Skyhigh® Security Edge (SSE)

IPsec Configuration VeloCloud

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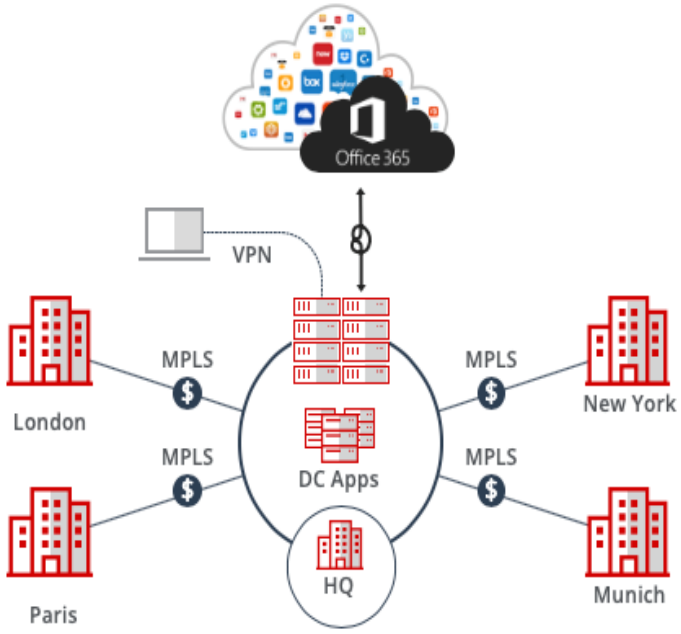
Introduction to SD-WAN Architecture

A Software-Defined Wide Area Network (SD-WAN) is a virtual WAN architecture that simplifies the connectivity, management, and operation of a traditional WAN.

As more companies shift to cloud applications, the result is a higher demand for bandwidth and direct internet connections to remote locations. Traditional MPLS networks are secure and stable, but expensive, and often fall victim to backhauling via the traditional hub and spoke architecture, where data is routed back through a central data center and out again to remote offices and users.

Hub and Spoke Architecture



SD-WAN combines traditional WAN technologies, such as MPLS and broadband connections, because it is abstracted from the hardware. Organizations leverage SD-WAN solutions because they provide enhanced capabilities for connectivity, monitoring, and managing network traffic while reducing cost.

Skyhigh Security Service Edge leverages SD-WAN technologies that allow remote offices to securely redirect web traffic to the Skyhigh Secure Web Gateway Cloud Service, where it is filtered according to your organization's web policy.

Direct to Cloud

This guide explains how to set up IPsec tunnels from VMware VeloCloud version 4.0 to Skyhigh Secure Web Gateway Cloud Service to apply policies and enable advanced security inspection.

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Configure IPsec site-to-site with VeloCloud 4.0

If your organization uses a supported third-party SD-WAN device to secure a remote office, you can use the IPsec protocol to secure communications between this site and Skyhigh Secure Web Gateway Cloud Service (Skyhigh SWG).

IPsec site-to-site overview

To secure communications between a remote site and Skyhigh SWG using IPsec site-to-site authentication, you create an IPsec VPN tunnel between the supported SD-WAN device and the cloud service.

Environment

- Skyhigh Security Service Edge (SSE)
- VMware VeloCloud Orchestrator

Setup includes

- Configuration of Skyhigh SWG using the Skyhigh Security Service Edge management console.
- Configuration of the supported device.

For information about configuring Skyhigh SWG for IPsec site-to-site, see the Skyhigh Web Gateway Cloud Service Installation Guide for Skyhigh Security Service Edge.

Considerations for configuring IPsec site-to-site

Before configuring IPsec site-to-site authentication, review the following considerations.

- **Routing only HTTP and HTTPS traffic**–Skyhigh SWG only handles IPsec traffic directed through the VPN tunnel to ports 80 and 443 (HTTP and HTTPS traffic, respectively). Configure your device to route only HTTP and HTTPS traffic through the VPN tunnel.
- **Configuring two IPsec VPN tunnels**–Best practice is to configure a primary and secondary VPN tunnel. The primary tunnel is connected to the best available point of presence (PoP), while the secondary tunnel is connected to the second-best point of presence. This practice ensures continuous IPsec support in case one point of presence is not available.
- **Using an IPsec VPN tunnel to connect remote sites**–If you have multiple remote offices connected to your main office by VPN, you can protect traffic and improve network latency by creating a VPN tunnel between each site and Skyhigh SWG.

- **Adding SAML authentication**–You can add a SAML configuration to an IPsec site. Skyhigh SWG uses SAML to authenticate requests received from the site through the IPsec tunnel.
- **Using a NAT device**–If your IPsec device is located behind a NAT device and the outgoing interface has a private IP address, set the local ID attribute to your public IP address.

Find the best available points of presence

To find the point of presence closest to the device that you are configuring for IPsec authentication, you query the Global Routing Manager (GRM). The GRM is a DNS service that routes traffic to the best available point of presence.

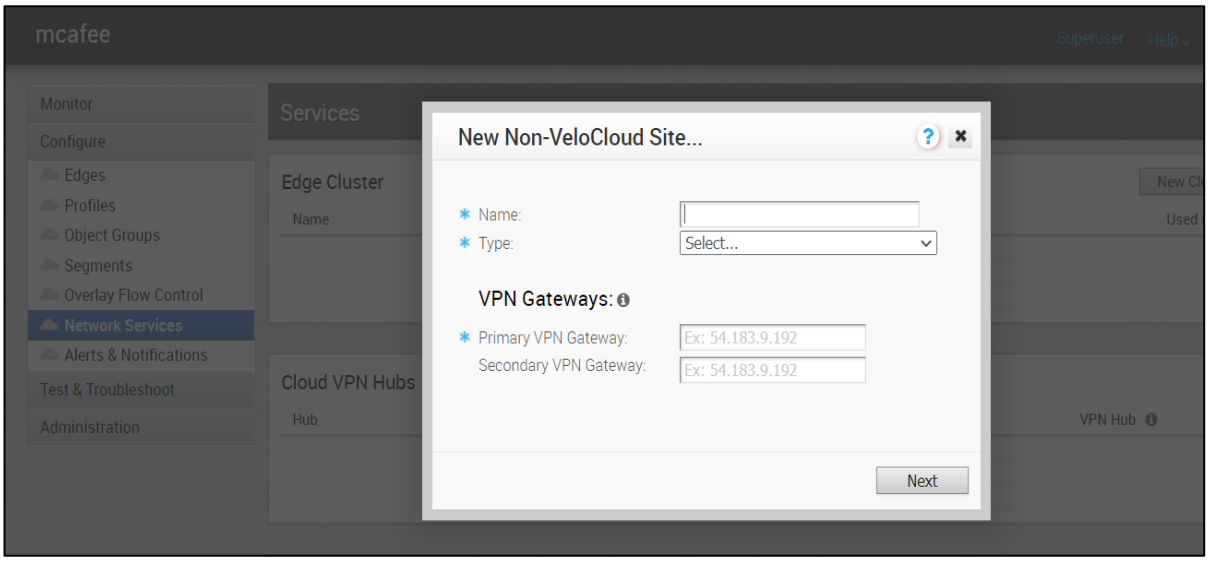
From the network where your device is installed, run the lookup command-line tool, as follows:

- lookup 1.network.swg.Skyhigh.cloud
- lookup 2.network.swg.Skyhigh.cloud

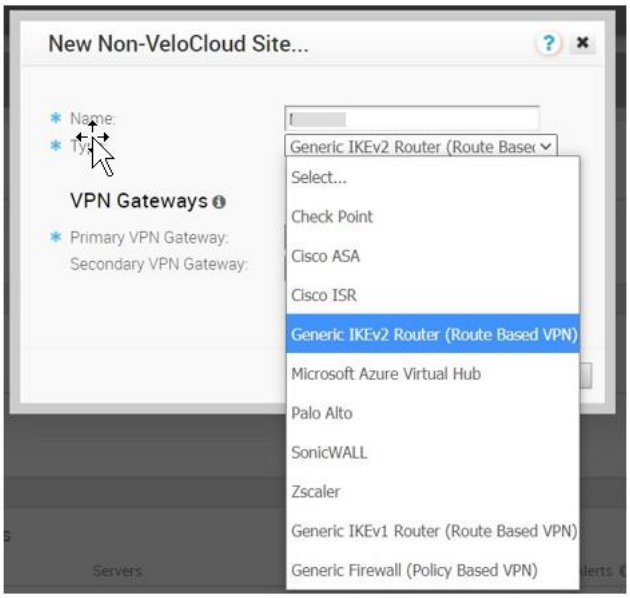
In response to these commands, the GRM returns the IP addresses of the best and second-best points of presence, respectively, based on the network location of your device. You need these values when configuring the primary and secondary IPsec VPN tunnels in your device and in Skyhigh SWG.

Configure an IPsec VPN tunnel with VMware VeloCloud Orchestrator

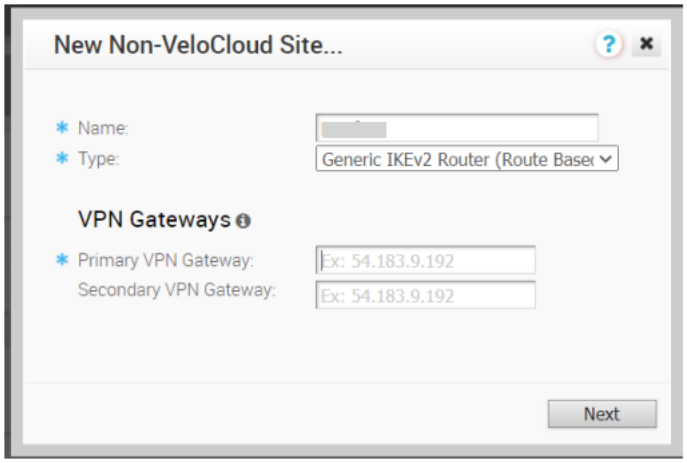
1. In SD-WAN VeloCloud Orchestrator, click **Configure** | **Network Services**.
2. Click **New** in Non-VeloCloud Sites to create a new site.



3. Enter the name of the site in the **Name** field.
4. Select **Generic IKEv2 Router** from the **Type** drop-down list.



5. Enter an IPv4 address in the **Primary VPN Gateway** field.



6. Click **Next**.

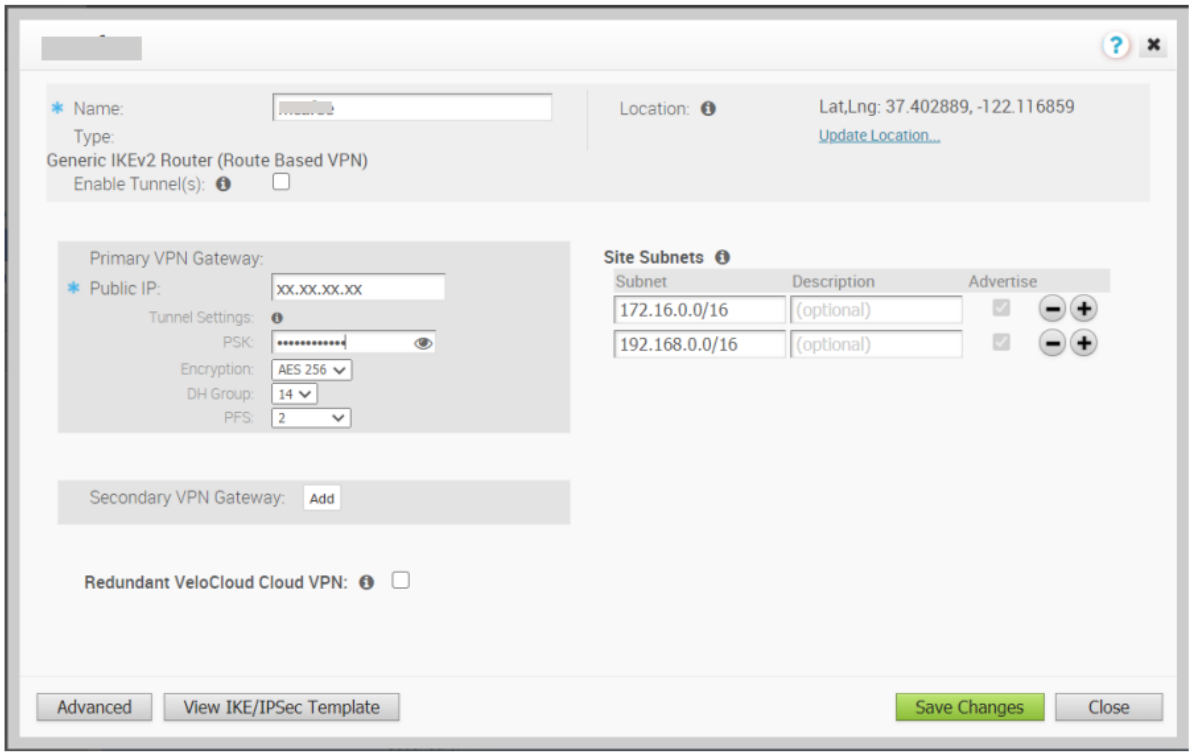
   VeloCloud creates the site and generates the IKE and IPsec configuration (including pre-shared key) for the site.

7. Click **Advanced**.

8. Update the IKE and IPsec parameters and add the Site Subnets that you will protect.

   1. PSK: Configure shared Secret
   2. Encryption: AES 256
   3. DH Group: 14
   4. PFS: 2

9. Select the **Enable Tunnel(s)** check box.
10. Click **Save Changes**.

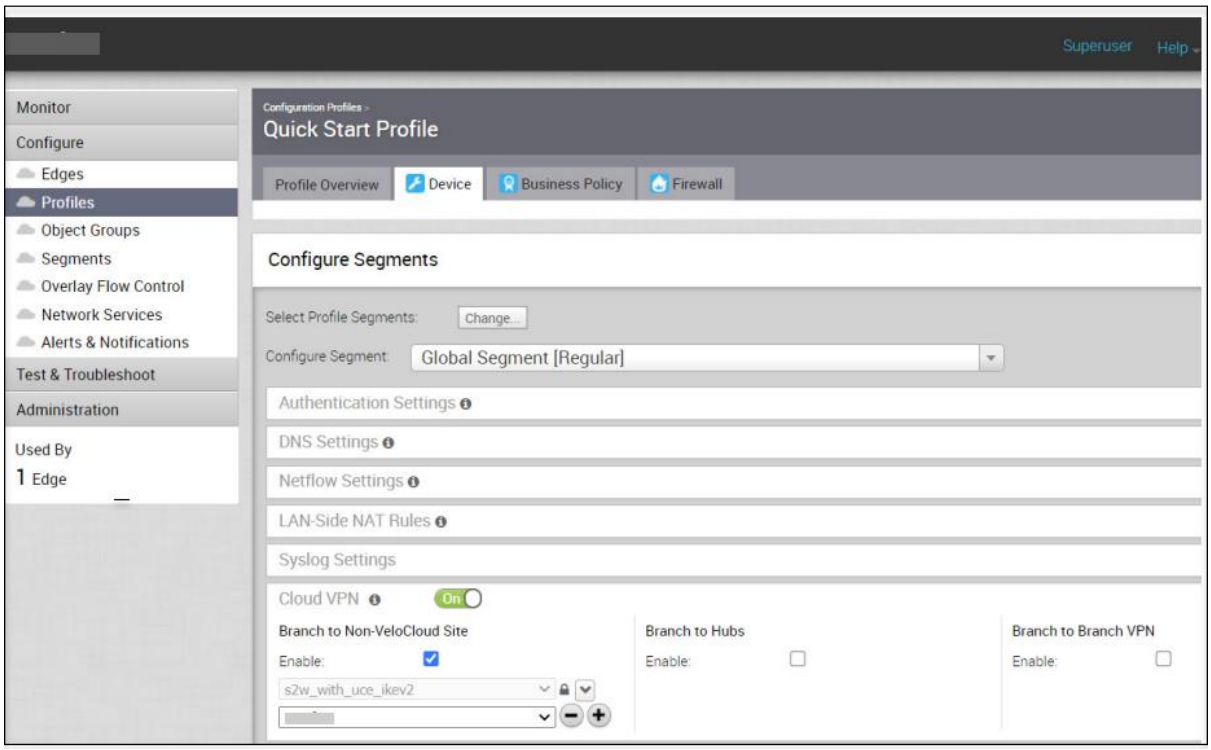


To view the detailed IKE, IPsec parameters, and the public IP address used by the VeloCloud gateway, click **View IKE/IPsec Template**.

Configure the customer profile

You can configure the customer profile to service-chain the Non-VeloCloud site to the customer's SD-WAN.

1. Select **Configure** | **Profiles** | **Profile-Name**, where Profile-Name is the customer's profile.
2. Click the **Device** tab.
3. Enable the Cloud VPN feature to turn on VPN connectivity from the Branch and Data Center sites.
4. In the **Branch to Non-VeloCloud Site** section, click **Enable** and then select **Non-VeloCloud site**.
5. Save your changes.



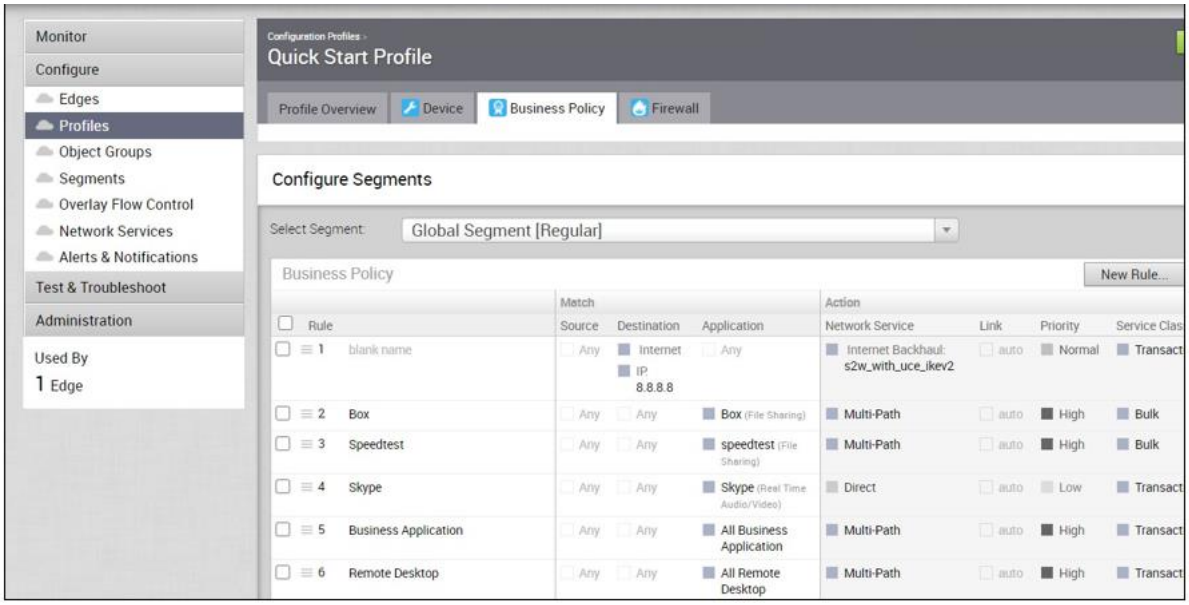
6. Verify the status of the remote network tunnel.

To view tunnel status in the VMware SD-WAN Orchestrator, select **Monitor Edge** in the VMware SD-WAN Orchestrator.

Route the traffic

To define routes from your branch office IPsec tunnels to Skyhigh server for the traffic:

1. In **Profiles** | **Business Policy**, click **New Rule**.



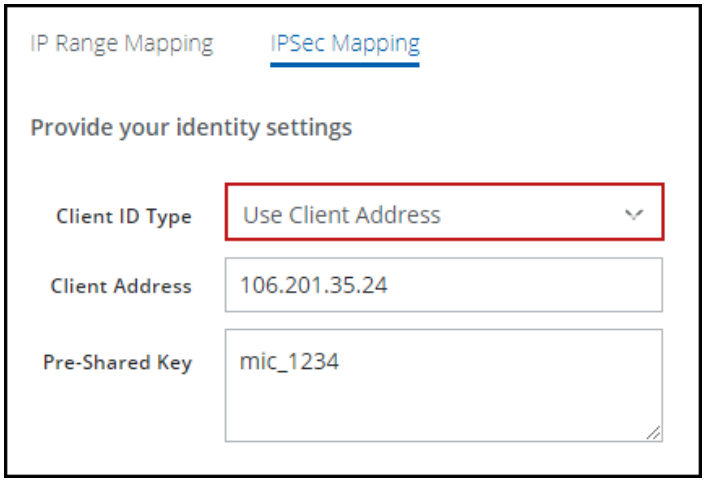
2. Enter the relevant information to configure the new rule.
3. To add two sites that represent tunnels, navigate to **Edges** | **Device** and click **Add**.
4. Click **Save Changes**.

IPsec VPN configuration options

You use one of the following options when configuring IPsec site-to-site authentication in the Edge Connect web interface. Then you select the same option from the Client ID Type drop-down list when configuring IPsec site-to-site in the Skyhigh SSE.

- Client Address

To configure IPsec site-to-site authentication in the Skyhigh SSE, select **Settings | Infrastructure** | **Web Gateway Setup** | **New Location** | **IPsec Mapping.**



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