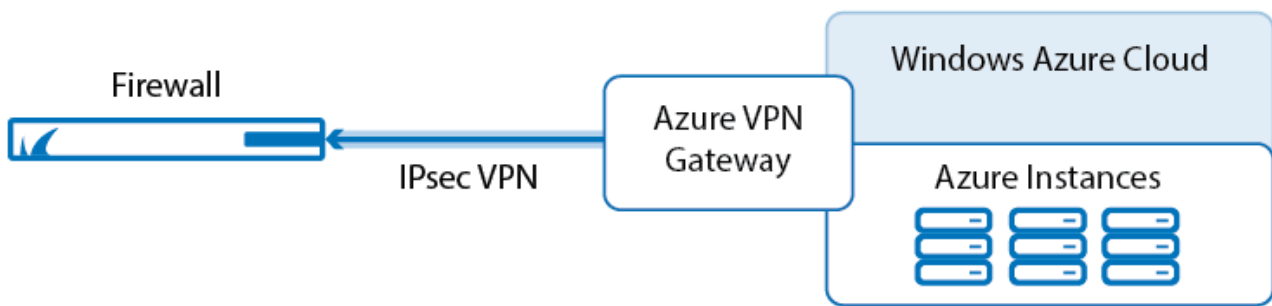


## How to Configure an IKEv2 IPsec Site-to-Site VPN to a Routed-Based Microsoft Azure VPN Gateway

<https://campus.barracuda.com/doc/73719171/>

To connect to your Azure virtual network with your on-premise 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-premise 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-premise 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.

```
$gwip = New-AzureRmPublicIpAddress -Name gwip -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 $gwip.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-premise 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 > Virtual Servers > your virtual server > 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 **IKEv2 Tunnel Name** field, enter your tunnel name.
6. Set **Initiates Tunnel** to **Yes**.
7. Set **Restart Child on close** to **Yes**.

**General**

IKEv2 tunnel name:  Initiates tunnel:  Yes  No

Enabled:  Yes  No Restart child on close:  Yes  No

8. Configure the **Authentication** settings:
  - o **Authentication Method** - Select **Pre-shared key**.
  - o **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 (#).

**Authentication**

Authentication Method:  CA Root:

Shared Secret:  X509 Condition:

Server Certificate:  Explicit X509:

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

Phase 1	Phase 2
Encryption: <input type="text" value="AES256"/>	Encryption: <input type="text" value="AES256"/>
Hash: <input type="text" value="SHA"/>	Hash: <input type="text" value="SHA"/>
DH-Group: <input type="text" value="Group 2"/>	DH-Group: <input type="text" value="Disable PFS"/>
Lifetime (seconds): <input type="text" value="28800"/>	Lifetime (seconds): <input type="text" value="3600"/>
	Lifetime (KB): <input type="text" value="0"/>

11. Configure the **Local Network** settings:
  - o **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
  - o **Network Address** - Enter your local on-premise networks and click **Add**.
12. Configure the **Remote Network** settings:
  - o **Remote Gateway** - Enter the Gateway IP Address of the Azure VPN Gateway in Step 2.
  - o **Network Address** - Enter the Azure subnet(s) configured in the Azure Virtual Network and click **Add**.

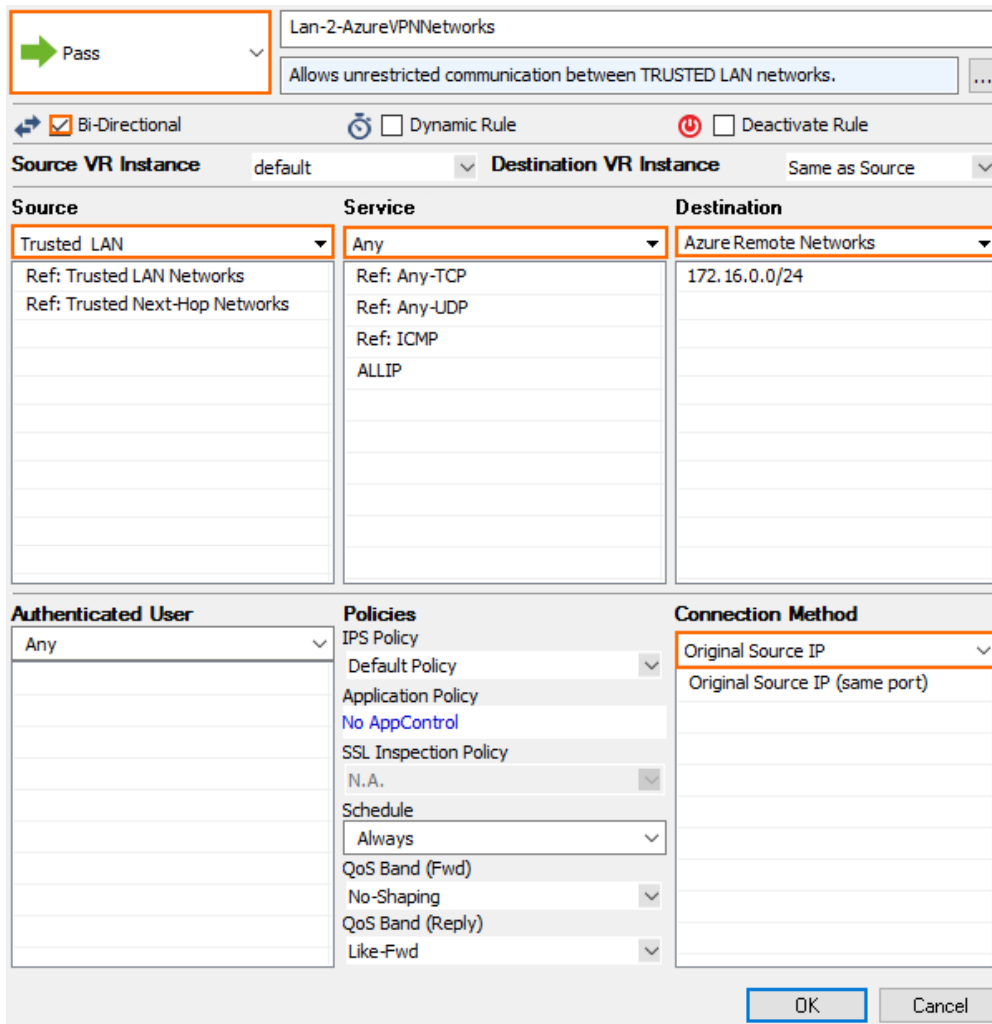
Network Local	Network Remote
Local Gateway: <input type="text" value="0.0.0.0"/>	Remote Gateway: <input type="text" value="168.63.96.146"/>
Local ID: <input type="text"/>	Remote ID: <input type="text"/>
Network address (e.g. 10.6.0.0/16) <input type="button" value="+"/> <input type="button" value="x"/>	Network address (e.g. 10.6.0.0/16) <input type="button" value="+"/> <input type="button" value="x"/>
<input type="text" value="10.0.1.0/24"/>	<input type="text" value="10.2.1.0/28"/> <input type="text" value="10.2.2.0/24"/>

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 > Virtual Servers > your virtual server > Assigned Services > Firewall > Firewall Rules**.
2. Click **Lock**.
3. Create a PASS access rule:
  - **Bi-Directional** - Enable.
  - **Source** - Select the local on-premise 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**.



**Pass** Lan-2-AzureVPNNetworks  
Allows unrestricted communication between TRUSTED LAN networks.

Bi-Directional  Dynamic Rule  Deactivate Rule

Source VR Instance: default Destination VR Instance: Same as Source

Source	Service	Destination
Trusted LAN	Any	Azure Remote Networks
Ref: Trusted LAN Networks	Ref: Any-TCP	172.16.0.0/24
Ref: Trusted Next-Hop Networks	Ref: Any-UDP	
	Ref: ICMP	
	ALLIP	

Authenticated User	Policies	Connection Method
Any	IPS Policy: Default Policy	Original Source IP
	Application Policy: No AppControl	Original Source IP (same port)
	SSL Inspection Policy: N.A.	
	Schedule: Always	
	QoS Band (Fwd): No-Shaping	
	QoS Band (Reply): Like-Fwd	

OK Cancel

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.

Tunnel	Name	Type	Group	Info	State	Succ.	Fail	Last Access	Last Peer	Last Info	Last Duration	Last Client	Last OS	Last WSC
IPSEC	v2-AWS2AzureVpngw				ACTIVE	1031	0	1h 25m 43s	168.63.96.146	Access Granted	1h 25m 43s	Unknown	Unknown	

## Figures

1. Azure\_VPN\_Gateway.png
2. GW\_01.png
3. GW\_02.png
4. GW\_03.png
5. GW\_04.png
6. access\_rule01.png
7. GW\_05.png

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