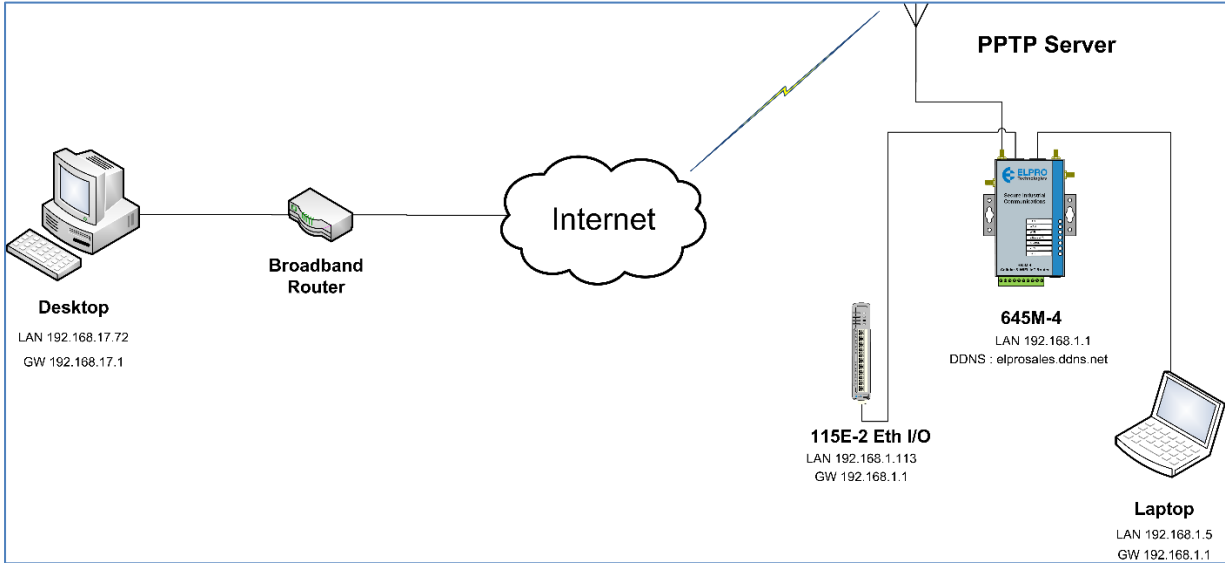


## PPTP VPN

### Network Topology



### Configuration

Modem LAN IP is 192.168.1.1

Configure the Modems APN for a Public WAN i.e. "telstra.extranet" for a Telstra Data SIM. You may need to ask your carrier to activate this option.



With a public WAN IP it will be dynamically assigned a Dynamic Public WAN IP when connected to the network.

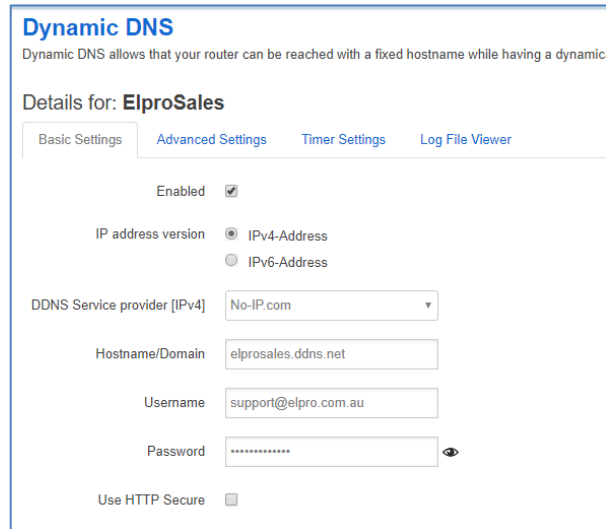
Mobile 1	
Cellular Status	Up
IP Address	100.83.26.194 255.255.255.252
DNS 1	112.198.126.124
DNS 2	112.198.126.116

## Dynamic DNS

The Public PPP IP Address assigned by cellular providers will be either a Fixed or a Dynamic IP address. Dynamic assigned IP addresses can change upon differing conditions set by the cellular carrier, when this occurs inactivity will occur until the new IP address is known, which typically requires connecting to it locally and viewing the unit status page.

The use of Dynamic DNS assigns a DNS name to the modem which then allows the modem to be accessed regardless of the assigned PPP IP address. There are several providers that offer Dynamic DNS "DDNS" services for example, a free service provided by "No-IP" allows users to setup between one to three host names on a domain name provided by No-IP.

In this example we are using a dynamic public IP addresses provided by "No-IP" and we have setup a Dynamic DNS address on the Server and each Clients cellular IP Address. If you were using a Private Network with fixed IP addresses, you would just need to setup the IPsec Communications using the fixed cellular IP Addresses instead of the DDNS names.



**Dynamic DNS**  
Dynamic DNS allows that your router can be reached with a fixed hostname while having a dynamic IP address.

Details for: **ElproSales**

Basic Settings | **Advanced Settings** | Timer Settings | Log File Viewer

Enabled

IP address version  IPv4-Address  IPv6-Address

DDNS Service provider [IPv4]

Hostname/Domain

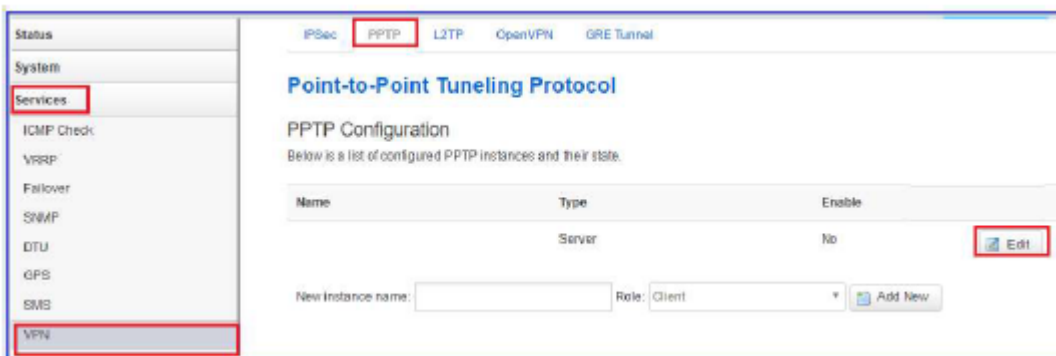
Username

Password

Use HTTP Secure

Configure the Modem with a DDNS, in this case "elprosales.ddns.net".

## Configure PPTP instance



IPSec | **PPTP** | L2TP | OpenVPN | GRE Tunnel

**Point-to-Point Tunneling Protocol**

PPTP Configuration

Below is a list of configured PPTP instances and their state.

Name	Type	Enable
	Server	No <input type="button" value="Edit"/>

New instance name:  Role:

**Configure the PPTP Local IP and remote start/end IPs.**

These can almost be left as default as it is just a PPTP Server instance. The configured IP's are only assigned to the connection and are not used as IP address for devices behind the router. Note: Cannot be the same subnet as the Modem LAN.

The IP address of the devices behind the PPTP server should be the same subnet of the router's LAN IP address and should have a default gateway configured.

**PPTP Server Instance:**

**Main Settings**

Enable

PPTP Local IP

PPTP remote IP start

PPTP remote IP end

ARP Proxy

MPPE Encryption

Debug

Username	Password	Address	Subnet
<input type="text" value="simon"/>	<input type="password" value="....."/>	<input type="text" value="*"/>	<input type="text"/>

Next configure a Username and Password that will be used for the Login.

Make sure the Network – Firewall – Security “Ping from WAN to LAN” is Allowed.

General Settings Port Forwards Traffic Rules Source NAT DMZ Security **MAC Filter**

**System Security Configuration**

SSH access from WAN

Ping from WAN to LAN

Enable telnet

**HTTPS Access**

HTTPS port

HTTPS access from WAN

Remote network

Also make sure Network – Firewall – Traffic Rules have “Allow All LAN Ports” is enabled.

**Firewall - Traffic Rules**

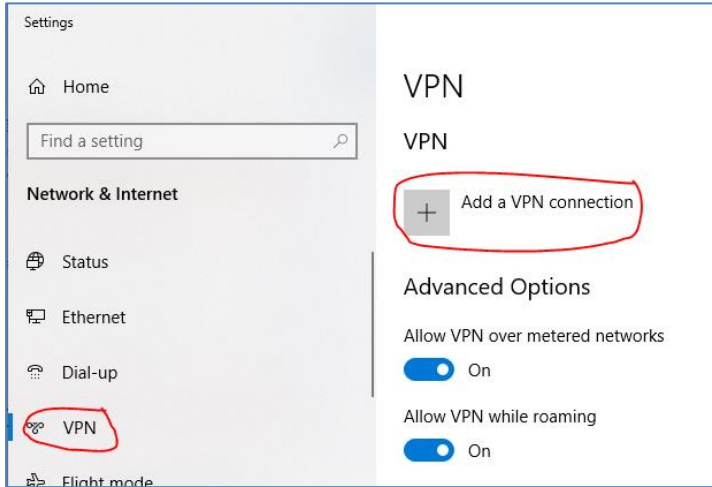
Traffic rules define policies for packets traveling between different zones, for example to reject traffic between certain hosts or to open WAN ports on the router.

**Traffic Rules**

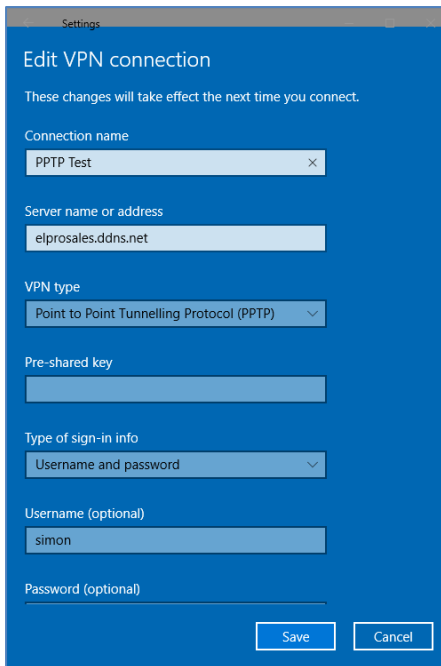
Name	Match	Action	Enable	Sort
DTU server	Any TCP, UDP From any host in wan To any router IP at port 5000 on this device	Accept input	<input type="checkbox"/>	+ + Edit Delete
Allow-All-LAN-Ports	Any traffic From any host in wan To any host, ports 1-65535 in lan	Accept forward	<input checked="" type="checkbox"/>	+ + Edit Delete

## External connection to the Server

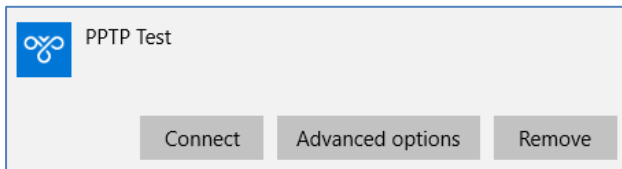
1. Go to Network and Internet Settings -> VPN -> Add a VPN connection.



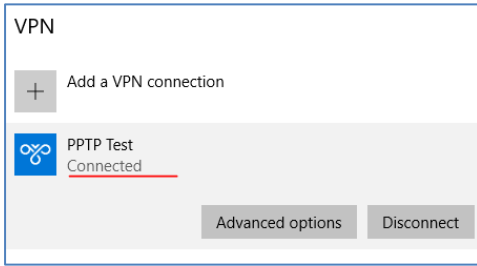
2. Set VPN Settings as below and click on the Save button.



3. Click on PPTP to connect to the VPN PPTP server with username and password.



4. Check VPN PPTP client connection.



- When VPN is connected you should be able to ping the External device connected to the LAN of the Modem, in this case it is a 115E-2 Ethernet I/O device (192.168.1.5)

```
C:\Users\Ben>ping 192.168.1.5

Pinging 192.168.1.5 with 32 bytes of data:
Reply from 192.168.1.5: bytes=32 time=275ms TTL=127
Reply from 192.168.1.5: bytes=32 time=277ms TTL=127
Reply from 192.168.1.5: bytes=32 time=289ms TTL=127
Reply from 192.168.1.5: bytes=32 time=342ms TTL=127

Ping statistics for 192.168.1.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss)
    Approximate round trip times in milli-seconds:
        Minimum = 275ms, Maximum = 342ms, Average = 295ms
```

- You should also be able to ping the IP Address of the 645M-4 Modem.

```
C:\Users\Ben>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:
Reply from 192.168.1.1: bytes=32 time=290ms TTL=64
Reply from 192.168.1.1: bytes=32 time=283ms TTL=64
Reply from 192.168.1.1: bytes=32 time=276ms TTL=64
Reply from 192.168.1.1: bytes=32 time=448ms TTL=64

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 276ms, Maximum = 448ms, Average = 324ms
```

Amendment Register:

Issue No.	Date	Details of Amendment
1.0	6/08/19	Draft Issue