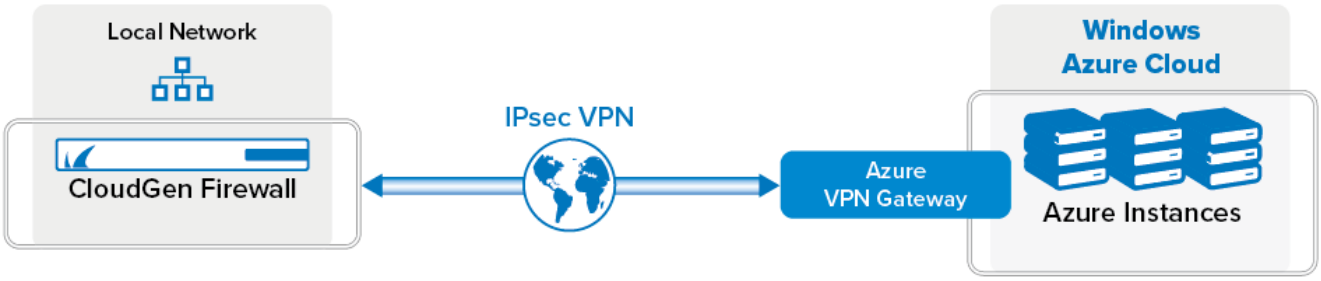
How to Configure an IKEv2 IPsec Site-to-Site VPN to a Routed-Based Microsoft Azure VPN Gateway

https://campus.barracuda.com/doc/17396/

To connect to your Azure virtual network with your on-premises CloudGen Firewall, Microsoft offers the Azure VPN Gateway in two different versions: static and route-based. The route-based VPN Gateway allows connection for up to 10 on-premises firewalls. To connect to the VPN Gateway, configure an IPsec IKEv2 site-to-site VPN tunnel on your CloudGen Firewall. The CloudGen Firewall must be configured as the active partner. The following instructions are for Azure Resource Manager deployments.



Before You Begin

- You will need the following information:
  - VPN Gateway
  - Public IP address of your on-premises CloudGen Firewall
  - Remote and local networks.
- Install and configure Azure PowerShell 4.1.0 or higher.

Step 1. Create a Dynamic Microsoft Azure VPN Gateway Using Azure Resource Manager and PowerShell

Use Azure PowerShell to create a routed-based VPN Gateway.

1. Open Azure PowerShell.
2. Connect to your Azure account:

```
Login-AzureRmAccount
```

3. Enter your Azure account credentials and click **Login**.

4. Create a resource group:

```
New-AzureRmResourceGroup -Name YOUR_RESOURCE_GROUP -Location
YOUR_LOCATION
```

5. Create the network configuration for the VPN gateway subnet and two Azure subnets. The VPN gateway subnet must use the name **GatewaySubnet**.

```
$vpnsubnet = New-AzureRmVirtualNetworkSubnetConfig -Name "GatewaySubnet"
-AddressPrefix 10.2.1.0/28
$subnet1 = New-AzureRmVirtualNetworkSubnetConfig -Name "Subnet1" -
AddressPrefix 10.2.2.0/24
$subnet2 = New-AzureRmVirtualNetworkSubnetConfig -Name 'Subnet2' -
AddressPrefix 10.2.3.0/24
```

6. Create the virtual network:

```
New-AzureRmVirtualNetwork -Name VNET_NAME -ResourceGroupName
YOUR_RESOURCE_GROUP -Location YOUR_LOCATION -AddressPrefix 10.2.0.0/16 -
Subnet $vpnsubnet,$subnet1,$subnet2
```

7. Create the local VPN Gateway configuration. Use the public IP address your firewall is using to connect to the Azure VPN Gateway. Replace the LOCAL_SUBNET variables with a list of the local subnets behind your firewall.

```
New-AzureRmLocalNetworkGateway -Name OnPremiseVPNGateway -
ResourceGroupName YOUR_RESOURCE_GROUP -Location YOUR_LOCATION -
GatewayIpAddress YOUR_PUBLIC_IP
-AddressPrefix @('LOCAL_SUBNET1','LOCAL_SUBNET2')
```

8. Create an Azure public IP address and store it in a variable for later use.

```
 $gwpip = New-AzureRmPublicIpAddress -Name gwpip -ResourceGroupName
YOUR_RESOURCE_GROUP -Location YOUR_LOCATION -AllocationMethod Dynamic
```

9. Create variables for virtual network, VPN subnet, and gateway IP configuration.

```
    $vnet = Get-AzureRmVirtualNetwork -Name VNET_NAME -ResourceGroupName
YOUR_RESOURCE_GROUP
    $vpnsubnet = Get-AzureRmVirtualNetworkSubnetConfig -Name
'GatewaySubnet' -VirtualNetwork $vnet
    $gwipconfig = New-AzureRmVirtualNetworkGatewayIpConfig -Name
gwipconfig1 -SubnetId $vpnsubnet.Id -PublicIpAddressId $gwpip.Id
```

10. Create the routed-based (dynamic) VPN Gateway attached to the virtual network:

```
New-AzureRmVirtualNetworkGateway -Name VNET_GW_NAME -ResourceGroupName
YOUR_RESOURCE_GROUP -Location YOUR_LOCATION -IpConfigurations
$gwipconfig -GatewayType Vpn -VpnType RouteBased
```

11. Create the VPN connection:

```
$gateway1 = Get-AzureRmVirtualNetworkGateway -Name VNET_GW_NAME -
ResourceGroupName YOUR_RESOURCE_GROUP
$local = Get-AzureRmLocalNetworkGateway -Name OnPremiseVPNGateway -
ResourceGroupName YOUR_RESOURCE_GROUP
New-AzureRmVirtualNetworkGatewayConnection -Name localtovpn -
ResourceGroupName YOUR_RESOURCE_GROUP -Location YOUR_LOCATION -
VirtualNetworkGateway1 $gateway1 -LocalNetworkGateway2 $local -
ConnectionType IPsec -RoutingWeight 10 -SharedKey YOUR_PASSPHRASE
```

Creating the VPN connection can take up to 30 minutes to complete. You can now configure the on-premises firewall to connect to the Azure VPN Gateway.

Step 2. Get the VPN Gateway Public IP Address

Get the public IP address allocated for the Azure VPN gateway.

1. Open Azure PowerShell
2. Get the IP address assigned to the VPN gateway:

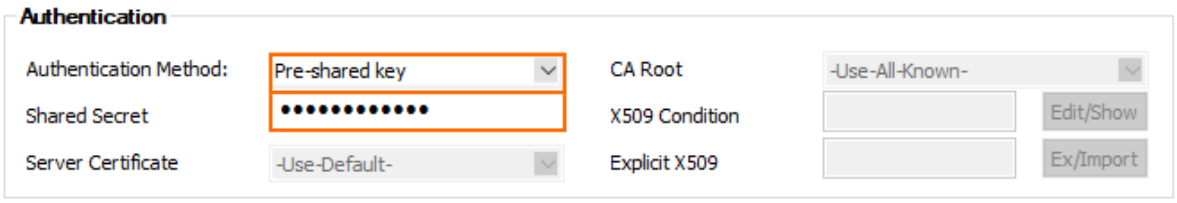
```
Get-AzureRmPublicIpAddress -Name gwpip -ResourceGroupName
YOUR_RESOURCE_GROUP
```

Step 3. Configure IPsec IKEv2 Site-to-Site VPN on the CloudGen Firewall

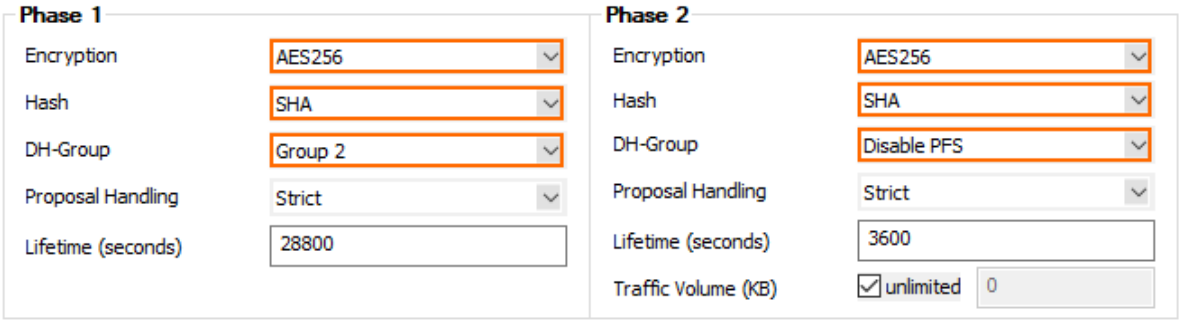
Configure a site-to-site IKEv2 VPN tunnel on the CloudGen Firewall. The firewall is configured as the active partner.

1. Go to **CONFIGURATION > Configuration Tree > Box > Assigned Services > VPN-Service > Site to Site**.
2. Click the **IPSEC IKEv2 Tunnels** tab.
3. Click **Lock**.
4. Right-click the table and select **New IKEv2 tunnel**. The **IKEv2 Tunnel** window opens.
5. In the **Tunnel Name** field, enter your tunnel name.
6. Set **Initiates tunnel** to **Yes**.
7. Configure the **Authentication** settings:
   - **Authentication Method** – Select **Pre-shared key**.
   - **Shared Secret** – Enter the passphrase you used when creating the virtual network gateway connection in Step 1.11.

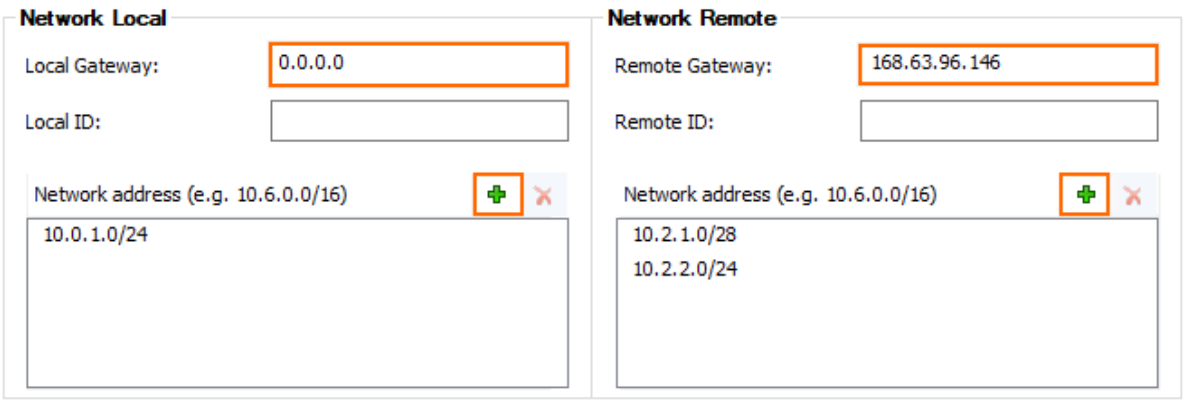
     The shared secret can consist of small and capital characters, numbers, and non-alpha-numeric symbols, except the hash sign (#).



8. Configure the **Phase 1** encryption settings:
   - **Encryption** – Select **AES-256**.
   - **Hash Meth.** – Select **SHA**.
   - **DH Group** – Select **Group 2**.
   - **Lifetime** – Enter **28800**.
9. Configure the **Phase 2** encryption settings:
   - **Encryption** – Select **AES-256**.
   - **Hash Meth.** – Select **SHA**.
   - **DH Group** – Select **Disable PFS**.
   - **Lifetime** – Enter **3600**.



10. In the **Network Settings** section, enable **Universal Traffic Selectors** to instruct the peer to route all traffic into the tunnel.
11. Configure the **Local Network** settings:
    - **Local Gateway** – Enter the public IP address the Azure VPN Gateway is connecting to, or use 0.0.0.0 if you are using a dynamic IP address or if the appliance is hosted in Azure, AWS, or GCP.
      Network Address – Enter your local on-premise networks and click **Add**.
12. Configure the **Remote Network** settings:
    - **Remote Gateway** – Enter the Gateway IP Address of the Azure VPN Gateway in Step 2.
    - **Network Address** – Enter the Azure subnet(s) configured in the Azure Virtual Network and click **Add**.

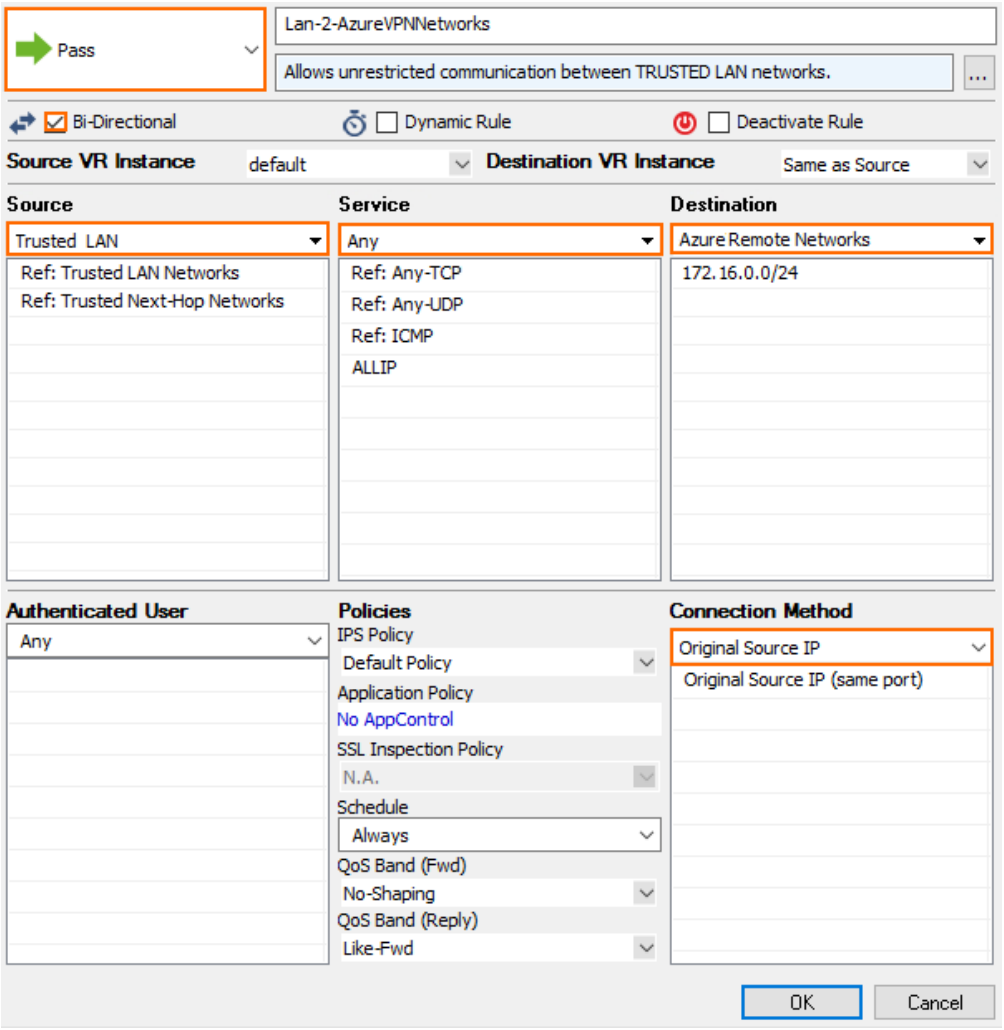


13. Click **OK**.
14. Click **Send Changes** and **Activate**.

Step 4. Create an Access Rule

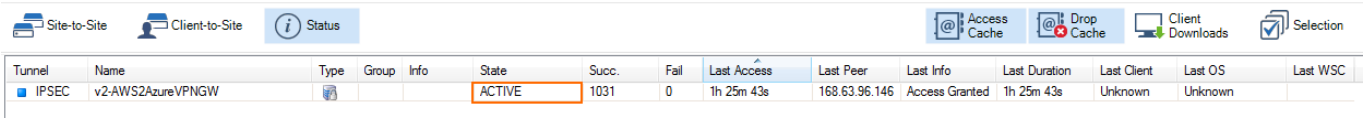
Create a pass access rule to allow traffic from the local network to the remote network.

1. Go to **CONFIGURATION > Configuration Tree > Box > Assigned Services > Firewall > Firewall Rules**.
2. Click **Lock**.
3. Create a PASS access rule:
   - **Bi-Directional** – Enable.
   - **Source** – Select the local on-premises network(s).
   - **Service** – Select the service you want to have access to the remote network, or select **Any** for complete access.
   - **Destination** – Select the network object containing the remote Azure Virtual Network subnet(s).
   - **Connection Method** – Select **Original Source IP**.



4. Click **OK**.
5. Move the access rule up in the rule list, so that it is the first rule to match the firewall traffic.
6. Click **Send Changes** and **Activate**.

Your Barracuda CloudGen Firewall will now automatically connect to the Azure VPN Gateway.



Figures

1. az_vpn_gw.png
2. GW_2.png
3. GW_3.png
4. GW_4.png
5. access_rule01.png
6. GW_05.png

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