645M-4 - Connect a mobile device to an OpenVPN Server

The following application note demonstrates the configuration and setup needed to connect a mobile Device, either a Tablet, Phone or PC to an ELPRO 645M-4 cellular modem using OpenVPN.

Creation of the .opvn files

We can manually create the .opvn files by using a text editor and cut & pasting the OpenVPN certificate parameters and keys, etc to a file.

OpenVPN file generation

Locate the certificate files generated during the OpenVPN Server initial setup, as per the *"645M-4_OpenVPN_Routed_Vx.x"* application note available in our Website Resources area.

The files that you will need to generate the .opvn files will be the "ca.crt" and each "ClientX.crt" and "ClientX.key"

File format

Open a text Editor (Notepad, Notepad++, Etc)

And create a file called "XXXXXX.opvn" based on the Client Certificates, i.e. Client1.opvn, Client2.opvn, etc.

The file format will be as per below

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client
dev tun
remote elprosupport.ddns.net
resolv-retry infinite
nobind
persist-key
persist-tun
verb 1
keepalive 10 120
port 1194
proto udp
cipher BF-CBC
comp-lzo
remote-cert-tls server
<ca>
<cut & paste "ca.crt" file contents here>
</ca>
<cert>
<cut & paste "ClientX.crt" file contents here>
</cert>
<key>
</key>

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In the formatting above the "elprosupport.ddns.net" represents the Server Cellular IP address or Dynamic DNS name. Note if using a Private IP Address, you will need to Add the Port number 1194 to the end, i.e. "120.157.6.217 1194"

Also, you will need to open each of the following files

- "ca.crt"
- "ClientX.crt"
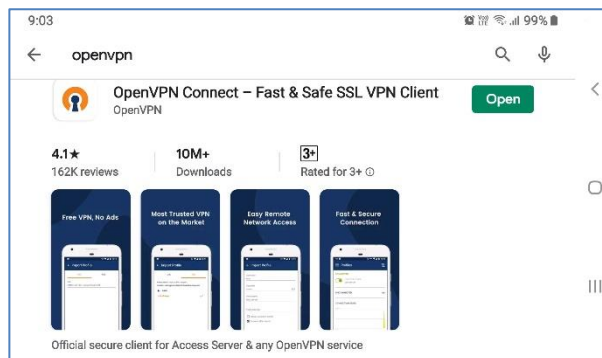- "ClientX.key"

And you need to copy the entire contents of each file and paste between the appropriate place holders in the .opvn file

- ca.crt → <ca> & </ca>
- CleintX.crt → <cert> & </cert>
- CleintX.key → <key> & </key>

When complete you need to save the file as per the client name, i.e. "Client1.opvn", Client2.opvn, etc.
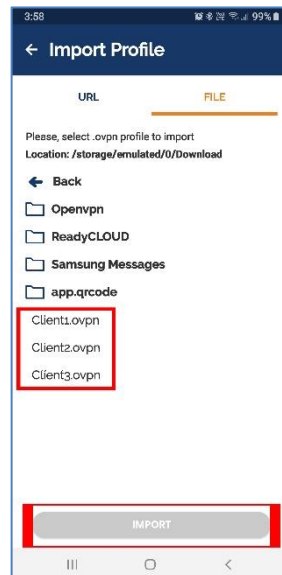Repeat above steps for each Client file.

Tablet or Phone setup.

On your Tablet or Phone, download the "OpenVPN Connect" App from the App store, both Apple and Android have this app.
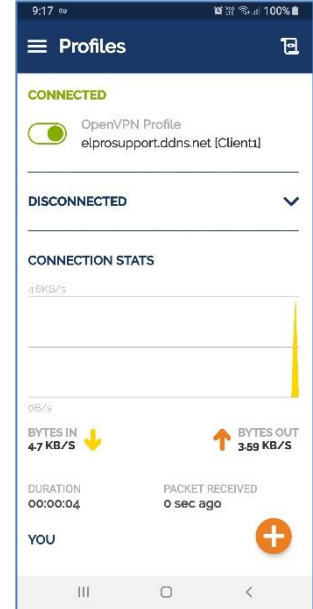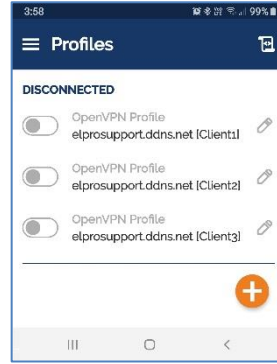

When the application is installed, open it and import the saved .opvn files.
The easiest way to get these files onto your Tablet/Phone is to email them to an account that can be accessed by the tablet /phone.

Slide the switch on the profile you wish to connect to and if the OpenVPN server is running and online it should connect and show you a Connection Status.

From here you should now be able to connect to the OpenVPN Server's LAN IP address as long as the "HTTP Access" has been enabled on the "Network/Firewall/Security" tab of the cellular modem.

Open an internet browser on the Tablet/Phone and type in the IP address of the Server LAN, in this example the IP Address is 192.168.0.1.
You should now have the Login page of the modem and if you type in the Username and Password you will have access to the Cellular modem's configuration.

In this example we also have a device (ELPRO 115E-2 Ethernet I/O) connected on the LAN, it has an IP address of 192.168.0.121.

You should also be able to type in the IP address of the 115E-2 and bring up its Web page, you will need to enter the Username and Password to gain access and displaying the Modules Dashboard.