

1 - Introduction to OpenVPN

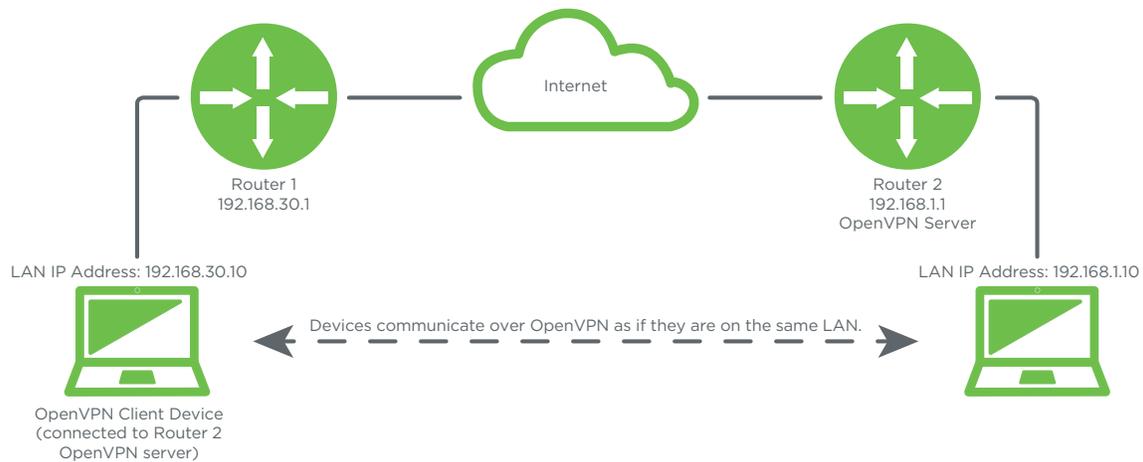
The AN-300-RT-4L2W router features a built-in OpenVPN server for secure, easily configured access to the network from the Internet using devices with an OpenVPN client application. Use OpenVPN to access local network devices like shared drives and home network servers as if you were on the local network.

OpenVPN communicates using encrypted SSL/TLS channels between networks that hide traffic from other devices on the Internet. The OpenVPN server runs on the router to control access to the tunnels, and users connect using a client application installed on their computer.

VPN users are provided with a configuration file generated by the OpenVPN server. This file is used as a key for the client application to communicate with the server and open a connection. The router must be configured for each OpenVPN account that will be used.

Client applications are available for PC and Mac computers and iOS and Android mobile devices.

Figure 1. OpenVPN Operation Diagram

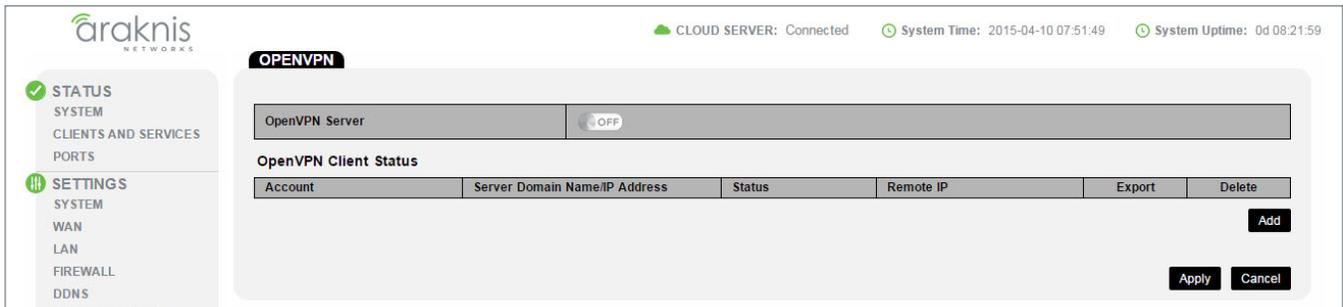


Note - When the PC client is connected to the VPN server, there will be one network adapter controlling the connection to the physical network the PC is on, and one running the VPN tunnel connection. The router's internal DHCP server will issue an IP address in the 172.0.0.XXX range to the PC network adapter for the VPN tunnel. The device will not appear in the router's DHCP list.

Also, local DNS addresses configured in the router will not function from VPN client-connected devices.

1.1 - OpenVPN Menu

Figure 2. OpenVPN Setup Page



Path - Advanced, VPN, OpenVPN

Parameters -

- **OpenVPN Server** - Click the button to turn the OpenVPN Server feature on or off.
Default: Off.

1.1.1 - OpenVPN Client Status

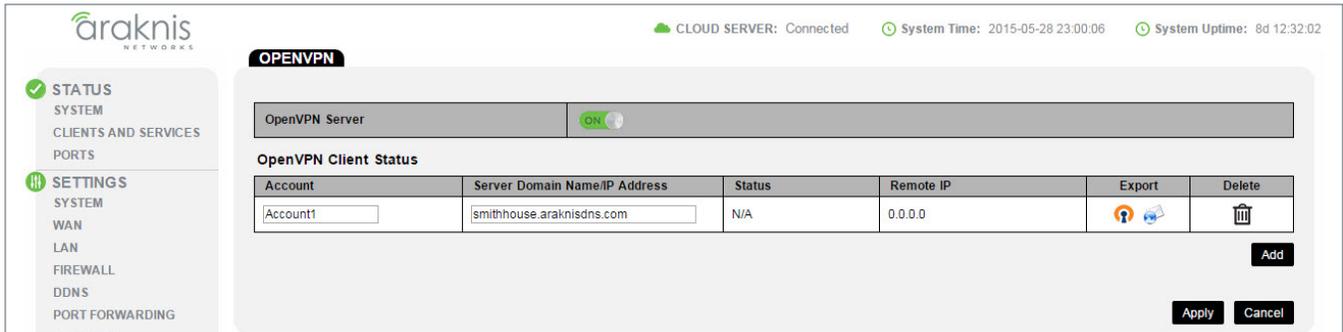
Parameters -

- **Account** - Username for the account.
- **Server Domain Name/IP Address** - WAN IP address of the server. This field should only be changed if a different DDNS service is being used, or if a static IP has been purchased for the Internet connection.
Default: Displays current router DDNS address (if DDNS is configured)
- **Status** - Shows the current status of the account connection.
- **Remote IP** - Remote IP address of the device connecting to the account.
- **Export** - Save or email a copy of the client configuration file used to configure remote devices.
- **Delete** - Click the **Trashcan** to delete an existing static route.
- **Add** - Click to add a new client account entry.

1.2 - Configuring OpenVPN Accounts in the Router

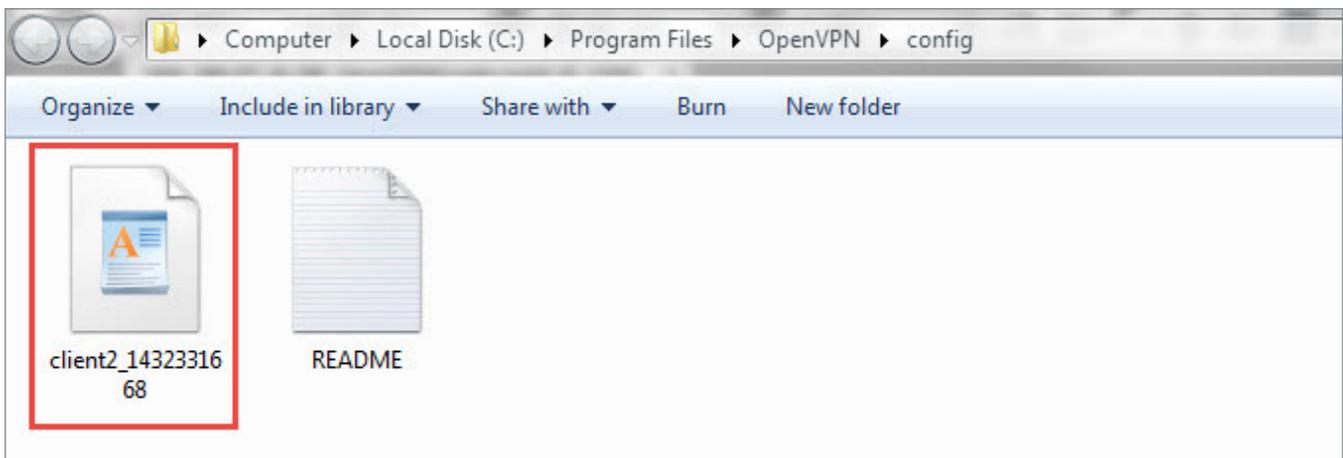
The router must be configured for each OpenVPN account that will be used. A client configuration file is exported and saved for the account, and the file is used by the client to connect to the server. Follow these steps to configure a new account on the router.

Figure 3. Adding a New OpenVPN Client



1. Log in to the router web interface and click Advanced, VPN, OpenVPN.
2. Click the **On/Off** button to turn the OpenVPN server ON.
3. Click **Add** to create a new account entry.
4. Enter a username in the Account field to identify the account user.
5. Do not change the Server Domain Name/IP Address field.
6. Click **Add** to create additional accounts or click **Apply** and confirm the new settings. Account setup in the router is now complete.
7. A configuration file must be exported and given to the OpenVPN client program on each device that will use an account. Click the button to export a copy of the configuration file to save, or click the button to email the file to a recipient. (The email server in the Security menu must be enabled to email OpenVPN files. See section 12.7.1.1 - *Configuring Email Alerts* in the AN-300-RT-4L2W manual for email server setup instructions.)

Figure 4. OpenVPN Configuration File Saved



2 - OpenVPN Client Configuration and Use

Once a client configuration file has been generated for an account, the file must be placed into the user's OpenVPN client application. This guide details the setup of applications developed by OpenVPN Technologies (<https://openvpn.net/>) currently available for PC, iOS, and Android devices.

OpenVPN Technologies has developed applications that can be downloaded for free, then installed and configured with ease.

2.1 - Windows Client

Note - You must be logged into an administrator account on the Windows PC to allow the OpenVPN client to connect to the server. Running the client from a non-administrator account will prevent the network card drivers from running correctly.

2.1.1 - Install the Client Application

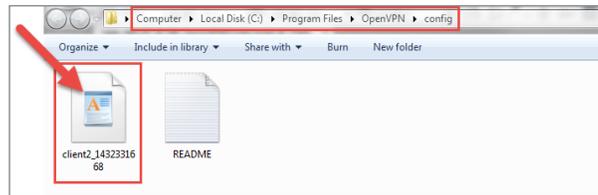
Figure 5. Downloading the Client Installer



1. Log into an administrator account on the client PC.
2. Open a Web browser and navigate to <https://openvpn.net/index.php/open-source/downloads.html>.
3. Download the correct installer file (.exe) to your PC from the middle column of the downloads table. Use the file that corresponds to your operating system and processor type (32- or 64-bit). Use the *Windows XP and later* version for PCs that originally came with Windows XP installed. Use the *Windows Vista and later* version for PCs that originally came with Windows Vista or newer installed.
4. Install the client. Do not change any of the options during the installation process to avoid issues later in the setup process.

2.1.2 - Configure the Client for the Account

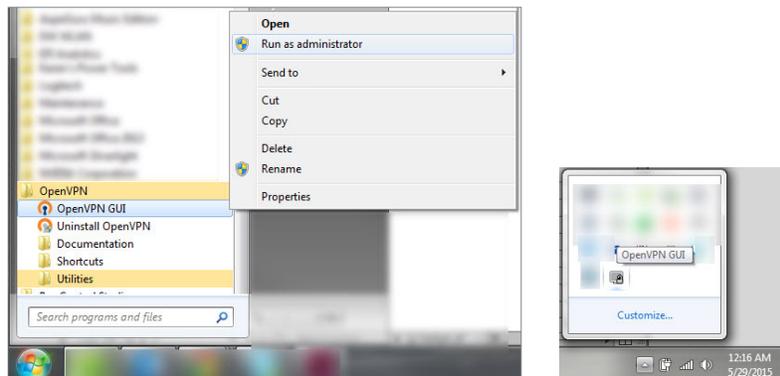
Figure 6. Placing the Configuration File in the Client Folder



1. Locate the configuration file created in section 1.2 - *Configuring OpenVPN Accounts in the Router* (page 3).
2. In the Start menu, click All Programs > OpenVPN > Shortcuts > OpenVPN configuration file directory. Or, open Windows Explorer and navigate to the OpenVPN **config** folder. Do not navigate to the Program Files (x86) folder.
 - **Location** - C:\Program Files\OpenVPN\config
3. Place the configuration file into the config folder. Do not modify the file name or contents.
4. Setup is complete. The account will now be available for connection in the OpenVPN GUI.

2.1.3 - Using the Client

Figure 7. Run OpenVPN Client as Administrator



1. Right-click the OpenVPN client program shortcut and select **Run as Administrator**. The OpenVPN application will open and the icon will appear in the Windows system tray.
2. Right-click the icon and click **Connect**. A dialog box will appear during the connection process and disappear after the client successfully connects to the OpenVPN server.
3. As long as the client remains connected, the PC will be able to access IP addresses on your local network as if you were directly connected.
4. To disconnect from the server, right-click the icon in the system tray and click **Disconnect**.

2.2 - iOS Client Setup

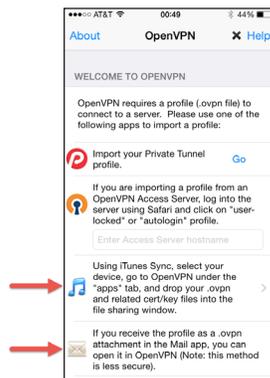
2.2.1 - Install the Client Application

Log into the App store on your device and search for *OpenVPN Connect* to find and install the app.

2.2.2 - Configure the Client for the Account

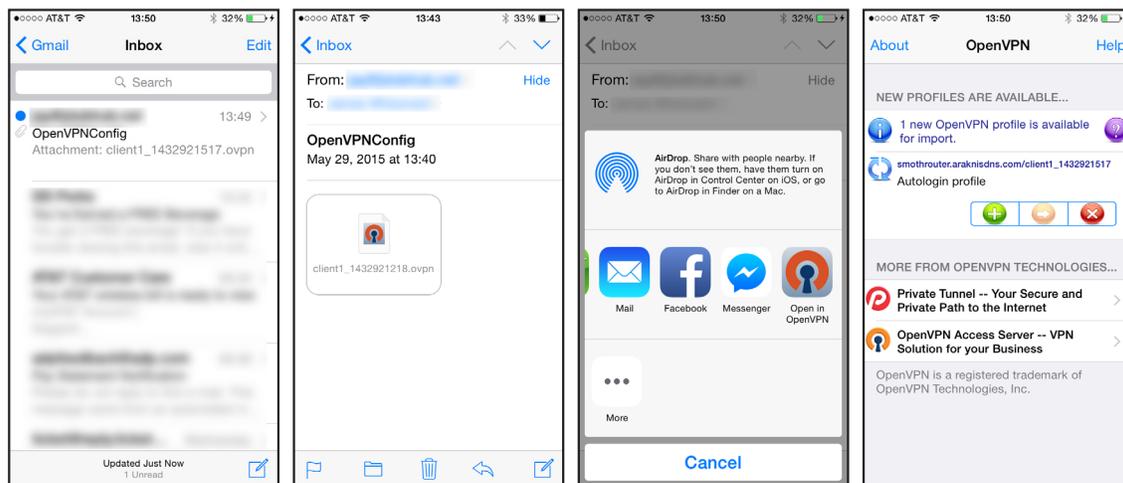
When the OpenVPN client app is opened for the first time, follow the instructions to import the configuration file created in section 1.2 - *Configuring OpenVPN Accounts in the Router (page 3)*. You can connect the device to a computer running iTunes or use an email app to import the file.

Figure 8. Configuration File Import Options



- **iTunes Import** - Download the configuration file to the computer, then follow the instructions in the app to import the file using iTunes.
- **Email Import** - Email the configuration file and import it using a separate email app on the device. Open the message in the email app, then click on the attached file and choose to open it with the OpenVPN app.

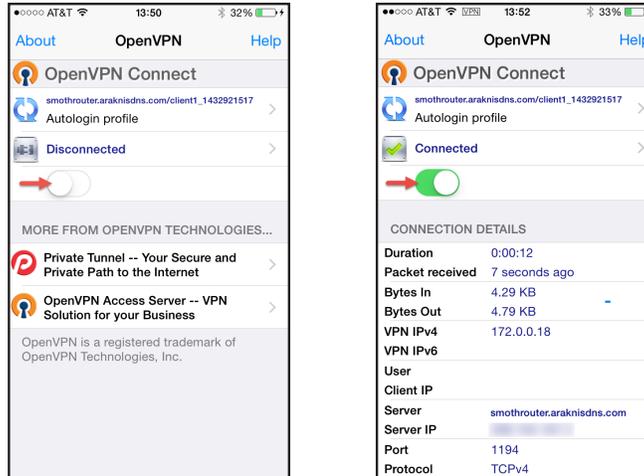
Figure 9. Email Import



2.2.3 - Using the Client

To turn on the VPN connection, open the client app and toggle the slider below the Disconnected status bar. Connection details will be displayed on the screen once the account is authenticated. You will be able to access IP addresses on your local network as if you were directly connected.

Figure 10. Connecting to the Server



2.3 - Android Client Setup

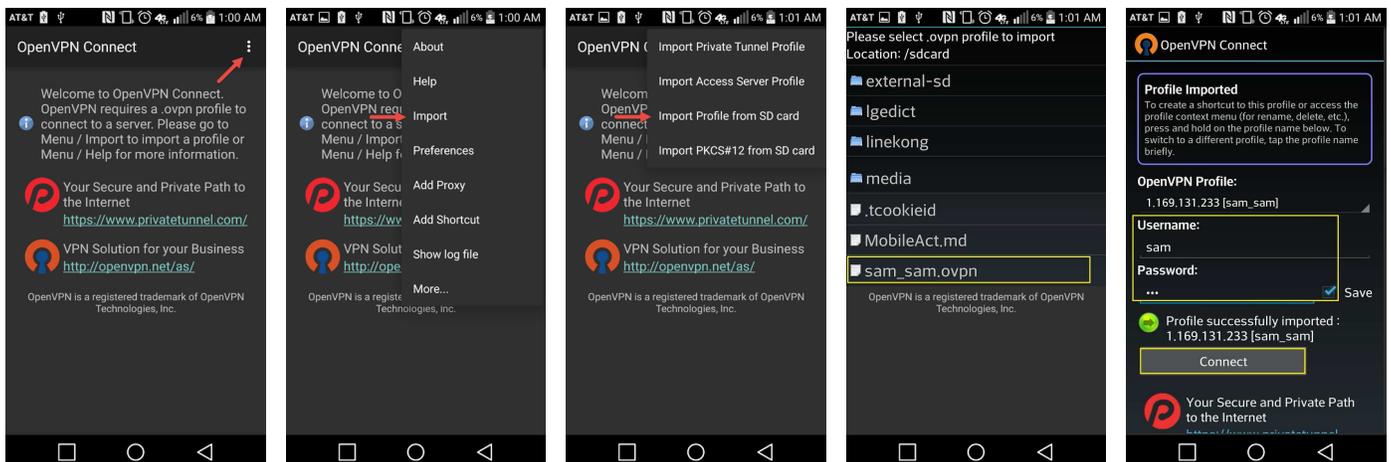
2.3.1 - Install the Client Application

Log into the Android marketplace on your device and search for **OpenVPN Connect** to find and install the app.

2.3.2 - Configure the Client for the Account

1. Save the configuration file created in section 1.2 - *Configuring OpenVPN Accounts in the Router* (page 3) to a known location on the Android device's SD card.
2. Open the client app and import the config file from the SD card.

Figure 11. Configuration File Import





2.3.3 - Using the Client

To turn on the VPN connection, open the client app and toggle the slider below the Disconnected status bar. Connection details will be displayed on the screen once the account is authenticated. You will be able to access IP addresses on your local network as if you were directly connected.

Figure 12. Connecting to the Server

