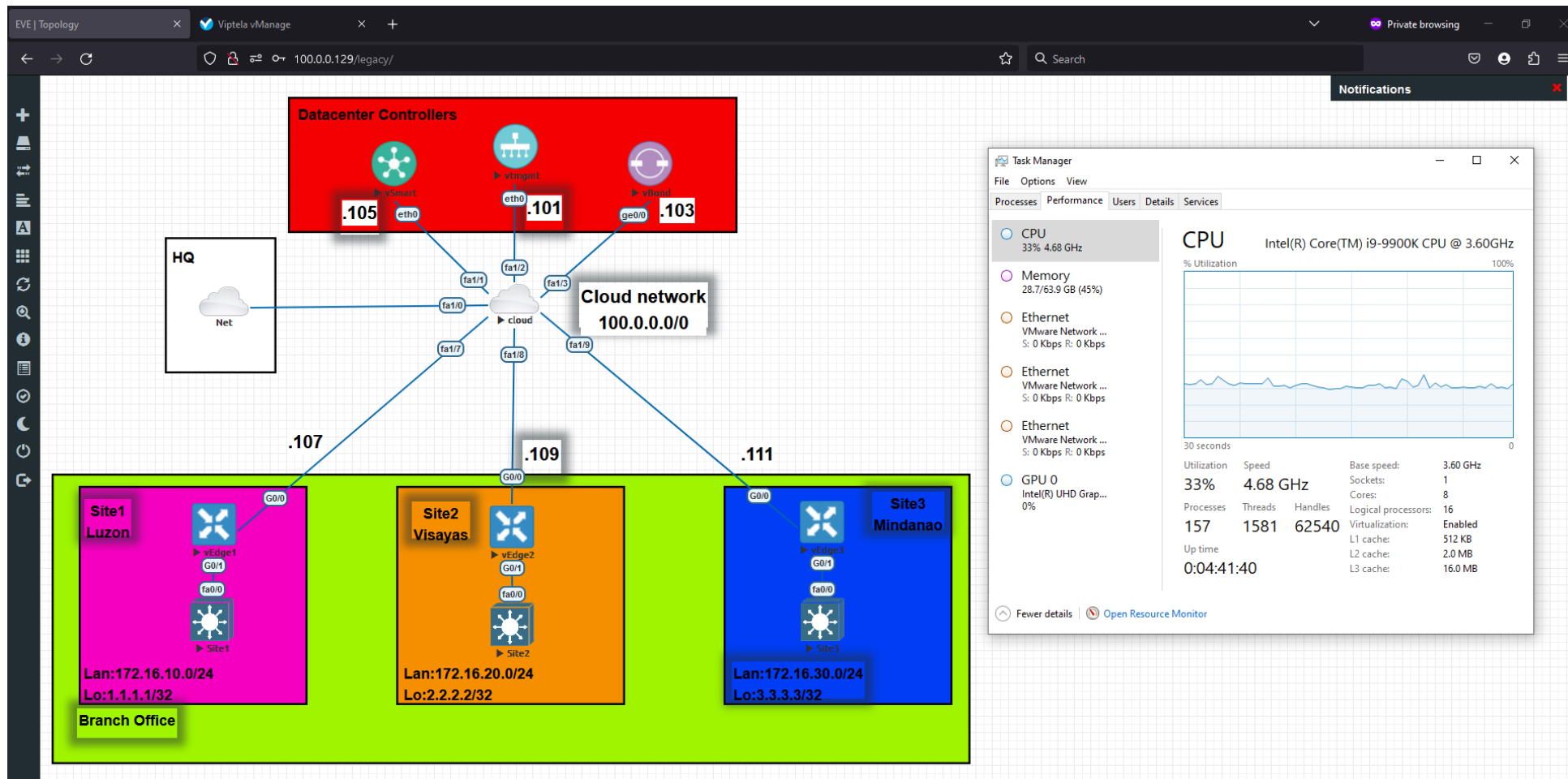




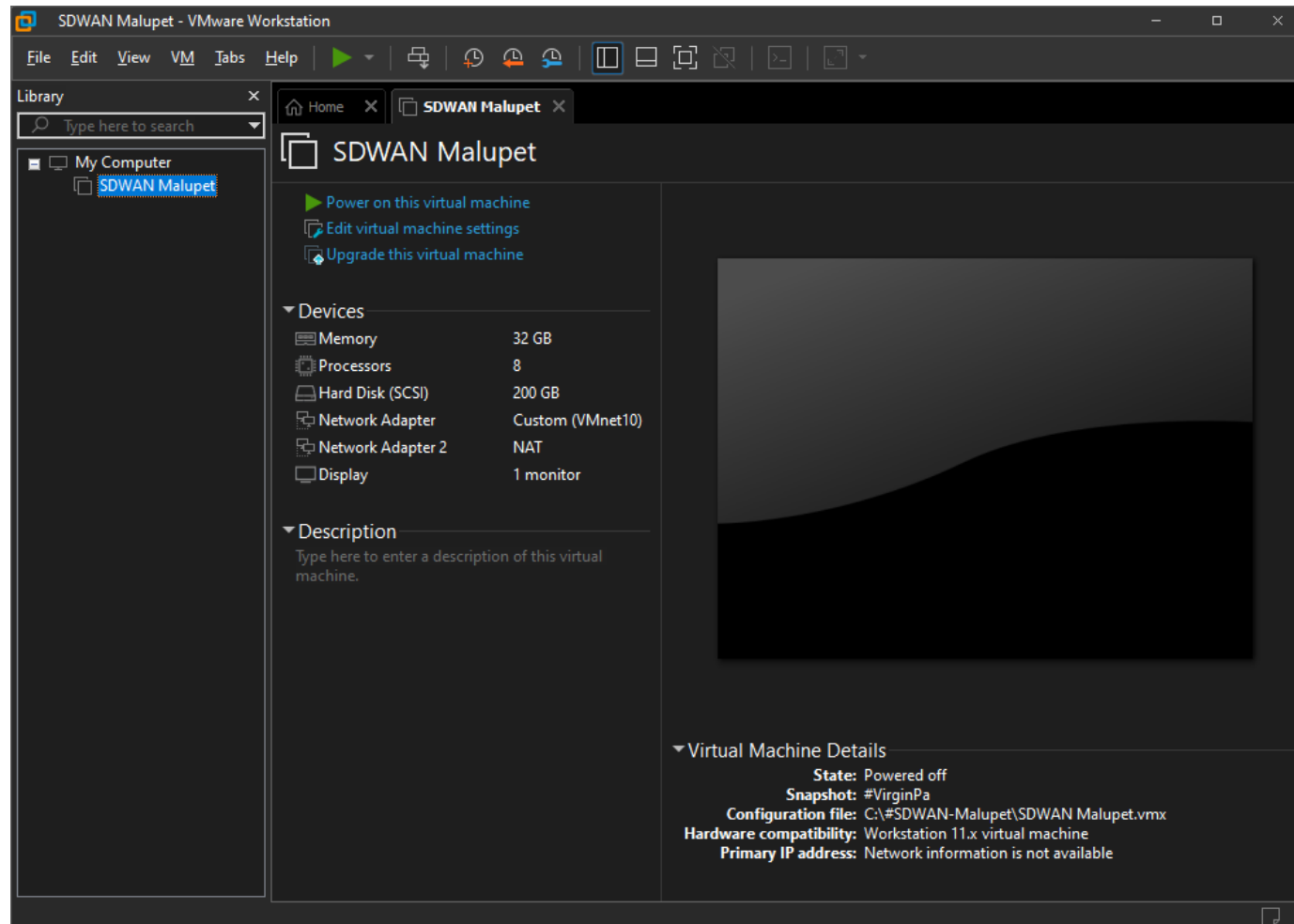
FULL PROCEDURES OF SD-WAN IMPLEMENTATION

Prior to setup and running SDWAN thru VMWare, Minimum RAM must at least 32GB and Intel i5 CPU to run. The SDWAN VM Package really consumes a lot of Resources, example to the indicated screenshot below runs on Intel i9-9900K and 64GB RAM DDR4-2666 with XMP.





To begin with, extract the provided SDWAN Package (.zip / .rar / .7zip file) to the drive which having the biggest space.
Launch the VMWare App and open its .vmx file from the extracted path.





Let's configure its Virtual Networking first... Add and set (or check) VMNet10 in Virtual Network Editor, the first Network Adapter is set to VMNet10 with its subnet IP 100.0.0.0. Since the IP Address 100.0.0.0 is not a private IP, it is recommended to disconnect the internet first to avoid possible conflict. The second Network Adapter is set to NAT.

The screenshot displays two windows from a virtualization software interface. The 'Virtual Network Editor' window is in the background, showing a table of network adapters. VMNet10 is selected, configured as a Host-only network with a Subnet Address of 100.0.0.0. Below the table, the 'VMNet Information' section shows 'Host-only (connect VMs internally in a private network)' selected, with 'Connect a host virtual adapter to this network' and 'Use local DHCP service to distribute IP address to VMs' checked. The Subnet IP is 100.0.0.0 and the Subnet mask is 255.255.255.0. The 'Virtual Machine Settings' window is in the foreground, showing the 'Options' tab. The 'Memory' section is expanded, showing a memory slider set to 32 GB. A legend on the right indicates that 32 GB is the 'Maximum recommended memory' (blue bar), 4 GB is the 'Recommended memory' (green bar), and 2 GB is the 'Guest OS recommended minimum' (yellow bar). The 'Hardware' tab shows the following configuration: Memory (32 GB), Processors (8), Hard Disk (SCSI) (200 GB), Network Adapter (Custom (VMNet10)), Network Adapter 2 (NAT), and Display (1 monitor).

Name	Type	External Connection	Host Connection	DHCP	Subnet Address
VMnet0	Bridged	Intel(R) Ethernet Connectio...	-	-	-
VMnet1	Host-only	-	Connected	Enabled	192.168.150.0
VMnet8	NAT	NAT	Connected	Enabled	192.168.250.0
VMnet10	Host-only	-	Connected	Enabled	100.0.0.0

Virtual Machine Settings

Hardware

Device	Summary
Memory	32 GB
Processors	8
Hard Disk (SCSI)	200 GB
Network Adapter	Custom (VMNet10)
Network Adapter 2	NAT
Display	1 monitor

Options

Memory

Specify the amount of memory allocated to this virtual machine. The memory size must be a multiple of 4 MB.

Memory for this virtual machine: 32768 MB

64 GB -
32 GB -
16 GB -
8 GB -
4 GB -
2 GB -
1 GB -
512 MB -
256 MB -
128 MB -
64 MB -
32 MB -
16 MB -
8 MB -
4 MB -

■ Maximum recommended memory
(Memory swapping may occur beyond this size.)
55.9 GB

■ Recommended memory
4 GB

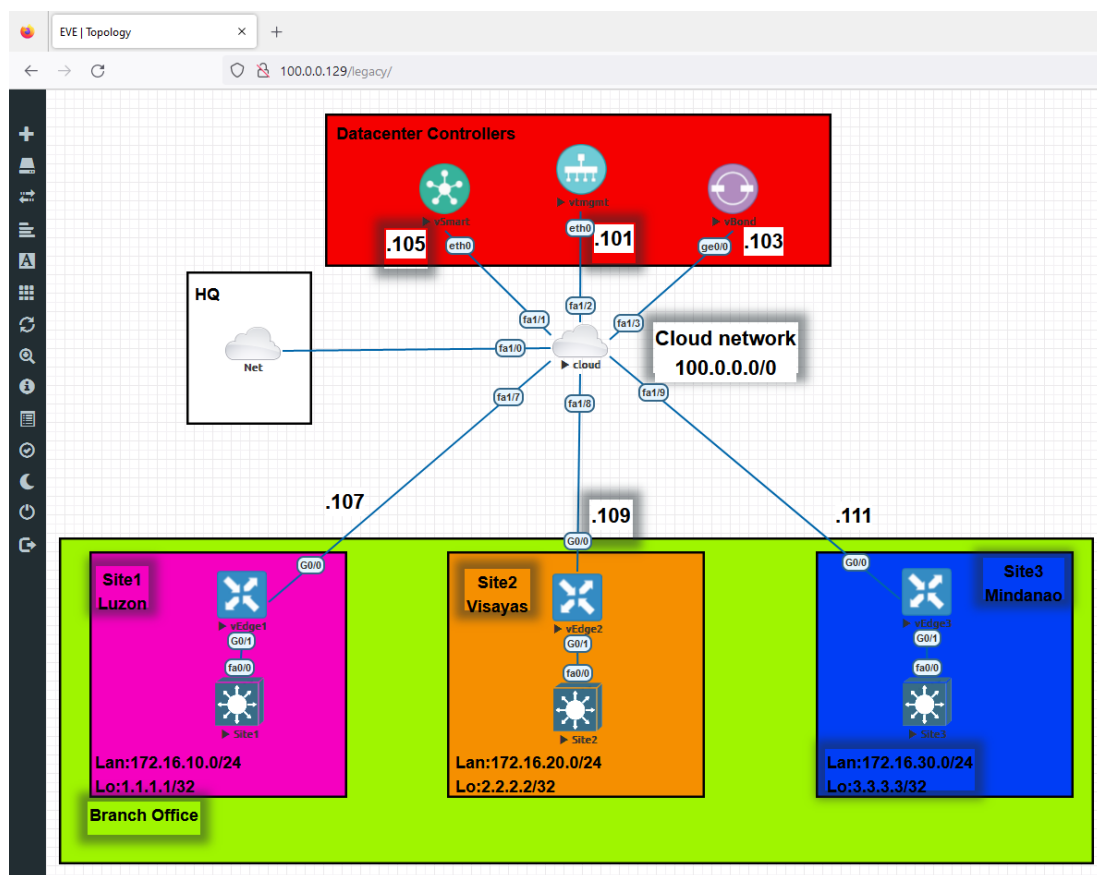
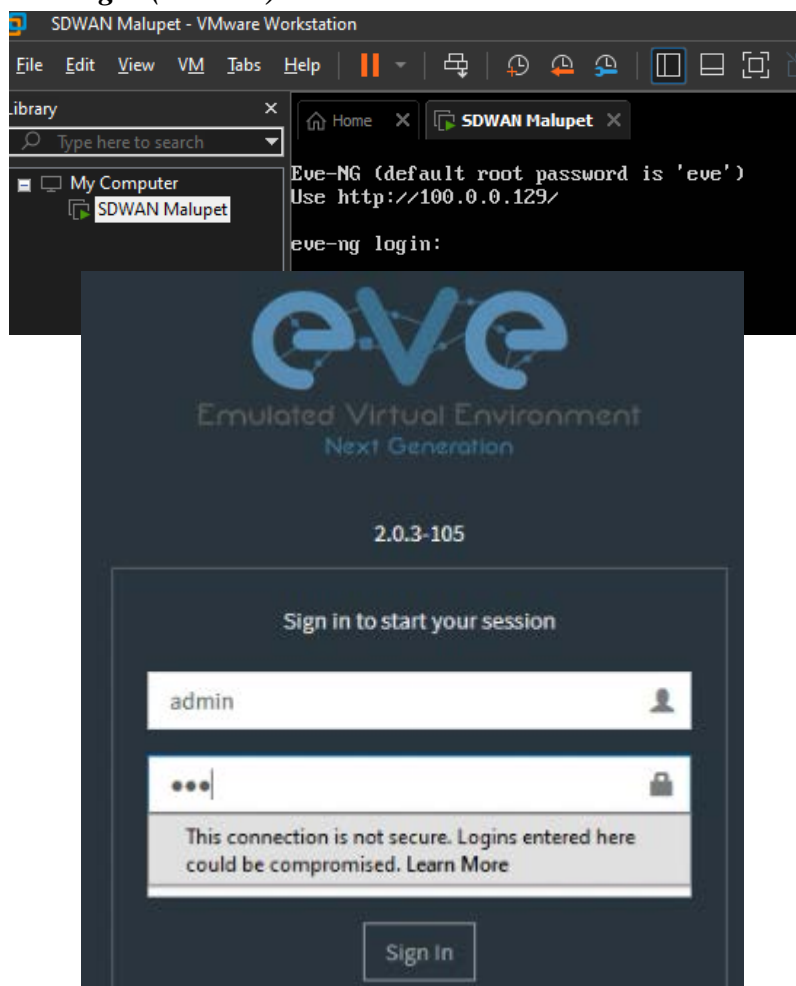
■ Guest OS recommended minimum
2 GB



When VM is running, activate all the virtual devices via browser > 100.0.0.xxx (depending on what it assign after its boot), you may ping check 100.0.0.1 and 100.0.0.xxx to confirm

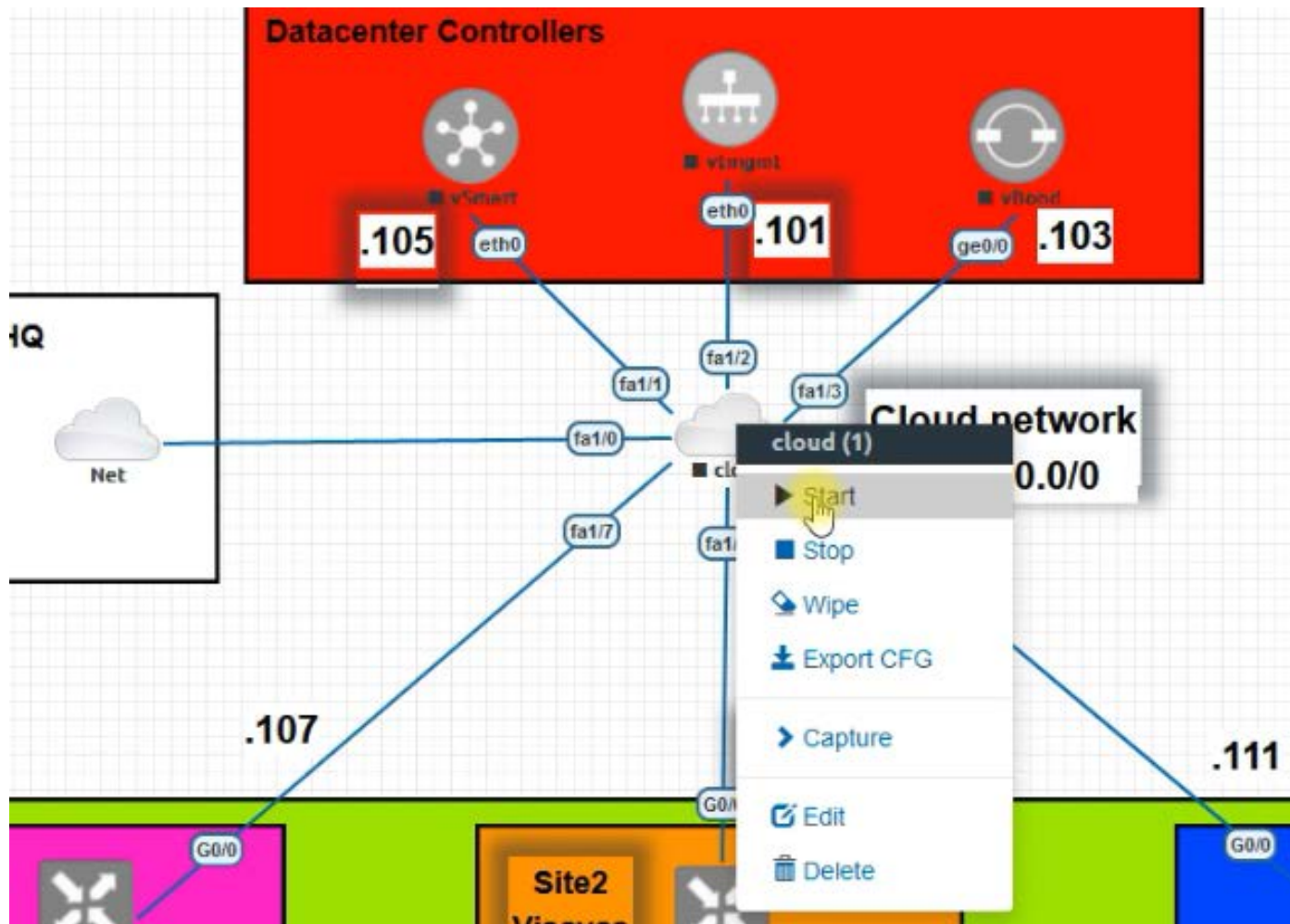
Open a browser and access the 100.0.0.xxx, a virtual topology of SDWAN should be accessed.

Login (browser): admin / eve



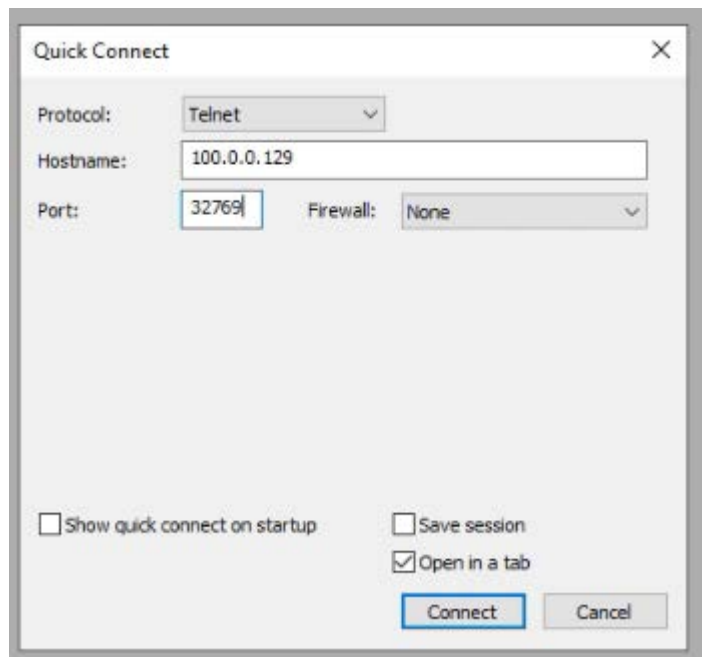


Run first the CLOUD (right-click and start)





telnet 100.0.0.xxx : 32769 (cloud/google)



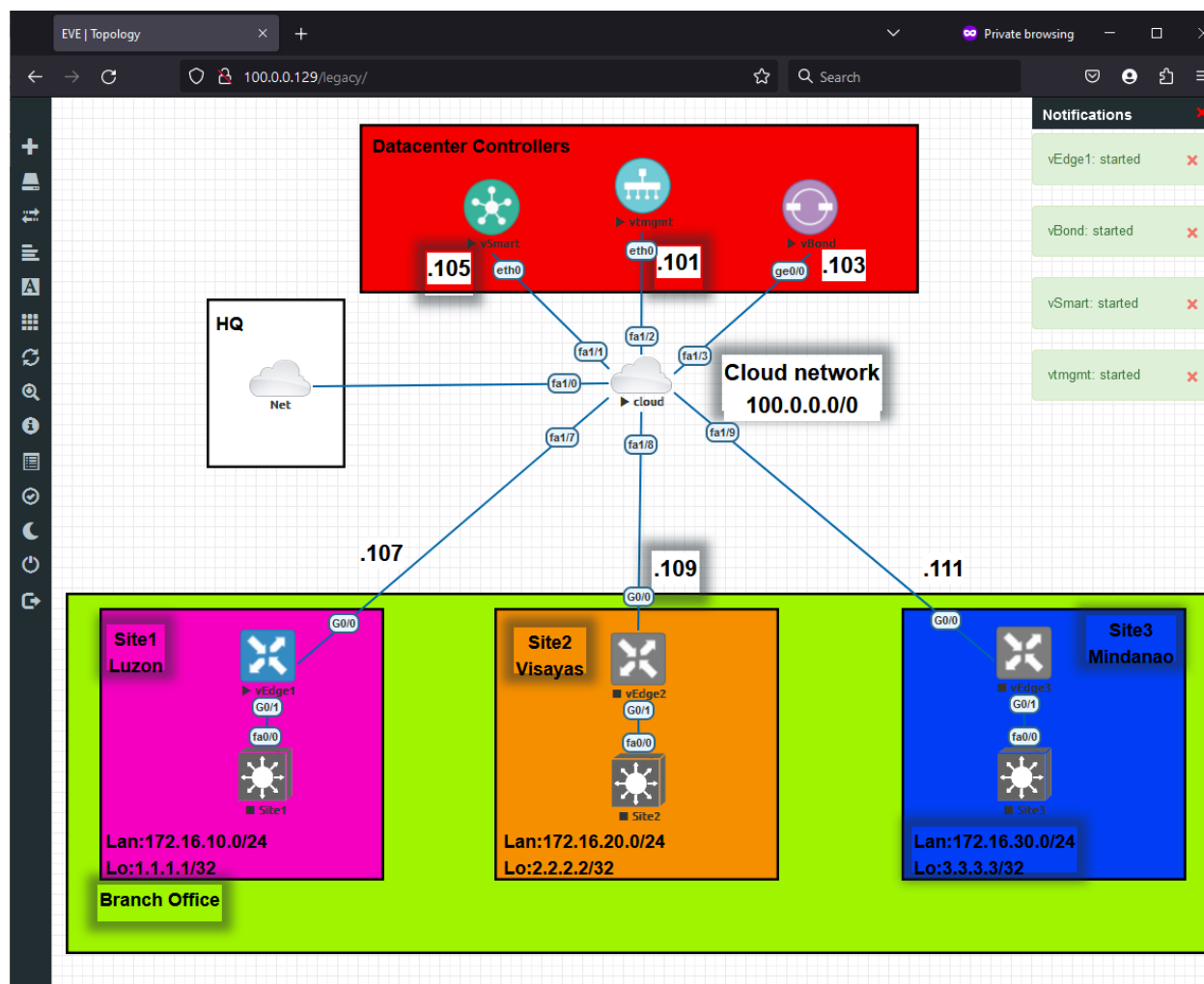
CLI Initial Configuration:

```
en
conf t
hostname google
int lo0
ip add 8.8.8.8 255.255.255.255
```

```
exit
int vlan 1
no shut
ip add 100.0.0.254 255.255.255.0
router bgp 65001
no synchro
bgp log-neighbor-changes
network 8.8.8.8 mask 255.255.255.255
network 100.0.0.0 mask 255.255.255.0
neighbor 100.0.0.107 remote-as 65001
neighbor 100.0.0.109 remote-as 65001
neighbor 100.0.0.111 remote-as 65001
no auto-summary
end
wr
!
```



To determine if it is running, ping 100.0.0.254, upon it pings. Launch all the virtual devices in the VIPTELA one by one (it changes colors when successfully started without issues). It is estimated that all devices will fully boot within 5 to 10 mins.





(While booting... Just Ready the following, don't paste it yet until Site1, Site2, and Site3 will require to configure eventually.)

for Telnnet 100.0.0.xxx : 32777

```
!*Site1*
en
conf t
hostname Site1
no ip domain-lookup
int f0/0
no shut
ip add 172.16.10.2 255.255.255.0
exit
int lo0
no shut
ip add 1.1.1.1 255.255.255.255
end
wr
```

for telnet 100.0.0.xxx : 32778

```
!*Site2*
en
conf t
hostname Site2
no ip domain-lookup
int f0/0
no shut
ip add 172.16.20.2 255.255.255.0
exit
int lo0
no shut
ip add 2.2.2.2 255.255.255.255
end
wr
```




for telnet 100.0.0.xxx : 32779

!*Site3*

en

conf t

hostname Site3

no ip domain-lookup

int f0/0

no shut

ip add 172.16.30.2 255.255.255.0

exit

int lo0

no shut

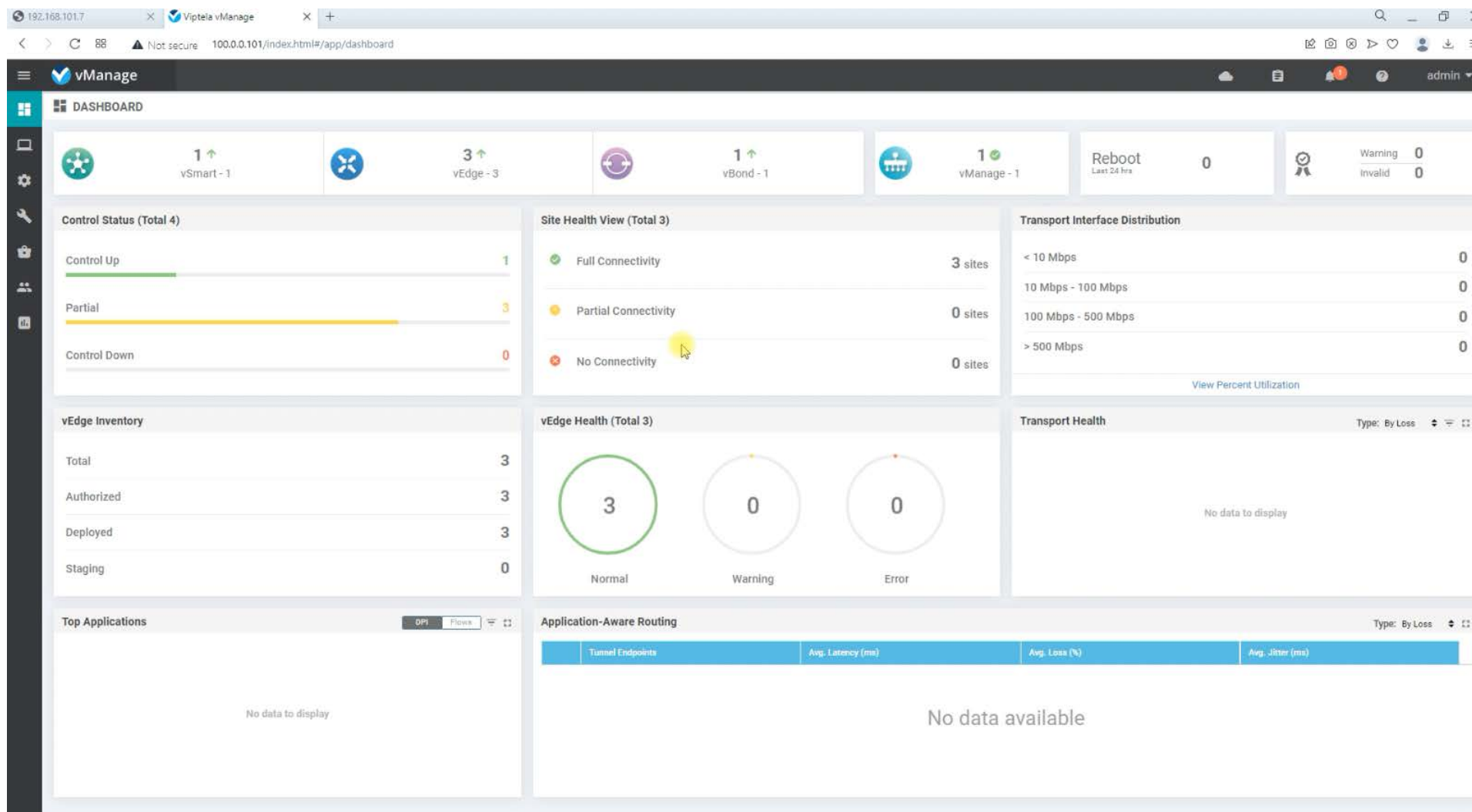
ip add 3.3.3.3 255.255.255.255

end

wr



Launch VIPTELA on a separate browser <https://100.0.0.101>, login: **admin/admin** (it may preferable to ping it first to know if it is completely booted).





!@VIPTELA

Configuration > Templates > Devices > ... > Select Lahat then Baklas (Detach) , wait for the completion of detach.

Name	Description	Type	Device Model	Feature Templates	Devices Attached	Updated By	Last Updated	Device Status
vEdgeTest	vEdgeTest	Feature	vEdge Cloud	8	3	admin	13 Jan 2021 10:16:12 PM CST	Out of Sync - 1
OSPF	ForOSPF Lecture	Feature	vEdge Cloud	12	0	admin	09 Mar 2020 3:35:27 PM CST	In Sync

Detach Device

Detach device from the list below

2 Items Selected

Available Devices

Select All

All

Name

Device IP

Rivan-vEdge3

100.0.0.123

Selected Devices

Select All

All

Name

Device IP

Rivan-vEdge1

100.0.0.106

Rivan-vEdge2

100.0.0.108

Detach

Cancel



Configuration > Templates > Feature > Add Template > vEdge Cloud > System : Template Name: VE-SYSTEM : (scroll) Console Baud Rate > 9600. (this is similar in configuring the serial console.)

The screenshot displays the 'CONFIGURATION | TEMPLATES' interface. The 'Feature' tab is selected, and the 'Add Template' button is highlighted. The 'Template Type' is set to 'Non-Default'. A table lists existing templates: tOSPF (jFirstTest), tSystem (vEdgeTest), and tLogging (Test logging). The 'vEdge Cloud' feature is selected in the left sidebar. The main form fields are as follows:

Field	Value
Template Name	VE-SYSTEM
Description	VE-SYSTEM
Site ID	[system_site_id]
System IP	[system_system_ip]
Overlay ID	1
Timezone	UTC
Hostname	[system_host_name]
Location	Multicast
Device Groups	
Controller Groups	System
Description	
Console Baud Rate (bps)	9600

Additional features visible in the sidebar include vEdge Cloud (vBond), vManage, vSmart, DHCP Server, OSPF, and SNMP.



Add Template > vEdge Cloud > Banner :: Template Name: VE-BANNER ::

Login Banner > Global > SORRY PERO SDWAN TAYO... FIND ANOTHER JOB HUE HUE HUE.

MOTD Banner > Global > LOL! GOOD LUCK FINDING ANOTHER JOB PAG DI KA SDWAN READY :)

The screenshot displays the vManage web interface for configuring templates. On the left, a sidebar lists various devices, with 'vEdge Cloud' highlighted in blue. The main area is titled 'CONFIGURATION | TEMPLATES' and has two tabs: 'Device' and 'Feature', with 'Feature' selected. Below the tabs, a breadcrumb trail reads 'Feature Template > Add Template > Banner'. A 'Template' section shows three options: 'AAA', 'Archive', and 'Banner', with 'Banner' circled in orange. The form below contains the following fields:

- Template Name:** VE-BANNER
- Description:** VE-BANNER
- Login Banner:** A dropdown menu (set to a globe icon) followed by the text 'SORRY PERO SDWAN TAYO... FIND ANOTHER JOB HUE HUE HUE.'
- MOTD Banner:** A dropdown menu (set to a globe icon) followed by the text 'LOL! GOOD LUCK FINDING ANOTHER JOB PAG DI KA SDWAN READY :)'



(for setting up VPN-0 Config): Add Template > vEdge Cloud > VPN : Template Name: BR-VE-VPN-VPN0 :

VPN > Global: 0 > Name: Transport VPN : IPv4 Route > + > Prefix > Global 0.0.0.0/0 > Next Hop + > Address: Device Specific(default).

!device specific because of different next hops per site, it will be set to [ip_address_0_0]

Device Feature

Feature Template > Add Template > VPN

Template Name BR-VE-VPN-VPN0

Description BR-VE-VPN-VPN0

VPN

Global 0

Name Transport VPN

DNS OMP IPv4 Route IPv6 Route Service GRE Route

Prefix 0.0.0.0/0

Gateway Next Hop Null0 VPN

Address [ip_address_0_0]

Distance 1



Add Template > vEdge Cloud > VPN : Template Name: BR-VE-VPN-VPN512 : VPN > Global: 512 > Name: MGMT VPN

The image shows the vManage Configuration | TEMPLATES interface. The left sidebar contains navigation icons for Home, Configuration, Devices, Templates, VPN, and Users. The main content area is titled "CONFIGURATION | TEMPLATES" and has two tabs: "Device" and "Feature". The "Feature" tab is active, showing the "Add Template > VPN" path. The "Template Name" field is set to "BR-VE-VPN-VPN512" and the "Device Type" is "vEdge Cloud". The "Description" field is also "BR-VE-VPN-VPN512". Under the "VPN" section, the "Name" field is "MGMT VPN". There are two toggle switches: "Enhance ECMP Keying" (set to Off) and "Enable TCP Optimization" (set to Off). Below these are tabs for "DNS", "OMP", "IPv4 Route", "IPv6 Route", "Service", and "GRE Route". The "DNS" tab is active, showing a "Primary DNS Address" field with a dropdown arrow.

vManage

CONFIGURATION | TEMPLATES

Device **Feature**

Feature Template > Add Template > VPN

Template Name: BR-VE-VPN-VPN512 Device Type: vEdge Cloud

Description: BR-VE-VPN-VPN512

VPN

Name: MGMT VPN

Enhance ECMP Keying: ☒ On ☐ Off

Enable TCP Optimization: ☒ On ☐ Off

DNS OMP IPv4 Route IPv6 Route Service GRE Route

Primary DNS Address: ☒



Add Template > vEdge Cloud > VPN Interface Ethernet (!serves as connector) : Template Name: BR-VE-VPNINT-VPN0-G0

Shutdown: Global NO : Interface Name > Global: ge0/0 : IPv4 Address > Device Specific: (*default*, IP Addresses are different in the offices)

The screenshot displays the vEdge Cloud configuration interface. On the left, a sidebar lists various features: vEdge 1000, vEdge 2000, vEdge Cloud (selected), vEdge Cloud (vBond), vManage, and vSmart. The main area shows a grid of feature templates: DHCP Server, IGMP, OSPF, PIM, VPN Interface Bridge, and VPN Interface Ethernet (highlighted). A modal window is open for the 'VPN Interface Ethernet' template, showing the following configuration details:

- Feature Template:** Add Template > VPN Interface Ethernet
- Template Name:** BR-VE-VPNINT-VPN0-G0
- Description:** BR-VE-VPNINT-VPN0-G0
- Shutdown:** Global ☒ No
- Interface Name:** ge0/0
- Description:** (empty)
- IPv4 Configuration:** ☐ Dynamic, ☒ Static
- IPv4 Address:** [vpn_if_ipv4_address]



(scroll)... Tunnel Interface > Global: ON > Color: biz_Internet (it's a cisco thing) : (Scroll to Allow Service) Global ON for: ALL, SSH (for security), NETCONF (!for postman-like) : (link tab above) NAT > Global: ON > SAVE

Bandwidth Upstream: ☒
Bandwidth Downstream: ☒
Tunnel Interface NAT VRRP ACL / QOS ARP 802.1X Advanced
Tunnel Interface: ☒ On ☐ Off
Color: ☒ biz-internet
Restrict: ☒ On ☐ Off

vManage Connection Preference: ☒ 5
Low-Bandwidth Link: ☒ On ☐ Off
Allow Service
All: ☒ On ☐ Off
BGP: ☒ On ☐ Off
DNS: ☒ On ☐ Off
SSH: ☒ On ☐ Off
DHCP: ☒ On ☐ Off
ICMP: ☒ On ☐ Off
NETCONF: ☒ On ☐ Off

Tunnel Interface NAT VRRP ACL / QOS ARP 802.1X Advanced
NAT: ☒ On ☐ Off
Advanced Options >



Add Template > vEdge Cloud > VPN Interface Ethernet : Template Name: BR-VE-VPNINT-VPN512-ETH0 : Shutdown> Global: NO
Interface Name: eth0 : IPv6 Configuration: Dynamic > SAVE

vEdge 1000

vEdge 2000

vEdge Cloud

vEdge Cloud (vBond)

vManage

vSmart

DHCP Server

IGMP

OSPF

PIM

VPN Interface Bridge

VPN Interface Ethernet

Device

Feature

Feature Template > Add Template > VPN Interface Ethernet

Template Name

BR-VE-VPNINT-VPN512-ETH0

Description

BR-VE-VPNINT-VPN512-ETH0

Shutdown

☐ Yes

☒ No

Interface Name

eth0

Description

IPv4 Configuration

☐ Dynamic

☒ Static

IPv4 Address

Secondary IP Address (Maximum: 4)

IPv6 Configuration

☒ Dynamic

☐ Static



Add Template > vEdge Cloud > BGP : Template Name: BR-VE-BGP-VPN0 : Shutdown> Global: NO : AS Number > Global: 65001
Address-Family > Global: ipv4-unicast : Neighbor+ > Address: 100.0.0.254 > Remote-AS: Global 65001 > *more*
> Address Family: Global ON > Global ipv4-unicast > SAVE > SAVE

The screenshot displays the vEdge Cloud configuration interface. The left sidebar shows the navigation menu with 'vEdge Cloud' selected. The main area is divided into two sections: 'Template' and 'Device'.

Template Section:

- Select Devices:** A list of devices including vEdge 100, vEdge 100 B, vEdge 100 M, vEdge 100 WM, vEdge 1000, vEdge 2000, vEdge Cloud, and vEdge Cloud (vBond).
- Template:** A grid of feature templates including AAA, Archive, Banner, BFD, BGP (highlighted), DHCP Server, IGMP, Logging, Multicast, and NTP.

Device Section:

- Feature Template > Add Template > BGP:** The breadcrumb navigation.
- Template Name:** BR-VE-BGP-VPN0
- Description:** BR-VE-BGP-VPN0
- Shutdown:** Global: NO (selected)
- AS Number:** 65001
- Propagate AS Path:** On (selected)
- Local Routes Distance:** 20
- Router ID:** (checked)
- Internal Routes Distance:** 200
- External Routes Distance:** 20
- IPv4 Unicast Address Family:** (selected)
- Neighbor:** (selected)
- Advanced:** (selected)
- Maximum Paths:** (checked)
- Address Family:** ipv4-unicast

Neighbor Configuration Table:

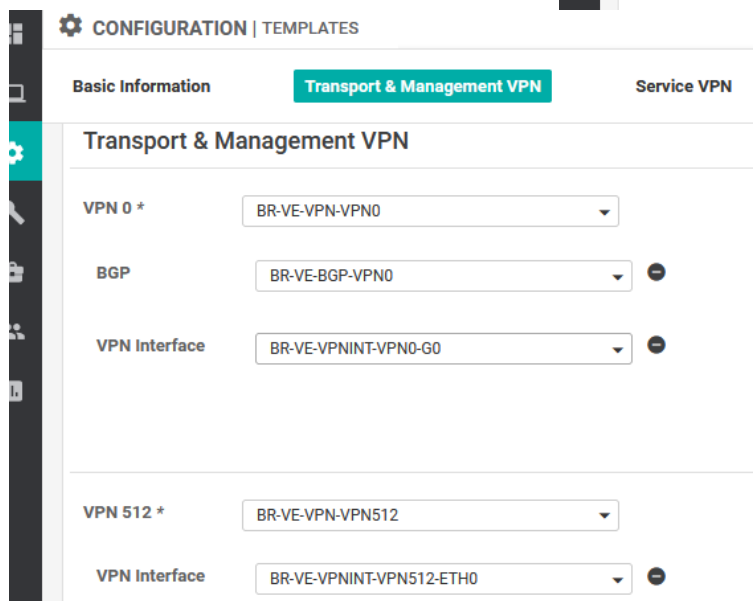
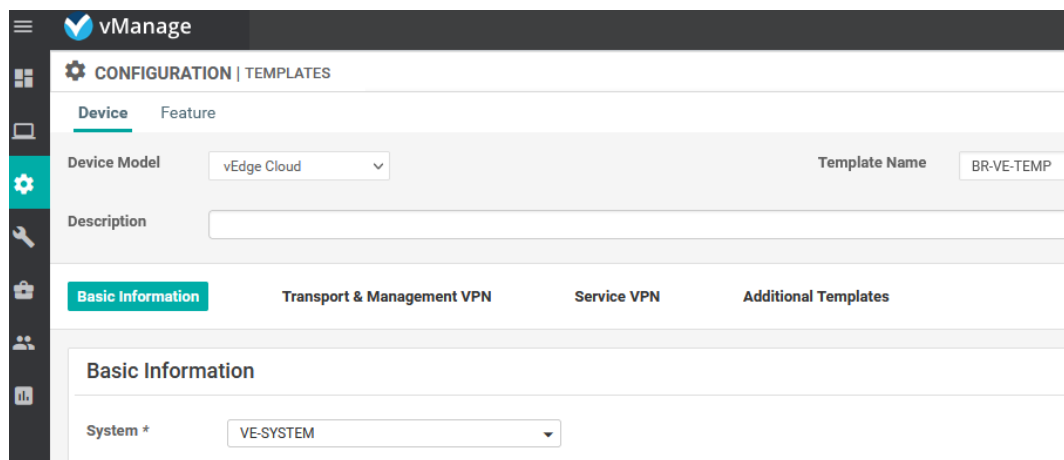
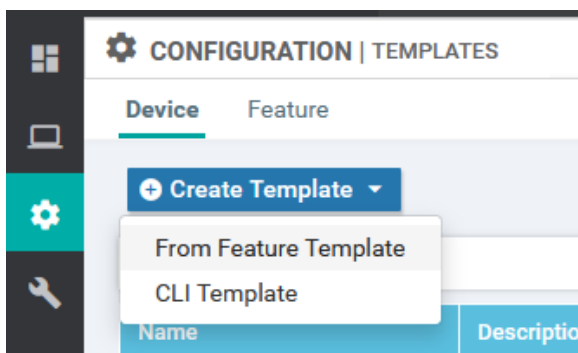
Address	Description	Remote AS
100.0.0.254	(checked)	65001

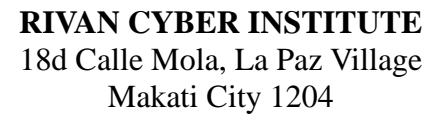
Neighbor Configuration Modal:

- Address Family:** On (selected)
- Address Family:** ipv4-unicast
- Router ID:** (checked)



Configuration > Templates > (Device) Create Template... From Feature Template : Device Model: vEdge Cloud
> Template Name: BR-VE-TEMP : System: VE-SYSTEM : Transport & Manage VPN > VPN 0: BR-VE-VPN-VPN0
> +BGP > BR-VE-BGP-VPN0 : VPN Interface: BR-VE-VPNINT-VPN0-G0 > VPN 512: BR-VE-VPN-VPN512
> +VPN Int: BR-VE-VPNINT-VPN512-ETH0 (VPN 0 and VPN 512 are needed to talk to each other)





Prepared by: GGener



!(Deployment Time)...: Configuration > Templates > BR-VE-TEMP > ... > Attach Devices

Name	Description	Type	Device Model	Feature Templates	Devices Attached	Updated By	Last Updated	Device Status	
vEdgeTest	vEdgeTest	Feature	vEdge Cloud	8	0	admin	13 Jan 2021 10:16:12 PM CST	In Sync	...
OSPF	ForOSPF Lecture	Feature	vEdge Cloud	12	0	admin	09 Mar 2020 3:35:27 PM CST	In Sync	...
BR-VE-TEMP	BR-VE-TEMP	Feature	vEdge Cloud	11	0	admin	18 Oct 2023 5:45:16 AM CST	In Sync	...

ATTACH: Rivan-vEdge1 > Rivan-vEdge2 > Rivan-vEdge3 (*NOT vBond as it is their communicator*),

Attach device from the list below

3 Items Selected

Available Devices	
Name	Device IP
Rivan-vBond	100.0.0.102

Selected Devices	
Name	Device IP
Rivan-vEdge1	100.0.0.106
Rivan-vEdge2	100.0.0.108
Rivan-vEdge3	100.0.0.123

Attach Cancel



(for final edit) ... **UPDATE** each (all of Rivan vEdges) ... > Address: 100.0.0.254

Hostname	Hostname(system_host_name)	System IP(system_system_ip)	Site ID(system_site_id)	Address(ip_address_0_0)	IPv4 Address(vpn_if_ipv4_address)	
Rivan-vEdge2	Rivan-vEdge2	100.0.0.108	6	—	100.0.0.109/24	...
Rivan-vEdge1	Rivan-vEdge1	100.0.0.106	5	—	100.0.0.107/24	
Rivan-vEdge3	Rivan-vEdge3	100.0.0.123	7	—	100.0.0.111/24	

Total Rows: 3

Edit Device Template

Update Device Template

Variable List (Hover over each field for more information)

Chassis Number

32f354b7-af43-43bc-ac00-fe4e2ae3648c

System IP

100.0.0.108

Hostname

Rivan-vEdge2

Hostname(system_host_name)

Rivan-vEdge2

System IP(system_system_ip)

100.0.0.108

Site ID(system_site_id)

6

IPv4 Address(vpn_if_ipv4_address)

100.0.0.109/24

Address(ip_address_0_0)

100.0.0.254

Hostname	Hostname(system_host_name)	System IP(system_system_ip)	Site ID(system_site_id)	Address(ip_address_0_0)
Rivan-vEdge2	Rivan-vEdge2	100.0.0.108	6	100.0.0.254
Rivan-vEdge1	Rivan-vEdge1	100.0.0.106	5	100.0.0.254
Rivan-vEdge3	Rivan-vEdge3	100.0.0.123	7	100.0.0.254
Rivan-vEdge3	Rivan-vEdge3	100.0.0.123	7	100.0.0.254



Next > CONFIGURE DEVICES > Confirm Configuration... > OK (and cross-fingers or pray! hue hue hue)

vManage

CONFIGURATION | TEMPLATES

Device

Feature

Device Template

BR-VE-TEMP

Total

1

Device list (Total: 3 devices)

Filter/Search

32f354b7-af43-43bc-ac00-fe4e2ae3648c

Rivan-vEdge2|100.0.0.108

63cf3bee-6af8-428b-9103-06f9034d0dcc

Rivan-vEdge1|100.0.0.106

efd014e9-b170-4881-9267-1ceb96f58114

Rivan-vEdge3|100.0.0.123

Configure Device Rollback Timer

Back

Configure Devices

Cancel

Configure Devices

Committing these changes affect the configuration on 3 devices. Are you sure you want to proceed?

☒

Confirm configuration changes on 3 devices.

OK

Cancel



Search Options								
	Status	Message	Chassis Number	Device Model	Hostname	System IP	Site ID	vManage IP
>	In progress	Pushing configuration to device	32f354b7-af43-43bc-ac00-fe4e2ae...	vedge-cloud	Rivan-vEdge2	100.0.0.108	6	100.0.0.100
>	In progress	Pushing configuration to device	63cf3bee-6af8-428b-9103-06f903...	vedge-cloud	Rivan-vEdge1	100.0.0.106	5	100.0.0.100
>	In progress	Pushing configuration to device	efd014e9-b170-4881-9267-1ceb96...	vedge-cloud	Rivan-vEdge3	100.0.0.123	7	100.0.0.100

cloud

1

3

?

admin

TASK VIEW

Push Feature Template Configuration | Validation Success

Initiated By: admin From: 100.0.0.1

Total Task: 3 | In Progress : 2 | Success : 1

Search Options

Total Rows: 3

	Status	Message	Chassis Number	Device Model	Hostname	System IP	Site ID	vManage IP
>	Success	Done - Push Feature Template Con...	32f354b7-af43-43bc-ac00-fe4e2ae...	vedge-cloud	Rivan-vEdge2	100.0.0.108	6	100.0.0.100
>	In progress	Pushing configuration to device	63cf3bee-6af8-428b-9103-06f903...	vedge-cloud	Rivan-vEdge1	100.0.0.106	5	100.0.0.100
>	In progress	Pushing configuration to device	efd014e9-b170-4881-9267-1ceb96...	vedge-cloud	Rivan-vEdge3	100.0.0.123	7	100.0.0.100

← → ↻

🔒 👤 🔍 https://100.0.0.101/index.html#/app/device/status?activity=push_feature_template_configuration&pid=push_feature_template_configuration-10

🔍 Search

🔒 📄 🔔 3 ?

admin

TASK VIEW

Push Feature Template Configuration | Validation Success

Initiated By: admin From: 100.0.0.1

Total Task: 3 | Success : 3

Search Options

Total Rows: 3

	Status	Message	Chassis Number	Device Model	Hostname	System IP	Site ID	vManage IP
>	Success	Done - Push Feature Template Con...	32f354b7-af43-43bc-ac00-fe4e2ae...	vedge-cloud	Rivan-vEdge2	100.0.0.108	6	100.0.0.100
>	Success	Done - Push Feature Template Con...	63cf3bee-6af8-428b-9103-06f903...	vedge-cloud	Rivan-vEdge1	100.0.0.106	5	100.0.0.100
>	Success	Done - Push Feature Template Con...	efd014e9-b170-4881-9267-1ceb96...	vedge-cloud	Rivan-vEdge3	100.0.0.123	7	100.0.0.100

If you have 3 SUCCESS, GOOD JOB (^_^) ... if failed... re-check the each created templates via Feature Templates.



WAIT... there's more!!! ... while pushing config status, add the previously prepared initial script for Sites 1,2, and 3.
(telnet 100.0.0.xxx : 32777, 32778, 32779) @ Pages 7-8 , verify that Sites 1, 2, 3 in the topology are running.

The image shows a network configuration tool interface. On the left, a 'Quick Connect' dialog box is open, showing the following settings:

- Protocol: Telnet
- Hostname: 100.0.0.129
- Port: 32777
- Firewall: None
- Checkboxes: ☒ Show quick connect on startup, ☒ Save session, ☒ Open in a tab
- Buttons: Done, Connect

On the right, a terminal window titled 'Site1' is open, displaying the following commands and output:

```
et1/6, changed state to up
Site1>
Site1>
Site1>
Site1>
Site1>en
Site1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Site1(config)#hostname Site1
Site1(config)#no ip domain-lookup
Site1(config)#int f0/0
Site1(config-if)#no shut
Site1(config-if)#ip add 172.16.10.2 255.255.255.0
Site1(config-if)#exit
Site1(config)#int lo0
Site1(config-if)#no shut
Site1(config-if)#ip add 1.1.1.1 255.255.255.255
Site1(config-if)#end
Site1#wr
Building configuration...
[OK]
Site1#
*Mar 1 00:11:18.539: %SYS-5-CONFIG_I: Configured from console by console
Site1#
```

The terminal window also shows a status bar at the bottom: Ready, Telnet: 100.0.0.129, 24, 7, 24 Rows, 80 Cols, Xterm, CAP, NUM.



Configure OSPF to remote SITES, push the following scripts via CLI ...

!Site1

```
en
conf t
router ospf 1
network 172.16.10.0 0.0.0.255 area 0
network 1.1.1.1 0.0.0.0 area 0
end
wr
!
```

!Site2

```
en
conf t
router ospf 1
network 172.16.20.0 0.0.0.255 area 0
network 2.2.2.2 0.0.0.0 area 0
end
wr
!
```

!Site3

```
en
conf t
router ospf 1
network 172.16.30.0 0.0.0.255 area 0
network 3.3.3.3 0.0.0.0 area 0
end
wr
!
```

```
[OK]
Site1#
*Mar  1 00:11:18.539: %SYS-5-CONFIG_I: Configured from console by console
Site1#en
Site1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Site1(config)#router ospf 1
Site1(config-router)#network 172.16.10.0 0.0.0.255 area 0
Site1(config-router)#network 1.1.1.1 0.0.0.0 area 0
Site1(config-router)#end
Site1#wr
Building configuration...
[OK]
Site1#
```



reminder: VPN512 for MGMT, VPN0 for Connectivity... new VPN1 for Data Plane.... @VIPTELA for OSPF Template Data Connectivity:

Configuration > Templates > Feature : Add Template > vEdge Cloud > VPN : Template Name/Description: BR-VE-VPN-VPN1

: VPN > Global: 1 > Name: DATA VPN : IPv4 Route+ : Global 0.0.0.0/0 ---> VPN: Global ON >>> SAVE

Template Name: BR-VE-VPN-VPN1

Description: BR-VE-VPN-VPN1

VPN: 1, Name: DATA VPN

Enhance ECMP Keying: ☒ On ☐ Off

Enable TCP Optimization: ☒ On ☐ Off

DNS OMP **IPv4 Route** IPv6 Route Service GRE Route

Prefix: 0.0.0.0/0

Enable VPN: ☒ On ☐ Off



(for the connectivity)... Add Template > vEdge Cloud > VPN Interface Ethernet : Template Name: BR-VE-VPNINT-VPN1-G1
: Shutdown > Global NO : Interface: ge0/1 > IPv4 Address: Device Specific >>> SAVE

The image shows the vManage Configuration | TEMPLATES interface. The left sidebar contains icons for various functions: a hamburger menu, a gear icon, a laptop icon, a gear icon (highlighted), a wrench icon, a briefcase icon, a group of people icon, and a bar chart icon. The main content area is titled 'CONFIGURATION | TEMPLATES' and has two tabs: 'Device' and 'Feature' (which is selected). Below the tabs is a breadcrumb trail: 'Feature Template > Add Template > VPN Interface Ethernet'. The configuration form includes the following fields and options:

- Template Name:** BR-VE-VPNINT-VPN1-G1
- Description:** BR-VE-VPNINT-VPN1-G1
- Shutdown:** A dropdown menu with a globe icon, followed by radio buttons for 'Yes' and 'No' (selected).
- Interface Name:** A dropdown menu with a globe icon, followed by a text field containing 'ge0/1'.
- Description:** A dropdown menu with a checkmark icon, followed by a text field.
- IPv4 Configuration:** Radio buttons for 'Dynamic' and 'Static' (selected).
- IPv4 Address:** A dropdown menu with a globe icon, followed by a text field containing '[vpn_if_ipv4_address]'.



(for OSPF Template)... Add Template > vEdge Cloud > OSPF (via VPN1) : Template Name: BR-VE-OSPF-VPN1
: Redistribute+ > Global: OMP (Overlay Management Protocol) : Area+ > Global: 0 > Interface+ > ge0/1
: Advance > Default Information Originate: Global ON, Always: (Global) ON >> SAVE

The screenshot displays the configuration interface for an OSPF template in the vEdge Cloud management system. The interface is divided into several sections:

- Feature Template > Add Template > OSPF**: This section shows the template name and description. The template name is **BR-VE-OSPF-VPN1** and the description is **BR-VE-OSPF-VPN1**.
- Redistribute**: This section shows the configuration for redistributing routes. The **Global** checkbox is checked, and the **OMP (Overlay Management Protocol)** is selected. The **Area** is set to **0** and the **Interface** is set to **ge0/1**.
- Advanced**: This section shows the configuration for advanced settings. The **Default Information Originate** is set to **On** and the **Always** checkbox is checked. The **Default Metric** is set to **110**.

The interface also includes a **Protocol** dropdown menu with options: **omp**, **static**, **connected**, **bgp**, **nat**, and **natpool-outside**. The **Distance for External Routes**, **Distance for Inter-Area Routes**, and **Distance for Intra-Area Routes** are all set to **110**.



(for the connectivity of OSPF Template):... Configuration > Templates > Device : BR-VE-TEMP... > Edit > Service VPN+
> VPN: BR-VE-VPN-VPN1 : OSPF+ > BR-VE-OSPF-VPN1 : VPN Interface+ > VPN Int: BR-VE-VPNINT-VPN1-G1 > >> UPDATE

CONFIGURATION | TEMPLATES

Device Feature

Create Template

Search Options

Total Rows: 3

Name	Description	Type	Device Model	Feature Templates	Devices Attached	Updated By	Last Updated	Device Status	
vEdgeTest	vEdgeTest	Feature	vEdge Cloud	8	0	admin	13 Jan 2021 10:16:12 PM CST	In Sync	...
OSPF	ForOSPF Lecture	Feature	vEdge Cloud	12	0	admin	09 Mar 2020 3:35:27 PM CST	In Sync	...
BR-VE-TEMP	BR-VE-TEMP	Feature	vEdge Cloud	12	3	admin	18 Oct 2023 6:03:24 AM CST	In Sync	...

Edit View

CONFIGURATION | TEMPLATES

Basic Information Transport & Management VPN Service VPN Additional Templates

Service VPN + Service VPN

VPN BR-VE-VPN-VPN1

OSPF BR-VE-OSPF-VPN1

VPN Interface BR-VE-VPNINT-VPN1-G1 + Sub-Templates

Additional VPN Templates

- + BGP
- + IGMP
- + Multicast
- + OSPF
- + PIM
- + VPN Interface
- + VPN Interface Bridge



(Edges Last Editing)... > Edit Device Template > vpn_if_ipv4_address: 172.16.x0.1/24 (where x == according to sites 1,2,3)

!!! :(it can be checked on sites 1,2,and 3 via CLI sh ip int br @ eth0 to verify the ip)

Device Template | BR-VE-TEMP

Q

Search Options

Total Rows: 3

S...	Chassis Number	System IP	Hostname	Hostname(system_host_name)	System IP(system_system_ip)	Site ID(system_site_id)	Address(ip_address_0_0)	IPv4 Address(vpn_if_ipv4_address)	
⚙	32f354b7-af43-43bc-ac00-fe4e2ae3648c	100.0.0.108	Rivan-vEdge2	Rivan-vEdge2	100.0.0.108	6	100.0.0.254	100.0.0.109/24	...
⚙	63cf3bee-6af8-428b-9103-06f9034d0dcc	100.0.0.106	Rivan-vEdge1	Rivan-vEdge1	100.0.0.106	5	100.0.0.254	100.0.0.107/24	...
⚙	efd014e9-b170-4881-9267-1ceb96f58114	100.0.0.123	Rivan-vEdge3	Rivan-vEdge3	100.0.0.123	7	100.0.0.254	100.0.0.111/24	...

Update Device Template

Variable List (Hover over each field for more information)

Chassis Number

System IP

Hostname

Hostname(system_host_name)

System IP(system_system_ip)

Site ID(system_site_id)

IPv4 Address(vpn_if_ipv4_address)

Address(ip_address_0_0)

IPv4 Address(vpn_if_ipv4_address)

efd014e9-b170-4881-9267-1ceb96f58114

100.0.0.123

Rivan-vEdge3

Rivan-vEdge3

100.0.0.123

7

100.0.0.111/24

100.0.0.254

172.16.30.1/24

Edit Device Template

Variable List (Hover over each field for more information)

Chassis Number

System IP

Hostname

Hostname(system_host_name)

System IP(system_system_ip)

Site ID(system_site_id)

IPv4 Address(vpn_if_ipv4_address)

Address(ip_address_0_0)

IPv4 Address(vpn_if_ipv4_address)

32f354b7-af43-43bc-ac00-fe4e2ae3648c

100.0.0.108

Rivan-vEdge2

Rivan-vEdge2

100.0.0.108

6

100.0.0.109/24

100.0.0.254

172.16.20.1/24

Update Device Template

Variable List (Hover over each field for more information)

Chassis Number

System IP

Hostname

Hostname(system_host_name)

System IP(system_system_ip)

Site ID(system_site_id)

IPv4 Address(vpn_if_ipv4_address)

Address(ip_address_0_0)

IPv4 Address(vpn_if_ipv4_address)

63cf3bee-6af8-428b-9103-06f9034d0dcc

100.0.0.106

Rivan-vEdge1

Rivan-vEdge1

100.0.0.106

5

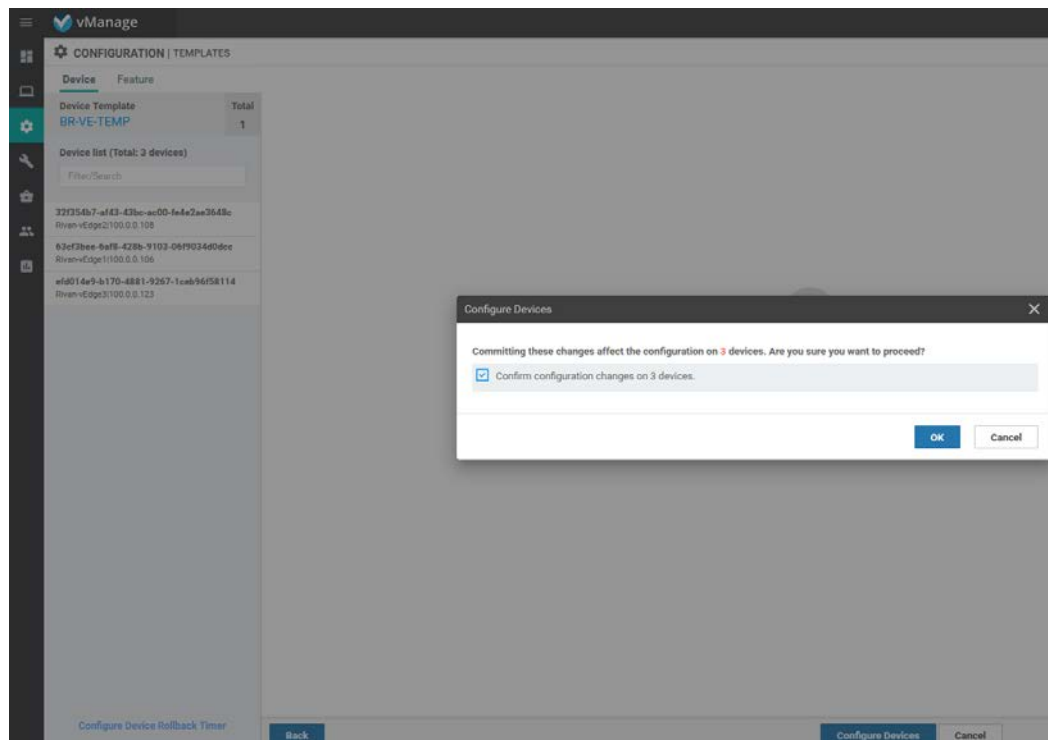
100.0.0.107/24

100.0.0.254

172.16.10.1/24



Next > CONFIGURE DEVICES > (and cross-fingers again! huehuehue)



vManage TASK VIEW

Push Feature Template Configuration | Validation Success | Initiated By: admin From: 100.0.0.1

Total Task: 3 | In Progress : 3

Search Options

Total Rows: 3

	Status	Message	Chassis Number	Device Model	Hostname	System IP	Site ID	vManage IP
>	In progress	Updating device configuration in v...	32f354b7-af43-43bc-ac00-fe4e2ae...	vedge-cloud	Rivan-vEdge2	100.0.0.108	6	100.0.0.100
>	In progress	Checking and creating device in v...	63cf3bee-6af8-428b-9103-06f903...	vedge-cloud	Rivan-vEdge1	100.0.0.106	5	100.0.0.100
>	In progress	Checking and creating device in v...	efd014e9-b170-4881-9267-1ceb96...	vedge-cloud	Rivan-vEdge3	100.0.0.123	7	100.0.0.100



: !(while in progress of saving, you may monitor the CLi of Sites 1,2, and 3 for OSPF Neighboring)

: !(thru cli, you can confirm via sh ip ospf nei... it should be in FULL/BDR)

Site1

File Edit View Options Transfer Script Tools Window Help

Enter host <Alt+R>

Session Manager Command Manager Active Sessions

cloud Site1 Site2 Site3

Site1 con0 is now available

Press RETURN to get started.

*Mar 1 00:55:06.547: %OSPF-5-ADJCHG: Process 1, Nbr 100.0.0.106 on FastEthernet0/0 from LOADING to FULL, Loading Done

Site1>

Ready Telnet: 100.0.0.129 24, 7 24 Rows, 80 Cols Xterm CAP NUM

Window Help

*Mar 1 00:55:06.547: %OSPF-5-ADJCHG: Process 1, Nbr 100.0.0.106 on FastEthernet0/0 from LOADING to FULL, Loading Done

Site1>en

Site1#sh ip ospf nei

Neighbor ID	Pri	State	Dead Time	Address	Interface
100.0.0.106	1	FULL/BDR	00:00:35	172.16.10.1	FastEthernet0/0

Site1#

Ready Telnet: 100.0.0.129 24, 7 24 Rows, 80 Cols Xterm CAP NUM



If you have 3 SUCCESS, GOOD JOB (^_^) ... if failed... re-check the OSPF Templates up to Final Editing of IP (refer to page 30 - 32)

	Status	Message	Chassis Number	Device Model	Hostname	System IP	Site ID	vManage IP
>	Success	Done - Push Feature Template Con...	32f354b7-af43-43bc-ac00-fe4e2ae...	vedge-cloud	Rivan-vEdge2	100.0.0.108	6	100.0.0.100
>	Success	Done - Push Feature Template Con...	63cf3bee-6af8-428b-9103-06f903...	vedge-cloud	Rivan-vEdge1	100.0.0.106	5	100.0.0.100
>	Success	Done - Push Feature Template Con...	efd014e9-b170-4881-9267-1ceb96...	vedge-cloud	Rivan-vEdge3	100.0.0.123	7	100.0.0.100

ping 8.8.8.8 and each site's loopback addresses for checking

```
Site1>en
Site1#ping 8.8.8.8

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 8.8.8.8, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 4/16/36 ms
Site1#ping 3.3.3.3

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 3.3.3.3, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 4/12/24 ms
Site1#ping 2.2.2.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 2.2.2.2, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 8/9/12 ms
Site1#
```

#CONGRATZ

#SDWAN.Success (^_^)

#GGWP \m/



BONUS FINALE CHECKING !!!

if working lahat... pasukin ang mga edges.

Login: admin/admin

may config pero wala nang Control Plane.

```
vEdge1
File Edit View Options Transfer Script Tools Window Help
Enter host <Alt+R>
vEdge1 x
Session Manager
Command Manager
Active Sessions
SORRY PERO SDWAN TAYO... FIND ANOTHER JOB HUE HUE HUE.
Rivan-vEdge1 login:
SORRY PERO SDWAN TAYO... FIND ANOTHER JOB HUE HUE HUE.
Rivan-vEdge1 login: admin
Password:
LOL! GOOD LUCK FINDING ANOTHER JOB PAG DI KA SDWAN READY :)
admin connected from 127.0.0.1 using console on Rivan-vEdge1
Rivan-vEdge1#
Rivan-vEdge1#
Rivan-vEdge1# conf t
Entering configuration mode terminal
Rivan-vEdge1(config)# router ospf 1
-----^
syntax error: unknown command
Rivan-vEdge1(config)# router bgp 1
-----^
syntax error: unknown command
Rivan-vEdge1(config)# int e0
-----^
syntax error: unknown command
Rivan-vEdge1(config)#
Ready Telnet: 100.0.0.129 22, 23 24 Rows, 80 Cols Xterm CAP NUM
```

#SDWAN-Works :)

#GloryToTeamRivan