



Introduction to Cisco SD WAN

The **Cisco SD WAN** solution is a distributed architecture, which means Cisco has separated the data plane from the control plane and management plane. This architecture differs from traditional networking in that it allows you to support large-scale networks while reducing operational and computational overhead. This solution separates the data plane, control plane, and management plane from each other.





Cisco SD WAN Components



vManage was introduced as the management plane, where all Day 0, Day 1, and Day N functions will be performed, including WAN Edge configuration, routing and control policies, troubleshooting, and monitoring.

vSmart is the brain of the Cisco SD WAN fabric and is responsible for calculating and deploying all control and data policies as well as handling the distribution of encryption keys for data plane connectivity.

vBond makes up the orchestration plane and is responsible for authenticating components on the fabric in addition to distributing control and management plane information to the WAN Edges. The vBond is the component that aids in discovery of the fabric for all other components (such as when devices are behind NAT). The vBond then distributes the connectivity information for the vSmart and vManage to the WAN Edge.

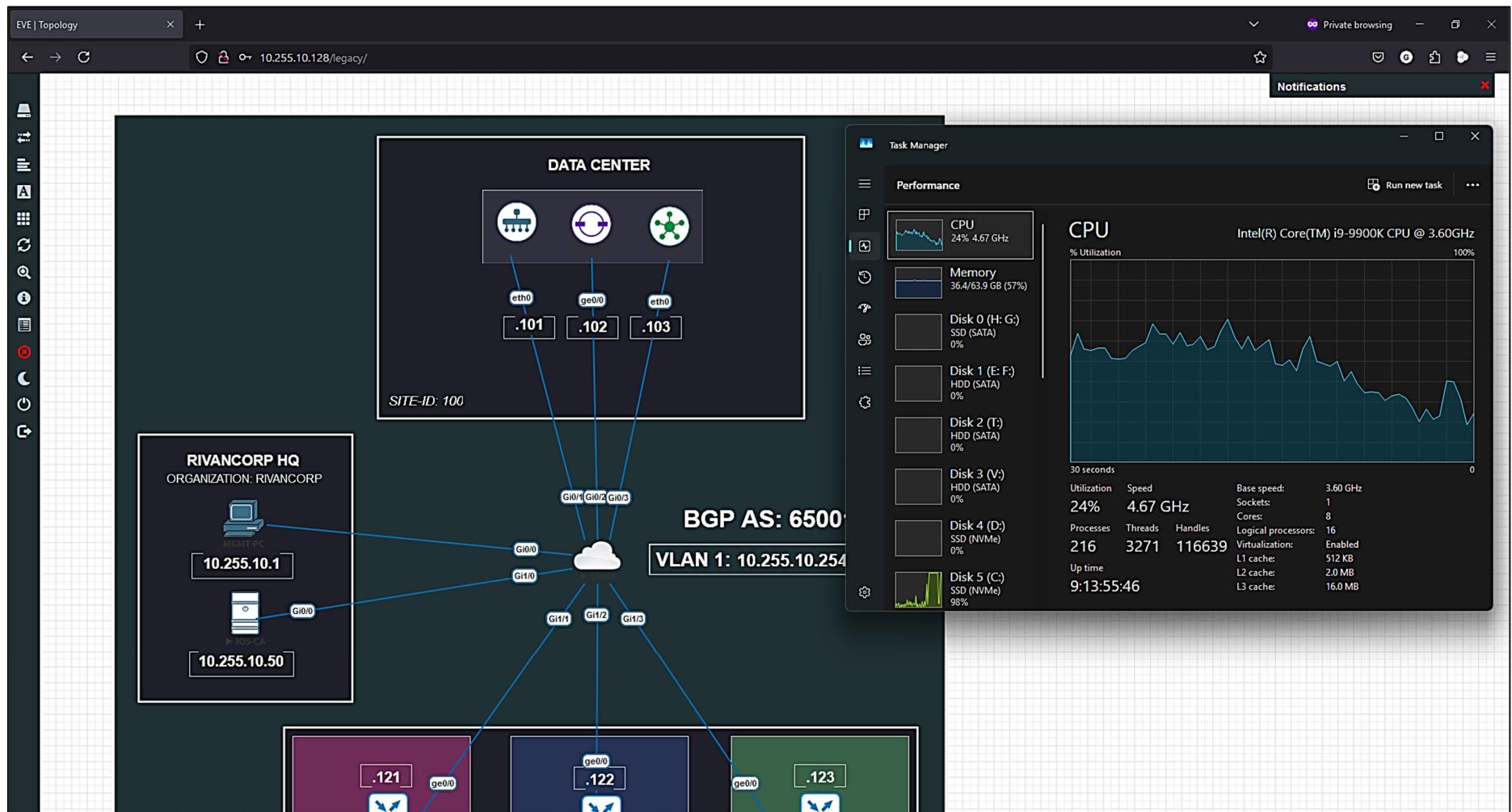
vEdge handles the data plane is where user traffic will be routed and forwarded across the WAN. The data plane is similar to routers that would be deployed in a traditional WAN, though in Cisco SD WAN, these are referred to as WAN Edges.

Each component authenticates each other and if successful, a **Datagram Transport Layer Security (DTLS)** tunnel is established. Separating the control plane from the data and management plane, the protocol that vSmart uses to communicate all the WAN Edge routing is called **Overlay Management Protocol (OMP)**.



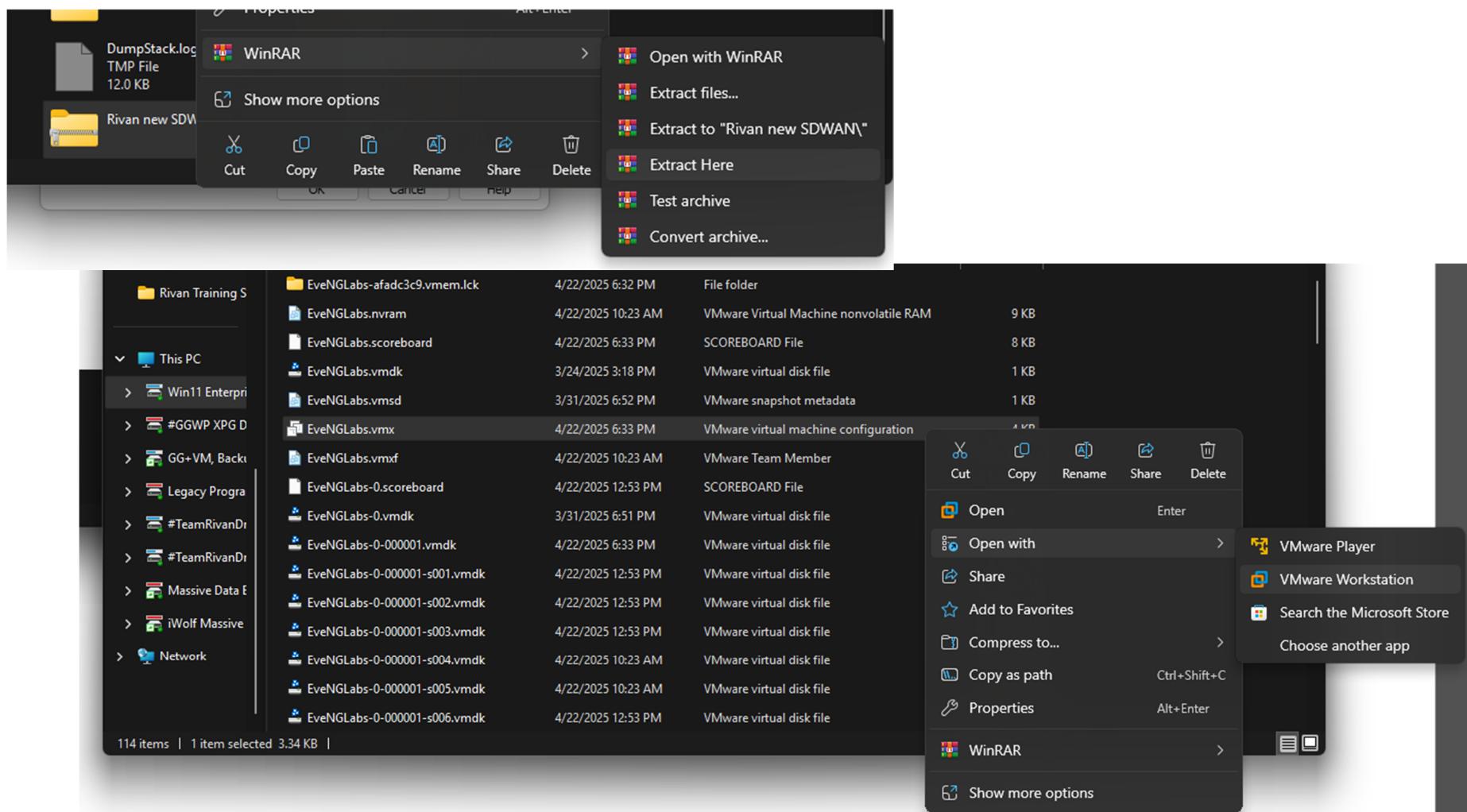
FULL PROCEDURES OF SD-WAN IMPLEMENTATION

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) VMNet11 in Virtual Network Editor, the first Network Adapter is set to VMNet11 with its subnet IP 10.255.10.0. The second Network Adapter is set to NAT (VMNet8) with its subnet ip is 208.8.8.0, and the Third Network Adapter is set to VMNet15 with the subnet IP of 10.69.255.0

The screenshot shows two overlapping windows from the VMware interface.

Virtual Network Editor (Top Window):

Name	Type	External Connection	Host Connection	DHCP	Subnet Address
VMnet1	Host-only	-	Connected	Enabled	192.168.101.0
VMnet2	Host-only	-	Connected	Enabled	192.168.102.0
VMnet3	Host-only	-	Connected	-	192.168.103.0
VMnet4	Host-only	-	Connected	-	192.168.104.0
VMnet5	Host-only	-	Connected	Enabled	192.168.105.0
VMnet8	NAT	NAT	Connected	Enabled	208.8.8.0
VMnet10	Host-only	-	Connected	Enabled	100.0.0.0
VMnet11	Host-only	-	Connected	Enabled	10.255.10.0
VMnet15	Host-only	-	Connected	Enabled	10.69.255.0

Virtual Machine Settings (Bottom Window):

VMnet Information:

- Bridged (connect VMs directly to the external network)
- NAT (shared host's IP address with VMs)
- Host-only (connect VMs internally in a private network)

Connect a host virtual adapter to this network
Host virtual adapter name: VMware Network Adapter VMnet11

Use local DHCP service to distribute IP address to VMs

Subnet IP: 10 . 255 . 10 . 0 Subnet mask: 255 . 255 . 255 . 0

Virtual Machine Settings (Hardware Tab):

Device	Summary
Memory	32 GB
Processors	8
Hard Disk (IDE)	200 GB
Hard Disk 2 (IDE)	40 GB
CD/DVD (IDE)	Using file C:\Users\Administra...
Network Adapter	Custom (VMnet11)
Network Adapter 2	Custom (VMnet8)
Network Adapter 3	Custom (VMnet15)
Display	Auto detect

Memory (Right Panel):

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: 32772 MB

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

Legend:
■ Maximum recommended memory (Memory swapping may occur beyond this size.)
■ Recommended memory
■ Guest OS recommended minimum



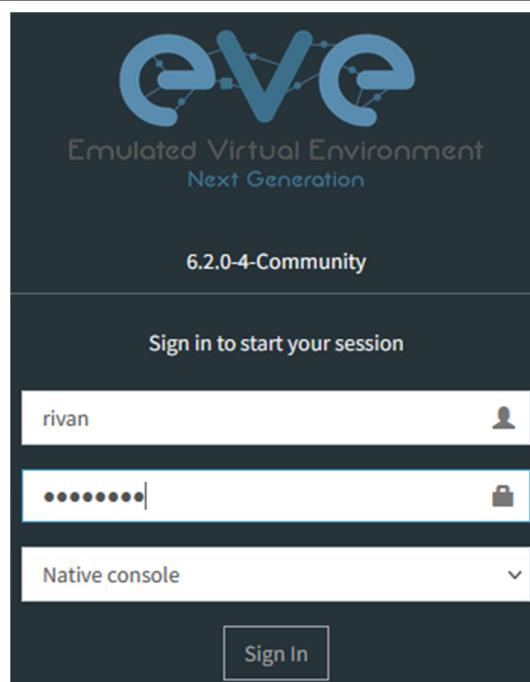
When VM is running, activate all the virtual devices via browser > 10.255.10.xxx (depending on what IP assigned after its boot), **WAIT AT LEAST 10 MINS** then you may ping check 10.255.10.1 and 100.0.0.xxx to confirm. **Preferably the Internet temporarily since VMNet8 is using a Public IP Address.**

Open a browser and access the 10.255.10.xxx, and do the following...

→ Login (browser): **rivan / C1sc0123**

→ Select and Open **SDWAN-RivanCorp-Updated**

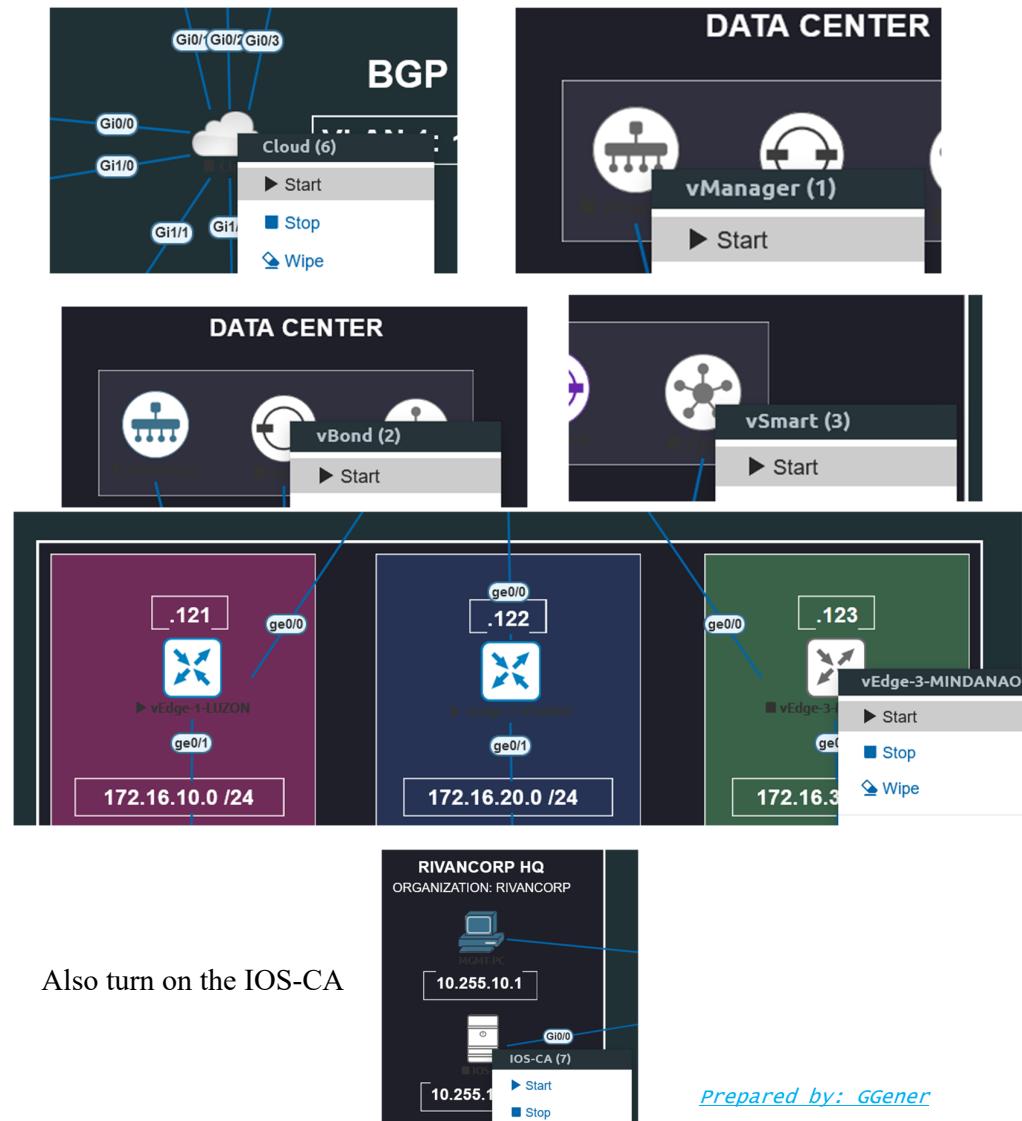
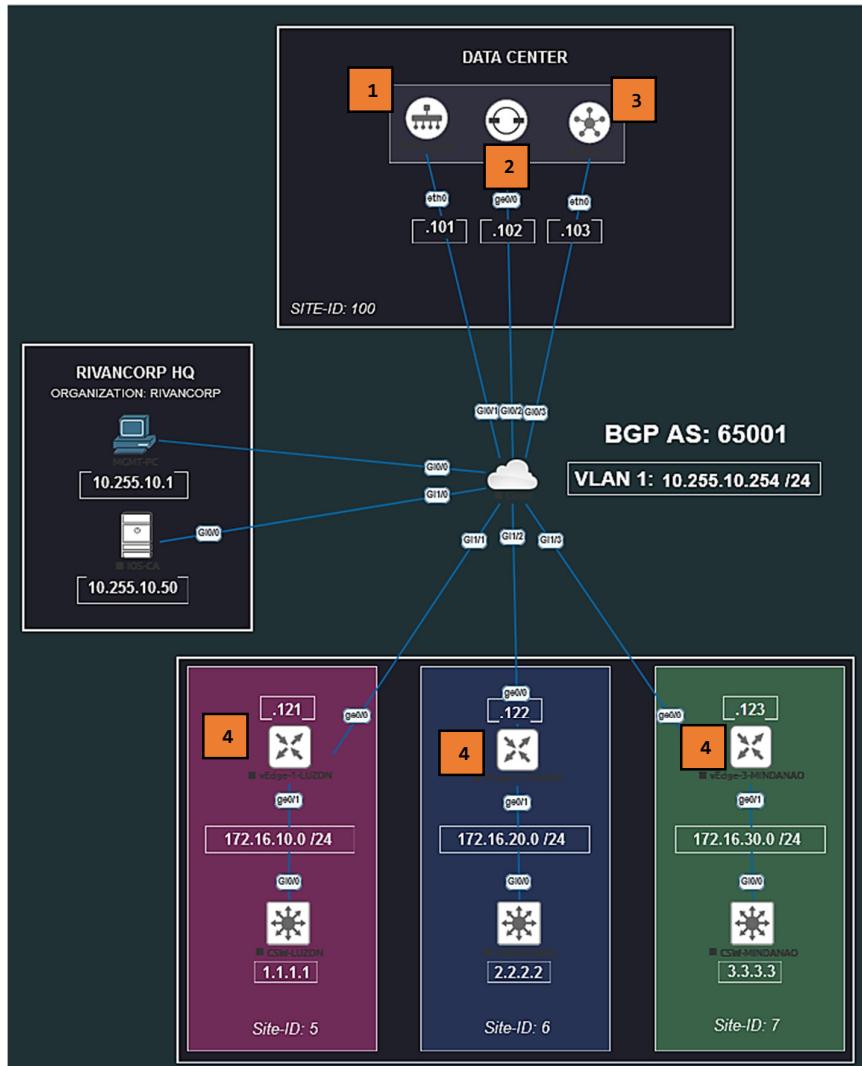
```
Eve-NG (default root password is 'eve')
Use http://10.255.10.128/
rivanlabs-eve-ng login:
```



The screenshot shows the EVE-NG File manager interface. The URL in the address bar is 10.255.10.128/#!/main. The main area displays a file list under the heading "File manager Current position / root". Two files are listed: "SDWAN-RivanCorp-Test.unl" (modified 29 Mar 2025 07:50) and "SDWAN-RivanCorp-Updated.unl" (modified 29 Mar 2025 07:20). To the right of the file list is a network diagram showing multiple nodes connected to a central hub. Below the diagram, the text "Lab Path: /SDWAN-RivanCorp-Updated.unl", "Version: 1", "UUID: 2219a47a-994f-4125-8d88-510a9d9cce6c", and "Author:" are displayed. At the bottom right are "Open", "Edit", and "Delete" buttons.



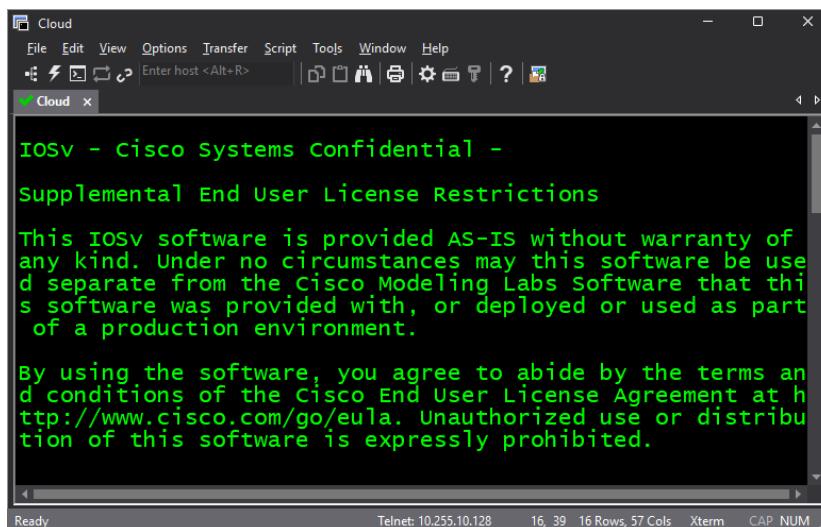
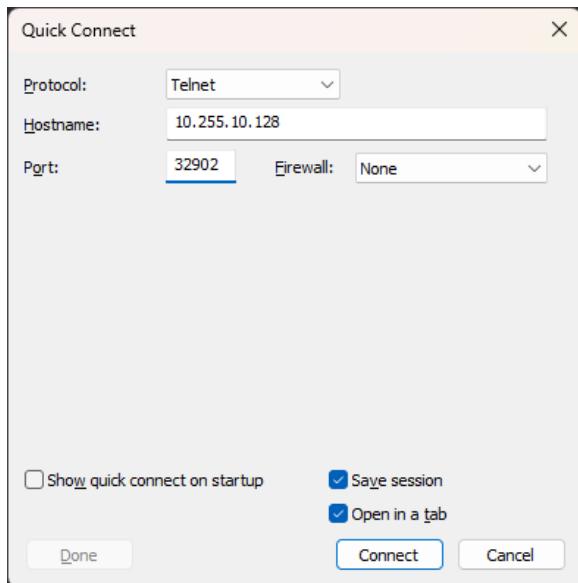
The full topology of SDWAN will show, run the following virtual SDWAN devices **in-order**: CLOUD, VMManage, VBond, VSmart, and vEdge.



Also turn on the IOS-CA



Launch SecureCRT and telnet 10.255.10.xxx : 32902 (cloud)



CLI Initial Configuration:

```
conf t
hostname Cloud
int lo0
ip add 10.100.10.10 255.255.255.255
int lo8
ip add 8.8.8.8 255.255.255.255
vlan 10
name SDWAN-Controllers
int vlan 10
ip add 10.255.10.254 255.255.255.0
no shut
int range g0/0-3,g1/0-3
swi mode acc
swi acc vlan 10
router bgp 65001
no synchro
bgp log-neighbor-changes
network 10.100.10.10 mask 255.255.255.255
network 8.8.8.8 mask 255.255.255.255
network 10.255.10.0 mask 255.255.255.0
neighbor 10.255.10.121 remote-as 65001
neighbor 10.255.10.122 remote-as 65001
neighbor 10.255.10.123 remote-as 65001
no auto-summary
end
wr
```



Booting all Virtual SDWAN devices may take at least 10 minutes (depending to the specs of the host machine), optionally you may check their booting status by accessing the CLI of vManage (via Telnet 10.255.10.128 port 32897, login: admin / C1sc0123) and entering the ***request nms all status*** command. Repeat the said command until the ***NMS Data Collection Agent*** and ***NMS Cloud Agents*** are in running status.

Quick Connect

Protocol: Telnet

Hostname: 10.255.10.128

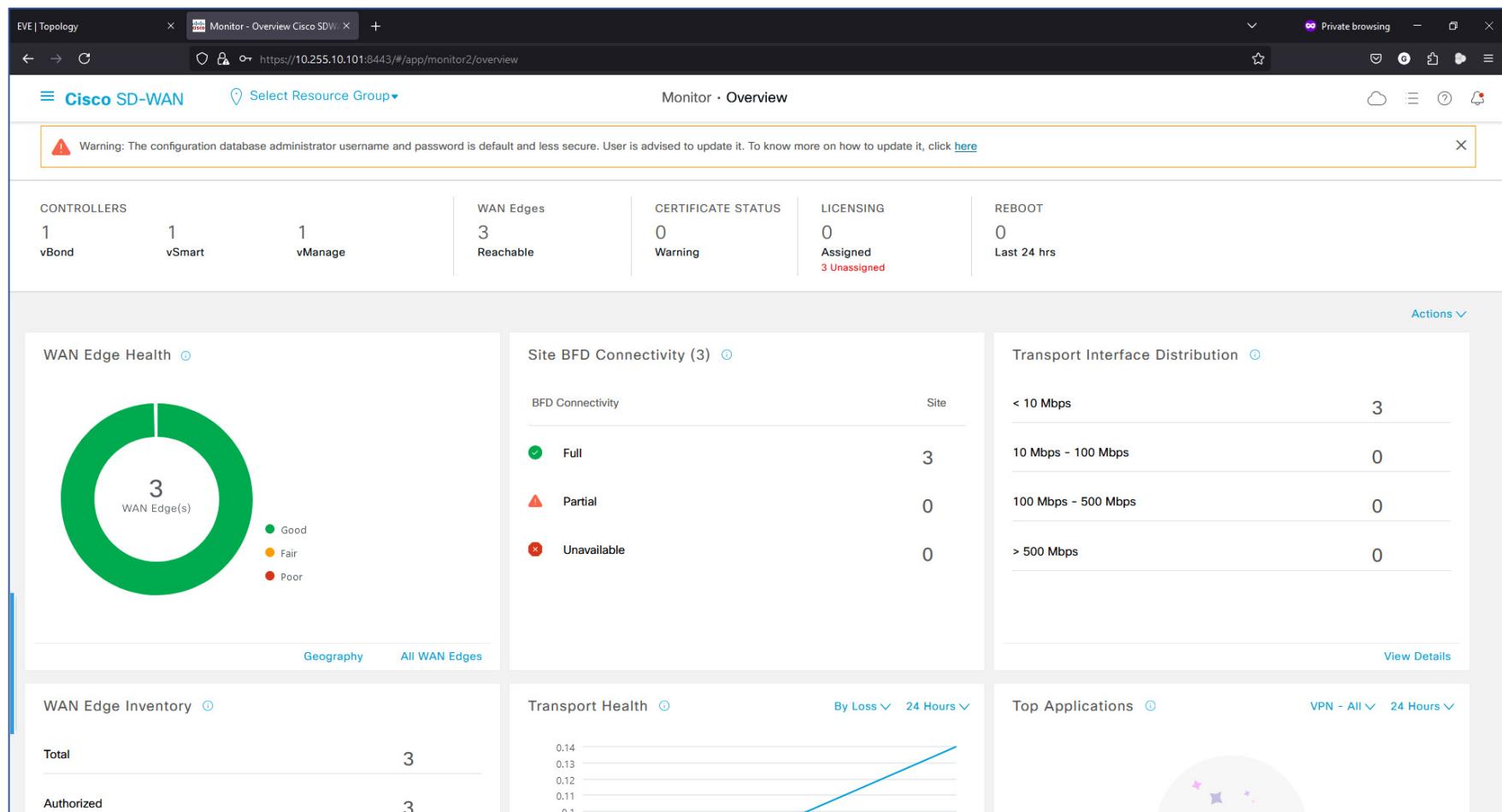
Port: 32897 Firewall: None

Show quick connect on startup Save session
 Open in a tab

```
vManager
File Edit View Options Transfer Script Tools Window Help
Enter host <Alt+R> | □ □ □ □ | ? | ☰
Cloud vManager vManager vManager x
NMS messaging server
    Enabled: true
    Status: running PID:3357 for 2119s
NMS statistics database
    Enabled: true
    Status: running PID:2196 for 2087s
NMS data collection agent
    Enabled: true
    Status: running PID:935 for 2073s
NMS CloudAgent v2
    Enabled: true
    Status: running PID:2860 for 2072s
NMS cloud agent
    Enabled: true
    Status: running PID:921 for 2074s
NMS SDAVC server
    Enabled: false
    Status: not running
NMS SDAVC proxy
    Enabled: true
    Status: running PID:904 for 2074s
Rivan-vManage#
```



To determine if the vManage is fully initialized (at least 10 to 15 minutes after started), ping 10.255.10.101, if it pings... Launch the vManage GUI on a separate browser <https://10.255.10.101> login: **admin / C1sc0123**





Upon SDWAN Maintenance, we have to detach the vEdges before configuring... Click the **☰ > Configuration > Templates > DeviceTemplates**

> ... (triple dots of BR-VE-TEMP) > Select All Rivan vEdges then Detach , and wait for the detachment completion.

The screenshot shows the Cisco SD-WAN Configuration - Templates interface. A modal dialog titled "Detach Device" is open, prompting the user to select devices to detach. The "Available Devices" list contains one item: "vEdge-LUZON" with IP "10.5.1.121". The "Selected Devices" list contains two items: "vEdge-MINDANAO" with IP "10.7.1.122" and "vEdge-VISAYAS" with IP "10.6.1.122". A context menu on the right side of the table lists options: Edit, View, Delete, Copy, Attach Devices, Change Resource Group, **Detach Devices** (which is highlighted), Export CSV, and Change Device Values.

Configuration - Templates

Device Templates

Name	Description	Type	Device Model	Device Role	Resource Group	Feature Templates	Draft Mode	Devices Attached	Updated By	Last Updated	Template Status
BR-VE-TEMP	BR-VE-TEMP	Feature	vEdge Cloud	SDWAN Edge	global	15	Disabled	3	admin	29 Mar 2025 1:15:...	In Sync

Detach Device

Detach device from the list below

Available Devices

Selected Devices

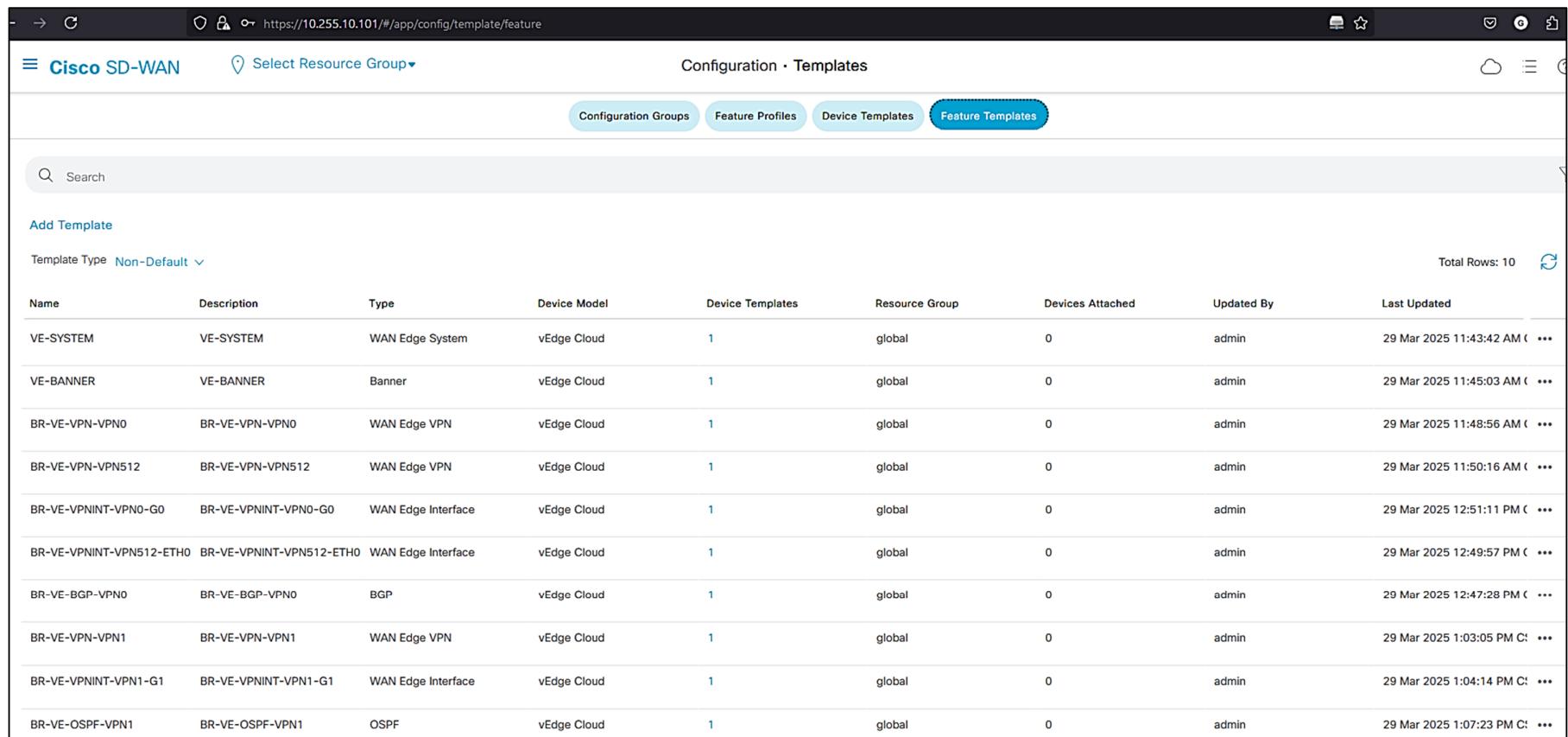
No data available

Detach Cancel

Detach Devices



SDWAN Configuration are composed of “**Templates**”, instead of using CLI commands or scripting, these are the somewhat called “configuration sheets” that defines the complete operational configuration for a specific component. It's essentially a container for a collection of feature templates that define specific aspects of the device's operation, therefore SDWAN Templates are composed thru GUI.



The screenshot shows the Cisco SD-WAN Configuration - Templates interface. The URL in the browser is https://10.255.10.101/#/app/config/template/feature. The top navigation bar includes tabs for Configuration Groups, Feature Profiles, Device Templates, and Feature Templates, with Feature Templates being the active tab. A search bar is present below the navigation. The main content area displays a table of Feature Templates with the following columns: Name, Description, Type, Device Model, Device Templates, Resource Group, Devices Attached, Updated By, and Last Updated. There are 10 rows of data, each with a 'More' (three dots) link. The table header also includes a 'Template Type' dropdown set to 'Non-Default' and a 'Total Rows: 10' indicator.

Name	Description	Type	Device Model	Device Templates	Resource Group	Devices Attached	Updated By	Last Updated
VE-SYSTEM	VE-SYSTEM	WAN Edge System	vEdge Cloud	1	global	0	admin	29 Mar 2025 11:43:42 AM C...
VE-BANNER	VE-BANNER	Banner	vEdge Cloud	1	global	0	admin	29 Mar 2025 11:45:03 AM C...
BR-VE-VPN-VPNO	BR-VE-VPN-VPNO	WAN Edge VPN	vEdge Cloud	1	global	0	admin	29 Mar 2025 11:48:56 AM C...
BR-VE-VPN-VPN512	BR-VE-VPN-VPN512	WAN Edge VPN	vEdge Cloud	1	global	0	admin	29 Mar 2025 11:50:16 AM C...
BR-VE-VPNINT-VPNO-G0	BR-VE-VPNINT-VPNO-G0	WAN Edge Interface	vEdge Cloud	1	global	0	admin	29 Mar 2025 12:51:11 PM C...
BR-VE-VPNINT-VPN512-ETH0	BR-VE-VPNINT-VPN512-ETH0	WAN Edge Interface	vEdge Cloud	1	global	0	admin	29 Mar 2025 12:49:57 PM C...
BR-VE-BGP-VPNO	BR-VE-BGP-VPNO	BGP	vEdge Cloud	1	global	0	admin	29 Mar 2025 12:47:28 PM C...
BR-VE-VPN-VPN1	BR-VE-VPN-VPN1	WAN Edge VPN	vEdge Cloud	1	global	0	admin	29 Mar 2025 1:03:05 PM C...
BR-VE-VPNINT-VPN1-G1	BR-VE-VPNINT-VPN1-G1	WAN Edge Interface	vEdge Cloud	1	global	0	admin	29 Mar 2025 1:04:14 PM C...
BR-VE-OSPF-VPN1	BR-VE-OSPF-VPN1	OSPF	vEdge Cloud	1	global	0	admin	29 Mar 2025 1:07:23 PM C...

At the end of the activity... these are the templates that are required to compose to run the minimum SDWAN System.



Let's begin composing the template for SYSTEM, follow the steps/procedure in composing the said template:

1. Configuration > 2. Templates > 3. Feature Templates > 4. Add Template

The screenshot shows the Cisco SD-WAN interface. On the left sidebar, 'Configuration' is selected (marked with orange box 1). Under 'Templates', 'Feature Templates' is selected (marked with orange box 2). The main pane shows the 'Cisco SD-WAN' configuration with tabs for 'Select Resource Group', 'Configuration Groups', 'Feature Profiles', 'Device Templates', and 'Feature Templates' (marked with orange box 3). A search bar and an 'Add Template' button are visible (marked with orange box 4).

5. Type in search and check “vEdge Cloud” > 6. System

The screenshot shows the 'Feature Template > Add Template' dialog. In the 'Select Devices' section, 'vEdge Cloud' is selected in the search field and checked in the list (marked with orange box 5). In the 'Select Template' section, the 'System' template is highlighted (marked with orange box 6). Other templates shown include AAA, Archive, NTP, OMP, and System.



7. Template Name & Description: VE-SYSTEM

Cisco SD-WAN Select Resource Group▼

Feature Template > Add Template > System

Device Type vEdge Cloud

Template Name* VE-SYSTEM **7**

Description* VE-SYSTEM

Basic Configuration GPS Tracker Advan

BASIC CONFIGURATION

Cisco SD-WAN Select Resource Group▼

Feature Template > Add Template > System

BASIC CONFIGURATION

Site ID [sys]

System IP [sys]

Overlay ID 1

Timezone UTC

Hostname [sys]

Location [sys]

Device Groups [sys]

Controller Groups [sys]

Description [sys]

Console Baud Rate (bps) 9600 **8**

8. (scroll under Basic Configuration) set Console Baud Rate: 9600
(This is similar in configuring the serial console.),

and click SAVE. (First Template is saved.)



Composing the template for BANNER that show some kind of welcome messages in the CLI, follow the steps/procedure in composing the said template:

1. Configuration > 2. Templates > 3. Feature Templates > 4. Add Template

The screenshot shows the Cisco SD-WAN interface with the following steps highlighted:

- Configuration > 2. Templates > 3. Feature Templates > 4. Add Template
- Configuration > 2. Templates > 3. Feature Templates > 4. Add Template
- Configuration > 2. Templates > 3. Feature Templates > 4. Add Template
- Configuration > 2. Templates > 3. Feature Templates > 4. Add Template
- Configuration > 2. Templates > 3. Feature Templates > 4. Add Template
- Configuration > 2. Templates > 3. Feature Templates > 4. Add Template

5. Type in search and check “vEdge Cloud” > 6. Banner

The bottom panel shows the "Feature Template > Add Template" screen with the following details:

- Search bar: vedge cloud
- Selected device: vEdge Cloud (highlighted with a red box)
- OTHER TEMPLATES grid:
 - Banner (highlighted with a red box)
 - DHCP Server
 - Multicast
 - BGP
 - IGMP
 - OSPF



7. Template Name: VE-BANNER
8. Login Banner > Global > WELCOME TO RIVAN SD-WAN
9. MOTD Banner > Global > FOR AUTHORIZED PERSONNEL ONLY, and SAVE

The screenshot shows the Cisco SD-WAN Feature Template configuration interface. The top navigation bar includes 'Cisco SD-WAN', 'Select Resource Group', and tabs for 'Configuration Groups' (selected) and 'Features'. The breadcrumb path is 'Feature Template > Add Template > Banner'. The configuration fields are:

Device Type	vEdge Cloud
Template Name	VE-BANNER
Description	VE-BANNER

A large dark grey button labeled 'BASIC CONFIGURATION' is visible. Below it, under 'Login Banner', the value 'WELCOME TO RIVAN SD-WAN' is selected. Under 'MOTD Banner', the value 'FOR AUTHORIZED PERSONNEL' is selected.

Step numbers 7, 8, and 9 are overlaid on the interface:

- Step 7 is highlighted in an orange box around the 'Template Name' field.
- Step 8 is highlighted in an orange box around the 'Login Banner' dropdown.
- Step 9 is highlighted in an orange box around the 'MOTD Banner' dropdown.



(for setting up VPN-0 Config: Add Template > vEdge Cloud > VPN)

1. Template Name: BR-VE-VPN-VPN0 : 2. VPN > Global: 0 > 3. Name: Transport VPN > 4. Click IPv4 Route > 5. New IPv4 Route

The screenshot shows the 'Basic Configuration' tab selected. A red box labeled '1' highlights the 'Template Name' field containing 'BR-VE-VPN-VPN0'. A red box labeled '2' highlights the 'Name' field containing 'TRANSPORT VPN'. A red box labeled '3' highlights the 'Global' dropdown set to '0'. A red box labeled '4' highlights the 'IPv4 Route' tab.

The screenshot shows the 'IPv4 ROUTE' tab selected. A red box labeled '5' highlights the 'New IPv4 Route' button. Below it, there are fields for 'Optional' and 'Prefix' (both empty), and a 'Gateway' field which also contains no data. At the bottom right, the message 'No data available' is displayed.



6. Prefix > Global 0.0.0.0/0 > 7 & 8. Add Next Hop +

IPv4 ROUTE

New IPv4 Route

Prefix: 0.0.0.0/0 6

Gateway: Next Hop Null 0 VPN DHCP

Next Hop: 7 + Add Next Hop

9. Address: Device Specific(default). *!device specific because of different next hops per site, it will be set to [vpn_next_hop_ip_address_0]*, and 10. ADD(twice) then SAVE

Next Hop

No Next Hop added, add your first Next Hop

8 Add Next Hop

Next Hop

Address	Distance	Tracker
<input style="border: none; width: 40px; height: 25px; background-color: #f0f0f0; font-size: 10px; font-weight: bold; padding: 0 5px;" type="button" value="Global"/> 9	<input style="border: none; width: 40px; height: 25px; background-color: #f0f0f0; font-size: 10px; font-weight: bold; padding: 0 5px;" type="button" value="1"/> ss_0]	<input style="border: none; width: 40px; height: 25px; background-color: #f0f0f0; font-size: 10px; font-weight: bold; padding: 0 5px;" type="button" value="Enter Key"/> vpn_next_hop_ip_address_0

10 Add Cancel



(for setting up VPN-0 Config: Add Template > vEdge Cloud > VPN)

1. Template Name: BR-VE-VPN-VPN512 : 2. VPN > Global: 512 > 3. Name: MGMT VPN > 4. SAVE

Feature Template > Add Template > VPN

Device Type: vEdge Cloud

Template Name*: BR-VE-VPN-VPN512 1

Description*: BR-VE-VPN-VPN512

Basic Configuration DNS Advertise OMP IPv4 Route IPv6 Route Service Service Route GRE Route

BASIC CONFIGURATION

VPN 2 512

Name 3 MGMT VPN

Enhance ECMP Keying On Off

Enable TCP Optimization On Off

OMP Admin Distance IPv4

DNS 4

Cancel Save



(for setting up VPN0 Interface as its ethernet connector: Add Template > vEdge Cloud > VPN INTERFACE ETHERNET)

1. Template Name: BR-VE-VPNINT-VPN0-G0 > 2. Shutdown: Global NO > 3. Interface Name > Global: ge0/0
4. IPv4 Address > Device Specific: (*default*, IP Addresses are different in the offices)

Feature Template > Add Template > VPN Interface Ethernet

Device Type	vEdge Cloud
Template Name*	BR-VE-VPNINT-VPN0-G0
Description*	BR-VE-VPNINT-VPN0-G0

Basic Configuration Tunnel NAT VRRP ACL/QoS ARP 802.1X Advanced

BASIC CONFIGURATION

Shutdown	<input type="radio"/> Yes	<input checked="" type="radio"/> No
Interface Name	ge0/0	
Description		

IPv4 **IPv6**

Dynamic Static

IPv4 Address



5. (scroll)... Tunnel Interface > Global: ON > Color: biz_Internet (*required for referencing VPN Connections*)

TUNNEL

Tunnel Interface On Off

Per-tunnel Qos On Off

Color biz-internet

Restrict On Off

6. (Scroll to *Allow Service*) Global ON for: ALL, SSH (for security), NETCONF (!for postman-like) > 7. (Scroll) NAT > Global: ON > SAVE

Allow Service

All On Off

BGP On Off

DHCP On Off

DNS On Off

ICMP On Off

NETCONF On Off

NTP On Off

OSPF On Off

SSH On Off

NAT

IPv4 IPv6

Global On Off

Cancel Save



(for setting up VPN512 Interface as its ethernet connector: Add Template > vEdge Cloud > VPN INTERFACE ETHERNET)

1. Template Name: BR-VE-VPNINT-VPN512-ETH0 : 2. Shutdown > Global: NO > 3. Interface Name: eth0 > 4. SAVE

Feature Template > Add Template > VPN Interface Ethernet

Device Type: vEdge Cloud

Template Name*: BR-VE-VPNINT-VPN512-ETH0 1

Description*: BR-VE-VPNINT-VPN512-ETH0

Basic Configuration Tunnel NAT VRRP ACL/QoS ARP 802.1X Advanced

BASIC CONFIGURATION

Shutdown: 2 Yes No

Interface Name: 3 eth0

Description:

IPv4 IPv6

Dynamic Static

IPv4 Address:

Cancel Save 4



(for setting up ***new template*** for **BGP** across Cloud: Add Template > vEdge Cloud > (other) BGP

1. Template Name: BR-VE-BGP-VPN0 : 2. Shutdown> Global: NO >> 3. AS Number > Global: 65001

Feature Template > Add Template > BGP

Device Type vEdge Cloud

Template Name* BR-VE-BGP-VPN0 1

Description* BR-VE-BGP-VPN0

Basic Configuration Unicast Address Family Neighbor Advanced

BASIC CONFIGURATION

Shutdown 2

AS Number 65001 3



4. (scroll) NEW NEIGHBOR > 5. Address: 10.255.10.254 > 6. Remote-AS: Global 65001 > 7. Address Family: Global ON > Global ipv4-unicast > 9. ADD > and 10. SAVE

The screenshot shows a network configuration interface with two main windows. The left window is titled 'NEIGHBOR' and contains fields for Address (10.255.10.254), Description (empty), Remote AS (65001), Address Family (On, ipv4-unicast), Maximum Number of Prefixes (empty), Route Policy In (empty), Route Policy Out (empty), Shutdown (Yes selected), and Advanced Options. The right window is also titled 'NEIGHBOR' and shows a table of neighbors with one entry: Address 10.255.10.254, Remote AS 65001, and Action 'More'. Orange boxes numbered 4 through 10 highlight specific fields and buttons.

Optional	Address	Description	Remote AS	Action	Action
<input type="checkbox"/>	10.255.10.254	(empty)	65001	More	

Fields highlighted with orange boxes:

- 4: 'New Neighbor' button in the top right of the 'NEIGHBOR' window.
- 5: 'Address' field containing '10.255.10.254'.
- 6: 'Remote AS' field containing '65001'.
- 7: 'Address Family' dropdown set to 'On'.
- 8: 'Shutdown' dropdown set to 'No'.
- 9: 'Add' button at the bottom of the left window.
- 10: 'Save' button at the bottom right of the right window.



So far way almost half-way through, it is expected that 7 templates are properly composed before proceeding to the next phase (see the illustration).

Cisco SD-WAN Select Resource Group▼ Configuration · Templates

Configuration Groups Feature Profiles Device Templates Feature Templates

Search

Add Template

Template Type Non-Default ▼

Name	Description	Type	Device Model	Device Templates	Resource Group	Devices Attached	Updated By
BR-VE-BGP-VPNO	BR-VE-BGP-VPNO	BGP	vEdge Cloud	0	global	0	admin
BR-VE-VPN-VPNO	BR-VE-VPN-VPNO	WAN Edge VPN	vEdge Cloud	0	global	0	admin
BR-VE-VPN-VPN512	BR-VE-VPN-VPN512	WAN Edge VPN	vEdge Cloud	0	global	0	admin
BR-VE-VPNINT-VPN0-G0	BR-VE-VPNINT-VPN0-G0	WAN Edge Interface	vEdge Cloud	0	global	0	admin
BR-VE-VPNINT-VPN512-ETH0	BR-VE-VPNINT-VPN512-ETH0	WAN Edge Interface	vEdge Cloud	0	global	0	admin
VE-BANNER	VE-BANNER	Banner	vEdge Cloud	0	global	0	admin
VE-SYSTEM	VE-SYSTEM	WAN Edge System	vEdge Cloud	0	global	0	admin

To proceed to the next phase... Click DEVICE TEMPLATES.



In this part we setup a **Device Template** for re-attachment of SDWAN Devices with applying the composed templates.

1. Device Templates > Create Template > From Feature Template >>>
2. Device Model: vEdge Cloud > Device Role: SDWAN Edge
- > Template Name: BR-VE-TEMP > System: VE-SYSTEM >>>
3. Transport & Manage VPN >VPN 0: BR-VE-VPN-VPN0 >
- > +BGP > BR-VE-BGP-VPN0 >>>
4. VPN Interface: BR-VE-VPNINT-VPN0-G0 >>>
5. 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*) >>
5. Banner: VE-BANNER > CREATE

The screenshot shows the Cisco SD-WAN configuration interface. On the left, there's a sidebar with 'Cisco SD-WAN' and a search bar. The main area has tabs for 'Configuration', 'Templates' (which is selected and highlighted with an orange box), 'Configuration Groups', and 'Feature Profiles'. A large orange box labeled '1' highlights the 'Create Template' button in the sidebar. The 'Templates' tab shows a table with columns for 'Name', 'Type', and 'Actions'. One row is selected, showing 'BR-VE-TEMP' as the name, 'Transport & Management VPN' as the type, and a 'Delete' icon in the actions column. An orange box labeled '2' highlights the 'Device Model' dropdown set to 'vEdge Cloud' and the 'Device Role' dropdown set to 'SDWAN Edge'. Below these are fields for 'Template Name' (BR-VE-TEMP) and 'Description' (BR-VE-TEMP). There are tabs for 'Basic Information', 'Transport & Management VPN', and 'Service VPN'. The 'Basic Information' tab is active, showing 'System' set to 'VE-SYSTEM' and 'Logging' set to 'Factory_Default_Logging_Template_V01'. On the right, a large orange box labeled '3' highlights the 'VPN 0' dropdown set to 'BR-VE-VPN-VPN0' and the 'BGP' dropdown set to 'BR-VE-BGP-VPN0'. Below these are 'VPN Interface' dropdowns set to 'BR-VE-VPNINT-VPN0-G0' and 'BR-VE-VPNINT-VPN512-ETH0'. An orange box labeled '4' highlights the 'VPN 512' dropdown set to 'BR-VE-VPN-VPN512' and the 'VPN Interface' dropdown set to 'BR-VE-VPNINT-VPN512-ETH0'. To the right of these dropdowns is a list of additional VPN templates: BGP, OSPF, Secure Internet Gateway, VPN Interface, VPN Interface Cellular, VPN Interface GRE, VPN Interface IPsec, and VPN Interface PPP. At the bottom, a modal window titled 'Additional Templates' shows a 'Banner' entry with 'VE-BANNER' and a 'Create' button. An orange box labeled '5 (scroll below)' points to this 'Create' button. A blue link at the bottom right says 'Prepared by: GGener'.



!(Deployment Time) 1. click **...** (BR-VE-TEMP) > Attach Devices >> 2. Select the vEdges of LUZON-VISAYAS-MINDANAO >> 3. Attach

The screenshot shows the Cisco SD-WAN Configuration - Templates page. A context menu is open over a row for 'BR-VE-TEMP'. The menu items are: Edit, View, Delete, Copy, **Attach Devices** (which is highlighted), Change Resource Group, and Export CSV. The number '1' is in the bottom right corner of this menu.

The 'Attach Devices' dialog is open. It has two tables: 'Available Devices' and 'Selected Devices'. In the 'Available Devices' table, there is one item: 'Rivan-vBond' with IP '10.100.1.102'. In the 'Selected Devices' table, there are three items: 'vEdge-LUZON' (IP '10.5.1.121'), 'vEdge-MINDANAO' (IP '10.7.1.122'), and 'vEdge-VISAYAS' (IP '10.6.1.122'). The number '2' is in the bottom right corner of the 'Available Devices' table, and the number '3' is in the bottom right corner of the 'Selected Devices' table.

At the bottom right of the dialog are the 'Attach' and 'Cancel' buttons.

Name	Device IP
Rivan-vBond	10.100.1.102

Name	Device IP
vEdge-LUZON	10.5.1.121
vEdge-MINDANAO	10.7.1.122
vEdge-VISAYAS	10.6.1.122



(for final edit) ... UPDATE (edit) Device Template each Rivan vEdges (Luzon, Visayas, Mindanao) ... > Address (next hop): **10.255.10.254**

S... Chassis Number	System IP	Hostname	IPv4 Address(vpn_if_ipv4_address)	Hostname(system_host_name)	...
✓ 0e3418bc-8f94-4136-90b6-672838268...	10.6.1.122	vEdge-VISAYAS	10.255.10.122/24	vEdge-VISAYAS	***
✓ 92d6b796-3e1b-4687-b49d-ac1ac1ec7...	10.7.1.122	vEdge-MINDANAO	10.255.10.123/24	vEdge-MI	Edit Device Template
✓ a53e99c9-a3f9-4faf-8ac4-254a38911098	10.5.1.121	vEdge-LUZON	10.255.10.121/24	vEdge-LUZON	***

Update Device Template

Variable List (Hover over each field for more information)

Status	complete
Chassis Number	0e3418bc-8f94-4136-90b6-672838268...
System IP	10.6.1.122
Hostname	vEdge-VISAYAS
Address(vpn_next_hop_ip_address_0)	<input type="text" value="10.255.10.254"/>
IPv4 Address(vpn_if_ipv4_address)	<input type="text" value="10.255.10.122/24"/>
Hostname(system_host_name)	<input type="text" value="vEdge-VISAYAS"/>
System IP(system_system_ip)	<input type="text" value="10.6.1.122"/>
Site ID(system_site_id)	<input type="text" value="6"/>

Update Device Template

Variable List (Hover over each field for more information)

Status	complete
Chassis Number	a53e99c9-a3f9-4faf-8ac4-254a38911098
System IP	10.5.1.121
Hostname	vEdge-LUZON
Address(vpn_next_hop_ip_address_0)	<input type="text" value="10.255.10.254"/>
IPv4 Address(vpn_if_ipv4_address)	<input type="text" value="10.255.10.121/24"/>
Hostname(system_host_name)	<input type="text" value="vEdge-LUZON"/>
System IP(system_system_ip)	<input type="text" value="10.5.1.121"/>
Site ID(system_site_id)	<input type="text" value="5"/>

Generate Password **Update** **Cancel**



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

☰ Cisco SD-WAN

global▼ Configuration • Templates

Device Template **BR-VE-TEMP** Total 1

Device list (Total: 3 devices)

Filter/Search

0e3418bc-8f94-4136-90b6-672838268208
vEdge-VISAYAS|10.6.1.122

92d6b796-3e1b-4687-b49d-ac1ac1ec7bcb
vEdge-MINDANAO|10.7.1.122

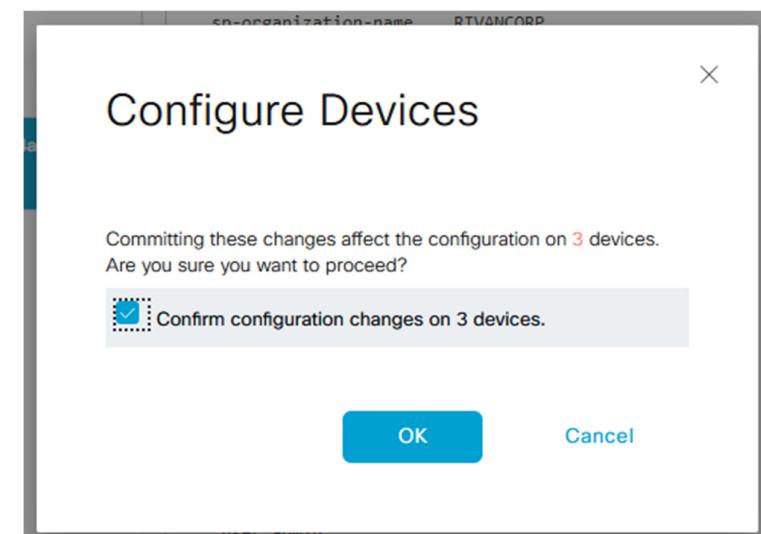
a53e99c9-a3f9-4faf-8ac4-254a38911098
vEdge-LUZON|10.5.1.121

Configure Device Rollback Timer

Config Preview Config Diff

```
system
host-name          vEdge-LUZON
system-ip          10.5.1.121
domain-id          1
site-id            5
admin-tech-on-failure
no route-consistency-check
no vrrp-advt-with-phymac
sp-organization-name RIVANCORP
organization-name   RIVANCORP
console-baud-rate  9600
vbond 10.255.10.102 port 12346
aaa
auth-order        local radius tacacs
usergroup basic
task system read write
task interface read write
!
usergroup netadmin
!
usergroup operator
task system read
task interface read
task policy read
task routing read
task security read
!
user admin
password $6$siwKBQ==$wT2lUa9BSreDPI6gB8s14E6PAJoVXgMbqv/whJ8F1C6sWdRa
!
ciscotacro-user true
ciscotacrw-user true
!
logging
disk
enable
!
```

Back Configure Devices Cancel





Cisco SD-WAN global▼

Push Feature Template Configuration | Validation Success

Initiated By: admin From: 10.255.10.1

Total Task: 3 | In Progress : 3

Search Total Rows: 3

Status	Message	Chassis Number	Device Model	Hostname	System IP	Site ID	vManage IP
In progress	Configuring device with feature te... 0e3418bc-8f94-4136-90b6-672...	vEdge Cloud	vEdge-VISAYAS	10.6.1.122	6	10.100.1.101	
In progress	Configuring device with feature te... 92d6b796-3e1b-4687-b49d-ac...	vEdge Cloud	vEdge-MINDANAO	10.7.1.122	7	10.100.1.101	
In progress	Configuring device with feature te... a53e99c9-a3f9-4faf-8ac4-254a...	vEdge Cloud	vEdge-LUZON	10.5.1.121	5	10.100.1.101	

Total Rows: 3

Status	Message	Chassis Number	Device Model	Hostname	System IP	Site ID	vManage IP
Success	Done - Push Feature Template C...	0e3418bc-8f94-4136-90b6-672...	vEdge Cloud	vEdge-VISAYAS	10.6.1.122	6	10.100.1.101
Success	Done - Push Feature Template C...	92d6b796-3e1b-4687-b49d-ac...	vEdge Cloud	vEdge-MINDANAO	10.7.1.122	7	10.100.1.101
Success	Done - Push Feature Template C...	a53e99c9-a3f9-4faf-8ac4-254a...	vEdge Cloud	vEdge-LUZON	10.5.1.121	5	10.100.1.101

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



WAIT... there's more!!! (we're just halfway through)... while pushing config status, add these initial pre-config scripts for **Luzon, Visayas, and Mindanao**

```
!for Telnet 10.255.10.xxx : 32906
!*LUZON*
en
conf t
hostname CSW-LUZON
no ip domain-lookup
int g0/0
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 10.255.10.xxx : 32907
!*Visayas*
en
conf t
hostname CSW-VISAYAS
no ip domain-lookup
int g0/0
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 10.255.10.xxx : 32908
!*Mindanao*
en
conf t
hostname CSW-MINDANAO
no ip domain-lookup
int g0/0
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
```

(telnet 10.255.10.xxx : 32906, 32907, 32908), verify that **Luzon, Visayas, and Mindanao** in the topology are running and properly configured before proceeding.



Quick Connect X

Protocol: Telnet Hostname: 10.255.10.128 Port: 32906 Firewall: None

Show quick connect on startup Save session Open in a tab

Done Connect Cancel

CSW-LUZON

File Edit View Options Transfer Script Tools Window Help

Enter host <Alt+R>

Cloud vManager CSW-LUZON CSW-VISAYAS CSW-MINDANAO

```
Enter configuration commands, one per line. End with CNTL/Z.
Site1(config)#hostname CSW-LUZON
CSW-LUZON(config)#no ip domain-lookup
CSW-LUZON(config)#int g0/0
CSW-LUZON(config-if)#no shut
CSW-LUZON(config-if)#ip add 172.16.10.2 255.255.255.0
CSW-LUZON(config-if)#exit
CSW-LUZON(config)#int lo0
CSW-LUZON(config-if)#no shut
CSW-LUZON(config-if)#ip add 1.1.1.1 255.255.255.255
CSW-LUZON(config-if)#end
CSW-LUZON#wr
Building configuration...
Compressed configuration from 2759 bytes to 1612 bytes[OK]
CSW-LUZON#
*Apr 22 22:46:05.260: %SYS-5-CONFIG_I: Configured from console by console
*Apr 22 22:46:06.083: %GRUB-5-CONFIG_WRITING: GRUB configuration is being updated on disk. Please wait...
*Apr 22 22:46:06.738: %GRUB-5-CONFIG_WRITTEN: GRUB configuration was written to disk successfully.
CSW-LUZON#
```

Ready Telnet: 10.255.10.128 22, 11 22 Rows, 69 Cols Xterm CAP NUM .::



Additionally after the initial config scripts: Configure Initial OSPF Scripts to remote SITES, add the following commands via CLI ...

!CSW-LUZON

```
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
!
.
```

!CSW-VISAYAS

```
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
!
.
```

!CSW-MINDANAO

```
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
!
.
```

```
CSW-LUZON#conf t
Enter configuration commands, one per line. End with CNTL/Z.
CSW-LUZON(config)#no router ospf 1
CSW-LUZON(config)#router ospf 1
CSW-LUZON(config-router)#network 172.16.10.0 0.0.0.255 area 0
CSW-LUZON(config-router)#network 1.1.1.1 0.0.0.0 area 0
CSW-LUZON(config-router)#end
CSW-LUZON#wr
Building configuration...
Compressed configuration from 2845 bytes to 1671 bytes[OK]
CSW-LUZON#!
```

```
Cloud vManager CSW-LUZON CSW-VISAYAS CSW-MINDANAO
CSW-VISAYAS#conf t
Enter configuration commands, one per line. End with CNTL/Z.
CSW-VISAYAS(config)#router ospf 1
CSW-VISAYAS(config-router)#network 172.16.20.0 0.0.0.255 area 0
CSW-VISAYAS(config-router)#network 2.2.2.2 0.0.0.0 area 0
CSW-VISAYAS(config-router)#end
CSW-VISAYAS#wr
Building configuration...
Compressed configuration from 2847 bytes to 1670 bytes[OK]
CSW-VISAYAS#!
```



Reminder: VPN512 for MGMT, VPN0 for Connectivity... *new VPN1 for Data Plane (or a.k.a. Service VPN).... @ vManage for OSPF*

Template Data Connectivity: Configuration > Templates > Feature Templates : Add Template > vEdge Cloud > VPN :

1. Template Name/Description: **BR-VE-VPN-VPN1** >>> 2. VPN: **1** >>> Name: **DATA VPN** (or SERVICE VPN)
- >>> 3. New IPv4 Route : Global **0.0.0.0/0** >>> Enable VPN: Global **ON** >>> 4. ADD >>> 5. SAVE

The screenshot shows the vManage interface for adding a template. The main window displays basic configuration settings for a vEdge Cloud device. A modal window titled 'IPv4 ROUTE' is open, showing fields for Prefix (0.0.0.0), Gateway (Next Hop, Null 0, VPN, DHCP), and Enable VPN (On). The 'New IPv4 Route' button is highlighted with a red box labeled '3'. The 'Add' button at the bottom right of the modal is also highlighted with a red box labeled '4'. At the bottom of the screen, a table lists the newly added route with its prefix, gateway, and enable status. The 'Save' button at the bottom center is highlighted with a red box labeled '5'.

Feature Template > Add Template > VPN

Device Type: vEdge Cloud

Template Name*: BR-VE-VPN-VPN1

Description*: BR-VE-VPN-VPN1

Basic Configuration DNS Advertise OMP IPv4 Route IPv6 Route

BASIC CONFIGURATION

VPN: 1

Name: DATA VPN

IPv4 ROUTE

New IPv4 Route

Prefix: 0.0.0.0

Gateway: Next Hop, Null 0, **VPN**, DHCP

Enable VPN: On

Add Cancel

Optional	Prefix	Gateway	Selected Gateway Configuration	Action
<input type="checkbox"/>	0.0.0.0/0	VPN	Enable VPN On	

Cancel Save

Prepared by: GGener



(for the DATA/SERVICE VPN 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

Device Type: vEdge Cloud

Template Name*: BR-VE-VPNINT-VPN1-G1 1

Description*: BR-VE-VPNINT-VPN1-G1

Basic Configuration Tunnel NAT VRRP ACL/QoS ARP 802.1X Advanced

BASIC CONFIGURATION

Shutdown: Yes No 2

Interface Name: ge0/1 2

Description:

3

Dynamic Static

IPv4 Address: [vpn_if_ipv4_address]

Cancel Save



(for OSPF Data/Service Routing Template)... Add Template > vEdge Cloud > OSPF: Template Name: **BR-VE-OSPF-VPN1**
: New Redistribute >> Protocol: Global OMP (Overlay Management Protocol) > ADD >> New Area > Area Number Global: 0
> Add Interface > Interface Name: ge0/1 > ADD (2 times) >> Advance > Originate: Global ON and Always: (Global) ON >> SAVE

The screenshot displays the configuration steps for creating an OSPF template named "BR-VE-OSPF-VPN1".

- Feature Template:** Shows the template name "BR-VE-OSPF-VPN1" and a description.
- REDISTRIBUTE:** A "New Redistribute" button is highlighted. The "Protocol" dropdown is set to "omp".
- AREA:** A "New Area" button is highlighted. The "Area Number" field is set to "0".
- Interface:** An "Add Interface" button is highlighted. The "Interface Name" is "ge0/1" and the "Hello Interval (seconds)" is "10".
- ADVANCED:** The "Originate" and "Always" checkboxes are both set to "On". Other settings include "Reference Bandwidth (Mbps)" at 100 and "RFC 1583 Compatible" set to "On".



for the connectivity of OSPF Template).... Device Templates : BR-VE-TEMP... > Edit

The screenshot shows the 'Device Templates' tab selected in the top navigation bar. A search bar is present above the table. The table has columns for Name, Description, Type, Device Model, Device Role, Resource Group, Feature Templates, Draft Mode, Devices Attached, Updated By, Last Updated, and Template Status. One row is listed: BR-VE-TEMP, BR-VE-TEMP, Feature, vEdge Cloud, SDWAN Edge, global, 12, Disabled, 0, admin, 23 Apr 2025 6:34:..., In Sync. There are 'Edit' and 'View' buttons at the bottom right of the table.

Name	Description	Type	Device Model	Device Role	Resource Group	Feature Templates	Draft Mode	Devices Attached	Updated By	Last Updated	Template Status
BR-VE-TEMP	BR-VE-TEMP	Feature	vEdge Cloud	SDWAN Edge	global	12	Disabled	0	admin	23 Apr 2025 6:34:...	In Sync

(scroll) Service VPN > Add VPN > select BR-VE-VPN1 > (add to the right >) > NEXT

The screenshot shows the 'Add VPN' dialog. On the left, a sidebar lists 'Service VPN' and other options. The main area has tabs for 'Select VPNs' and 'Select Sub-Templates'. Under 'Available VPN Templates', there is a search bar and a table with columns for ID and Template Name. The table shows 'No data available'. Under 'Selected VPN Templates', there is also a search bar and a table with one entry: fcb7bcd8-1869-4981-bfc5-5fa7992553a7, BR-VE-VPN-VPN1. An orange box highlights the 'Service VPN' sidebar, and another orange box highlights the 'Selected VPN Templates' table.



> OSPF+ > BR-VE-OSPF-VPN1 : VPN Interface+ > VPN Int: BR-VE-VPNINT-VPN1-G1 >>> ADD >> UPDATE

Add VPN

Select VPNs Select Sub-Templates

Include sub-templates to attach to ALL selected service VPNs:

OSPF BR-VE-OSPF-VPN1

VPN Interface BR-VE-VPNINT-VPN1-G1

Additional VPN Templates

- + BGP
- + IGMP
- + Multicast
- + OSPF
- + PIM
- + VPN Interface
- + VPN Interface Bridge
- + VPN Interface GRE
- + VPN Interface IPsec
- + VPN Interface Natpool

Service VPN

Search

0 Rows Selected

ID	Template Name	Sub-Templates
<input type="checkbox"/> fcb7bcd8-1869-4981-bfc5-5fa7992553a7	BR-VE-VPN-VPN1	OSPF, VPN Interface



vEdges Final Phase Deployment (*do the procedure below if BR-VE-TEMP needs to re-attach again*)

1. click ... (BR-VE-TEMP) > Attach Devices >> 2. Select the vEdges of LUZON-VISAYAS-MINDANAO >> 3. Attach

The screenshot shows the Cisco SD-WAN Configuration - Templates page. A modal dialog titled "Attach Devices" is open over the main table. The main table lists a single template named "BR-VE-TEMP". The "Selected Devices" table contains three entries: "vEdge-LUZON", "vEdge-MINDANAO", and "vEdge-VISAYAS". A context menu is open on the "BR-VE-TEMP" row, with the "Attach Devices" option highlighted.

Main Table Headers:

Name	Description	Type	Device Model	Device Role	Resource Group	Feature Templates	Draft Mode	Devices Attached	Updated By	Last Updated	Template Status
BR-VE-TEMP	BR-VE-TEMP	Feature	vEdge Cloud	SDWAN Edge	global	12	Disabled	0	admin	23 Apr 2025 6:11:...	In Sync

Attach Devices Dialog:

Attach device from the list below

Available Devices:

Name	Device IP
Rivan-vBond	10.100.1.102

Selected Devices:

Name	Device IP
vEdge-LUZON	10.5.1.121
vEdge-MINDANAO	10.7.1.122
vEdge-VISAYAS	10.6.1.122

3 Items Selected

1. Context menu on BR-VE-TEMP row.
2. Selected vEdges in the Selected Devices table.
3. "Attach" button in the Attach Devices dialog.



1. click **...** (each vEdges) > **vpn_if_ipv4_address**: **172.16.x0.1/24** (where x == according to sites Luzon, Visayas, or Mindanao)) ,
and **Update**, also do to the other vEdges. *!!! :(it can be checked on Luzon, Visayas, Mindanao devices via CLI sh ip int br @ eth0 to verify the ip)*

Cisco SD-WAN global Configuration · Templates

Device Template | BR-VE-TEMP

Search

Total Rows: 3

S...	Chassis Number	System IP	Hostname	IPv4 Address(vpn_if_ipv4_address)
0e3418bc-8f94-4136-90b6-672838268208	10.6.1.122	vEdge-VISAYAS	...	
92d6b796-3e1b-4687-b49d-ac1ac1ec7...	10.7.1.122	vEdge-MINDANAO	...	
a53e99c9-a3f9-4faf-8ac4-254a38911098	10.5.1.121	vEdge-LUZON	...	

Edit Device Template

Luzon = 172.16.10.1/24
Visayas = 172.16.20.1/24
Mindanao = 172.16.30.1/24

Update Device Template

Variable List (Hover over each field for more information)

Status	in_complete
Chassis Number	0e3418bc-8f94-4136-90b6-672838268208
System IP	10.6.1.122
Hostname	vEdge-VISAYAS
IPv4 Address(vpn_if_ipv4_address)	172.16.20.1/24
Address(vpn_next_hop_ip_address_0)	100.0.0.254

Device Template | BR-VE-TEMP

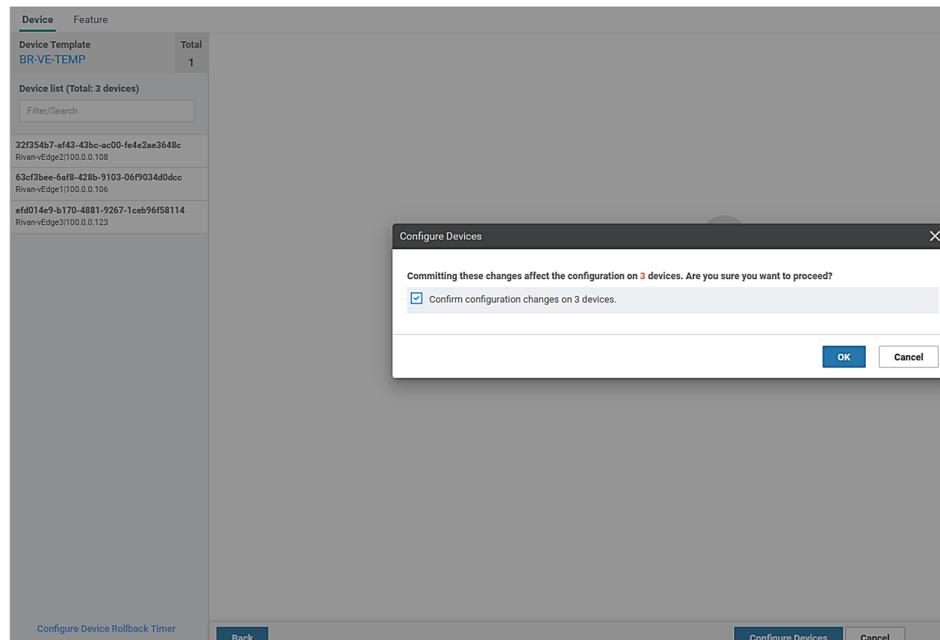
Search

S...	Chassis Number	System IP	Hostname	IPv4 Address(vpn_if_ipv4_address)
✓	0e3418bc-8f94-4136-90b6-672838268208	10.6.1.122	vEdge-VISAYAS	172.16.20.1/24
✓	92d6b796-3e1b-4687-b49d-ac1ac1ec7...	10.7.1.122	vEdge-MINDANAO	172.16.30.1/24
✓	a53e99c9-a3f9-4faf-8ac4-254a38911098	10.5.1.121	vEdge-LUZON	172.16.10.1/24

Prepared by: GGener



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



The screenshot shows the 'Cisco SD-WAN' interface under the 'Push Feature Template Configuration' section. It displays a success message: 'Validation Success' and 'Total Task: 3 | Success : 3'. A search bar is at the top. Below is a table with columns: Status, Message, Chassis Number, Device Model, Hostname, System IP, and Site ID. Three rows are listed, all showing 'Success' status with green checkmarks. The table rows are:

>	Status	Message	Chassis Number	Device Model	Hostname	System IP	Site ID
>	Success	Done - Push Feature Template C...	0e3418bc-8f94-4136-90b6-672...	vEdge Cloud	vEdge-VISAYAS	10.6.1.122	6
>	Success	Done - Push Feature Template C...	92d6b796-3e1b-4687-b49d-ac...	vEdge Cloud	vEdge-MINDANAO	10.7.1.122	7
>	Success	Done - Push Feature Template C...	a53e99c9-a3f9-4faf-8ac4-254a...	vEdge Cloud	vEdge-LUZON	10.5.1.121	5



(while in progress of saving, you may monitor the CLi of Sites Luzon, Visayas, and Mindanao for OSPF Neighboring)
(thru cli, you can confirm via sh ip ospf nei... it should be in FULL/BDR)

The screenshot shows two terminal windows side-by-side. Both windows have a title bar with the host name and a menu bar with File, Edit, View, Options, Transfer, Script, Tools, Window, Help. The top window is titled "CSW-LUZON" and the bottom window is titled "CSW-MINDANAO". Both windows show a toolbar with icons for file operations like Open, Save, Print, and a search bar with "Enter host <Alt+R>". Below the toolbar, there's a status bar with "Cloud", "vManager", and the host names "CSW-LUZON", "CSW-VISAYAS", and "CSW-MINDANAO". The main area of each window displays the output of various CLI commands.

CSW-LUZON Terminal Output:

```
By using the software, you agree to abide by the terms and conditions of the Cisco End User License Agreement at http://www.cisco.com/go/eula. Unauthorized use or distribution of this software is expressly prohibited.

CSW-LUZON>
CSW-LUZON>en
CSW-LUZON>sh ip int br
Interface          IP-Address      OK? Method Status        Protocol
GigabitEthernet0/0  172.16.10.2    YES NVRAM  up           up
GigabitEthernet0/1  unassigned     YES unset   up           up
GigabitEthernet0/2  unassigned     YES unset   up           up
GigabitEthernet0/3  unassigned     YES unset   up           up
Loopback0          1.1.1.1       YES NVRAM  up           up
CSW-LUZON#
*Apr 22 23:34:22.440: %OSPF-5-ADJCHG: Process 1, Nbr 10.5.1.121 on GigabitEthernet0/0 from LOADING to FULL, Loading Done
CSW-LUZON#
CSW-LUZON>sh ip ospf nei
Neighbor ID      Pri  State        Dead Time   Address      Interface
10.5.1.121        1    FULL/BDR   00:00:36   172.16.10.1  GigabitEthernet0/0
CSW-LUZON#
```

CSW-MINDANAO Terminal Output:

```
*Apr 22 23:34:52.286: %OSPF-5-ADJCHG: Process 1, Nbr 10.7.1.122 on GigabitEthernet0/0 from LOADING to FULL, Loading Done
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CSW-MINDANAO>en
CSW-MINDANAO>sh ip ospf nei
Neighbor ID      Pri  State        Dead Time   Address      Interface
10.7.1.122        1    FULL/BDR   00:00:32   172.16.30.1  GigabitEthernet0/0
CSW-MINDANAO#
```

At the bottom of the bottom window, there is a status bar with "Telnet: 10.255.10.128", "23, 14 23 Rows, 104 Cols", "Xterm", "CAP NUM", and a scroll bar.



ping 8.8.8.8 and each site's loopback addresses for checking, if you have 3 SUCCESS, GOOD JOB (^_^) ... if failed... re-check the OSPF Templates up to Final Specifications of each sites IP Addresses. (refer to page 40).

The screenshot shows two terminal windows side-by-side. The left window is titled 'CSW-LUZON' and the right window is titled 'CSW-MINDANAO'. Both windows have a menu bar with 'File', 'Edit', 'View', 'Options', 'Transfer', 'Script', 'Tools', 'Window', and 'Help'. Below the menu bar, there are icons for file operations like Open, Save, Print, and a search bar with the placeholder 'Enter host <Alt+R>'. The windows also show tabs for 'Cloud', 'vManager', and three hosts: 'CSW-LUZON', 'CSW-VISAYAS', and 'CSW-MINDANAO'. The main area of both windows displays command-line output for pinging various IP addresses.

CSW-LUZON Terminal Output:

```
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 69/72/74 ms
CSW-LUZON#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 = 69/72/74 ms
CSW-LUZON#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 = 69/72/74 ms
CSW-LUZON#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 = 69/72/74 ms
CSW-LUZON#ping 10.100.10.10
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.100.10.10, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 69/72/74 ms
CSW-LUZON#
```

CSW-MINDANAO Terminal Output:

```
CSW-MINDANAO>en
CSW-MINDANAO#ping 1.1.1.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 1.1.1.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 65/71/73 ms
CSW-MINDANAO#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 = 68/72/74 ms
CSW-MINDANAO#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 = 36/40/42 ms
CSW-MINDANAO#ping 10.100.10.10
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.100.10.10, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 41/41/43 ms
CSW-MINDANAO#
```

#CONGRATULATIONS

#SDWAN.Success (^_^)
#GGWP \m/



BONUS CHECKING !!!

if everything works... access the vEdges, the welcome message will display as defined in the VE-BANNER Template.

Login: admin / C1sc0123

There is still *configure terminal* but most common commands are not valid due to the management from SDWAN vManage.

```
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