Bình Thạnh, Tp Hồ Chí Minh

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Sau đó một loạt thiết bị trong Select Device xuất hiện, ở đây ta chọn vEdge Cloud và sau đó chọn BGP để tạo Feature Template.

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Bước tiếp theo là đặt tên cho Template Name, Description, Router ID.

Template Name: *vEdge_BGP*

Description: *vEdge_BGP*

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Description*	vEdge_BGP			
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Router ID		⊘ •		
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Website: www.vnpro.vn | Forum: www.vnpro.org | Video: https://www.youtube.com/@vnpro149



Tiếp theo đến phần **Neighbor**, hãy chọn **New Neighbor Address:** Device Specific **Remote AS**: Device Specific

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Sau đó chọn Save để lưu Feature Template

3.3. Tạo một Device Template

Ở giao diện vManage, ta chọn **Configuration** > **Template** > **Create Template**, sau đó ta chọn **From Feature Template**

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Trong phần Transport & Management VPN, chọn VPN Interface.

Đối với *VPN0*, chọn Feature Template đã được tạo trong mục sổ ra *vEdge_VPN0* và trong mục sổ ra VPN Interface trong *vEdge_VPN0_Ge0/0* và *vEdge_VPN0_Ge0/1*

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



Đối với *VPN512*, chọn Feature Template được tạo trong mục sổ ra *vEdge_VPN512* và trong mục sổ ra *VPN Interface* là *vEdge_VPN512_eth0*

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Đối với phần Service VPN:

- VPN: vEdge VPN1
- BGP: vEdge_BGP
- vEdge: vEdge_VPN1_Ge0/2



TRUNG TÂM TIN HỌC VNPRO

ĐC: 276 - 278 Ung Văn Khiêm, P.25, Q.Binh Thạnh, Tp Hồ Chí Minh **ĐT**: (028) 35124257 | **Hotline**: 0933427079 **Email**: vnpro@vnpro.org

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Choose...

Policy

Sau đó chọn Create để tạo Device Template

3.4. Tiến hành đẩy cấu hình cho vedge từ Device Template

•

Ta chọn *Configuration* > *Templates* > *tab Device* > *tìm vEdge* BGP > ... > *Attach Devices*.

Cancel

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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.



Tìm vEdge-Site1 > ... > Edit device template Tìm vEdge-Site2 > ... > Edit device template Tìm vEdge-Site3 > ... > Edit device template

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Một màn hình hiện lên hiển thị danh sách biến. Từ danh sách đó thay đổi biến mà mình muốn. vEdge-Site1

Configuration - Templates Cisco S × + ← → C ▲ Not secure https://192.166	3.1.1:8443/#/app/config/template/device/configure/c1922:	3d7-cd14-442d-955c-f56830e51ddd		✓ – ∅ ×
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vEdge-Site2

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DC: 276 - 278 Ung Văn Khiêm, P.25, Q.Binh Thạnh, Tp Hồ Chí Minh **DT**: (028) 35124257 | **Hotline**: 0933427079 **Email**: vnpro@vnpro.org

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V-Pro



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





Cuối cùng xuất hiện một bảng thông báo quá trình áp dụng template lên các vEdge đã được chọn trước đó **Success**

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3.5. Thực hiện Redistribute BGP vào OMP và Redistribute OMP vào BGP.
- Đầu tiên, ta thực hiện Redistribute OMP vào BGP.

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



Trong giao diện vManage ta chọn **Configuration > Template > Feature > Sau đó ta chọn Add Template**

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Sau đó một loạt thiết bị trong **Select Device** xuất hiện, ở đây ta chọn **vEdge Cloud** và sau đó chọn **OMP** để tạo Feature Template.



ĐC: 276 - 278 Ung Văn Khiêm, P.25, Q.Binh Thạnh, Tp Hồ Chí Minh **ĐT**: (028) 35124257 | **Hotline**: 0933427079 **Email**: vnpro@vnpro.org

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Chọn Save để tạo Feature Template

Sau đó ta trở về mục **Template > Device**, hãy tìm device template là *vEdge_BGP*, chọn **Edit**

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Ở phần Basic information, tìm phần OMP, rồi thêm Feature Template mới tạo là OMP into BGP

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TRUNG TÂM TIN HỌC VNPRO

Sau đó chọn Configure Devices

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- Thực hiện Redistribute từ BGP vào ngược lại OMP

Trong giao diện v Manage ta chọn **Configuration > Template** > **Feature** > tìm Feature Template có tên là $vEdge_BGP$, chọn **Edit**

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OMP_into_BGP	OMP_into_BGP	WAN Edge OMP	vEdge Cloud	1	global	3	admin	12 Jul 2023 12:2 •••		



Hãy tìm mục **RE-DISTRIBUTE**, chọn **New Resdistribute**, chọn *omp* (để bgp resdistribute vào omp) . Sau đó chọn **Add**, và cuối cùng cho **Update** để hoàn thành bước Redistribute

CISCO SD-WAN	Select Resource	Group		Templa	ates		\bigcirc	=	(?)
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IV. Kiểm tra

Ta vào console từng vedge dung lệnh **show running-config** thì ta thấy cấu hình BGP đã được đẩy xuống vEdge thành công trong **VPN1**

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```
vpn 1
router
 bgp 1
  address-family ipv4-unicast
   redistribute omp
  neighbor 192.168.1.2
   no shutdown
   remote-as 1
interface ge0/2
 ip address 192.168.1.254/24
 no shutdown
omp
 advertise connected
 advertise static
vpn 512
interface eth0
 description MGMT
 no shutdown
vEdge-Site1#
```

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```
vpn 1
router
 bgp 2
   address-family ipv4-unicast
    redistribute omp
  neighbor 192.168.2.2
   no shutdown
    remote-as 2
interface ge0/2
  ip address 192.168.2.254/24
 no shutdown
omp
 advertise connected
 advertise static
vpn 512
interface eth0
 description MGMT
 no shutdown
vEdge-Site2#
```

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```
7pn
router
 bgp 3
  address-family ipv4-unicast
    redistribute omp
  neighbor 192.168.3.2
   no shutdown
   remote-as 3
interface ge0/2
 ip address 192.168.3.254/24
 no shutdown
omp
 advertise connected
 advertise static
vpn 512
interface eth0
 description MGMT
 no shutdown
vEdge-Site3#
```

Ta vào từng vEdge ở các site gõ lệnh: **show omp routes** | **tab** để xem nó đã học route ở các site khác thông qua OMP



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🕞 vEdge-Site1

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Vào PC1 (với IP Address là: 10.10.10.2) trong sơ đồ lab, thực hiện lệnh ping đến các địa chỉ IP của PC2 (10.10.20.2) và PC3 (10.10.30.2)

Kết quả đã ping được với nhau

```
PC1> ping 10.10.20.2
84 bytes from 10.10.20.2 icmp_seq=1 ttl=60 time=63.115 ms
84 bytes from 10.10.20.2 icmp_seq=2 ttl=60 time=78.649 ms
84 bytes from 10.10.20.2 icmp_seq=3 ttl=60 time=62.001 ms
84 bytes from 10.10.20.2 icmp_seq=4 ttl=60 time=53.733 ms
84 bytes from 10.10.20.2 icmp_seq=5 ttl=60 time=65.664 ms
PC1> ping 10.10.30.2
84 bytes from 10.10.30.2 icmp_seq=1 ttl=60 time=73.088 ms
84 bytes from 10.10.30.2 icmp_seq=2 ttl=60 time=67.104 ms
84 bytes from 10.10.30.2 icmp_seq=3 ttl=60 time=65.594 ms
84 bytes from 10.10.30.2 icmp_seq=4 ttl=60 time=65.236 ms
84 bytes from 10.10.30.2 icmp_seq=5 ttl=60 time=65.236 ms
84 bytes from 10.10.30.2 icmp_seq=5 ttl=60 time=65.236 ms
```

PC1>

