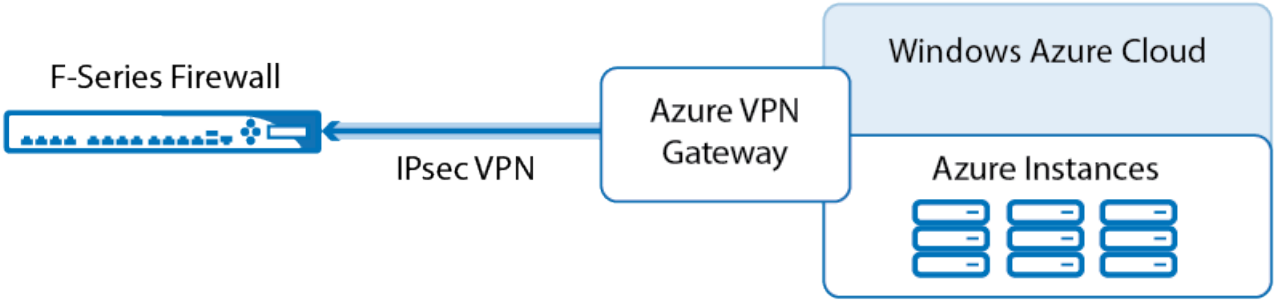
# How to Configure an IKEv2 IPsec Site-to-Site VPN to a Routed-Based Microsoft Azure VPN Gateway

https://campus.barracuda.com/doc/46892201/

To connect to your Azure virtual network with your on-premise F-Series 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 F-Series Firewall. The F-Series Firewall must be configured as the active partner. The following instructions are for Azure Resource Manager deployments.




**In this article**

## Before You Begin

- You will need the following information:
  - VPN Gateway
  - Public IP address of your on-premise F-Series Firewall
  - Remote and local networks.
- Install and Configure Azure PowerShell 1.0.1 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.
   `$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,$subnet2`
7. Create the local VPN Gateway configuration. Use the public IP address your firewall is using to connect to the Azure VPN Gateway.
   `New-AzureRmLocalNetworkGateway -Name OnPremiseVPNGateway -ResourceGroupName YOUR_RESOURCE_GROUP -Location YOUR_LOCATION -GatewayIpAddress YOUR_PUBLIC_IP -AddressPrefix @('LOCAL_SUBNET1','LOCAL_SUBNET2')`
8. Create an Azure public IP address and store it in a variable for later use.
   `$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 may take a couple of minutes. You can now configure the on-premise firewall to connect to the Azure VPN Gateway.

### Step 2. Get the VPN Gateway Public IP Address

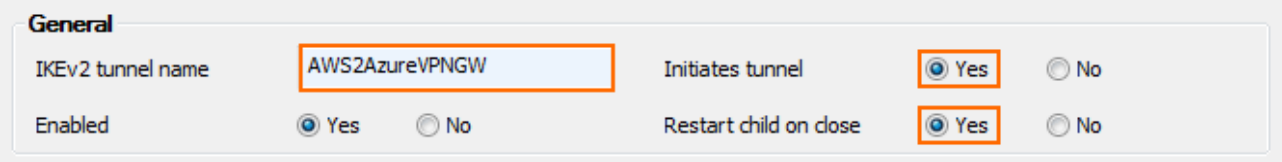
Get the public IP address allocated for the Azure VPN gateway.

1. Open Azure PowerShell
2. Get the IP address assigned to the VPN gateway:
   `Get-AzureRmPublicIpAddress -Name gwpip -ResourceGroupName YOUR_RESOURCE_GROUP`

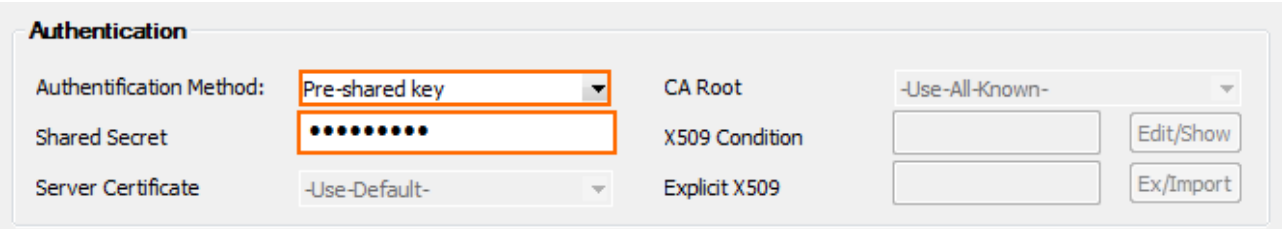
### Step 3. Configure IPsec IKEv2 Site-to-Site VPN on the F-Series Firewall

Configure a site-to-site IKEv2 VPN tunnel on the F-series 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**



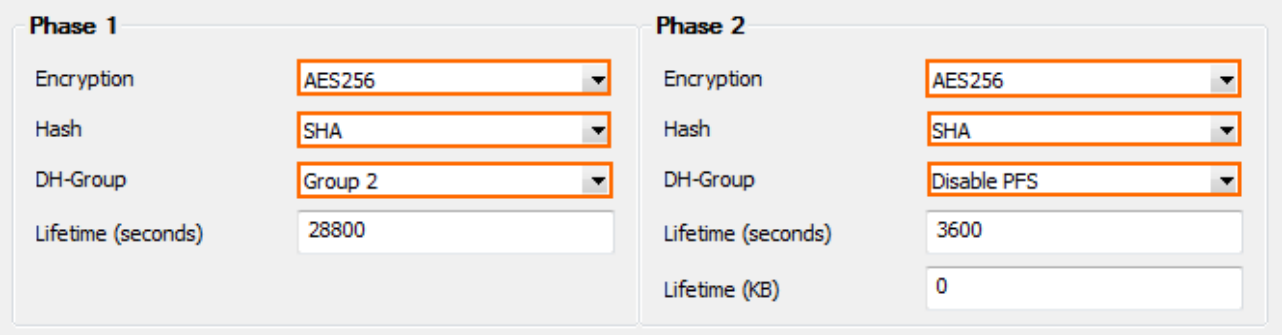

8. Configure the **Authentication** settings:
   - **Authentication Method** – Select **Pre-shared key**.
   - **Shared Secret** – Enter the passphrase you used when creating the virtual network gateway connection in Step 1.11.



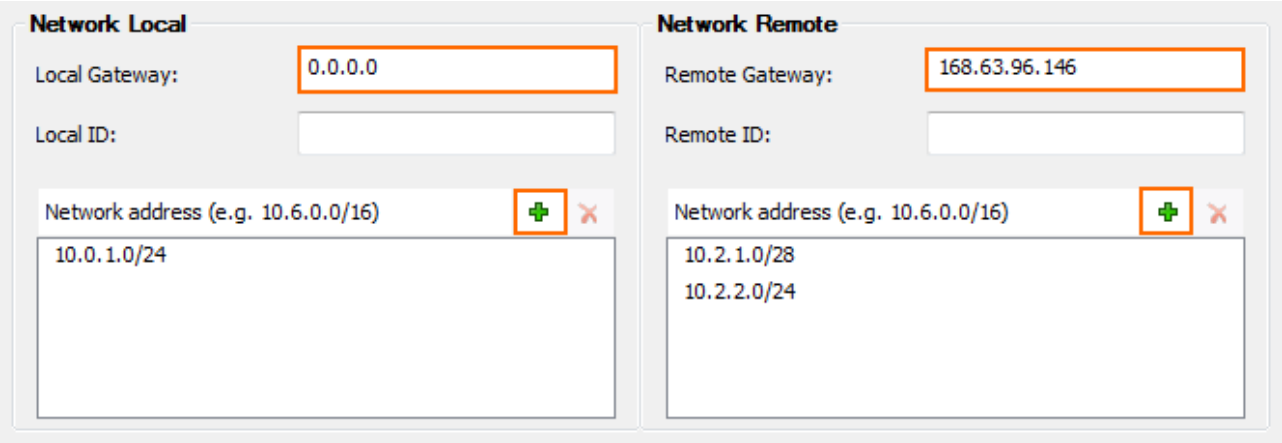

9. Configure the **Phase 1** encryption settings:

- **Encryption** – Select **AES-256**.
- **Hash Meth.** – Select **SHA**.
- **DH Group** – Select **Group 2**.
- **Lifetime** – Enter 28800.

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




12. 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
      **Network Address –** Enter your local on-premise networks and click **Add**.
13. 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**.

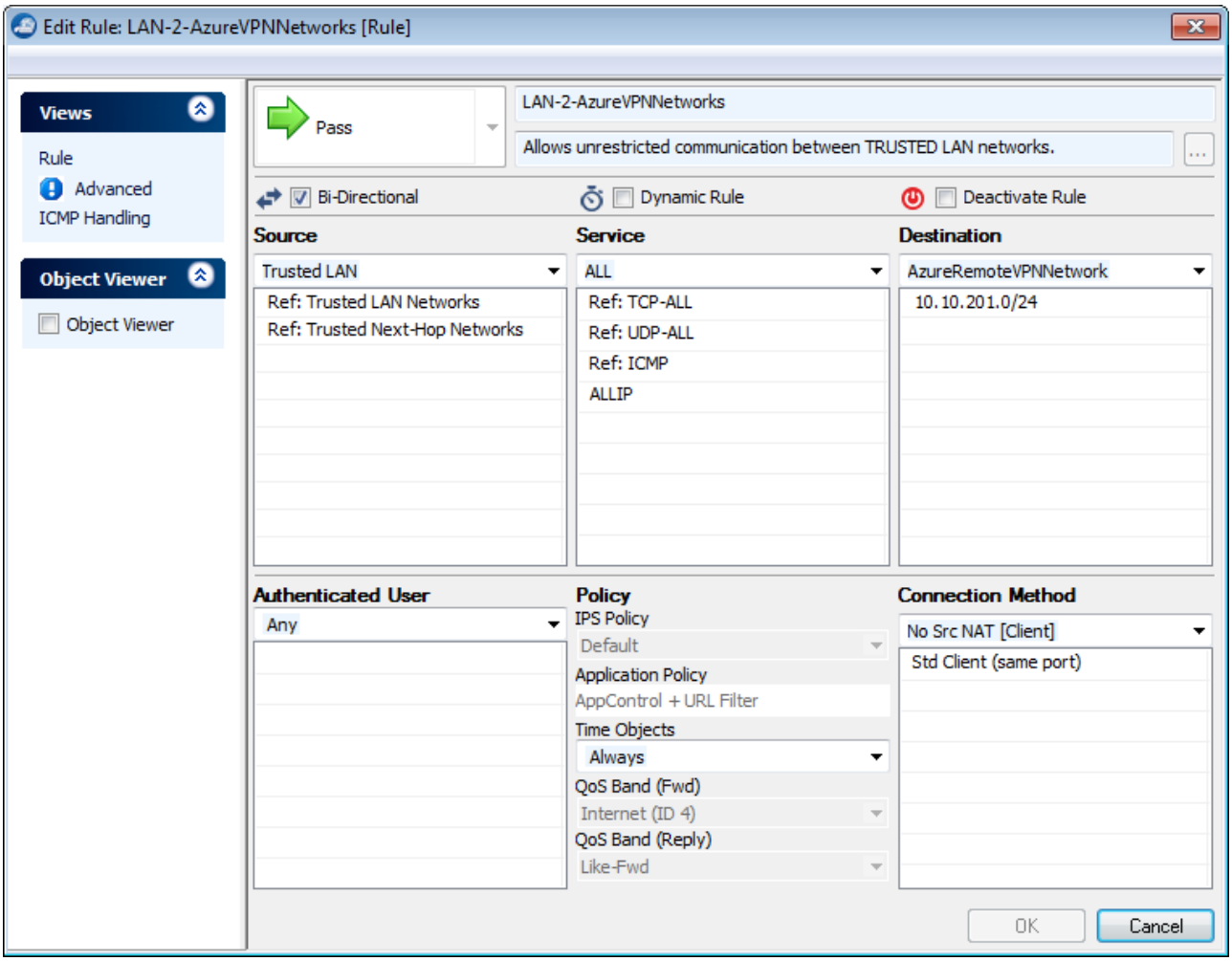



14. Click **OK**.
15. Click **Send Changes** and **Activate**.

## Step 4. Create an Access Rule

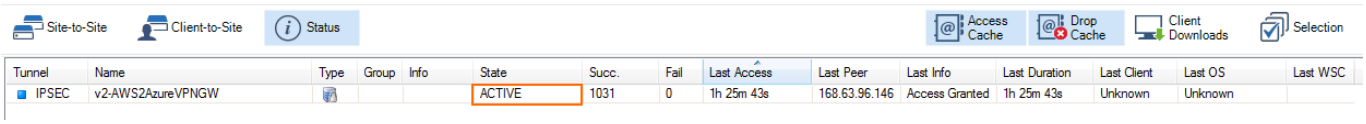
Create a pass access rule to allow traffic from the local network to the remote network.

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 **ALL** for complete access.
   - **Destination** – Select the network object containing the remote Azure Virtual Network subnet(s).
   - **Connection Method** – Select **No Src NAT**.




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 NextGen Firewall F-Series will now automatically connect to the Azure VPN Gateway.


Site-to-Site
Client-to-Site
Status
Access Cache
Drop Cache
Client Downloads
Selection
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