Dell EMC SD-WAN Edge 3400 Advanced Activation Guide

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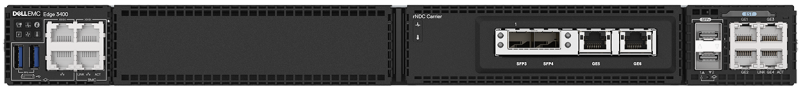
DELL Technologies

Introduction



The Dell EMC SD-WAN Edge is purpose-built for next-generation WAN access deployments. The Dell EMC SD-WAN Edge 3000 series is a performance-designed solution integrated with industry-leading VMware SD-WAN software; and also offers centralized orchestration and available gateways. It offers hosted virtualized network functionality, with applicability for the SP Edge and Enterprise Branch. The SD-WAN Edge 3000 series is 1 RU sized, and uses the latest Intel® Xeon® D-2100 x86-based processor, which is optimized for high-performance networking. Dell EMC is the first to market with Xeon-D for SD-WAN.

- VMware SD-WAN Edge—a hardware device with VMware software preinstalled.
- VMware SD-WAN Gateway—VMware SD-WAN networks consists of gateways deployed at top tier network points-of-presence and cloud data centers around the world. SD-WAN Gateway also provides SD-WAN services to the doorstep of SaaS, IaaS, cloud network services, and access to private backbones.
- VMware SD-WAN Orchestrator—SD-WAN Orchestrator provides centralized enterprise-wide configuration, real-time monitoring, and orchestrates the data flow into and through the SD-WAN overlay network.

NOTE: For software information, see the VMware documentation at https://sdwan.vmware.com/.

NOTE: After unpacking the Dell EMC SD-WAN Edge 3400 system, inspect the device and immediately report any damage to your Dell Technologies sales representative.

Dell EMC SD-WAN Edge 3400 installation considerations

It is important to work with your company IT or security teams to determine the network infrastructure for the site where the SD-WAN Edge 3400 system is to be installed. If the SD-WAN Edge 680 system is to be connected behind a firewall, these settings must be in place for the product to function properly.

Table 1. Mandatory ports

Protocol	Port	Description
VeloCloud Multipath Protocol (VCMP)	UDP/2426	VMware SD-WAN tunnel protocol
HTTPS	TCP/443	Needed for SD-WAN Orchestrator communication
NTP	UDP/123	Needed for time sync (security)
DNS	UDP/53	Needed for translation of SD-WAN Orchestrator URLs, among other use cases

If the SD-WAN Edge 3400 system is connected behind a NAT, UDP hole punching is used to open the ports for inbound VCMP traffic. To enable UDP hole punching, click **Configure** > **Edge** > **Device** > **WAN Settings** to edit the relevant overlay.

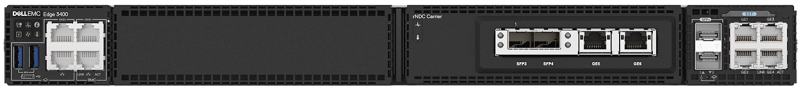
Table 2. Conditional ports

Protocol	Port	Description
IKE	UDP/500	Used by SD-WAN Edge 3400 system to form IPSec tunnels with certain CSS solutions
ESP	IP/50	Used by SD-WAN Edge 3400 system to form IPSec tunnels with certain CSS solutions
NAT traversal	UDP/4500	Needed to pass IKE and ESP over NAT

NOTE: If you plan to use SFP/SFP+ modules, contact your Dell Technologies Sales Representative to ensure compatibility.

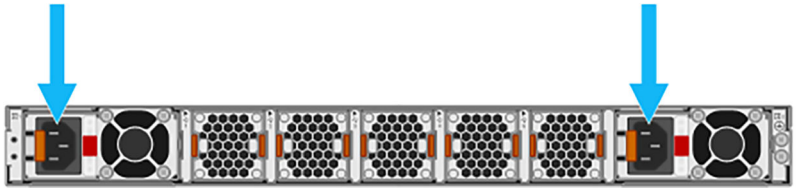
Dell EMC SD-WAN Edge 3400 standard configuration

Follow the steps below to install the SD-WAN Edge 3400 system in the standard configuration.



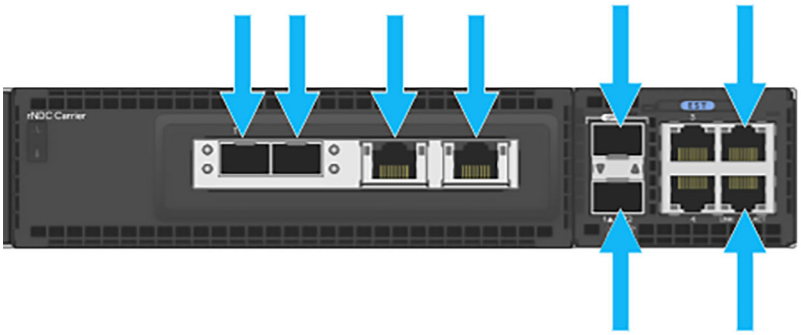
Step 1. Connect the power

Connect the power adapter to an AC power outlet. Connect the other end of the power adapter to the power port on the SD-WAN Edge 3400 system. When the SD-WAN Edge 3400 system powers ON, verify that the status LED on the front of the SD-WAN Edge 3400 system is illuminated.



Step 2. Connect to the Internet

Connect an Ethernet cable to an available Internet connection, and then connect the cable to one of the four ports labeled GE3, GE4, GE5, GE6, or any SFP+ port.



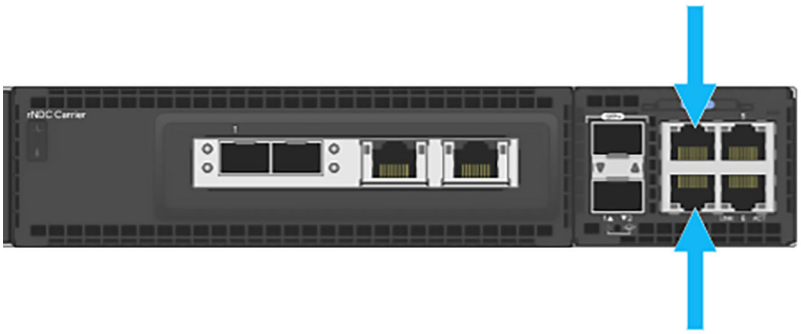
NOTE: The SD-WAN Edge 3400 system is configured by default to acquire a DHCP IP address from the ISP on the WAN (uplink). When the WAN connection is fully operational, the LED on the front of the SD-WAN Edge 3400 is green. To use a static IP address, see the Setting up a static IP address section.

Step 3. Follow email instructions

NOTE: If you received an email from your IT administrator, follow the instructions in the email to complete the activation of the SD-WAN Edge 3400. If you did not receive an email, request the setup instructions from your IT administrator or contact your Dell Technologies sales representative.

Step 4. Connect local devices

Connect the local devices such as desktops, phones, or switches to any of the LAN ports.



Dell EMC SD-WAN Edge 3400 advanced configuration

The following sections describe the optional advanced configurations that are supported and listed within the Activation Quick Start Guide that is included with the SD-WAN Edge 3400 system.

Set up a static IP address

1. Connect the SD-WAN Edge 3400 system through Ethernet or Wi-Fi and obtain a DHCP IP address.
   NOTE: In this example, GE1 is used.
2. Open a web browser and type http://192.168.2.1 in the address bar.
3. Click the **Details** button located below the image of the SD-WAN Edge 3400.
4. In the **Edge Overview** section of the screen, click the **Connected** button to view the connected interfaces.



Figure 1. Connected interfaces

5. Click the name of the interface you want to set with a static IP address.
   NOTE: In this example, the WAN interface is connected to GE5, shown in red.
6. Under **Configuration** > **Addressing**, select the **Static** radio button, then type the **IP Address**, **Subnet Mask**, and **Gateways** in the appropriate text boxes.

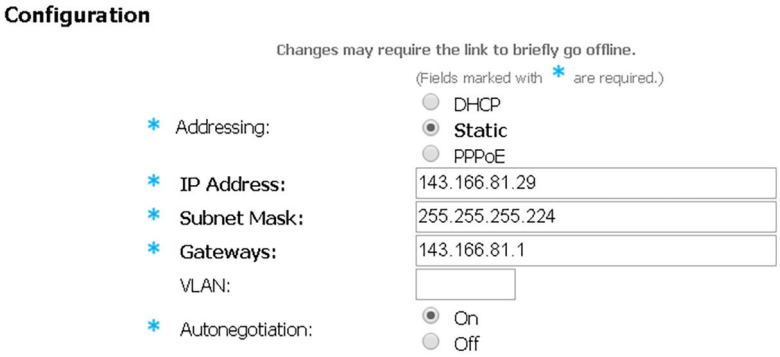


Figure 2. Static IP address assignment

7. Click **Save** (upper-right of the **Configuration** screen) to apply the settings.
8. When prompted, type the default username **admin** and the default password **admin** and click **OK**. The SD-WAN Edge 3400 attempts to reach the SD-WAN Gateway address, and the icon will turn green when successful.

NOTE: Based on your service provider, a VLAN ID may be required.



Figure 3. GE5 shown with active WAN connectivity

NOTE: SD-WAN Edge activation retains the static IP address settings when the activation profile has the corresponding port configured as a routed port.

Set up PPPoE

To configure PPPoE, perform the following steps:

1. Connect through Ethernet or Wi-Fi and obtain a DHCP IP address from the SD-WAN Edge 3400.

   NOTE: In this example, GE1 is used.
2. Open a web browser and type http://192.168.2.1 in the address bar.
3. Click the **Details** button located below the image of the SD-WAN Edge 3400.
4. Click the name of the interface you want to configure for PPPoE, for example, GE3.
5. Under **Configuration** > **Addressing**, select the **Static** radio button, and enter the **Username** and **Password**.

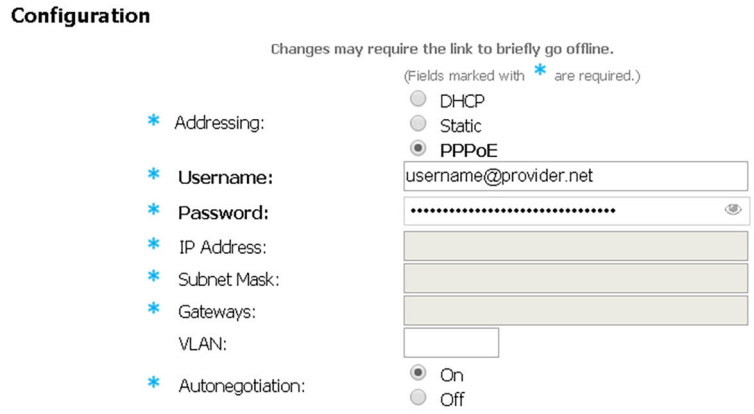


Figure 4. PPPoE configuration

6. Click **Save** (upper-right of the **Configuration** screen) to apply the settings.
7. When prompted, type in the default username **admin** and the default password **admin** and click **OK**.

NOTE: VMware activation retains the PPPoE address settings when the activation profile has the corresponding port configured as a routed port.

Install and configure an SFP module as WAN interface

1. Verify that the SFP module you want to install is compatible with the device.

   NOTE: For information about compatibility, contact your Dell Technologies Sales Representative.
2. Insert the SFP module in any SFP port.

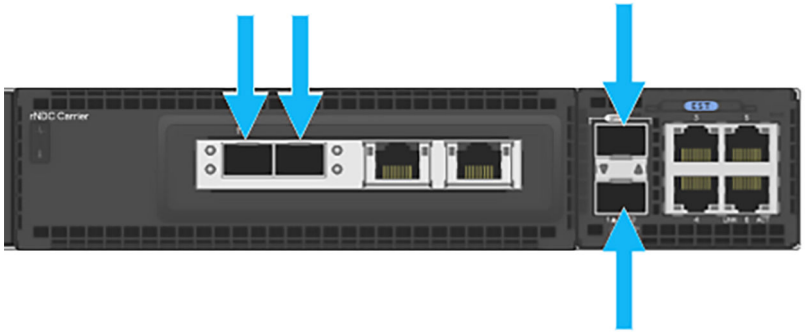


Figure 5. SFP ports

NOTE: If the link lights do not illuminate, use the UI to reboot the SD-WAN Edge 3400 system.

3. When the module is ready, it shows as **Available** in the WAN interface with the associated DHCP address.

NOTE: Follow the procedure above to configure the static IP address if needed. If problems persist, see VMware KB article KB59582.

Dell EMC SD-WAN Edge 3800 activation troubleshooting

Internet status not available

1. Verify physical cabling.
2. Ensure that the SD-WAN Edge 3800 MAC address is learned on the correct port or VLAN.
3. For static IP, verify that the IP address or mask and gateway are properly configured.
4. Verify that the VMware SD-WAN Gateway is reachable.

Verify the SD-WAN Edge 3800 MAC address is listed on the gateway

You can verify that the SD-WAN Edge 3800 MAC is seen on the gateway to confirm Layer 2 connectivity.

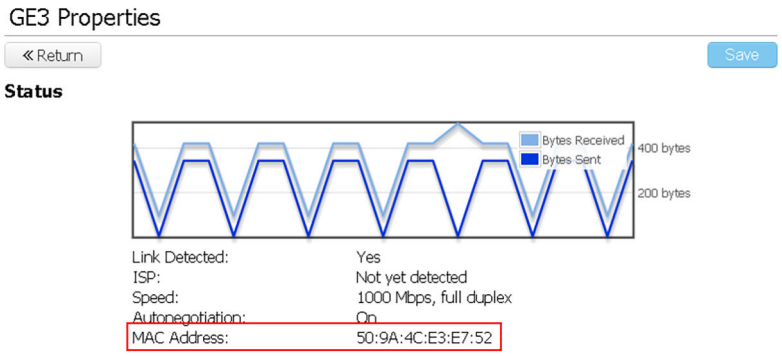


Figure 6. MAC Address listing

NOTE: Alternatively, the MAC address can be found printed on a sticker on the bottom of the SD-WAN Edge 3800.

The following figure shows results of `arp- n` from a device on the same network segment.

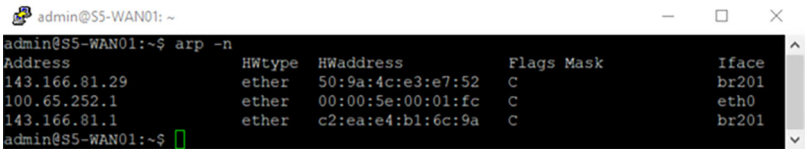


Figure 7. arp -n command results

NOTE: The MAC address match-up for the SD-WAN Edge 3800 device public WAN on GE3 is shown in the figure above.

Verify that the gateway IP address is reachable

1. Remove the configured WAN connection from the SD-WAN Edge 3800 and connect directly to a system.
2. Configure the system with an identical network configuration.
3. Ping the gateway address.

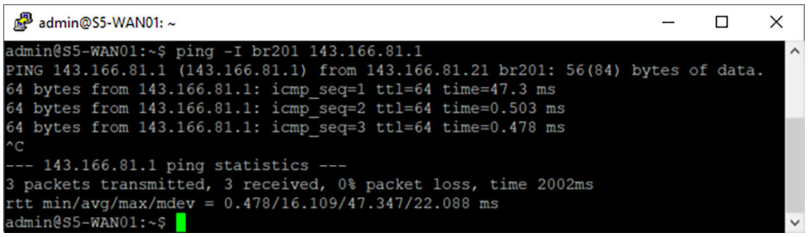


Figure 8. Ping gateway address

If the ping fails and the gateway is a firewall, ICMP may be blocked, in which case the Internet status will remain unconnected. Wait for the retry to timeout and click **Activate**. Also, ensure that the SD-WAN Orchestrator IP address is reachable using TCP/443.

NOTE: See VMware KB article KB2341023 for details.

Verify configuration string values

When the SD-WAN Edge 3800 is updated before activation (for example, setting a static IP address), a configuration string is appended to the activation URL. This string is `Base64` and is used to specify the static IP address during activation.

```
http://192.168.2.1/?activation_key=1X1X-1X1X-1X1X-1X1X1&custom_vco=vco109-
usca1.velocloud.net&configuration=W3siaW50ZXJmYWNlIjoiR0UzIiwicHJvdG8iOiJzdGF0aWMiLCJpcCI
6IjE0My4xNjYuODEuMjIiLCJnYXRld2F5IjoiMTQzLjE2Ni44MS4xIiwibmV0bWFzayI6IjI1NS4yNTUuMjU1LjAi
fV0
```

The configuration string can be decoded to verify that the profile is configured accurately. Using the above value, the correct IP address is verified.

```
[{"interface":"GE5","proto":"static","ip":"143.166.81.29","gateway":"143.166.81.1","netma
sk":"255.255.255.0"}]
```

VMware SD-WAN Orchestrator is unavailable

If you receive the error that the SD-WAN Orchestrator is not reachable, follow these steps:

1. Change the SD-WAN Orchestrator FQDN to an IP address. You can use the `nslookup` command to verify the IP address of the SD-WAN Orchestrator address listed in the activation email.

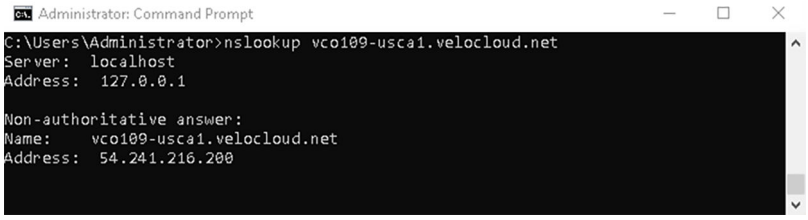


Figure 9. Change SD-WAN Orchestrator FQDN to IP address

2. Check the ignore certificates with the SD-WAN Orchestrator IP address.
3. Verify that the next-hop device such as a firewall, is not applying an outbound filter to the SD-WAN Orchestrator IP address for TCP/443.
4. Check the firewall logs for any blocked traffic that matches the SD-WAN Orchestrator IP address.

Notes, cautions, and warnings

NOTE: A NOTE indicates important information that helps you make better use of your product.

CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

WARNING: A WARNING indicates a potential for property damage, personal injury, or death.

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