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Example Configuration for Connecting to EVIX

EVIX supports OpenVPN TAP and Mikrotik EoIP tunnels for peering. We also support GRETAP, however, it is currently in an experimental phase and should not be relied upon. Official OS support is currently limited to Debian, VyOS and Mikrotik routerOS, however, these instructions should be transferrable to other Linux-based systems as well.

Setting up VyOS

****NOTE only VyOS 1.18 is supported. The rolling .12 release breaks OpenVPN bridging*****

VyOS seems to have poor support for IPv6 on its OpenVPN interfaces so our solution is to create an OpenVPN TAP connection and bridge it to a standard Linux bridge which holds all the IP configuration. When looking at the config instructions you should pay attention to three addresses, your IPv4 address, your IPv6 address and your server address. The server address is the address of the closest EVIX virtual switch to yourself geographically. The current switches are:

US West – 72.52.82.6
Netherlands - 93.158.213.143

You may use the following config snippit to configure your VyOS router, ensure that you have changed anything encased in <> brackets:

```
'set interfaces bridge br0 address '<Your IPv6 Address>'
set interfaces bridge br0 address '<Your IPv4 Address>'
set interfaces bridge br0 aging '300'
set interfaces bridge br0 hello-time '2'
set interfaces bridge br0 max-age '20'
set interfaces bridge br0 priority '0'
set interfaces bridge br0 stp 'false'
set interfaces openvpn vtun0 bridge-group bridge 'br0'
set interfaces openvpn vtun0 device-type 'tap'
set interfaces openvpn vtun0 mode 'client'
set interfaces openvpn vtun0 protocol 'udp'
set interfaces openvpn vtun0 remote-host '<Server Address>'
set interfaces openvpn vtun0 tls ca-cert-file '/config/auth/openvpn/ca.crt'
set interfaces openvpn vtun0 tls cert-file '/config/auth/openvpn/<your certificate>.crt'
set interfaces openvpn vtun0 tls key-file '/config/auth/openvpn/<your key>.key'
set interfaces openvpn vtun0 'use-lzo-compression'
set protocols bgp <Your ASN> neighbor 206.81.104.1 remote-as '137933'
set protocols bgp <Your ASN> neighbor 206.81.104.1 soft-reconfiguration 'inbound'
set protocols bgp <Your ASN> neighbor 2602:fed2:fff:ffff::1 address-family ipv6-unicast soft-reconfiguration 'inbound'
set protocols bgp <Your ASN> neighbor 2602:fed2:fff:ffff::1 remote-as '137933'
```

Note that you will need to create the directory /config/auth/openvpn and place the ca.crt and your certificate and private key files here. These files will be provided when you join EVIX.

Some helpful troubleshooting steps:

Can you ping the IPv6 gateway address?
Can you ping the IPv6 route server (2602:fed2:fff:ffff::1)?
Can you ping the IPv4 route server?
Display BGP session information: show ip bgp summary
Display Received routes: show ip bgp neighbors <Neighbor IP> received-routes

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Setting up Debian

Connecting to EVIX via Debian should be fairly straightforward, simply install OpenVPN via apt and place the ca, certificate and key in the /etc/openvpn/ folder. Then create a client.conf file containing the following:

```
client
dev tap
proto udp

remote <Server IP>  1194
resolv-retry infinite
nobind
persist-key
persist-tun

ca ca.crt
cert as_65530.crt
key as_65530.key

remote-cert-tls server
comp-lzo
verb 3
```

Enable the service by running systemctl enable openvpn@client and start it by running service openvpn@client start. After a few seconds verify the tunnel has come up with ifconfig.

I'll leave it up to you to configure routing on Debian, Bird is generally the preferred BGP daemon.

Mikrotik RouterOS

EVIX also supports connection via EoIP tunnels on Mikrtoik RouterOS. To connect via Mikrotik you will need to provide your router's public IP address. Note that your tunnel IP will be provided to you when you join EVIX. The configuration commands are as follows:

```
/interface eoip add !keepalive local-address=<Your public IP>  name=EVIX remote-address=<Server IP> tunnel-id=<ID>
/routing bgp instance set default as=<Your ASN> disabled=no
/routing bgp peer add instance=default name=EVIX remote-address=206.81.104.1 remote-as=137933 ttl=default
/routing bgp peer add instance=default name=EVIX remote-address=2602:fed2:fff:ffff::1 remote-as=137933 ttl=default
```

ZeroTier

ZeroTier is a new VPN protocol designed to be zero configuration. ZeroTier is especially advantageous in that it can automatically establish tunnels to other ZeroTier users, bypassing the EVIX switch and establishing a lower-latency connection with the other user.

While the standard implementation of ZeroTier relies on ZeroTier's root servers, EVIX has opted to create our own route servers to maintain independence. Fortunately, the configuration steps are not much different from Vanilla ZeroTier.

First install ZeroTier using the official documentation: https://www.zerotier.com/download.shtml
Once the install has completed:

```
cd /var/lib/zerotier-one/
mkdir moons.d
cd moons.d
wget https://evix.org/0000002cb385e495.moon
service zerotier-one restart
```

Now, verify you can see the EVIX root node by running zerotier-cli listpeers, you should see something like:

200 listpeers <ztaddr> <path> <latency> <version> <role>
200 listpeers 2cb385e495 23.129.32.56/9993;4115;4115 207 1.2.12 MOON
200 listpeers 8841408a2e 46.101.160.249/9993;1538759940976;4306 17 1.1.5 PLANET
200 listpeers 9d219039f3 188.166.94.177/9993;1538759940976;4091 2 1.1.5 PLANET

The key is to see that the EVIX root server is listed as a moon. Once you have confirmed this, simply run: zerotier-cli join 2cb385e4952b3e84 to join the network. You membership will be approved by one of our staff and you should be able to see the zerotier network interface and assign your EVIX IP's using the ip command:

ip addr add 206.81.104.x/24 dev ztzatk5wqr