

# Tunnel Server Setup



Most nodes will be set up as [Tunnel Clients](#). If you aren't sure, you probably don't need to follow the steps on this page.

If you'd like your node to be able to act as a Tunnel Server and allow other nodes to connect to you, you will need to make sure that your node is available over the Internet. This includes configuring a dynamic DNS entry, and making some firewall or port forwarding settings.

## DNS Name

Most residential internet services are given a single *dynamic* IP address, which means that the address can *change* every few days or so (or when the router power cycles). This means that when a server node suddenly gets a new public IP address, the client node can't find it anymore.

One solution is to use a [Dynamic\\_DNS](#) service like [No-IP](#). These services query your *dynamic* IP address, and translate it into a *static* hostname. It's that hostname that you then give the AREDN client (instead of your public IP address).

However, the No-IP service needs to be “told” when your dynamic IP address changes. This can be done by installing a small program that notifies them of the change, or alternatively, some routers have that function already built in. For example, the No-IP account can be entered in the Telus T3200M router here:

[Advanced Setup](#) → Dynamic DNS

The screenshot shows a router's web interface. At the top, there is a navigation bar with five icons: Home (house), Status (heart rate), Wireless Setup (Wi-Fi), Firewall (flame), and Advanced Setup (wrench and screwdriver). The 'Advanced Setup' icon is highlighted with a red box. Below the navigation bar is a sidebar menu with categories: Blocking/Filtering, IP Address, Security, Storage Service, and Modem Utilities. The 'Dynamic DNS' option under 'IP Address' is highlighted with a red box. The main content area shows the 'Dynamic DNS' configuration page. It includes a description of Dynamic DNS, a section to 'Set the dynamic DNS state' with 'Enable' selected, a section to 'Select the dynamic DNS provider' with 'no-ip.com' selected, a section to 'Enter your username and password' with 'myemail@address.com' in the username field and a masked password, a section to 'Enter the dynamic DNS host name' with 'myfancyhostname.ddns.net' in the hostname field, and a final section to 'Click Apply to save changes.' with an 'Apply' button.

With this setup, every time Telus gives me a new public IP address, the router notifies No-IP, which updates it so that myfancyhostname.ddns.net continues to point to my router.

## Port Forwarding

Port 5525 has to be forwarded to the hAP. There are two steps to this:

## DHCP Reservation

Just like Telus gives the router a *dynamic* WAN IP address, the router gives the home devices *dynamic* LAN IP addresses. The first step is to force the router to always give the same IP address to the hAP. On the T3200M this is done in:

[Advanced Setup](#) → DHCP Reservation

**Blocking/Filtering**

- Services Blocking
- Website Blocking
- Scheduling Access
- Parental Controls

**IP Address**

- WAN IP Addressing
- IPv6 WAN Settings
- LAN IP Settings
- IPv6 LAN Settings
- DHCP Reservation**
- Dynamic DNS
- DNS Host Mapping
- Port Bridging
- MoCA LAN Setup

### DHCP Reservation

DHCP reservation leases a permanent DHCP allocated address to a client.

**1. Select MAC Address, or manually enter a MAC address.**

Select MAC Address:

Manually Add MAC Address:

**2. Select an IP address to associate with a MAC address.**

IP Address:

Manually Add IP Address:

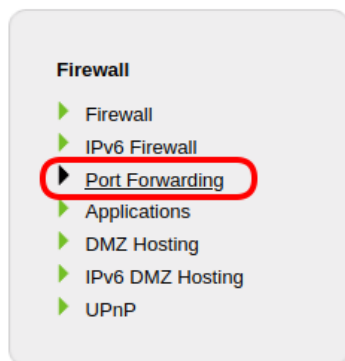
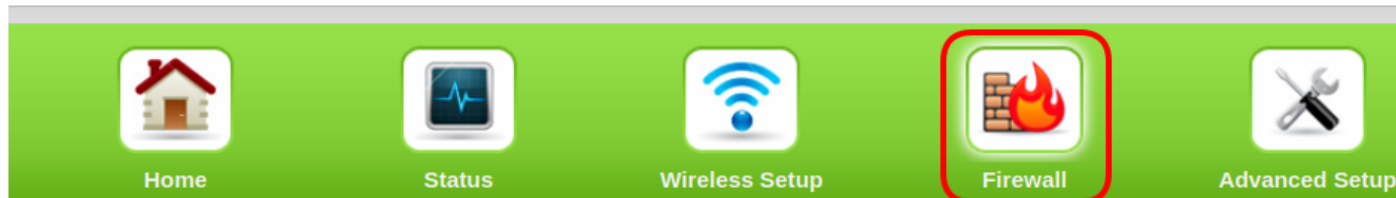
VA7FI-HAP-1	08:50:27	192.168.1.204	<input type="button" value="Remove"/>
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- Select the MAC address of the hAP from the list.
- Choose an IP address to assign it.
- Disconnect the hAP from the router and reconnect it to clear the IP.

## Port Forwarding

Now that the hAP's LAN IP address is fixed, we can forward a port to it:

[Firewall](#) → Port Forwarding



### Port Forwarding

Enter ports or port ranges required to forward Internet applications to a LAN device below.

**1. Set the LAN/WAN port and IP information.**

Select LAN Device:

LAN IP Address:

External (WAN) Start Port:

External (WAN) End Port:

Internal (LAN) Start Port:

Internal (LAN) End Port:

Protocol:

**2. Click Apply to save changes.**

Applied Port Forwarding Rules					
LAN START/ END PORT	PROTOCOL	LAN IP ADDRESS	WAN START/END PORT	MODIFY	REMOVE
5525/5525	TCP	192.168.1.204	5525/5525	<input type="button" value="Modify"/>	<input type="button" value="Remove"/>

- Select the hAP's IP address from the list
- Enter 5525 as the start and 5535 as the end (if you want to give 10 tunnels)
- Select TCP

## AREDN Server Setup

Now we can go back to AREDN and add a server:


## Tunnels Help

Tunnel Server   
DNS name of this tunnel server

Add tunnel Wireguard Server +  
Add a tunnel from a template

**Wireguard Server**

qT2xSAZ4fHWCvDkyTFfjYmHI 172.31.40.178:5532 Wgt

Notes... 

1. add your DNS name
2. select Wireguard Server and click the +
3. enter the name of the client
4. the rest of the information will auto populate
5. click the clipboard icon and copy the information, which you'll need to send to the client.
6. click Done
7. select Commit

Pending changes: 2 Commit Revert

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<https://wcairedn.ca/> - **West Coast  
AREDN**

Permanent link:  
<https://wcairedn.ca/starting/tunneling/tunnel-server-setup>

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