AnywhereUSB Plus

User Guide

User Guide

Revision history—90002383

Revision	Date	Description
A	January 2020	Initial release.

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Product name and model
Product serial number (s)
Firmware version
Operating system/browser (if applicable)
Logs (from time of reported issue)
Trace (if possible)
Description of issue
Steps to reproduce

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AnywhereUSB Plus User Guide

AnywhereUSB® Plus is a Remote USB 3.1 Hub that implements USB over IP® technology over Gigabit Ethernet networks. The Hub enables communication with USB-enabled devices from virtualized systems and from remote host computers. You can securely deploy AnywhereUSB® Plus Remote USB 3.1 Hubs in non-secure environments, making it ideal for point-of-sale, kiosks, surveillance, industrial automation, or any mission-critical enterprise application. This Gigabit Ethernet-attached solution provides 2, 8, or 24 USB 3.1 ports to connect a wide range of peripheral devices such as USB license dongles, scanners, printers, cameras, storage media, or other USB devices. The 8- and 24-port models provide support for 10 Gigabit Ethernet and include SFP+ interfaces.

User roles

The different user roles that work with the AnywhereUSB Plus Hub are described in the table below.

Role	Description
Windows Administrator	The Windows administrators have the Windows permissions to install the **AnywhereUSB Manager** software on the computer. The Administrator can start, stop, and configure the **AnywhereUSB Manager** if it is run as a service.
Hub administrator	The Hub administrators have access to the Hub password. This enables the administrators to access and perform all activities to configure and maintain the Hub using the web UI and the Hub CLI commands.
User	A user can log into their computer and access the **AnywhereUSB Manager** that has been installed on the computer by the Windows administrator and is not running as a service. Within the **AnywhereUSB Manager**, the user can connect to the groups on the remote Hubs to which they have been given access by a Hub administrator. A user cannot access the web UI or use the Hub or AnywhereUSB Manager CLI commands.

Terminology

Role	Description
Computer	The physical or virtual equipment (such as a PC, laptop, or virtual machine), which is used to remotely access the AnywhereUSB Plus Hub.
Client ID	The client ID is a unique identifier assigned to a user account the first time a user logs in to a computer and opens the **AnywhereUSB Manager**. During this process, the **AnywhereUSB Manager** creates a secure identity certificate that is associated with the client ID. This certificate is used to validate your user account with the Hub. For more information, see Client ID.
Group	A group is a set of USB ports on an AnywhereUSB Plus Hub with exclusive access to a single user account. Each USB port can be assigned to only one group by the Hub administrator. When you log into the computer and connect to a Hub, you are allowed to connect to any groups assigned to your client ID. See Create groups and assign to client IDs for more information.

Supported OS

Microsoft Operating systems supported:

- Microsoft Windows 7
- Microsoft Windows 8.1
- Microsoft Windows 10
- Microsoft Windows Server 2012 R2
- Microsoft Windows Server 2016
- Microsoft Windows Server 2019

Get started

This section explains what comes with each AnywhereUSB model, how to install the necessary software, and how to connect the hardware. After you have verified the AnywhereUSB Hub components, the software installation, hardware connection, and initial connection process must be done individually for each computer.

Note The steps in this process can only be done by an administrator. Once the setup is complete, any user can connect to a group, as described in step 6 below, Connect to groups.

1. Verify product components.
2. Install the AnywhereUSB Manager.
3. Cellular ONLY: Insert the CORE module (AnywhereUSB 8 and 24 port devices ONLY).
4. Connect the hardware.
5. Verify initial connection.
6. Change the Hub password.
7. You should update the firmware on the Hub to ensure you have the latest version. See Update system firmware.
8. After you have completed your initial connection, you can create groups and assign ports to each group. Once this step is complete, you can specify the groups that a client ID is allowed to access. See Create groups and assign to client IDs.
9. Connect to groups. Any user (Administrator or non-Administrator) can open the **AnywhereUSB Manager** and connect to the Hubs and groups to which access is allowed.

   Note If you installed the **AnywhereUSB Manager** as a service in step 2, above, only Administrators can open the **AnywhereUSB Manager**.

10. The Hub administrator can use the web UI to configure networks parameters, services, and other Hub features. You can update the firmware, back up the configuration, view system information and logs, and reboot the Hub. To get started, see Configure the AnywhereUSB in the web user interface.

Verify product components

All AnywhereUSB models include the AnywhereUSB device in the box. Additional equipment may be required or may be optional.

- AnywhereUSB 2 Plus components
- AnywhereUSB 8 Plus components
- AnywhereUSB 24 Plus components

AnywhereUSB 2 Plus components

Verify that you have the following included and required additional equipment.

Included equipment

- AnywhereUSB 2-port device. For details, see AnywhereUSB 2 Plus: Front panel.

Required additional equipment

- STP Cat 7 Ethernet cable
- Power supply kit (recommended): 1.8 amps per port. Digi PN 76000965.
- Alternate power supply kits (may be used if USB port charging is not required):
  - AC Power Supply: US plug to 5 VDC. 2.5 mm locking barrel plug (3 A max). Digi PN 76000934.
  - AC Power Supply: EU plug to 5 VDC. 2.5mm locking barrel plug (3 A max). Digi PN 76000935.
  - AC Power Supply: Standard Temperature, Universal plugs (US, EU, UK, AU) to 5 VDC. 2.5mm locking barrel plug (3 A max). Digi PN 76002021.

Optional additional equipment

- DIN rail mounting kit: Digi PN 7000682. See Attach a DIN rail clip (AnywhereUSB Plus 2-port ONLY).

Note Some kits may not have the required screws included. If this occurs, you will need to separately purchase two screws of the following type: 4-40 x .250 Flat head, Phillips head, zinc-plated screws.

AnywhereUSB 8 Plus components

Verify that you have the following included and required additional equipment. A list of optional equipment is also included below.

Included equipment

- AnywhereUSB 8-port device
  - AnywhereUSB 8 Plus: Front panel
  - AnywhereUSB 8 Plus: Back panel
- Power supply
- Rack mounting brackets and screws

Required additional equipment

- STP Cat 7 Ethernet cable
- IEC 60320 power cord

Optional additional equipment

- SFP+ module
- RS232 DB9 Console cable

Optional additional equipment for connecting to a cellular network

This equipment is required only if you want to connect to a cellular network. A SIM card is also required. See Cellular ONLY: Insert the CORE module (AnywhereUSB 8 and 24 port devices ONLY).

Equipment	Description
CORE module	
SIM card	An activated SIM card provided by your cellular network operator. You can insert up to two SIM cards in the CORE module. The CORE module supports the standard mini-SIM cards (2FF).

Equipment	Description
Antennas (2)	

AnywhereUSB 24 Plus components

Verify that you have the following included and required additional equipment. A list of optional equipment is also included below.

Included equipment

- AnywhereUSB 24-port device
  - AnywhereUSB 24 Plus: Front Panel
  - AnywhereUSB 24 Plus: Back panel

Required additional equipment

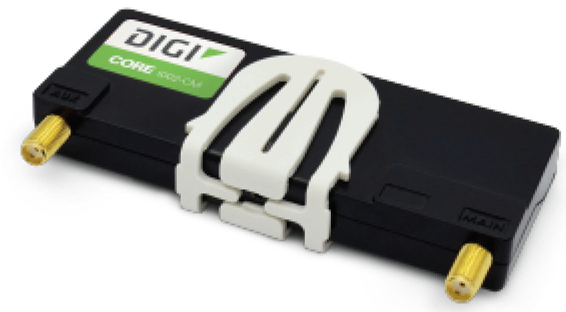
- STP Cat 7 Ethernet cable
- IEC 60320 power cord

Optional additional equipment

- An additional STP Cat 7 Ethernet cable
- An additional IEC 60320 power cord
- SFP+ modules
- RS232 DB9 Console cable

Optional additional equipment for connecting to a cellular network

This equipment is required only if you want to connect to a cellular network. A SIM card is also required. See Cellular ONLY: Insert the CORE module (AnywhereUSB 8 and 24 port devices ONLY).

Equipment	Description
CORE module	
SIM card	An activated SIM card provided by your cellular network operator. You can insert up to two SIM cards in the CORE module. The CORE module supports the standard mini-SIM cards (2FF).

Equipment	Description
Antennas (2)	

Install the AnywhereUSB Manager

The **Anywhere USB Manager** software must be downloaded from the Digi support site and installed on your computer. After the manager software installs, the **AnywhereUSB Manager** launches. The **AnywhereUSB Manager** automatically discovers AnywhereUSB Hubs on the local subnet.

The Windows administrator must perform the software install.

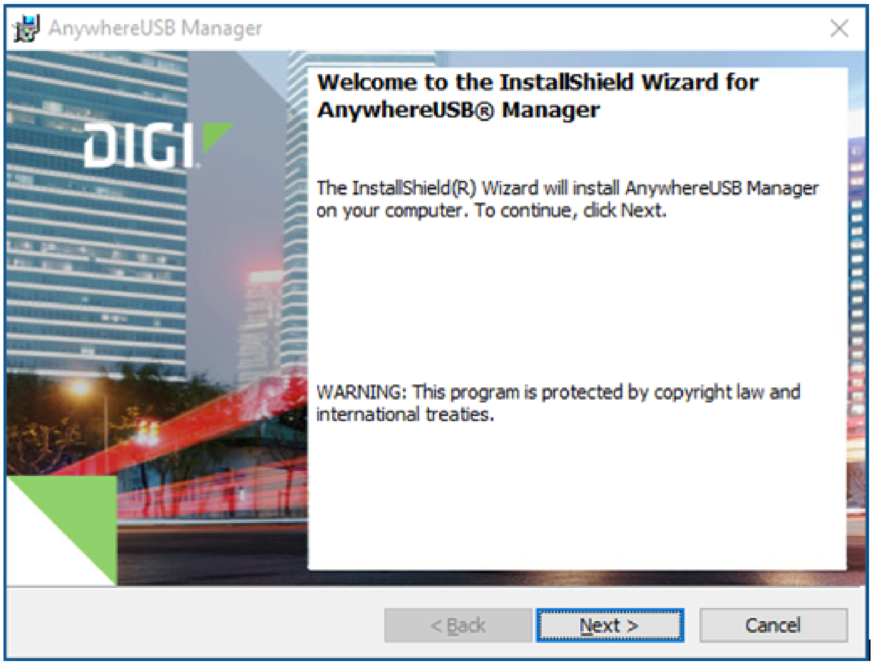
Prerequisites

Before you begin, you should decide whether you want to run the **AnywhereUSB Manager** as a stand-alone or as a service. For detailed information, see Install AnywhereUSB Manager as a service or stand-alone.

1. Navigate to https://www.digi.com/support#support-tools.
2. From the **Support Downloads** section, click **Drivers**.
3. Find and select **AnywhereUSB Plus** from the product list.
4. Select your **AnywhereUSB Plus** model.
5. Select and download the appropriate software for your operating system.

   Note You can save the downloaded software to your computer before you start the install process. This is useful if you decide to uninstall the **AnywhereUSB Manager** in the future.

6. Click on the downloaded software to launch the **AnywhereUSB Manager** installation wizard. The **Welcome** screen appears.



Welcome to the InstallShield Wizard for AnywhereUSB® Manager

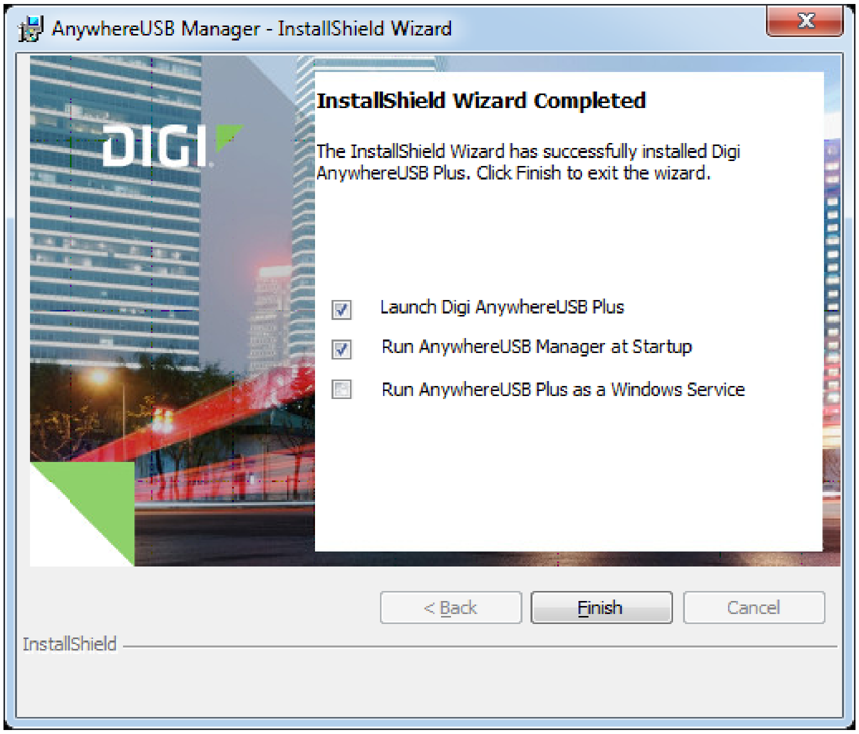
The InstallShield(R) Wizard will install AnywhereUSB Manager on your computer. To continue, click Next.

WARNING: This program is protected by copyright law and international treaties.

7. Click **Next**. The **Ready to Install** screen appears.

8. Click **Install**. A status bar shows the progress of the installation process. When complete, the **Completed** screen appears.
9. Select from the options on the screen:
   - **Launch AnywhereUSB Manager**: Launches the **AnywhereUSB Manager** when the installation completes. This is selected by default.
   - **Run AnywhereUSB Manager at Startup**: Automatically launch **AnywhereUSB Manager** each time you log in to your Windows user account. This is selected by default, and Digi recommends that you do not de-select this option.
   - **Run AnywhereUSB Plus as a Windows Service**: Only a Windows administrator is able to open and use the **AnywhereUSB Manager**. If you are not the Windows administrator, you are cannot open the **AnywhereUSB Manager** but you have access to the devices connected to the Hub that are in the groups to which your client ID is assigned. See Install AnywhereUSB Manager as a service or stand-alone.

Note If you select the **Run AnywhereUSB Plus as a Windows Service** option, and a non-Windows administrator logs into the computer, the **AnywhereUSB Manager** will not display, even if the **Launch AnywhereUSB Manager** and/or the **Run AnywhereUSB Manager at Startup** options are selected. When running the **AnywhereUSB Manager** as a service, you must be logged in to the computer as a Windows administrator to be able to open and use the **AnywhereUSB Manager**.



AnywhereUSB Manager - InstallShield Wizard

InstallShield Wizard Completed

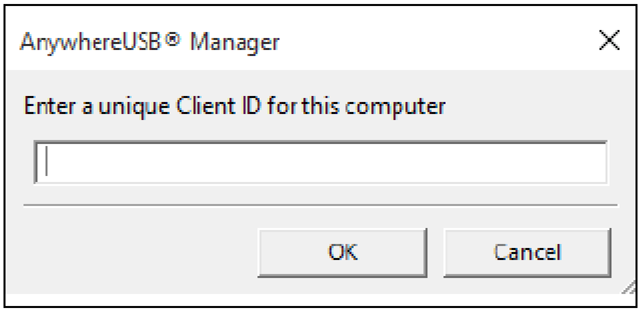
The InstallShield Wizard has successfully installed Digi AnywhereUSB Plus. Click Finish to exit the wizard.

☑ Launch Digi AnywhereUSB Plus

☑ Run AnywhereUSB Manager at Startup

☐ Run AnywhereUSB Plus as a Windows Service

10. Click **Finish**. The client ID confirmation dialog appears.
11. Enter a unique client ID. See Client ID for more information about how the client ID is used by your computer and the Hub to create a connection.



Enter a unique Client ID for this computer

12. Click **OK**. The **AnywhereUSB Manager** launches.

Install AnywhereUSB Manager as a service or stand-alone

You can choose to install the **AnywhereUSB Manager** as a stand-alone application or as a service. Review the sections below for more detailed information.

Note A Windows Administrator must perform the **AnywhereUSB Manager** software install.

Stand-alone

Install the **AnywhereUSB Manager** as a stand-alone if you want to manage USB connections and only be connected to them when you are logged in.

If you install the **AnywhereUSB Manager** as a stand-alone, Digi recommends that you select the **Run AnywhereUSB Manager at Startup** option during the installation process to automatically launch the **AnywhereUSB Manager** each time you log in to your Windows user account.

If the auto connect feature is enabled, the **AnywhereUSB Manager** automatically connects to groups and devices when the user logs in and starts the **AnywhereUSB Manager**.

Both Administrators and non-Administrators can run the **AnywhereUSB Manager** and configure it.

Groups and devices are disconnected when user logs out.

Service

Install the **AnywhereUSB Manager** as a service if USB devices must be available before user login and remain connected even when all users log out. The service automatically runs in the background.

Only an Administrator can start the **AnywhereUSB Manager** or command line to configure service.

If the auto connect feature is enabled, the **AnywhereUSB Manager** automatically connects to groups and devices at Windows boot time.

Groups and devices remain connected when the user logs out.

If you are not the Administrator, you are able to see and use the devices connected to the Hub that are in the groups to which your client ID is assigned, but you cannot choose to connect to an additional Hub or device without assistance from an Administrator.

Cellular ONLY: Insert the CORE module (AnywhereUSB 8 and 24 port devices ONLY)

This section explains how to connect the CORE module and cellular antennas to the AnywhereUSB hardware.

Note This section applies to AnywhereUSB 8 and 24 port devices ONLY. You cannot configure a cellular network connection for a 2-port device. Instead, see Connect the hardware using an Ethernet LAN connection.

Prerequisites

- Activated SIM card from your cellular network provider.
- CORE module. This may be included with your device. If it is not, you must purchase one separately.

To connect the hardware and connect to the cellular network:

1. Insert your activated SIM card into the CORE module. The notched end of SIM card should be inserted first, with the gold metal contacts facing down. You will hear a click once the SIM is completely inserted.

   Note If one SIM card is being used, insert the SIM card into the SIM 1 slot.

2. Insert the CORE module into the device.
   a. Orient the device so the rear of the device is facing you.
   b. Remove the CORE module slot cover from the back of the device.
   c. Insert the CORE module into the slot. Make sure the pin holes on the back of the module match the location of the pins in the slot.
   d. Push the module into the slot.
   e. Push the white handle down until you hear it click.
   f. Optionally, you can screw one of the CORE module cover screws into the center of the handle.
   g. Place the CORE module slot cover over the end of the device. Make sure that the antenna labels are oriented correctly.
   h. Push the cover in place.
3. Attach both of the included antennas. While gripping the metal connector section with your thumb and forefinger, tighten until secure. Do not tighten the antenna by holding any part of the plastic antenna housing.

   Note Attaching both antennas ensures maximum performance. If a single antenna solution is required, it must be attached to the antenna port labeled MAIN.

Connect the hardware

These sections explain how to connect the hardware and then connect to either a cellular network using the CORE module or to a site network using an Ethernet cable.

Note Only AnywhereUSB 8 and 24 port devices can connect to a cellular network. This requires a CORE module, which must be purchased separately.

- Connect the hardware using an Ethernet LAN connection
- Connect hardware and connect to a cellular network

Connect the hardware using an Ethernet LAN connection

Before you begin, verify that you have your AnywhereUSB Hub, the required additional equipment for your Hub, and any additional optional equipment. See Verify product components.

WARNING! Digi recommends that you use a private network to connect the computer to the Hub, as described in this section. If you do not use a private network, and the same client ID is assigned to both a known and an unknown computer, there is a risk of misidentification. In this situation, an unknown computer may connect to the Hub before the known computer does, resulting in the wrong computer being allowed to connect to your Hub.

1. Connect one end of a Shielded CAT 7 (STP) Ethernet cable to the Hub.
2. Connect the other end of the Ethernet cable to your computer.
3. Connect the appropriate power supply for your model:
   - **AnywhereUSB 2 Plus Hub**: Connect the power supply to the Hub, and use the twist-lock feature to secure the power supply.
   - **AnywhereUSB 8 Plus Hub**: Connect the power supply to the Hub and tighten the screws to secure.
   - **AnywhereUSB 24 Plus Hub**: Connect one IEC 60320 power cord into the Hub. The second power cord is used for redundancy.
4. Plug the power supply to an outlet. You may have two power supplies for an AnywhereUSB 24 Plus Hub.
5. Verify that the blue power LED is illuminated.

Connect hardware and connect to a cellular network

This section explains how to connect the AnywhereUSB hardware and then connect to a cellular network, using a CORE module. You must have purchased a CORE module to be able to connect to the cellular network.

Note As an alternative, you can also use an Ethernet LAN connection. See Connect the hardware using an Ethernet LAN connection.

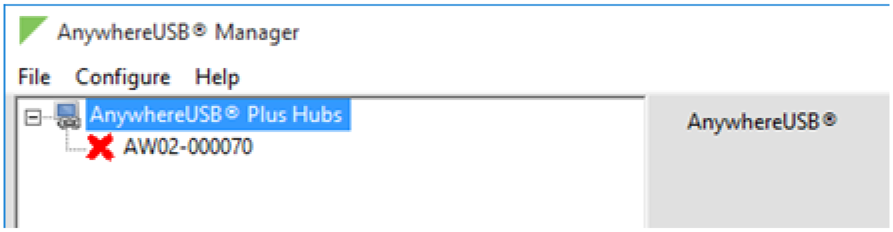
To connect the hardware and connect to the cellular network:

1. Insert a CORE module with an activated SIM card. See Cellular ONLY: Insert the CORE module (AnywhereUSB 8 and 24 port devices ONLY).
2. Plug the power supply cord into at least one of the power supplies on the back of the device. The second power cord can also be plugged in, but it is not required. It is available for power redundancy.
3. Plug the power supply unit into an AC power outlet to power up the AnywhereUSB 16/48.

Verify initial connection

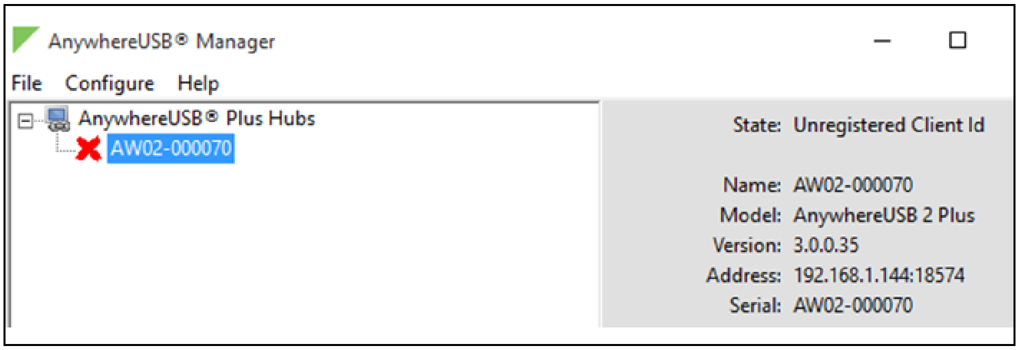
After the hardware has been connected and powered on, and you have installed the **AnywhereUSB Manager**, verify that the Hub connection is working as expected. You will need a USB flash drive to follow the verification process below.

1. Verify that your Hub powered on. The power LED is solid blue.
2. Plug your USB flash drive into port 1 on the Hub.
3. Verify that the USB port 1 LED is solid yellow, green, or blue, depending on whether the USB flash drive is 1.1, 2.0, or 3.1.
4. If not already open, launch the AnywhereUSB Manager.
5. Expand **AnywhereUSB Hubs** to display a list of AnywhereUSB Hubs.



6. Verify that the serial number of the Hub is in the list. You can find the serial number on the Hub's label.
7. You will notice that the Manager is showing the Hub in an error state, with a red X appearing next to the Hub name. Click on the Hub to update information in the **Hub Status** pane. The Hub **State** appears as "Unregistered Client ID."

   This is a security feature. The Hub administrator needs to allow each new client ID by adding the client ID to the client list.



State: Unregistered Client Id

Name: AW02-000070
Model: AnywhereUSB 2 Plus
Version: 3.0.0.35
Address: 192.168.1.144:18574
Serial: AW02-000070

8. Before you can register the client ID with the Hub, you must add the client ID to the Hub from the web UI.
   a. Right-click on the Hub and select **Open Web UI**.
   b. A login dialog displays. Enter the following:
      - **User name**: admin
      - **Password**: Located on the label on the bottom of the Hub. Note that the password is case-sensitive and must be typed in exactly as it appears on the label.

   Note The first time you launch the web UI, a warning dialog may appear if your internet connection is not private. In this situation, continue to access the device. The log in dialog appears.

   c. Click **Login**. The web UI appears.
   d. You are required to change the password the first time you log in. See Reset default password for the default admin user.

e. Select **System** > **Configuration** > **AnywhereUSB Configuration**. The **AnywhereUSB Configuration** page appears.

f. Expand the **Client Settings** section.

g. Click **Add Client**. A new row labeled "New Client" is added to the client list and the **Settings for Client** section is populated for the new client.

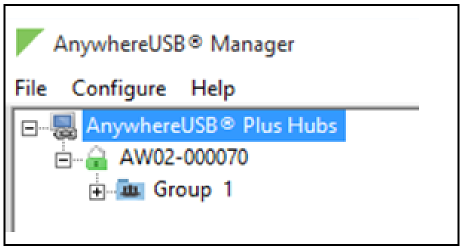
h. In the **Client ID** field, enter the client ID you assigned to your computer when you installed the **AnywhereUSB Manager**.

i. In the **Description** field, enter a descriptive name for the computer. This step is optional.

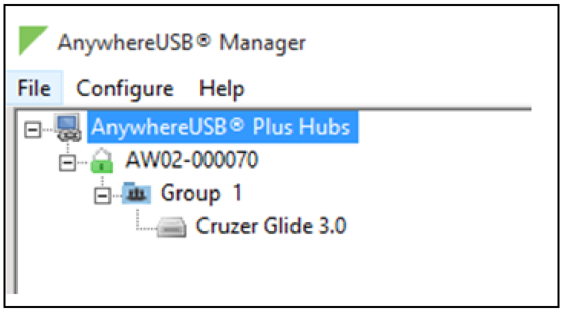
j. Click the check box next to group **1**.

k. Click **Apply** to save the Hub settings.

9. Open the **AnywhereUSB Manager**. The **Manager** connects to the Hub.
10. Expand the Hub to display the groups.



11. Expand Group 1 to display the USB flash drive connected to Group 1.



12. Right-click on Group 1 and select **Connect to Group**. The USB flash drive is available in Windows.

Create groups and assign to client IDs

For each Hub, the Hub administrator can assign a number of USB ports to a group. The Hub administrator can also assign groups to client IDs. Groups are created and assigned to client IDs in the **AnywhereUSB** page in the web UI.

When the client ID connects to a Hub, the computer is allowed to access the ports in the groups assigned to the client ID. The same groups can be assigned to more than one client ID on a Hub. Note that connecting to a group is exclusive and only one client can connect to a group at a time.

1. Add client IDs to the client list.
2. Create groups and assign ports to the group.
3. Assign a group to a client ID.

Create groups and assign ports to the group

In the **AnywhereUSB** page in the web UI, you can assign a name to each group, and specify the ports in each group. Each port can only be assigned to one group. Any unassigned ports are included in the **Unassigned** row that displays beneath the list of groups.

If a group has ports assigned to it, the group will display in the **AnywhereUSB Manager**, even if a USB device is not connected to a port. You can reassign the unused ports in a group so the group does not appear in the **AnywhereUSB Manager**. See Hide a group in the AnywhereUSB Manager.

1. Open the web UI for your selected Hub.
2. Select **System** > **Configuration** > **AnywhereUSB Configuration**. The **AnywhereUSB Configuration** page appears.
3. Expand the **Group Settings** section.
4. In the **Group Description** field, enter a name for a group. This name displays in the **Group Name** field in the Group Status pane in the **Anywhere USB Manager**.
5. In the row for the group, select the ports for that group. Each port on a Hub can be assigned to only one group. Ports that are not assigned to a group can be put in the default **Unassigned** group.
6. Repeat the steps 4 and 5 for each group you want to create.
7. When done, click **Apply** to save the changes.

Assign a group to a client ID

You can assign the groups to a client ID. When the client ID connects to the Hub, the computer can access all of the ports in the specified groups.

1. Open the web UI.
2. Select **System** > **Configuration** > **AnywhereUSB Configuration**. The **AnywhereUSB Configuration** page appears.
3. Expand the **Client Settings** section.
4. In the client list, select the client ID to which you want to assign groups. Information about the selected client ID displays in the **Settings for Client** section.
5. Click the check box next to a group to which the computer is allowed access. As you select groups, the selected group numbers appear in the **Group Access** field in the **Settings for Client** section.

   You can also manually enter group numbers in the **Group Access** field.

6. Click **Apply** to save the changes.

Connect to a group or USB device in the AnywhereUSB Manager

When you connect to a group, you are given exclusive access to all of the ports in the group to which you are allowed access. All other users are blocked from access to the ports in that group until you disconnect from the group. A user can connect to more than one group at a time.

Note If you have enabled auto connect for a group, you are automatically connected to those groups when you log in to your computer and **AnywhereUSB Manager** opens automatically, or when you manually open and log into **AnyhwereUSB Manager**. See Configure auto connect.

When a USB device is plugged in to a port on a Hub, the device displays in the list of devices in the group. Note that a group may have ports that do not have a connected device. Only ports with a connected USB device display in the **AnywhereUSB Manager**.

Connect to a group or a USB device in the AnywhereUSB Manager

You can connect to all of the USB devices and ports in a group, or to one device in a group.

- **Connect to a group**: To connect to a group, right-click on the group name and click Connect to Group.
- **Connect to a USB ports in a group**: You can connect to the USB ports in a group depending on whether you are allowed access to the port and if you are connected to the group:
  - If you are connected to the group, right-click on a USB device name and click Connect to Device. You are connected to that USB device and to all of the USB ports in the group.
  - If you are not connected to the group, right-click on the USB device name and click Connect to Group to connect to the group and the USB device.
  - If the group is owned by another user, you are not allowed to connect to the device.

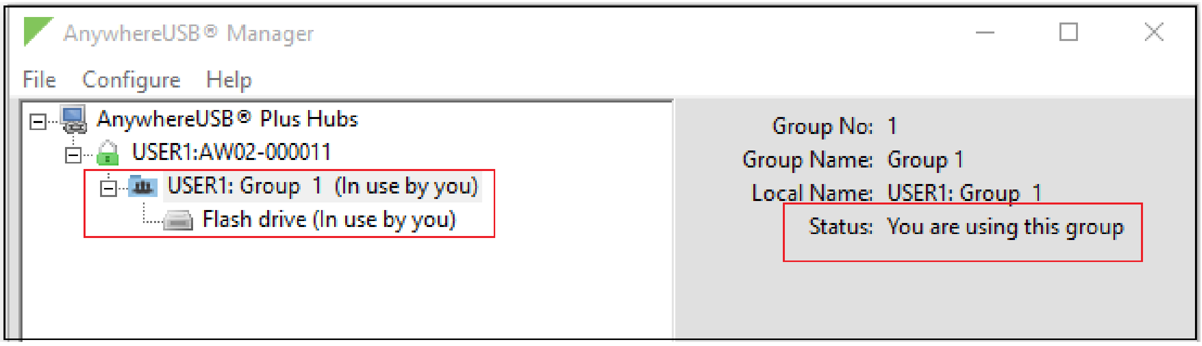
Connect to a group

You can connect to a group so that you have access to the ports in the group. Once you have connected to a group, no one else can connect to that group. You cannot connect to a group that is already is use.

When you have connected to a group, a note appears next to the group name, next to the devices in the group, and in the Group Status pane to show that the device is being used by you.

1. Open the **Anywhere USB Manager**.
2. Expand **AnywhereUSB Hubs** to display the Hubs.

3. Expand a Hub to display the groups in the Hub.
4. Right-click on the group to which you want to connect.
5. Select **Connect to Group**. A note appears next to the group name, next to the devices in the group, and in the Group Status pane to show that the device is being used by you.



AnywhereUSB® Plus Hubs
USER1:AW02-000011
USER1: Group 1 (In use by you)
Flash drive (In use by you)

Group No: 1
Group Name: Group 1
Local Name: USER1: Group 1
Status: You are using this group

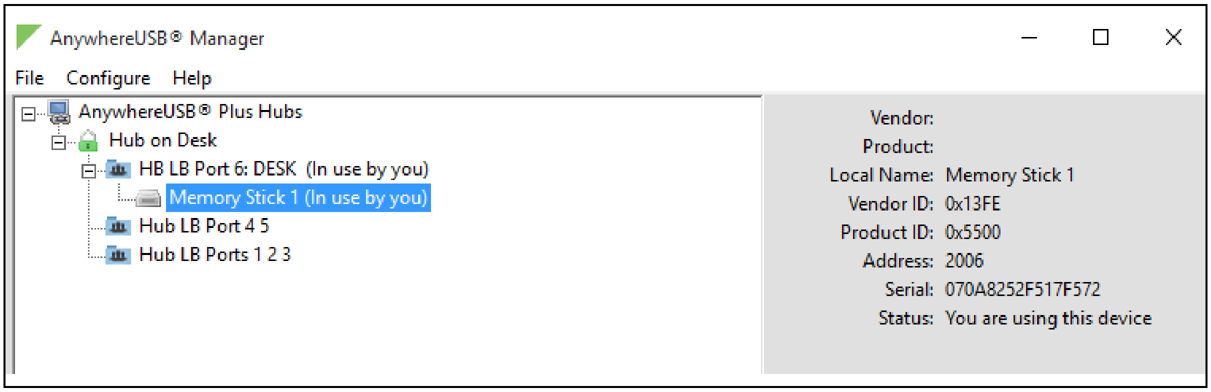
Connect to a USB device

You can connect to a USB device in a group to which you have access. You cannot connect to a device in a group that is already is use by another user.

When you have connected to a device, a note appears next to the device name and in the Device Status pane to show that the device is being used by you.

1. Open the **Anywhere USB Manager**.
2. Expand **AnywhereUSB Hubs** to display the Hubs.
3. Expand a Hub to display the groups in the Hub.
4. Expand a group to display the USB devices in the group.
5. Right-click on the device to which you want to connect.
6. The connect menu option available depends on whether you are already connected to the group.
   - **Connected to the group**: Right-click on the USB device name and click **Connect to Device** to connect to the USB device.
   - **Not connected to the group**: Right-click on the USB device name and click **Connect to Group** to connect to the group and the USB device.

   A note appears next to the device name and in the Device Status pane to show that the device is being used by you.



Vendor:
Product:
Local Name: Memory Stick 1
Vendor ID: 0x13FE
Product ID: 0x5500
Address: 2006
Serial: 070A8252F517F572
Status: You are using this device

Manage the Hubs using the AnywhereUSB Manager

You can use the **AnywhereUSB Manager** to view the AnywhereUSB Plus Hubs that are allowed to connect to your computer. You can also connect to groups of USB ports on the Hubs.

By default, the **AnywhereUSB Manager** is configured to automatically discover Hubs that are connected to the same network as your computer. You can allow a connection to additional Hubs that are not on the same network.

Note Before you begin, make sure you have installed the **AnywhereUSB Manager**.

Note The **AnywhereUSB Manager** supports the AnywhereUSB Plus family of products: AnywhereUSB 2 Plus, AnywhereUSB 8 Plus, AnywhereUSB 24 Plus. The earlier AnywhereUSB products (AnywhereUSB 2, AnywhereUSB 5, and AnywhereUSB 14) use a different driver package. For more information, please refer to the AnywhereUSB product page.

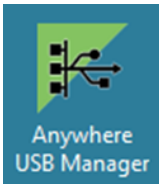
Start the AnywhereUSB Manager

You can search for and launch the **Anywhere USB Manager** using the Windows application search feature or from the Digi International **Start** menu.

If you selected the **Run AnywhereUSB Manager at Startup** option during the installation process, the tool launches automatically each time you log into your computer. See Install the AnywhereUSB Manager.

To manually start the **Anywhere USB Manager**:

1. Log in to your computer.
2. Double-click the **Anywhere USB Manager** shortcut on your desktop.



Rename AnywhereUSB Hubs, groups, and USB devices

Each AnywhereUSB Hub and group has a default name that displays in the **AnywhereUSB Manager**. You can also assign a local name to each Hub, group, or USB device that displays in the **AnywhereUSB Manager**, which can help you to uniquely identify your local Hubs, groups, and USB devices.

The local name is local to the computer on which the **AnywhereUSB Manager** is running. No other user can see the local name.

- Assign a local name to a Hub
- Assign a local name to a group
- Assign a local name to a USB device

Assign a local name to a Hub

You can give a AnywhereUSB Hub a local name. The name displays in the Hub Status pane in the **AnywhereUSB Manager** and also in the tree view. The local name is local to the computer on which the **AnywhereUSB Manager** is running.

Note The Hub local name is different from the default Hub name. For detailed information about the default name, see Rename a Hub and the groups in a Hub.

1. Open the **AnywhereUSB Manager**.
2. Expand **AnywhereUSB Hubs** to display the Hubs.
3. Right-click on the Hub that you want to give a local name.
4. Select the **Assign Local Name** menu option. A dialog appears.

5. In the field, enter a local name for the Hub.
6. Click **OK**.

Assign a local name to a group

You can give a group a descriptive local name. The local name displays in the Group Status pane in the **AnywhereUSB Manager** and also in the tree view. The local name can be seen only on the computer on which the **AnywhereUSB Manager** is running.

Note The group local name is different from the default group name. For detailed information about the default name, see Rename a Hub and the groups in a Hub.

1. Open the **AnywhereUSB Manager**.
2. Expand **AnywhereUSB Hubs** to display the Hubs.
3. Expand the Hub that has the group you want to give a local name.
4. Right-click on the group that you want to rename.
5. Select the **Assign Local Name** menu option. A dialog appears.
6. Enter a local name for the group.
7. Click **OK**.

Assign a local name to a USB device

You can assign a local name to a USB device that displays in the in the Device Status pane and also in the tree view. The local name is local to the computer on which the **AnywhereUSB Manager** is running.

1. Open the **AnywhereUSB Manager**.
2. Expand **AnywhereUSB Hubs** to display the Hubs.
3. Expand the Hub that has the group to which the to USB device is attached.
4. Expand the appropriate group to display the USB devices in the group.
5. Right-click on the USB device that you want to give a local name.
6. Select the **Assign Local Name** menu option. A dialog appears.
7. In the field, enter a local name for the USB device.
8. Click **OK**.

Disconnect from a group or USB device

You can disconnect from any group or USB device in the group to which you no longer need access.

- Disconnect from a group
- Disconnect from a USB device

Disconnect from a group

You can disconnect from a group that has ports you no longer need access to. You are disconnected from all USB devices and ports in that group. Any other user can then connect to that group.

Note If you have auto connect enabled for the group, you are not allowed to disconnect from the group. You have to first disable auto connect, and then disconnect from the group. The next time you log in to your computer, you will not be automatically connected to this group.

1. Open **AnywhereUSB Manager**.
2. Expand **AnywhereUSB Hubs** to display the Hubs.
3. Expand a Hub to display the groups in the Hub.
4. Right-click on the AnywhereUSB group from which you want to disconnect.
5. Select **Disconnect from Group**. A note appears in the Group Status pane to show that the group is not being used.

Disconnect from a USB device

You can disconnect from a USB device to which you no longer need access. You can disconnect from a USB device that is in a group to which you are connected. Other users cannot connect the USB device, since you still own the group that the USB device is in.

Note If you have auto connect enabled for the group, you can disconnect from a USB device in the group, but note that the device will be connected again the next time you log in to your account.

1. Open **AnywhereUSB Manager**.
2. Expand **AnywhereUSB Hubs** to display the Hubs.
3. Expand a Hub to display the groups in the Hub.
4. Expand a group to display the USB devices in the group.
5. Right-click on the USB device from which you want to disconnect.
6. Select **Disconnect from Device**. A note appears in the Device Status pane to show that the device is not being used.

Configure auto connect

You can enable the auto connect feature for a group (or multiple groups). This feature ensures that whenever you open the **AnywhereUSB Manager**, you are automatically connected to all of the groups to which you are allowed access that have auto connect enabled.

If you have auto connect enabled for the group, auto connect controls how you can disconnect from a group:

- You are not allowed to disconnect from the group. You have to first disable auto connect, and then disconnect from the group. The next time you start your computer, you will not be automatically connected to this group.
- You can disconnect from a USB device in the group, but note that the device will be connected again the next time you start your computer.

For this to work as expected, you should also choose to automatically start the **AnywhereUSB Manager** each time you start your computer.

For example, you can enable auto connect for a group that has a camera connected to a port in the group. Every time the computer starts, the **AnywhereUSB Manager** starts and automatically connects the camera to your computer.

Enable auto connect for a group

You can choose to automatically connect to a selected group each time you open the **AnywhereUSB Manager**.

Note You can disable auto connect at any time.

1. Open **AnywhereUSB Manager**.
2. Expand **AnywhereUSB Hubs** to display the Hubs.
3. Expand a Hub to display the groups in the Hub.
4. Right-click on the AnywhereUSB group to which you want to automatically connect.
5. Select **Enable Auto Connect**. If you were not already connected to the group, you are immediately connected to the group. A note appears next to the group name and in the Group Status pane to show that you are connected to the group.

Disable auto connect for a group

After you have enabled auto connect for a group, you can disable this option. You will no longer automatically connect to this group when you open the **AnywhereUSB Manager**.

1. Open the **AnywhereUSB Manager**.
2. Expand **AnywhereUSB Hubs** to display the Hubs.
3. Expand a Hub to display the groups in the Hub.
4. Right-click on the AnywhereUSB group to which you no longer want to automatically connect at start up.
5. Select **Disable Auto Connect** to turn off the auto connect feature for the group.

Manage the list of known Hubs

You can create a list of Hubs to which your **AnywhereUSB Manager** is allowed to connect when you open it. The Hubs you add to the list can be on the same network as your computer, or on a different network.

Hubs that you have added to the known Hubs list display when you open the **AnywhereUSB Manager**. These Hubs are in addition to any Hubs that are automatically discovered if you have enabled the **Autofind Hubs feature**.

Add a Hub to the known Hub list

You can manually add Hubs to the known Hub list. The Hubs can be on the same network as your computer, or on a different network.

1. Open the **AnywhereUSB Manager**.
2. Select **Configure > Known Hubs**. The **Known Hubs** dialog appears.
3. Click **Add**. The **Add Known Hub** dialog appears.
4. In the **Hub Address** field, enter the Hub IP address.
5. If you want to update the TCP port number, click **Advanced**. The **Hub TCP port (most systems should leave at default)** field displays.

   a. In the **Hub TCP port (most systems should leave at default)** field, a TCP port number is entered by default. You can change this entry, but it is not recommended.
   b. Click **Standard** to hide the **Hub TCP port (most systems should leave at default)** field.
6. Click **OK**. The Hub appears in the Hub list in the **Known Hubs** dialog.
7. Click **Close** to close the **Known Hubs** dialog. The **AnywhereUSB Manager** attempts to connect to the new Hub.

Remove a Hub from the known Hub list

You can remove a known Hub that was added to the known Hubs list.

1. Open the **AnywhereUSB Manager**.
2. Select **Configure > Known Hubs**. The **Known Hubs** dialog appears.
3. From the list of known Hubs, select the Hub you want to remove.
4. Click **Remove**.
5. Click **Close** to close the **Known Hubs** dialog.

Working with the known Hubs list and the Autofind Hubs option

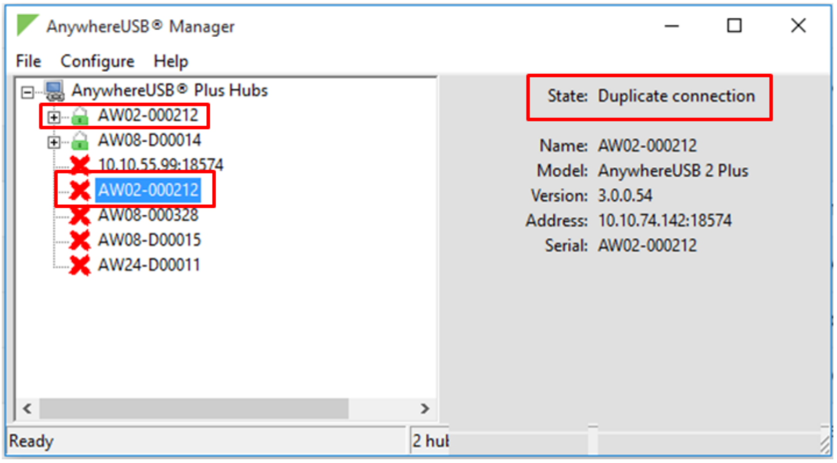
You should be aware of how the **Autofind Hubs** option works with the Hubs you add to the known Hubs list.

If you have the **Autofind Hubs option** selected for the Hub, when you open the **AnywhereUSB Manager**, all Hubs connected to the same network as your computer are automatically found and appear in the **AnywhereUSB Manager**. In addition, any Hubs you have added to the known Hubs list are found and also appear.

Duplicate connection

If you have added a Hub to the known Hub list that is on same network as your computer, and you have the **Autofind Hubs** feature enabled, the Hub is found twice and appears twice in the **AnywhereUSB Manager**. When you select the duplicate Hub in the **AnywhereUSB Manager**, the state for that Hub is noted as "Duplicate connection" in the **Status** field.

In this situation, the Hub added to the known Hubs list is considered a duplicate Hub, and should be removed from the known Hubs list.



AnywhereUSB® Plus Hubs
- AW02-000212
- AW08-D00014
- 10.10.55.99:18574
- AW02-000212
- AW08-000328
- AW08-D00015
- AW24-D00011

State: Duplicate connection

Name: AW02-000212
Model: AnywhereUSB 2 Plus
Version: 3.0.0.54
Address: 10.10.74.142:18574
Serial: AW02-000212

Considerations for removing a Hub on the same network as your computer

If you have the **Autofind Hubs** feature enabled and then remove a Hub from known Hubs list that was on the same network as your computer, the Hub will still be automatically found and connected to your computer when you open the **AnywhereUSB Manager**.

If you do not want the computer to be able to connect this Hub, you must de-select the **Autofind Hubs** option. Note, however, that if this option is de-selected, Hubs on the same network as your computer will not be automatically found. Only the Hubs in the list of known Hubs will be available when you open the **AnywhereUSB Manager**.

Note As an alternative, you can choose to hide a Hub that is automatically found. This ensures that while the Hub is still automatically found, it does not appear in the **AnywhereUSB Manager**.

Hide an individual Hub

You can choose to hide an individual Hub so that it does not appear in the **AnywhereUSB Manager**. For example, you can hide an unauthorized Hub, or a Hub which users shouldn't access.

- You can choose to hide Hubs that currently display in the **AnywhereUSB Manager**, such as an unauthorized Hub (which displays with a red X next to the Hub name), or a Hub which users shouldn't access. See Hide a Hub that displays in the AnywhereUSB Manager.
- You can also choose to hide Hubs that don't currently display in the **AnywhereUSB Manager**, but the client ID may have access in the future, such as a Hub on another network. See Hide a Hub that does not currently display in the AnywhereUSB Manager.

Note You can choose to automatically hide all unauthorized Hubs, which is a Hub that has failed to connect to your computer. See Hide all unauthorized Hubs.

Hide a Hub that displays in the AnywhereUSB Manager

Note After you have hidden a Hub, you can choose to re-display it. See Display a hidden Hub.

1. Open **AnywhereUSB Manager**.
2. Right-click on the Hub that you want to hide. The shortcut menu appears.
3. Click **Hide Hub**. The next time the **AnywhereUSB Manager** updates, the hidden Hub is removed from the Hub list and no longer displays.

Hide a Hub that does not currently display in the AnywhereUSB Manager

Note After you have hidden a Hub, you can choose to re-display it. See Display a hidden Hub.

1. Open the **AnywhereUSB Manager**.
2. Select **Configure > Hidden Hubs**. The **Hidden Hubs** dialog appears.
3. Click **Add**. The **Add Hidden Hub** dialog appears.
4. In the **Hub Address** field, enter the Hub IP address.

5. If you want to update the TCP port number, click **Advanced**. The **Hub TCP port (most systems should leave at default)** field displays.
    a. In the **Hub TCP port (most systems should leave at default)** field, a TCP port number is entered by default. You can change this entry, but it is not recommended.
    b. Click **Standard** to hide the **Hub TCP port (most systems should leave at default)** field.
6. Click **OK**. The Hub appears in the Hub list in the **Hidden Hubs** dialog.
7. Click **Close** to close the **Hidden Hubs** dialog.

Display a hidden Hub

You can display any Hub that was hidden using the **Hide Hub** menu option.

1. Open **AnywhereUSB Manager**.
2. Choose **Configure > Hidden Hubs**. The **Hidden Hubs** dialog appears.
3. Click on the Hub that you no longer want to hide. To select more than one Hub, press CTRL as you select Hub.
4. Click **Remove**. The selected Hubs are removed from the list.
5. Click **Close**. The next time the **AnywhereUSB Manager** updates, the hidden Hubs appear in the list of Hubs.

Hide all unauthorized Hubs

You can choose to automatically hide all unauthorized Hubs, so they do not display in the **AnywhereUSB Manager**. An unauthorized Hub is a Hub that has failed to connect to your computer. A red X appears next to the Hub name.

- Automatically hide unauthorized Hubs
- Display unauthorized Hubs

Note You can choose to automatically hide any indivudual Hub. See Hide an individual Hub.

Automatically hide unauthorized Hubs

You can choose to automatically hide all unauthorized Hubs, which is a Hub that has failed to connect to your computer. An unauthorized Hub appears with a red X next to it in the list of Hubs in the **AnywhereUSB Manager**.

Note After you have hidden unauthorized Hubs, you can choose to re-display unauthorized, hidden Hubs. See Display unauthorized Hubs.

1. Open **AnywhereUSB Manager**.
2. Choose **File > Preferences**. The **Preferences** dialog appears.
3. Select the **Hide unauthorized Hubs** option.
4. Click **Save**. Hubs that have failed to connect no longer display in the **AnywhereUSB Manager**.

Display unauthorized Hubs

You can display the unauthorized Hubs that were hidden using the **Hide unauthorized Hubs** option.

1. Open **AnywhereUSB Manager**.
2. Choose **File > Preferences**. The **Preferences** dialog appears.
3. De-select the **Hide unauthorized Hubs** option.
4. Click **Save**. Hubs that have failed to connect now display in the **AnywhereUSB Manager**.

Minimize the AnywhereUSB Manager when launched

You can choose to automatically minimize the **AnywhereUSB Manager** when it launches.

1. Open **AnywhereUSB Manager**.
2. Choose **File > Preferences**. The **Preferences** dialog appears.
3. Click the **Setup** tab.
4. Determine whether you want to automatically minimize the **AnywhereUSB Manager** when it launches.
   - Select **Start Manager minimized** to automatically minimize the **AnywhereUSB Manager** when it launches.
   - De-select **Start Manager minimized** to open the **AnywhereUSB Manager** when it launches.
5. Click **Save**.

Autofind Hubs when the AnywhereUSB Manager launches

You can choose to automatically find Hubs connected to the network when **AnywhereUSB Manager** launches and repeatedly while the **AnywhereUSB Manager** is running, based on the interval specified in the **Preferences** dialog.

1. Open **AnywhereUSB Manager**.
2. Choose **File > Preferences**. The **Preferences** dialog appears.
3. Click the **Setup** tab.
4. Determine whether you want to automatically find Hubs on the network when **AnywhereUSB Manager** launches.
   - Select **Autofind Hubs** to automatically find Hubs on the network. This is the default.
   - De-select **Autofind Hubs** to ensure that the Hubs are not automatically found. In this case, you must manually add the Hubs to which you want to connect.
5. Click **Save**.

Specify search, response, and keepalive intervals for a Hub

You can specify the search and response time for Hubs on the network, and the keepalive intervals for the connection between the Hub and the **AnywhereUSB Manager**.

1. Open **AnywhereUSB Manager**.
2. Choose **File > Preferences**. The **Preferences** dialog appears.
3. Click the **Advanced** tab.

4. Enter the following:
   - **Search for Hubs every .... sec**: Specifies how often the **AnywhereUSB Manager** searches the local network to discover AnywhereUSB Hubs and refresh the **AnywhereUSB Manager** display.

     Note You cannot manually perform a refresh of the Hubs displayed in the **AnywhereUSB Manager**.

   - **Wait for Hub response for .... sec**: Specifies the time interval from the last discovery refresh that the **AnywhereUSB Manager** will stop looking for more Hubs.
   - **Send Keep-Alive every ... sec**: Specifies how often the **AnywhereUSB Manager** sends a keepalive request to the Hubs connected to the network. This impacts network utilization because each **AnywhereUSB Manager** will send one packet at this interval to each Hub to which it is connected.
   - **Keep-Alive Timeout ... sec**: Specifies how long the **AnywhereUSB Manager** should wait for a keepalive response. When the value of the response time is reached, the Manager decides that a Hub is no longer available, and the computer is disconnected from all groups and devices on that Hub.
     - The keepalive timeout value would need to be longer if the network has more latency (such as a cellular or satellite link), or an internet link with unreliable packet delivery.
     - If the value is too short, devices will be disconnected, which may have an adverse affect on some devices, such as USB memory.
     - If the value is too long, Hubs that are removed from the network will not be noticed as gone for a long time, and devices that are no longer connected will be unresponsive for a long time.
5. Click **Save**.

Manage Hub credentials

You can manually add, update, or remove the certificate associated with Hub on the **AnywhereUSB Manager**. The Hub and the **AnywhereUSB Manager** must have matching certificates to be able to communicate.

This feature works with the **Auto-register Hub Cert** option in the **Preferences** dialog. You should determine whether you want to automatically register a Hub's certificate with the **AnywhereUSB Manager**.

Enable and disable the auto-register Hub certificate

You can choose to automatically find Hubs connected to the network when **AnywhereUSB Manager** launches.

1. Open **AnywhereUSB Manager**.
2. Choose **File > Preferences**. The **Preferences** dialog appears.
3. Click the **Setup** tab.
4. Determine whether you want to automatically register a Hub with the **AnywhereUSB Manager**.

- Select **Auto-register Hub Cert** to automatically register a Hub certificate with the **AnywhereUSB Manager**. This is the default.
- De-select **Auto-register Hub Cert** to ensure that the Hub certificates are not automatically registered. In this case, you must manually register a certificate for each Hub.

5. Click **Save**.

Update a Hub certificate

You can choose to manually update a Hub's certificate and register a new certificate with the **AnywhereUSB Manager**. This ensures that the Hub and the **AnywhereUSB Manager** can communicate.

1. Open **AnywhereUSB Manager**.
2. Choose **Configure** > **Manage Hub Credentials**. The **Manage Hub Credentials** dialog appears.
3. Select the Hub for which you want to update the certificate.
4. Click **Update**. The **Choose a credential file** window appears.
5. Browse for the new certificate file and click **Open**. The file should have a .pem extension.
6. An update message displays in the **Manage Hub Credentials** dialog.
7. Click **Close**.

Remove a Hub certificate

You can choose to remove a Hub to which you no longer want the **AnyhwereUSB Manager** to connect.

After you have removed a Hub certificate, if you have the Auto-register Hub Cert option selected in the **Preferences** dialog, a new certificate for the Hub is automatically registered with the **AnyhwereUSB Manager** at the next connection attempt or the next time the Hub is discovered by the Manager. If this option is not selected and you want the **AnywhereUSB Manager** to connect to the Hub, you can manually add the Hub to register a new certificate.

1. Open **AnywhereUSB Manager**.
2. Choose **Configure** > **Manage Hub Credentials**. The **Manage Hub Credentials** dialog appears.
3. Select the Hub that you want to remove.
4. Click **Close**.

Add a Hub certificate

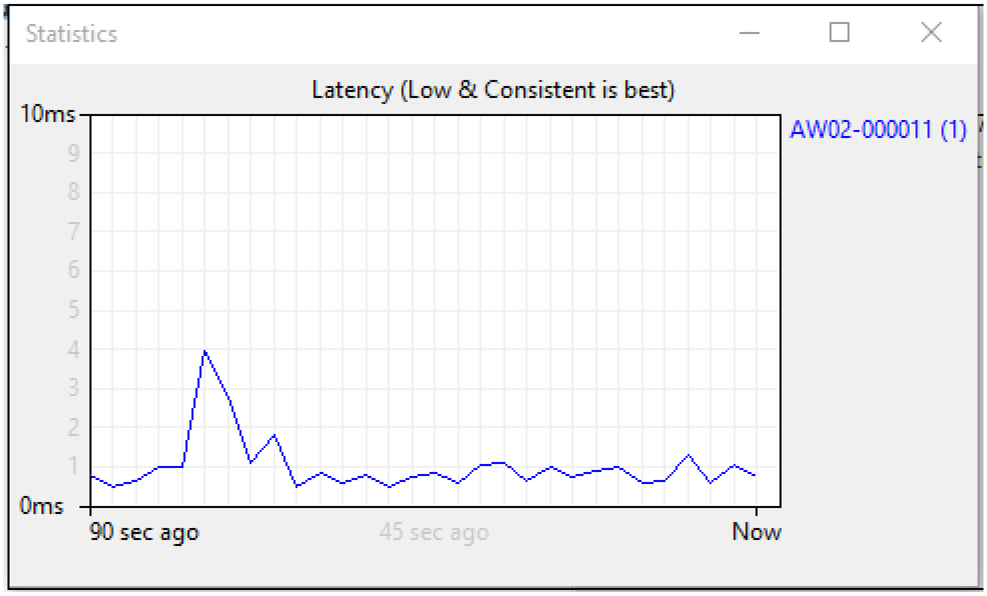
You can manually add a Hub, which registers the Hub's certificate with the **AnywhereUSB Manager**.

1. Open **AnywhereUSB Manager**.
2. Choose **Configure** > **Manage Hub Credentials**. The **Manage Hub Credentials** dialog appears.
3. In the **Serial number** field, enter the Hub's serial number.
4. Click **Add**. The **Choose a credential file** window appears.
5. Browse for the new certificate file and click **Open**. The file should have a .pem extension.
6. An update message displays in the **Manage Hub Credentials** dialog.
7. Click **Close**.

View latency graph

You can review the relative latency of all of the Hubs connected to the network.

1. Open the **AnywhereUSB Manager**.
2. Select **Help > Latency graph** to display the latency graph.



View the AnywhereUSB Manager system messages

You can view the system message log of the **AnywhereUSB Manager** events. The date and time at which an event occurred is listed, as well as the event type and additional information. A new log is created each time you start the **AnywhereUSB Manager**.

The system message log is used for troubleshooting.

1. Open the **AnywhereUSB Manager**.
2. Select **Help > System Messages**. The **System Messages** dialog appears.
   - Click **Clear Log** to clear the system messages from the log.
   - Click **Copy to Clipboard** to copy the messages to the Windows clipboard. You can then paste the messages into another application or document.
3. Click **Close** to close the **System Messages** dialog.

View AnywhereUSB license information

You can view license information about the AnywhereUSB Hub.

1. Open the **AnywhereUSB Manager**.
2. Select **Help > About**. The **License** dialog appears.
3. Scroll down to review all of the information.
4. Click **Close** to close the dialog.

Restore AnywhereUSB Manager default configuration

You can restore the **AnywhereUSB Manager** to the default settings. During this process, you have the option to keep your currently configured client ID and identity certificate during this process. See Client ID for more information about how the client ID is used by your computer and the Hub to create a connection.

- Keep the current client ID
- Change the client ID

Keep the current client ID

To restore the Hub's default settings and keep your currently configured client ID and identity certificate:

1. Open the **AnywhereUSB Manager**.
2. Select **File > Preferences**. The **Preferences** dialog appears.
3. Click the **Setup** tab.
4. Click **Restore default settings**. A dialog appears.
5. Select the **Keep Client ID** option. This is selected by default.
6. Click **OK**. The **AnywhereUSB Manager** closes automatically. The next time you launch the **AnywhereUSB Manager**, the default settings will be restored.

Change the client ID

To restore the Hub's default settings and change your currently configured client ID and identity certificate:

1. Open the **AnywhereUSB Manager**.
2. Select **File > Preferences**. The **Preferences** dialog appears.
3. Click **Restore default settings**. A dialog appears.
4. De-select the **Keep Client ID** option.
5. Click **OK**. The **AnywhereUSB Manager** closes automatically.
6. Open the **AnywhereUSB Manager** again. The **Client ID** confirmation dialog appears.
7. Enter a new, unique client ID.
8. Click **OK**. The **AnywhereUSB Manager** launches.

AnywhereUSB Manager window

The **AnywhereUSB Manager** displays AnywhereUSB Hubs, groups, and USB devices. Click the plus sign next to each name in the window to display a hierarchy of found Hubs, groups, and USB devices.

Information about the icons in the screen and the menu options can be found here:

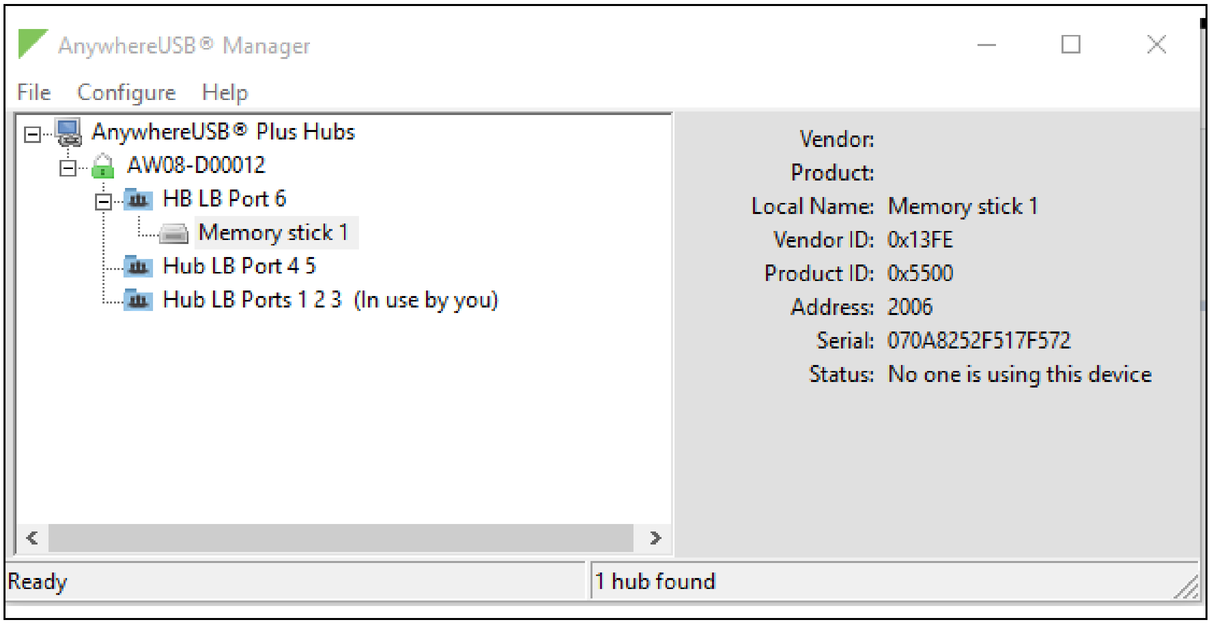
- AnywhereUSB Manager icons and toolbar
- AnywhereUSB Manager menu options

You can use the menus associated with the Hubs, groups, and USB devices to configure local names, preferences, and connections. Right-click on a Hub, group, or device name to display the menus.

- AnywhereUSB Manager Hub menu options
- AnywhereUSB Manager group menu options
- AnywhereUSB Manager USB device menu options

Click on a Hub, group, or device name to display information about the selected Hub, group, or device in the status pane on the right side of the **AnywhereUSB Manager**.

- AnywhereUSB Manager Hub Status pane
- AnywhereUSB Manager Group Status pane
- AnywhereUSB Manager Device Status pane



Vendor:
Product:
Local Name: Memory stick 1
Vendor ID: 0x13FE
Product ID: 0x5500
Address: 2006
Serial: 070A8252F517F572
Status: No one is using this device

Access the online help from the AnywhereUSB Manager

1. Open the **AnywhereUSB Manager**.
2. Click **Help > Online Manual** to launch the online help file.

AnywhereUSB Manager window

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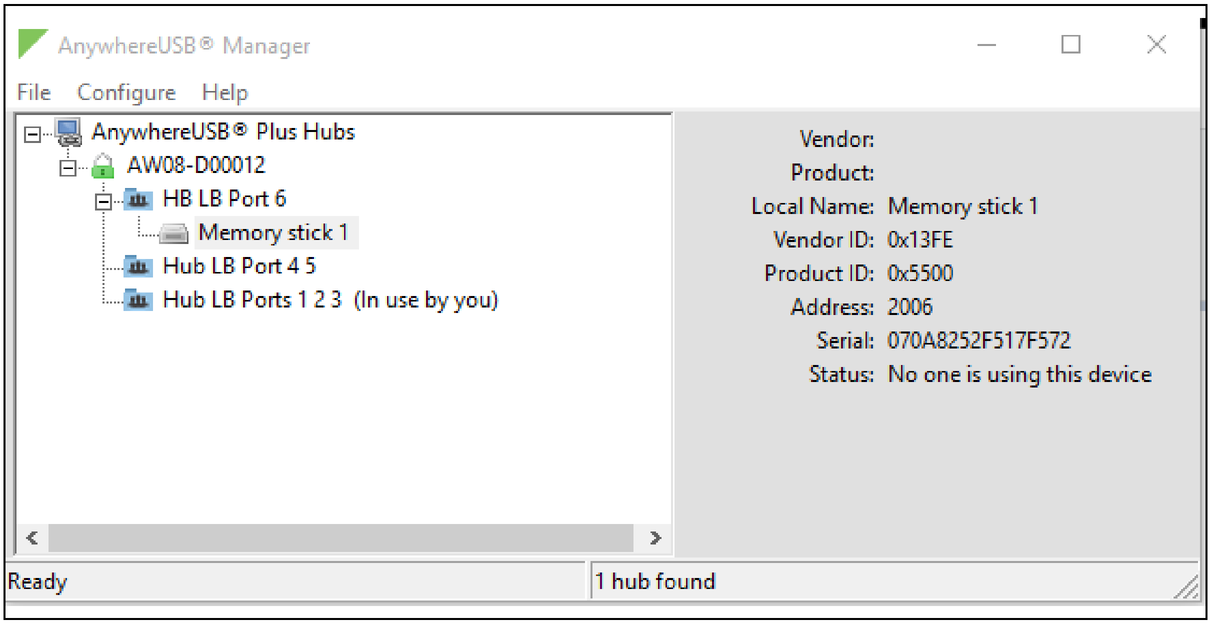
- AnywhereUSB Manager Hub menu options
- AnywhereUSB Manager group menu options
- AnywhereUSB Manager USB device menu options

Click on a Hub, group, or device name to display information about the selected Hub, group, or device in the status pane on the right side of the **AnywhereUSB Manager**.

- AnywhereUSB Manager Hub Status pane
- AnywhereUSB Manager Group Status pane
- AnywhereUSB Manager Device Status pane



Vendor:
Product:
Local Name: Memory stick 1
Vendor ID: 0x13FE
Product ID: 0x5500
Address: 2006
Serial: 070A8252F517F572
Status: No one is using this device

AnywhereUSB Manager icons and toolbar

This section explains how to use the icons in the **AnywhereUSB Manager** and what they represent.

The icons in the **AnywhereUSB Manager** show the status of a Hub.

Icon	Location	Description
🔒	Hub	Green lock: Active and secure connection between the Hub and the PC.
●	Hub	Yellow dot: The PC and Hub are attempting to connect.
✗	Hub	Red X: Connection between the Hub and the PC failed.

The toolbar icons manage the **AnywhereUSB Manager** dialog.

Icon	Description
—	Minimizes the **AnywhereUSB Manager** into the task bar and the notification area of the task bar.
□	Maximizes the **AnywhereUSB Manager**.
×	Minimizes the **AnywhereUSB Manager** into the notification area of the task bar.

AnywhereUSB Manager menu options

You can use the menu options to view AnywhereUSB Hub information.

- File > Preferences
- File > Exit
- Configure > Known Hubs
- Configure > Hidden Hubs
- Configure > Manage Hub Credentials
- Help > System Messages
- Help > Latency graph
- Help > Online Manual
- Help > About

AnywhereUSB Manager Hub menu options

Right-click on a Hub name in the **AnywhereUSB Manager** to configure and maintain the Hub.

- Open Web UI
- Assign Local Name

AnywhereUSB Manager group menu options

Right-click on a group name in the **AnywhereUSB Manager** to configure and maintain the group.

- Connect to Group
- Disconnect from Group
- Enable Auto Connect
- Disable Auto Connect
- Assign Local Name

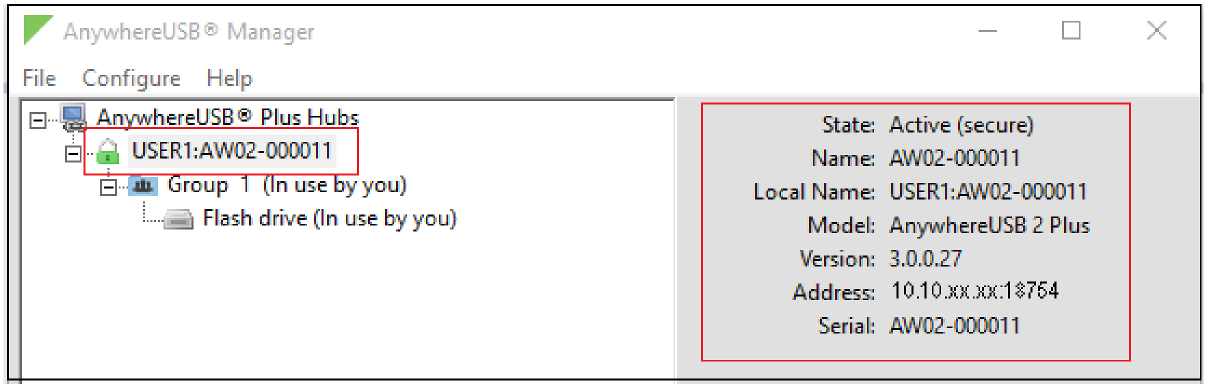
AnywhereUSB Manager USB device menu options

Right-click on a USB device name in the **AnywhereUSB Manager** to configure and connect to the USB device.

- Connect to Device
- Connect to Group
- Disconnect from Device
- Assign Local Name

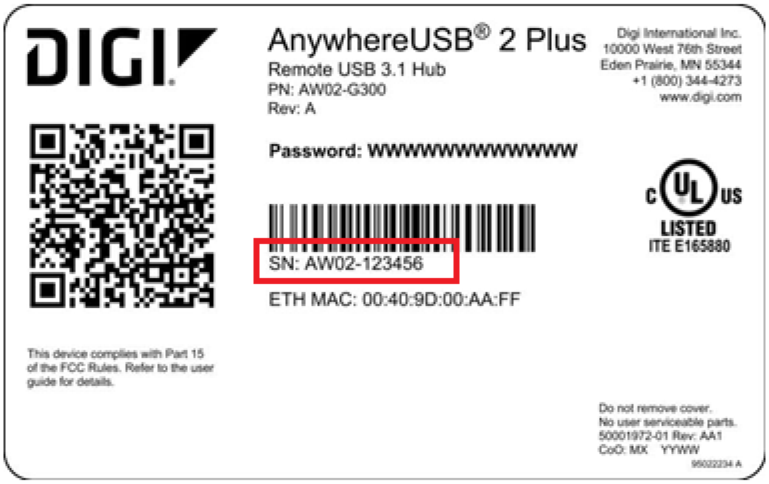
AnywhereUSB Manager Hub Status pane

When you select an AnywhereUSB Hub in the **AnywhereUSB Manager**, information about the Hub displays in the Hub Status pane.



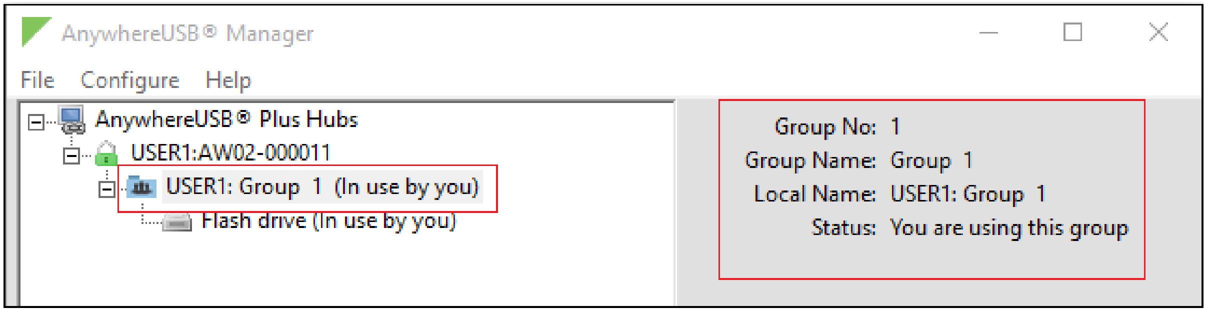
State: Active (secure)
Name: AW02-000011
Local Name: USER1:AW02-000011
Model: AnywhereUSB 2 Plus
Version: 3.0.0.27
Address: 10.10.xx.xx:18754
Serial: AW02-000011

Label	Description
State	The current state of the Hub. Options are: ■ **Connecting** ■ **Authenticating** ■ **Active (secure)**: A green lock icon appears next to the Hub name. ■ **Error**: If an error has occurred, a red X icon appears next to the Hub name. ■ **Duplicate connection**: If a Hub that is on the same network as your computer has been added to the known Hubs list, and the **Autofind Hubs** feature is enabled, a duplicate Hub displays in the AnywhereUSB Manager. The duplicate Hub will be in the **Duplicate connection** state. See Manage the list of known Hubs. ■ **Unregistered client ID**: The client ID is not in the client list for the Hub. The Hub administrator needs to allow each new client ID by adding the client ID to the client list. See AnywhereUSB Manager icons and toolbar for more information about the Hub icons.

Label	Description
Name	The name of the Hub supplied by the Hub. The default value for the Hub name is the serial number assigned to the Hub. You can change the Hub name in the **Ethernet Network** section of the web UI. See Rename the Hub.
Local Name	A descriptive local name for the Hub. The local name also displays in the tree view in the left-hand pane in the **AnywhereUSB Manager**. The local name is local to the computer on which the **AnywhereUSB Manager** is running. You can change the local name using the Assign Local Name menu option for the Hub.
Model	The model name for the AnywhereUSB Hub.
Version	The version number of the firmware running on the Hub.
Address	The network address of the Hub.
Serial	The serial number of the Hub, which is found on the Hub label.  DIGI AnywhereUSB® 2 Plus Remote USB 3.1 Hub PN: AW02-G300 Rev: A Digi International Inc. 10000 West 76th Street Eden Prairie, MN 55344 +1 (800) 344-4273 www.digi.com Password: WWWWWWWWWWWWW SN: AW02-123456 ETH MAC: 00:40:9D:00:AA:FF c UL us LISTED ITE E165880 This device complies with Part 15 of the FCC Rules. Refer to the user guide for details. Do not remove cover. No user serviceable parts. 50001972-01 Rev: AA1 CoO: MX YYWW 95022234 A

AnywhereUSB Manager Group Status pane

When you select a group in the **AnywhereUSB Manager**, information about the group displays in the Group Status pane.

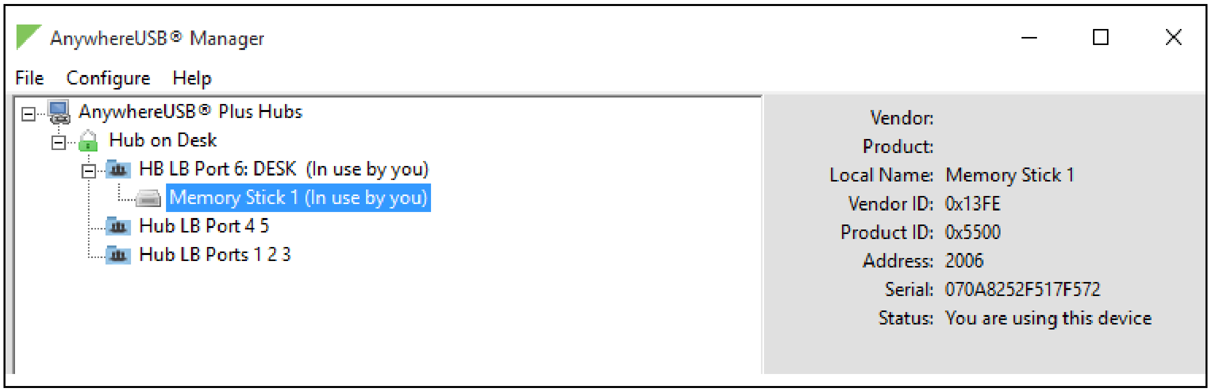


Group No: 1
Group Name: Group 1
Local Name: USER1: Group 1
Status: You are using this group

Label	Description
Group No	The group number from the Hub.
Group Name	The name of the group supplied by the Hub. By default, a group is named "Group" appended by a consecutive number, such as Group 1, Group 2, and so on. You can change the group name in the **AnywhereUSB** screen in the web UI. See Create groups and assign ports to the group.
Local Name	A descriptive local name for the group. The local name also displays in the tree view in the left-hand pane in the **AnywhereUSB Manager**. The local name is local to the computer on which the **AnywhereUSB Manager** is running. You can change the local name using the Assign Local Name menu option for the group.
Status	A status message indicates whether a user is currently connected this group. Options are: ■ You are using this group ■ No one is using this group ■ In use by <*client ID*> at <*machine name*>

AnywhereUSB Manager Device Status pane

When you select a USB device in a group in the **AnywhereUSB Manager**, information about the device displays in the Device Status pane.



Vendor:
Product:
Local Name: Memory Stick 1
Vendor ID: 0x13FE
Product ID: 0x5500
Address: 2006
Serial: 070A8252F517F572
Status: You are using this device

Label	Description
Vendor	Name of the USB device vendor, if supplied by the device.
Product	Name of the USB product, if supplied by the device.
Local Name	A descriptive local name for the USB device. The local name also displays in the tree view in the left-hand pane in the **AnywhereUSB Manager**. The local name is local to the computer on which the **AnywhereUSB Manager** is running. You can change the local name using the **Assign a Local Name** menu option for the device. See Assign a local name to a USB device.
Vendor ID	The USB vendor ID.
Product ID	The USB product ID.
Address	The USB device address that helps to identify a device.
Serial	The serial number of the USB device, if supplied by the device.
Status	A status message indicates whether a user is currently using this device. Options are: ▪ You are using this device ▪ No one is using this device ▪ In use by <*client ID*> at <*machine name*>

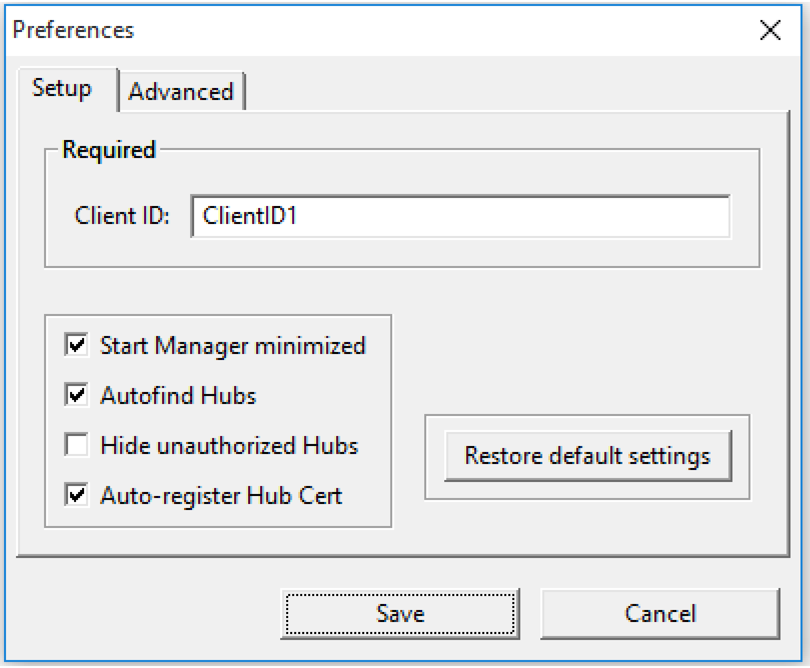
Set Hub preferences

In the **AnywhereUSB Manager**, you can set preferences for keepalive time messages and responses and how often the **AnywhereUSB Manager** searches for a Hub and the Hub response time.

Click **File > Preferences** to display the **Preferences** dialog.

Setup tab

- Client ID
- Start Manager minimized
- Autofind Hubs
- Hide unauthorized Hubs
- Auto-register Hub Cert
- Restore default settings



Required

Client ID: ClientID1

☑ Start Manager minimized

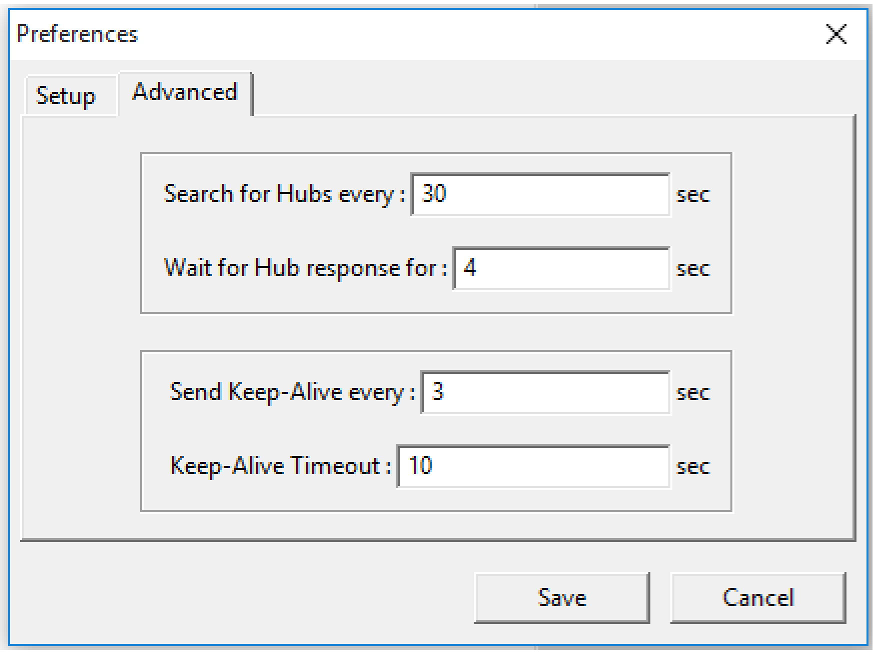
☑ Autofind Hubs

□ Hide unauthorized Hubs

☑ Auto-register Hub Cert

Advanced tab

Specify search, response, and keepalive intervals for a Hub



Search for Hubs every : 30 sec

Wait for Hub response for : 4 sec

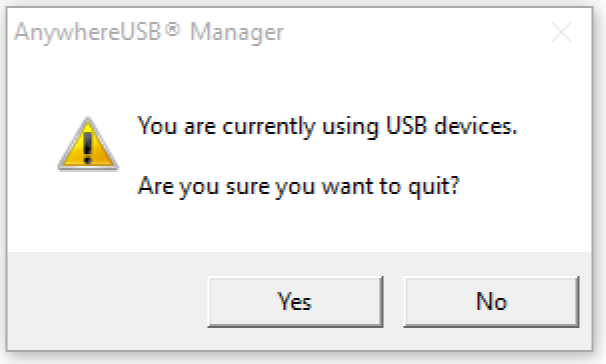
Send Keep-Alive every : 3 sec

Keep-Alive Timeout : 10 sec

Exit the AnywhereUSB Manager

You can log out of the AnywhereUSB Manager close the dialog.

1. Open the **AnywhereUSB Manager**.
2. Click **File > Exit** to disconnect all USB devices connected to your computer, close all connections, and close the **AnywhereUSB Manager**.
3. If you are connected to any USB devices, a confirmation dialog appears.



AnywhereUSB® Manager

You are currently using USB devices.

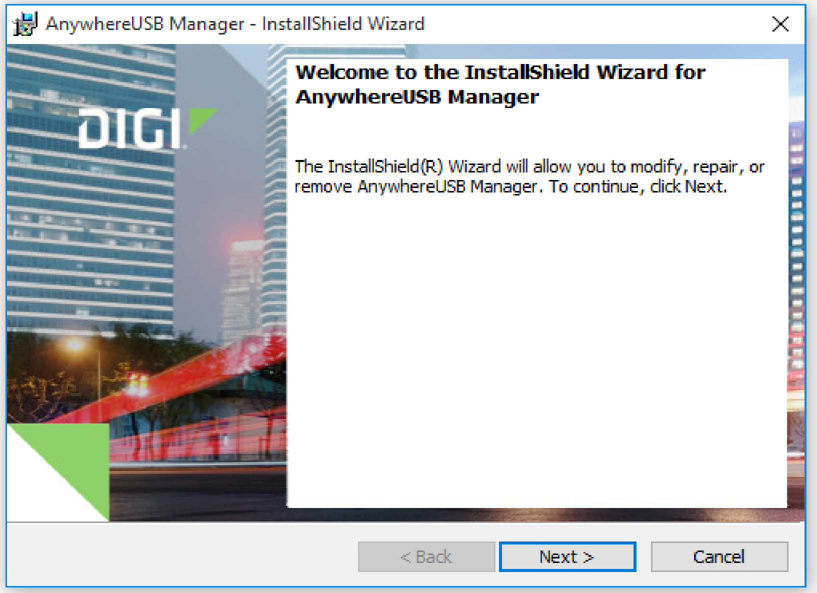
Are you sure you want to quit?

4. Click **Yes** to exit the **AnywhereUSB Manager**.

Uninstall the AnywhereUSB Manager

You can uninstall the **AnywhereUSB Manager** if needed.

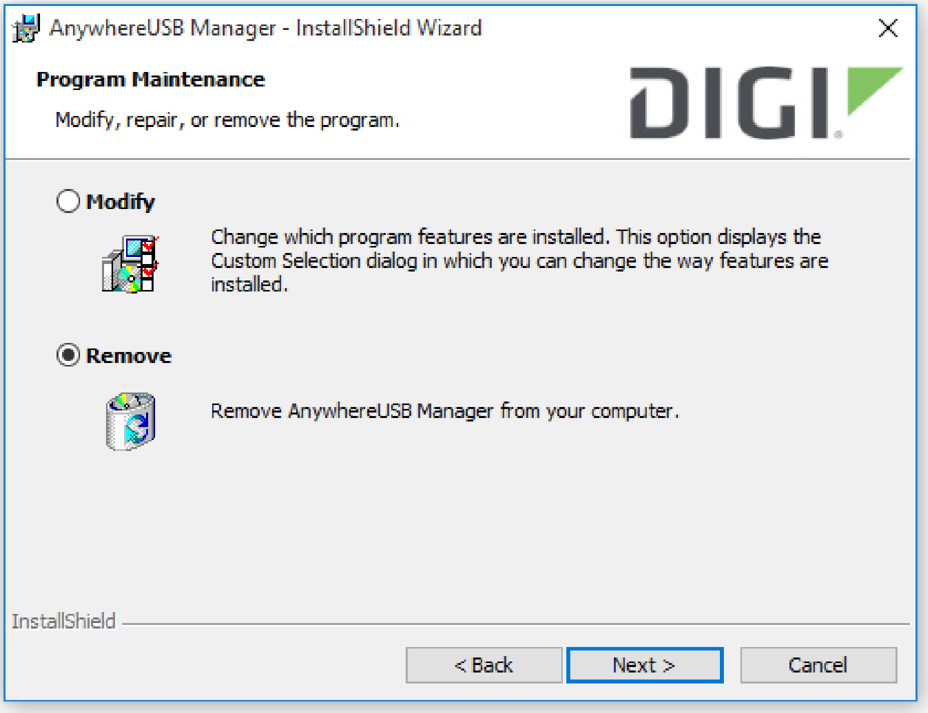
1. Locate the **AnywhereUSB Manager** installer.
   - If you saved the installer when you originally installed the **AnywhereUSB Manager**, navigate to that location on your computer.
   - If you did not, you can download the installer from the Support Tools website.
     a. Navigate to https://www.digi.com/support#support-tools.
     b. From the **Support Downloads** section, click **Drivers**.
     c. Find and select **AnywhereUSB Plus** from the product list.
     d. Select your **AnywhereUSB Plus** model.
     e. Select and download the appropriate software for your operating system.
2. Click on the downloaded software to launch the **AnywhereUSB Manager** installation wizard. The **Welcome** screen appears.


AnywhereUSB Manager - InstallShield Wizard

Welcome to the InstallShield Wizard for AnywhereUSB Manager

The InstallShield(R) Wizard will allow you to modify, repair, or remove AnywhereUSB Manager. To continue, click Next.

3. Click **Next**. The **Program Maintenance** screen appears.
4. Select **Remove**.


AnywhereUSB Manager - InstallShield Wizard

Program Maintenance

Modify, repair, or remove the program.

○ **Modify**

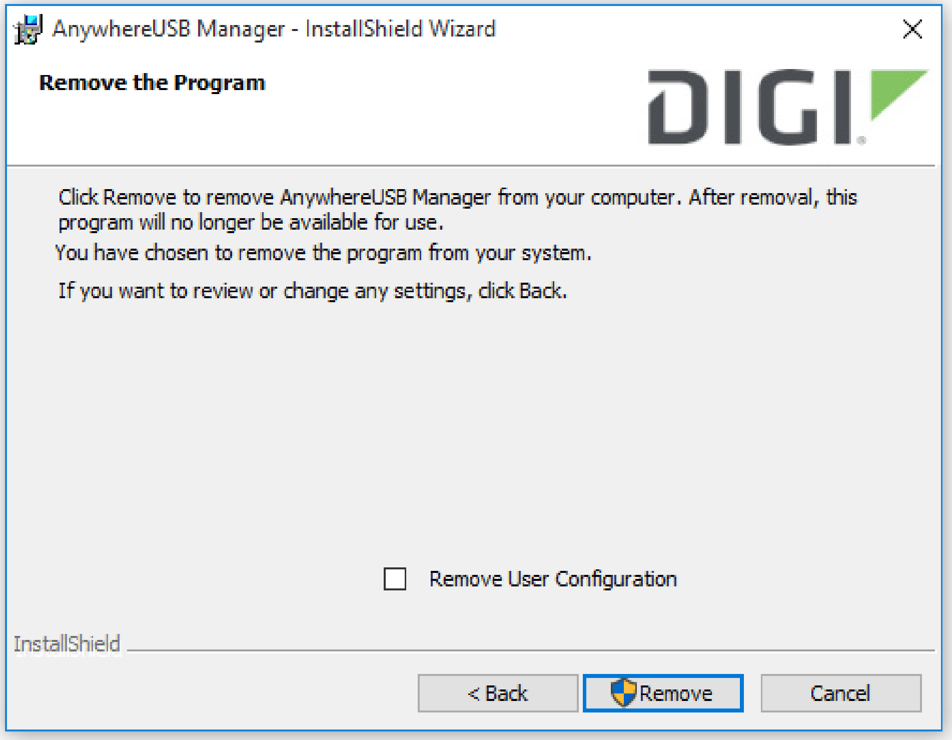
Change which program features are installed. This option displays the Custom Selection dialog in which you can change the way features are installed.

● **Remove**

Remove AnywhereUSB Manager from your computer.

5. Click **Next**. The **Remove the Program** screen appears.
6. Determine whether you want to remove the AnywhereUSB configuration settings that you have selected.
   - Do not select **Remove User Configuration**: The configuration settings you have made are retained and re-applied the next time you install the **AnywhereUSB Manger**.

- Select **Remove User Configuration**: The configuration settings you have made are not retained and removed with the program.



AnywhereUSB Manager - InstallShield Wizard

Remove the Program

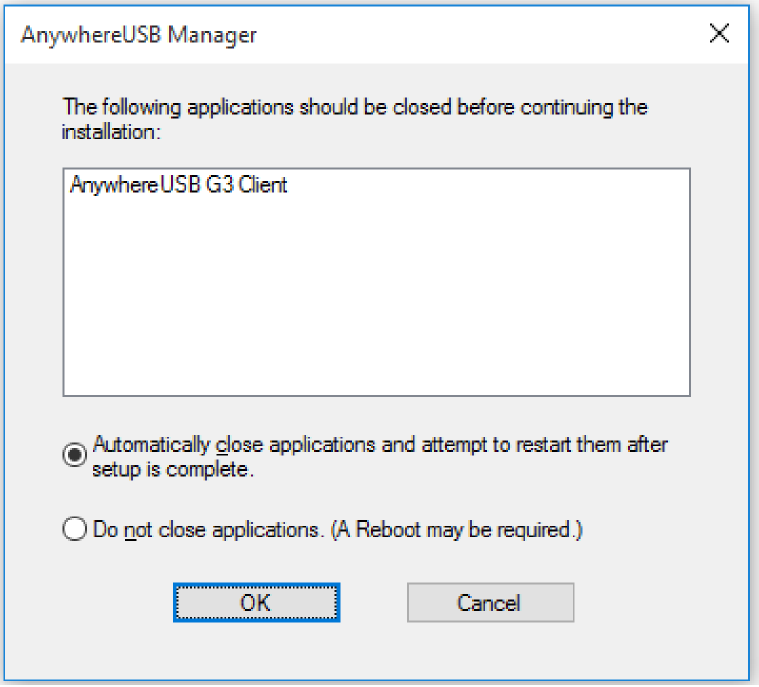
Click Remove to remove AnywhereUSB Manager from your computer. After removal, this program will no longer be available for use.

You have chosen to remove the program from your system.

If you want to review or change any settings, click Back.

□ Remove User Configuration

7. Click **Remove**. If the **AnywhereUSB Manager** is open, the following dialog displays. Do not change the default settings.



AnywhereUSB Manager

The following applications should be closed before continuing the installation:

AnywhereUSB G3 Client

● Automatically close applications and attempt to restart them after setup is complete.

○ Do not close applications. (A Reboot may be required.)

8. Click **OK**. A progress bar appears.
9. When the uninstall is complete, the **InstallShield Wizard Completed** screen appears.
10. Click **Finish** to complete the uninstall and close the dialog.

Configure the AnywhereUSB in the web user interface

You can configure the AnywhereUSB Hub in the **Configuration and Management** web user interface.

The web UI is available from a Hub listed in the **AnywhereUSB Manager**. You must install the **AnywhereUSB Manager** before you can use the web UI. See Install the AnywhereUSB Manager.

Rename a Hub and the groups in a Hub

A default name is assigned to a Hub and to the groups in the Hub. These names are associated with the physical Hub and groups on the Hub, and can be changed in theweb user interface.

Note A USB device does not have a name that can be changed. However, a local name can be assigned to a USB device in the **AnywhereUSB Manager**. See Assign a local name to a USB device.

The default Hub name and group name can be seen by every user that connects to the Hub. You can also give a Hub and groups a local name that can be see only by the user that assigns the name. See Assign a local name to a Hub and Assign a local name to a group.

Note Only administrators can rename the Hubs and the groups.

- Rename the Hub
- Rename a group

Rename the Hub

You can rename the AnywhereUSB Hub in the **Ethernet Network Configuration** page.

By default, the Hub name is the serial number assigned to the Hub. The serial number for the Hub is on the Hub's label. The Hub name displays in the **Name** field in the Hub Status pane in the **AnywhereUSB Manager**.

Note The name can consist of the following characters: 0-9, A-Z, a-z, dash (-), or period (.). You cannot use spaces, underscores (_), comma (,), forward slash (/), or ampersand (&).

1. Open the web UI.
2. Select **System** > **Configuration** > **Device Configuration**.
3. Expand **System**.
4. In the **Name** field, enter a descriptive name for the Hub. The name cannot have spaces or underscores.
5. Click **Apply**.

Rename a group

You can rename the AnywhereUSB Hub in the **AnywhereUSB** page in the web UI.

By default, a group is named "Group" appended by a consecutive number, such as Group 1, Group 2, and so on. The group name displays in the **Group Name** field in the Group Status pane in the **AnywhereUSB Manager**.

1. Open the web UI from your selected Hub.
2. Select **System** > **AnywhereUSB Configuration**.
3. Expand **Group Settings**.
4. Enter a new name for a group in the **Group Description** field.
5. Click **Apply** to save the changes.

Configure and manage client IDs

The client ID is a unique identifier assigned to a user account the first time a user logs in to a computer and opens the **AnywhereUSB Manager**. During this process, the **AnywhereUSB Manager** creates a secure identity certificate that is associated with the client ID. This certificate is used to validate your user account with the Hub. For more information, see Client ID.

Manage the client IDs

For each Hub, you can view a list of client IDs that are allowed to connect to the Hub. You can manually add client IDs or choose to automatically add client IDs to the list.

Note You can have up to 24 client IDs in the client list.

Assign client IDs to USB ports on the Hub

The client IDs are assigned to groups of USB ports on the Hub. When a computer connects to a group in the **AnywhereUSB Manager**, the computer has access to all of the ports in the group and the devices connected to those ports. No other computer is allowed to access any of the devices in the group. A computer can connect to more than one group at a time.

- Configure a client ID
- Manually add a client ID
- Remove a client ID
- Automatically register or reject unknown clients

Configure a client ID

You can assign a descriptive name to a client ID in the client list, and update the groups the client ID is allowed to access. The client ID can access all of the ports in the specified groups, as defined in the Group Settings section.

Note If needed, you can also add additional client IDs to the list.

1. Open the web UI.
2. Select **System** > **Configuration** > **AnywhereUSB Configuration**. The **AnywhereUSB Configuration** page appears.
3. Expand the **Client Settings** section.
4. Click **Edit**.
5. From the client list, select the client ID that you want to configure. Information about the selected client ID displays in the **Settings for Client** section.
6. In the **Description** field, enter a descriptive name for the client ID.
7. Click the check box next to a group to which the computer is allowed access. As you select groups, the selected group numbers appear in the **Group Access** field in the **Settings for Client** section. You can also manually enter group numbers in the **Group Access** field.

   Note The **Certificate** value is **Unavailable** until certificates have been exchanged between the computer and the Hub. After this occurs, the **Certificate** value is updated to **Available**.

8. Click **Apply** to save the changes.

Manually add a client ID

You can manually add client IDs to the client list. When a computer searches for Hubs, any computer with a client ID on the client list can connect to the Hub.

Note You can have up to 24 client IDs in the client list.

After you have added a client ID, the certificate is unavailable until the first time the computer with the new client ID connects to the Hub. When the computer connects to the Hub for the first time, the identity certificates are exchanged between the computer and the Hub. After the initial connection, only that computer with the client ID and unique identity certificate is able to connect to the Hub. Any other computer with the same client ID will be rejected. For information about computers with the same client ID, see AnywhereUSB Manager client ID is not unique.

WARNING! After you have manually added a client ID to the list, Digi recommends that you use a private network to connect the computer to the Hub and then to verify the initial connection. If you do not use a private network, and the same client ID is assigned to both a known and an unknown computer, there is a risk of misidentification. In this situation, an unknown computer may connect to the Hub before the known computer does, resulting in the wrong computer being allowed to connect to your Hub.

Note Digi recommends de-selecting the **Automatically Register Unknown Clients** option if you choose to manually add multiple client IDs to the client list. See Automatically reject unknown clients.

1. Open the web UI.
2. Select **System** > **Configuration** > **AnywhereUSB Configuration**. The **AnywhereUSB Configuration** page appears.
3. Expand the **Client Settings** section.
4. Click **Add Client**. A new row labeled "New Client" is added to the client list and the **Settings for Client** section is populated for the new client.
5. Enter information about the client ID in the **Settings for Client "New Client"** section.
   a. In the **Client ID** field, enter the client ID for the computer.
   b. In the **Description** field, enter a descriptive name for the client ID.
   c. Click the check box next to a group to which the computer is allowed access. As you select groups, the selected group numbers appear in the **Group Access** field in the **Settings for Clients** section.

   Note The **Certificate** value is **Unavailable** until certificates have been exchanged between the computer and the Hub. After this occurs, the **Certificate** value is updated to **Available**.
6. Click **Apply**. The client ID is added to the client list.

Remove a client ID

You can remove a client ID from the client list when that computer should no longer have access to the Hub.

Note If you have selected the **Automatically Register Unknown Clients** option, any client ID removed from the list is automatically added to the client list again the next time the computer tries to connect.

1. Open the web UI.
2. Select **System** > **Configuration** > **AnywhereUSB Configuration**. The **AnywhereUSB Configuration** page appears.
3. Expand the **Client Settings** section.
4. In the **Client Settings** section, select the client ID you want to remove from the list.
5. Click **Remove**. A confirmation dialog appears.
6. Click **OK**.

Automatically register or reject unknown clients

In the **AnywhereUSB Configuration** page, you have the choice to automatically register or reject computers that have not previously connected to the Hub. The **Automatically Register Unknown Clients** option is disabled by default, meaning that computers that have not previously connected to the Hub are rejected, and cannot connect to the Hub.

Note Digi recommends keeping the **Automatically Register Unknown Clients** option disabled and to manually add client IDs on a secure network.

- Automatically reject unknown clients
- Automatically register unknown clients

Automatically reject unknown clients

You can choose to have the Hub automatically reject any client ID that is not on the Hub's registered client list.

When you open the **AnywhereUSB Manager**, the Hub is found on the network, but a red X displays next Hub name, as the client ID is not registered with the Hub. The user is not able to connect to the Hub.

Note Digi recommends keeping the **Automatically Register Unknown Clients** option disabled and to manually add client IDs on a secure network.

1. Open the web UI.
2. Select **System** > **Configuration** > **AnywhereUSB Configuration**. The **AnywhereUSB Configuration** page appears.
3. Expand the **Client Settings** section.
4. De-select the **Automatically Register Unknown Clients** option so the Hub rejects any client ID that is not on the Hub's registered client list. In this case, a red X displays next to the name of the Hubs in the **AnywhereUSB Manager** to which the client ID cannot connect.
5. Click **Apply** to save the changes.

Automatically register unknown clients

Select the **Automatically Register Unknown Clients** option to automatically add the client ID for an unknown computer to the client list for the Hub. When you open the **AnywhereUSB Manager** and the Hub is found on the network, and the user is able to automatically connect to the Hub.

By default, the computer will have access to the ports in the groups specified in the **Group Access** field in the **Settings for Unknown Clients** section. The ports for each group are specified in the Group Settings section. You can change the groups to which a computer has access in the Client Settings section.

A user will be able to connect to the Hub in the **AnywhereUSB Manager**.

1. Open the web UI.
2. Select **System** > **Configuration** > **AnywhereUSB Configuration**. The **AnywhereUSB Configuration** page appears.
3. Expand the **Client Settings** section.
4. Select the **Automatically Register Unknown Clients** option.
5. Click the check box next to the group(s) to which the computer is allowed access. As you select groups, the selected group numbers appear in the **Group Access** field in the **Settings for Unknown Clients** section.

   You can also manually enter group numbers in the **Group Access** field.
6. Click **Apply** to save the changes.

Configure device identity settings

You can configure the device description, contact, and location information for the Hub in the **System Configuration** page. This feature is useful to identify a specific Hub when working with a large number of Hubs in multiple locations. The information entered on this page appears in the Home page.

1. Open the web UI.
2. Select **System** > **Configuration** > **Device Configuration**.
3. Expand **System**.
4. Enter the following information:
   - **Contact**: Any contact information for a person that can manage the Hub, such as the administrator name and contact information.
   - **Location**: The physical location of the Hub.
   - **Description**: An identifying description of the Hub. This displays in the **AnywhereUSB Configuration** page. To display this page, select **System** > **Configuration** > **AnywhereUSB Configuration.**
5. Click **Apply** to apply and save the changes.

View current connections to the Hub

You can view information about current connections to the Hub in the **Connections Management** page.

1. Open the web UI.
2. Select **Status** > **Services** > **AnywhereUSB**. The **AnywhereUSB Status** page appears.
   - **USB Devices**: Expand the **USB Devices** section to display information about the devices connected to the Hub.
   - **Client Connections**: Expand the **Client Connection** section to display information about the computers connected to the Hub.

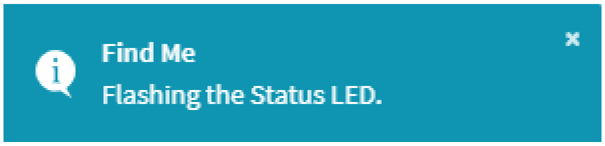
Configure the Find Me feature

You can use the Find Me feature to cause an LED on the Hub to blink, which can help you to identify a specific Hub.

- **AnywhereUSB 2 Plus**: When enabled, the power LED blinks green, then orange.
- **AnywereUSB 8 Plus** and **AnywhereUSB 24 Plus**: When enabled, the user LED blinks green, then orange.

To use this feature:

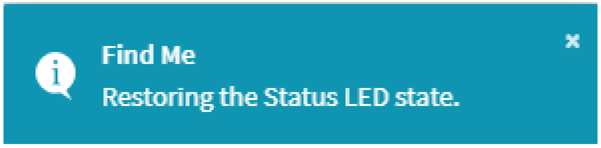
1. Open the web UI.
2. Select **System** > **Administration** > **Find Me**. A notification message appears, noting that the LED is flashing on the device. Click the X in the message to close it.



Find Me

Flashing the Status LED.

3. Select **System** > **Administration** again, and you can see that the blue circle next to **Find Me** is blinking, to alert you that the Find Me feature is active.
4. To de-activate the Find Me feature, select **System** > **Administration** > **Find Me**. A notification message appears, noting that the LED is no longer flashing on the device. Click the X in the message to close it.



Find Me

Restoring the Status LED state.

Configuration and management

This chapter contains the following topics:

Review AnywhereUSB Plus default settings

You can review the default settings for your AnywhereUSB Plus device in Digi Remote Manager by viewing the current configuration:

1. If you have not already done so, connect to your Digi Remote Manager account.
2. Locate and select your device as described in Use Digi Remote Manager to view and manage your device.
3. Click **Configure**.

The following tables list factory default settings for the AnywhereUSB Plus.

Default interface configuration

Interface type	Preconfigured interfaces	Devices	Default configuration
Wide Area Networks (WANs) (Available only on the AnywhereUSB Plus 8 and 24 models.)	■ Modem	■ WWAN1 cellular modem	■ Firewall zone: External ■ WAN priority: Metric=3 ■ SIM failover after 5 attempts
Ethernet Network	■ ETH1	■ Ethernet: ETH1	■ Firewall zone: Edge ■ DHCP client enabled
	■ Loopback	■ Ethernet: Loopback	■ Firewall zone: Loopback ■ IP address: 127.0.0.1/8
	■ Default IP	■ Ethernet: ETH1	■ Firewall zone: Setup ■ IP address 192.168.210.1/24
	■ Default Link-local IP	■ Ethernet: ETH1	■ Firewall zone: Setup ■ IP address 169.254.100.100/16
	■ ETH2 (Available on the AnywhereUSB Plus 24 model only.)	■ Ethernet: ETH2	■ Firewall zone: Edge ■ DHCP client enabled

Other default configuration settings

Feature	Configuration
Central management	■ Digi Remote Manager enabled as the central management service.

Feature	Configuration
Security policies	■ Packet filtering allows all outbound traffic. ■ SSH and web administration: • Enabled for local administration • Firewall zone: Set up
Monitoring	■ Device heath metrics uploaded to Digi Remote Manager at 60 minute interval. ■ SNMP: Disabled

Reset default password for the default admin user

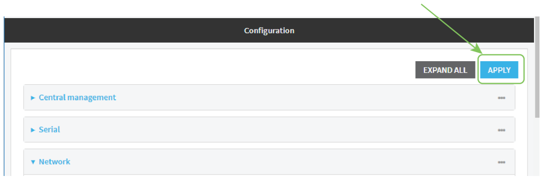
When you first log into the WebUI or the command line, you will be required the change the unique, factory-assigned default password for the default **admin** user prior to being able to save any changes or exit the user interface. The unique, factory-assigned default password is printed on the bottom label of the device (or the printed label included in the package).

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Authentication** > **Users** > **admin**.
4. Enter a new password for the admin user.
5. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Enter a new password by using the following command:

```
(config)> auth user admin password new-password
```

4. Save the configuration and apply the change:

```
(config)> save
Configuration saved.
>
```

5. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Configuration methods

There are three methods for configuring your AnywhereUSB Plus device:

- Web interface

  The local web interface on the Hub, which includes a separate page for all AnywhereUSB Plus configuration.

  - See Open the web user interface for information about accessing the web interface from a Hub.
  - See Configure the AnywhereUSB in the web user interface for more information about using the local web interface to manage and configure your AnywhereUSB Plus device.

- Central management

  Central management using the Digi Remote Manager, a cloud-based device management and data enablement platform that allows you to connect any device to any application, anywhere. See Using the Digi Remote Manager for more information about using the Remote Manager to manage and configure your AnywhereUSB Plus device.

- Command line

  A robust command line allows you to perform all configuration and management tasks from within a command shell. Both the Remote Manager and the local web interface also have the option to open a terminal emulator for executing commands on your AnywhereUSB Plus device. See Using the command line for more information about using the command line to manage and configure your AnywhereUSB Plus device.

In this guide, task topics show how to perform tasks:

WebUI

Shows how to perform a task by using the local web interface.

Command line

Shows how to perform a task by using the command line interface.

Open the web user interface

You can open the web user interface for a selected AnywhereUSB Hub from the **AnywhereUSB Manager**. The information in the web UI is unique for each Hub, so make sure you select the desired Hub before you open the web UI.

By default, the web UI **Dashboard** appears when you open the web UI for a Hub, and displays current Hub status information.

1. Open the **AnywhereUSB Manager**.
2. Expand **AnywhereUSB Hubs** to display the Hubs.
3. Right-click on the Hub that you want to configure or maintain.
4. Click **Open Web UI**. The web UI **Dashboard** displays by default.

    Note The first time you launch the web UI, a warning dialog may appear if your internet connection is not private. In this situation, continue to access the device, and a log in dialog appears. If your internet connection is private, only the log in dialog appears. The user name is **admin** and the default password is located on the label on the bottom of the Hub. Note that the password is case-sensitive and must be typed in exactly as it appears on the label.

5. When you are done working in the web UI, close the browser window.

Using the Digi Remote Manager

By default, your AnywhereUSB Plus device is configured to use Digi Remote Manager as its central management server. No configuration changes are required to begin using the Remote Manager.

For information about configuring central management for your AnywhereUSB Plus device, see Central management with Digi Remote Manager.

Access the Digi Remote Manager

To access the Digi Remote Manager:

1. If you have not already done so, go to https://myaccount.digi.com/ to sign up for a Digi Remote Manager account.

    Check your email for Digi Remote Manager login instructions.
2. Go to remotemanager.digi.com.
2. Enter your username and password.

    The Digi Remote Manager Dashboard appears.

Using the command line

The Digi AnywhereUSB Plus device provides a command-line interface that you can use to configure the device, display status and statistics, update firmware, and manage device files.

See Command line interface for detailed instructions on using the command line interface and see Command line reference for information on available commands.

Access the command line interface

You can access the AnywhereUSB Plus command line interface using an SSH connection or a serial connection. You can use an open-source terminal software, such as PuTTY or TeraTerm, to access the device through one of these mechanisms.

You can also access the command line interface in the WebUI by using the **Terminal**, or the Digi Remote Manager by using the **Console**.

To access the command line, your device must be configured to allow access, and you must log in as a user who has been configured for the appropriate access. For further information about configuring access to these services, see:

- WebUI: Configure the web administration service
- SSH: Configure SSH access

Log in to the command line interface

Command line

1. Connect to the AnywhereUSB Plus device by using a serial connection, SSH, or the **Terminal** in the WebUI or the **Console** in the Digi Remote Manager. See Access the command line interface for more information.
    - For serial connections, the default configuration is:
        - **115200** baud rate
        - **8** data bits
        - **no** parity
        - **1** stop bit
        - **no** flow control
    - For SSH connections, enter the device's default IP address.
2. At the login prompt, enter the username and password of a user with Admin access:

    ```
    login: admin
    Password: **********
    ```

    The default username is **admin**. The default unique password for your device is printed on the device label.
3. Depending on the device configuration, you may be presented with another menu, for example:

    ```
    Access selection menu:

           a: Admin CLI
    ```

```
       1: Serial: port1        (9600,8,1,none,none)
       2: Serial: port2        (9600,8,1,none,none)
       q: Quit

Select access or quit [admin] :
```

Type **a** or **admin** to access the AnywhereUSB Plus command line.

You will now be connected to the Admin CLI:

```
Connecting now, 'exit' to disconnect from Admin CLI ...

>
```

See Command line interface for detailed instructions on using the command line interface.

Exit the command line interface

Command line

1. At the command prompt, type **exit**.

```
> exit
```

2. Depending on the device configuration, you may be presented with another menu, for example:

```
Access selection menu:

       a: Admin CLI
       1: Serial: port1        (9600,8,1,none,none)
       2: Serial: port2        (9600,8,1,none,none)
       q: Quit

Select access or quit [admin] :
```

Type **q** or **quit** to exit.

Serial port

AnywhereUSB Plus devices have a single serial port that provides access to the command-line interface.

Use an RS-232 serial cable to establish a serial connection from your AnywhereUSB Plus to your local laptop or PC. Use a terminal emulator program to establish the serial connection. The terminal emulator's serial connection must be configured to match the configuration of the AnywhereUSB Plus device's serial port. The default serial port configuration for the AnywhereUSB Plus is:

- Baud rate: **115200**
- Data bits: **8**
- Parity: **None**
- Stop bits: **1**
- Flow control: **None**

Services

This chapter contains the following topics:

Allow remote access for web administration and SSH

By default, only devices connected to the AnywhereUSB Plus's LAN have access to the device via web administration and SSH. To enable these services for access from remote devices:

- The AnywhereUSB Plus device must have a publicly reachable IP address.
- The **External** firewall zone must be added to the web administration or SSH service. See Firewall configuration for information on zones.
- See Set the idle timeout for AnywhereUSB Plus users for information about setting the inactivity timeout for the web administration and SSH services.

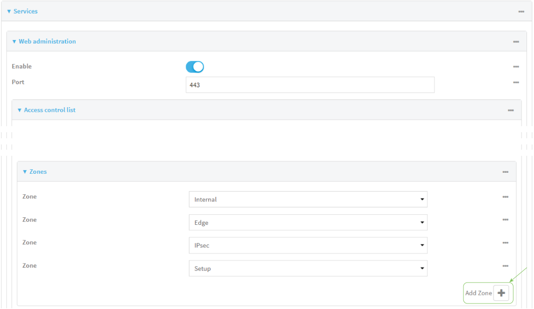
To allow web administration or SSH for the External firewall zone:

Add the External firewall zone to the web administration service

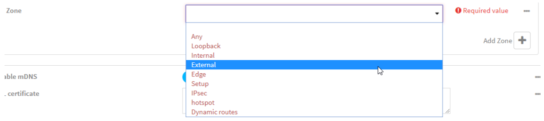
WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Services** > **Web administration** > **Access Control List** > **Zones**.
4. For **Add Zone**, click +

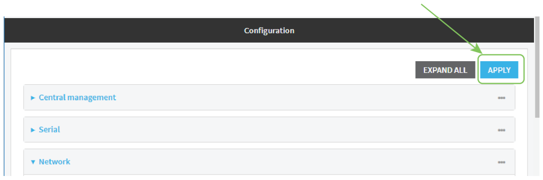


5. Select **External**.



6. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

   ```
   > config
   (config)>
   ```
3. Add the external zone to the web administration service:

   ```
   (config)> add service web_admin acl zone end external
   (config)>
   ```
4. Save the configuration and apply the change:

   ```
   (config)> save
   Configuration saved.
   >
   ```
5. Type **exit** to exit the Admin CLI.

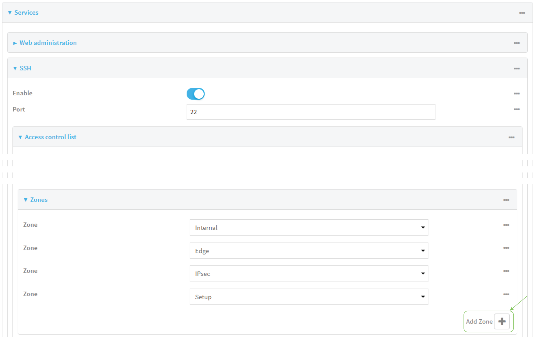
   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Add the External firewall zone to the SSH service

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

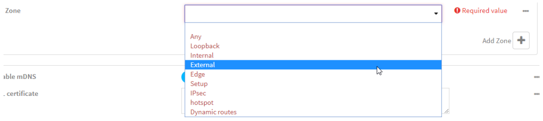
   The **Configuration** window is displayed.
3. Click **Configuration** > **Services** > **SSH** > **Access Control List** > **Zones**.
4. For **Add Zone**, click ♑



Enable ●
Port 22

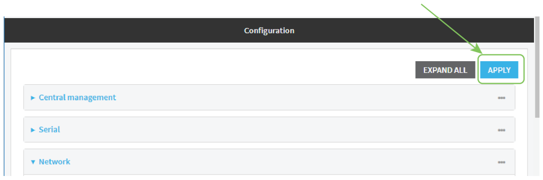
Zone Internal
Zone Edge
Zone IPsec
Zone Setup

5. Select **External**.



6. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Add the **External** zone to the SSH service:

```
(config)> add service ssh acl zone end external
(config)>
```

4. Save the configuration and apply the change:

```
(config)> save
Configuration saved.
>
```

5. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Configure the web administration service

The web administration service allows you to monitor and configure the AnywhereUSB Plus device by using the WebUI, a browser-based interface.

By default, the web administration service is enabled and uses the standard HTTPS port, 443. The default access control for the service uses the **Internal** firewall zone, which means that only devices connected to the AnywhereUSB Plus's LAN can access the WebUI. If this configuration is sufficient for your needs, no further configuration is required. See Allow remote access for web administration and SSH for information about configuring the web administration service to allow access from remote devices.

Required configuration items

- The web administration service is enabled by default.
- Configure access control for the service.

Additional configuration items

- Port to use for web administration service communication.
- Multicast DNS (mDNS) support.
- An SSL certificate to use for communications with the service.
- Support for legacy encryption protocols.

See Set the idle timeout for AnywhereUSB Plus users for information about setting the inactivity timeout for the web administration services.

Enable or disable the web administration service

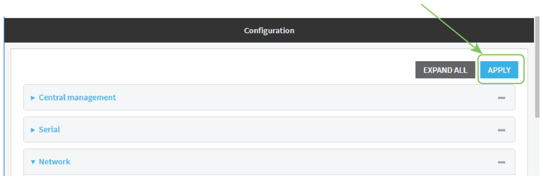
The web administration service is enabled by default. To disable the service, or enable it if it has been disabled:

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Services** > **Web administration**.
4. Click **Enable**.
5. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Enable or disable the web administration service:
   - To enable the service:

   ```
   (config)> service web_admin enable true
   (config)>
   ```

   - To disable the sevice:

   ```
   (config)> service web_admin enable false
   (config)>
   ```

4. Save the configuration and apply the change:

```
(config)> save
Configuration saved.
>
```

5. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Configure the service

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Services** > **Web administration**.
4. (Optional) For **Port**, enter the port number for the service. Normally this should not be changed.
5. Click **Access control list** to configure access control:
   - To limit access to specified IPv4 addresses and networks:
     a. Click **IPv4 Addresses**.
     b. For **Add Address**, click ♑
     c. For **Address**, enter the IPv4 address or network that can access the device's web administration service. Allowed values are:
        - A single IP address or host name.
        - A network designation in CIDR notation, for example, 192.168.1.0/24.
        - **any**: No limit to IPv4 addresses that can access the web administration service.

     d. Click ♑again to list additional IP addresses or networks.
   - To limit access to specified IPv6 addresses and networks:
     a. Click **IPv6 Addresses**.
     b. For **Add Address**, click ♑
     c. For **Address**, enter the IPv6 address or network that can access the device's web administration service. Allowed values are:
        - A single IP address or host name.
        - A network designation in CIDR notation, for example, 2001:db8::/48.
        - **any**: No limit to IPv6 addresses that can access the web administration service.

     d. Click ♑again to list additional IP addresses or networks.
   - To limit access to hosts connected through a specified interface on the AnywhereUSB Plus device:
     a. Click **Interfaces**.
     b. For **Add Interface**, click ♑
     c. For **Interface**, select the appropriate interface from the dropdown.
     d. Click ♑again to allow access through additional interfaces.
   - To limit access based on firewall zones:
     a. Click **Zones**.
     b. For **Add Zone**, click ♑

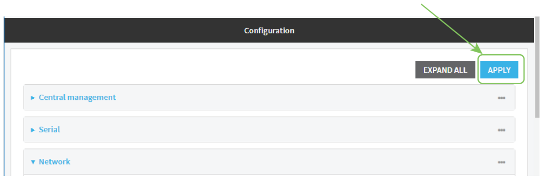
   c. For **Zone**, select the appropriate firewall zone from the dropdown.

      See Firewall configuration for information about firewall zones.

   d. Click + again to allow access through additional firewall zones.

6. Multicast DNS (mDNS) is enabled by default. mDNS is a protocol that resolves host names in small networks that do not have a DNS server. To disable mDNS, or enable it if it has been disabled, click **Enable mDNS**.
7. For **SSL certificate**, if you have your own signed SSL certificate, type the certificate and private key in PEM format. If **SSL certificate** is blank, the device will use an automatically-generated, self-signed certificate.
8. For **Allow legacy encryption protocols**, enable this option to allow clients to connect to the HTTPS session by using encryption protocols older than TLS 1.2, in addition to TLS 1.2 and later protocols. This option is disabled by default, which means that only TLS 1.2 and later encryption protocols are allowed with HTTPS connections.
9. **View** is set to **Auto** by default and normally should not be changed.
10. **Legacy port redirection** is used to redirect client HTTP requests to the HTTPS service. Legacy port redirection is enabled by default, and normally these settings should not be changed. To disable legacy port redirection, click to expand **Legacy port redirection** and deselect **Enable**.
11. Click **Apply** to save the configuration and apply the change.

    The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Configure access control:

   ■ To limit access to specified IPv4 addresses and networks:

```
(config)> add service web_admin acl address end value
(config)>
```

   Where *value* can be:

   - A single IP address or host name.
   - A network designation in CIDR notation, for example, 192.168.1.0/24.
   - **any**: No limit to IPv4 addresses that can access the web administratrion service.

Repeat this step to list additional IP addresses or networks.

- To limit access to specified IPv6 addresses and networks:

```
(config)> add service web_admin acl address6 end value
(config)>
```

Where *value* can be:

- A single IP address or host name.
- A network designation in CIDR notation, for example, 2001:db8::/48.
- **any**: No limit to IPv6 addresses that can access the web administratrion service.

Repeat this step to list additional IP addresses or networks.

- To limit access to hosts connected through a specified interface on the AnywhereUSB Plus device:

```
(config)> add service web_admin acl interface end value
(config)>
```

Where *value* is an interface defined on your device.

Display a list of available interfaces:

Use **... network interface ?** to display interface information:

```
(config)> ... network interface ?

Interfaces

Additional Configuration
-------------------------------------------
 defaultip                Default IP
 defaultlinklocal         Default Link-local IP
 eth1                     ETH1
 eth2                     ETH2
 loopback                 Loopback
 modem                    Modem

(config)>
```

Repeat this step to list additional interfaces.

- To limit access based on firewall zones:

```
(config)> add service web_admin acl zone end value
```

Where *value* is a firewall zone defined on your device, or the **any** keyword.

Display a list of available firewall zones:

Type **... firewall zone ?** at the config prompt:

```
(config)> ... firewall zone ?
```

```
Zones: A list of groups of network interfaces that can be
referred to by packet
filtering rules and access control lists.

 Additional Configuration
 ----------------------------------------------------------
----------------------
  any
  dynamic_routes
  edge
  external
  hotspot
  internal
  ipsec
  loopback
  setup

(config)>
```

Repeat this step to list additional firewall zones.

4. (Optional) If you have your own signed SSL certificate, set the certificate and private key in PEM format. If not set, the device will use an automatically-generated key.

```
(config)> service web_admin cert cert.pem
(config)>
```

5. (Optional) Configure Multicast DNS (mDNS):

   mDNS is a protocol that resolves host names in small networks that do not have a DNS server. mDNS is enabled by default. To disable mDNS, or enable it if it has been disabled:

   - To enable the mDNS protocol:

     ```
     (config)> service web_admin mdns enable true
     (config>
     ```

   - To disable the mDNS protocl:

     ```
     (config)> service web_admin mdns enable false
     (config)>
     ```

6. (Optional) Set the port number for this service.

   The default setting of 443 normally should not be changed.

   ```
   (config)> service web_admin port 444
   (config)>
   ```

7. (Optional) Configure the device to allow legacy encryption protocols.

   Legacy encryption protocols allow clients to connect to the HTTPS session by using encryption protocols older than TLS 1.2, in addition to TLS 1.2 and later protocols. This option is disabled by default, which means that only TLS 1.2 and later encryption protocols are allowed with HTTPS connections.

To enable legacy encryption protocols:

```
(config)> service web_admin legacy_encryption true
(config)>
```

8. (Optional) Disable legacy port redirection.

   Legacy port redirection is used to redirect client HTTP requests to the HTTPS service. Legacy port redirection is enabled by default, and normally these settings should not be changed.

   To disable legacy port redirection:

   ```
   (config)> service web_admin legacy enable false
   (config)>
   ```

9. Save the configuration and apply the change:

   ```
   (config)> save
   Configuration saved.
   >
   ```

10. Type **exit** to exit the Admin CLI.

    Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Configure SSH access

The AnywhereUSB Plus's default configuration has SSH access enabled, and allows SSH access to the device from authorized users within the **Internal** firewall zone. If this configuration is sufficient for your needs, no further configuration is required. See Allow remote access for web administration and SSH for information about configuring the SSH service to allow access from remote devices.

Required configuration items

- Enable SSH access.
- Configure access control for the SSH service.

Additional configuration items

- Port to use for communications with the SSH service.
- Multicast DNS (mDNS) support.
- A private key to use for communications with the SSH service.

See Set the idle timeout for AnywhereUSB Plus users for information about setting the inactivity timeout for the SSH service.

Enable or disable the SSH service

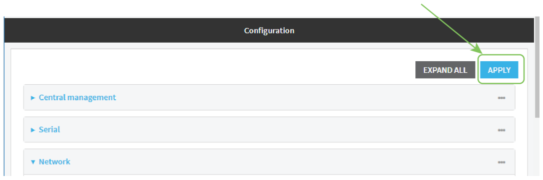
The SSH service is enabled by default. To disable the service, or enable it if it has been disabled:

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Services** > **SSH**.
4. Click **Enable**.
5. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Enable or disable the SSH service:
   - To enable the service:

     ```
     (config)> service ssh enable true
     (config)>
     ```

   - To disable the sevice:

     ```
     (config)> service ssh enable false
     (config)>
     ```

4. Save the configuration and apply the change:

```
(config)> save
Configuration saved.
>
```

5. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Configure the service

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

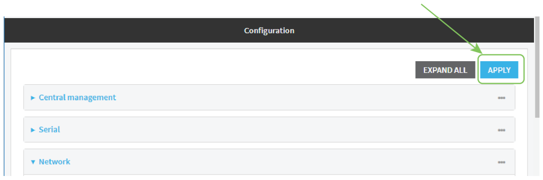
   The **Configuration** window is displayed.
3. Click **Services** > **SSH**.
4. (Optional) For **Port**, enter the port number for the service. Normally this should not be changed.
5. Click **Access control list** to configure access control:
   - To limit access to specified IPv4 addresses and networks:
     a. Click **IPv4 Addresses**.
     b. For **Add Address**, click ♑.
     c. For **Address**, enter the IPv4 address or network that can access the device's SSH service. Allowed values are:
        - A single IP address or host name.
        - A network designation in CIDR notation, for example, 192.168.1.0/24.
        - **any**: No limit to IPv4 addresses that can access the SSH service.
     d. Click ♑again to list additional IP addresses or networks.

- To limit access to specified IPv6 addresses and networks:
  a. Click **IPv6 Addresses**.
  b. For **Add Address**, click ♑.
  c. For **Address**, enter the IPv6 address or network that can access the device's SSH service. Allowed values are:
     - A single IP address or host name.
     - A network designation in CIDR notation, for example, 2001:db8::/48.
     - **any**: No limit to IPv6 addresses that can access the SSH service.
  d. Click ♑again to list additional IP addresses or networks.
- To limit access to hosts connected through a specified interface on the AnywhereUSB Plus device:
  a. Click **Interfaces**.
  b. For **Add Interface**, click ♑.
  c. For **Interface**, select the appropriate interface from the dropdown.
  d. Click ♑again to allow access through additional interfaces.
- To limit access based on firewall zones:
  a. Click **Zones**.
  b. For **Add Zone**, click ♑.
  c. For **Zone**, select the appropriate firewall zone from the dropdown.

     See Firewall configuration for information about firewall zones.
  d. Click ♑again to allow access through additional firewall zones.

6. Multicast DNS (mDNS) is enabled by default. mDNS is a protocol that resolves host names in small networks that do not have a DNS server. To disable mDNS, or enable it if it has been disabled, click **Enable mDNS**.
7. For **Private key**, type the private key in PEM format. If **Private key** is blank, the device will use an automatically-generated key.
8. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

2. At the command line, type **config** to enter configuration mode:

   ```
   > config
   (config)>
   ```

3. Configure access control:

   - To limit access to specified IPv4 addresses and networks:

     ```
     (config)> add service ssh acl address end value
     (config)>
     ```

     Where *value* can be:

     - A single IP address or host name.
     - A network designation in CIDR notation, for example, 192.168.1.0/24.
     - **any**: No limit to IPv4 addresses that can access the SSH service.

     Repeat this step to list additional IP addresses or networks.

   - To limit access to specified IPv6 addresses and networks:

     ```
     (config)> add service ssh acl address6 end value
     (config)>
     ```

     Where *value* can be:

     - A single IP address or host name.
     - A network designation in CIDR notation, for example, 2001:db8::/48.
     - **any**: No limit to IPv6 addresses that can access the SSH service.

     Repeat this step to list additional IP addresses or networks.

   - To limit access to hosts connected through a specified interface on the AnywhereUSB Plus device:

     ```
     (config)> add service ssh acl interface end value
     (config)>
     ```

     Where *value* is an interface defined on your device.

     Display a list of available interfaces:

     Use **... network interface ?** to display interface information:

     ```
     (config)> ... network interface ?

     Interfaces

     Additional Configuration
     -------------------------------------------
      defaultip              Default IP
      defaultlinklocal       Default Link-local IP
      eth1                   ETH1
      eth2                   ETH2
      loopback               Loopback
     ```

```
 modem                      Modem

(config)>
```

Repeat this step to list additional interfaces.

- To limit access based on firewall zones:

```
(config)> add service ssh acl zone end value
```

Where *value* is a firewall zone defined on your device, or the **any** keyword.

Display a list of available firewall zones:

Type **... firewall zone ?** at the config prompt:

```
(config)> ... firewall zone ?

Zones: A list of groups of network interfaces that can be
referred to by packet
filtering rules and access control lists.

 Additional Configuration
 ---------------------------------------------------------
----------------------
  any
  dynamic_routes
  edge
  external
  hotspot
  internal
  ipsec
  loopback
  setup

(config)>
```

Repeat this step to list additional firewall zones.

4. (Optional) Set the private key in PEM format. If not set, the device will use an automatically-generated key.

```
(config)> service ssh key key.pem
(config)>
```

5. (Optional) Configure Multicast DNS (mDNS)

   mDNS is a protocol that resolves host names in small networks that do not have a DNS server. mDNS is enabled by default. To disable mDNS, or enable it if it has been disabled:

   - To enable the mDNS protocol:

```
(config)> service ssh mdns enable true
(config>
```

- To disable the mDNS protocl:

  ```
  (config)> service ssh mdns enable false
  (config)>
  ```

6. (Optional) Set the port number for this service.

   The default setting of 22 normally should not be changed.

   ```
   (config)> service ssh port 24
   (config)>
   ```

7. Save the configuration and apply the change:

   ```
   (config)> save
   Configuration saved.
   >
   ```

8. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Use SSH with key authentication

Rather than using passwords, you can use SSH keys to authenticate users connecting via SSH, SFTP, or SCP. SSH keys provide security and scalability:

- **Security**: Using SSH keys for authentication is more secure than using passwords. Unlike a password that can be guessed by an unauthorized user, SSH key pairs provide more sophisticated security. A public key configured on the AnywhereUSB device is paired with a private key on the user's PC. The private key, once generated, remains on the user's PC.
- **Scalability**: SSH keys can be used on more than one AnywhereUSB device.

Generating SSH key pairs

On a Microsoft Windows PC, you can generate SSH key pairs using a terminal emulator application, such as **PuTTY** or **Tera Term**.

On a Linux host, an SSH key pair is usually created automatically in the user's **.ssh** directory. The private and public keys are named **id_rsa** and **id_rsa.pub**. If you need to generate an SSH key pair, you can use the **ssh-keygen** application.

For example, the following entry generates an RSA key pair in the user's **.ssh** directory:

```
ssh-keygen -t rsa -f ~/.ssh/id_rsa
```

The private key file is named **id_rsa** and the public key file is named **id_rsa.pub**. (The **.pub** extension is automatically appended to the name specified for the private key output file.)

Required configuration items

- Name for the user
- SSH public key for the user

Additional configuration items

- If you want to access the AnywhereUSB device using SSH over a WAN interface, configure the access control list for the SSH service to allow SSH access for the **External** firewall zone.

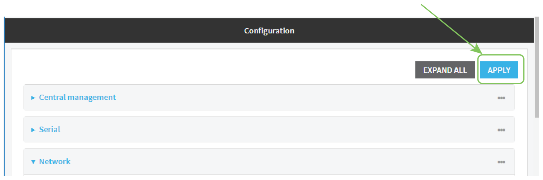
WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Authentication** > **Users**.
4. Select an existing user or create a new user. See User authentication for information about creating a new user.
5. Click **SSH keys**.
6. In **Add SSH key**, enter a name for the SSH key and click ♑
7. Enter the public SSH key by pasting or typing a public encryption key that this user can use for passwordless SSH login.

8. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.

Command line

You can add configure passwordless SSH login for an existing user or include the support when creating a new user. See User authentication for information about creating a new user. These instructions assume an existing user named **temp_user**.

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Add an SSH key for the user by using the ssh_key command and pasting or typing a public encryption key:

```
(config)> add auth user maria ssh_key key_name key
(config)>
```

   where:

   - *key_name* is a name for the key.
   - *key* is a public SSH key, which you can enter by pasting or typing a public encryption key that this user can use for passwordless SSH login
4. Save the configuration and apply the change:

```
(config)> save
Configuration saved.
>
```

5. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Configure DNS

The AnywhereUSB Plus device includes a caching DNS server which forwards queries to the DNS servers that are associated with the network interfaces, and caches the results. This server is used within the device, and cannot be disabled. Use the access control list to restrict external access to this server.

Required configuration items

- Configure access control for the DNS service.

Additional configuration items

- Whether the device should cache negative responses.
- Whether the device should always perform DNS queries to all available DNS servers.
- Whether to prevent upstream DNS servers from returning private IP addresses.
- Additional DNS servers, in addition to the ones associated with the device's network interfaces.
- Specific host names and their IP addresses.

To configure the DNS server:

WebUI

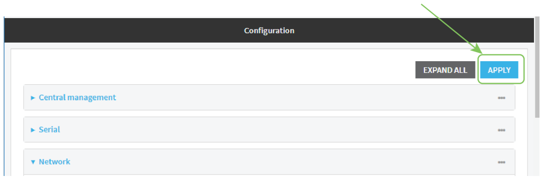
1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Services** > **DNS**.
4. Click **Access control list** to configure access control:
   - To limit access to specified IPv4 addresses and networks:
     a. Click **IPv4 Addresses**.
     b. For **Add Address**, click ♑
     c. For **Address**, enter the IPv4 address or network that can access the device's DNS service. Allowed values are:
        - A single IP address or host name.
        - A network designation in CIDR notation, for example, 192.168.1.0/24.
        - **any**: No limit to IPv4 addresses that can access the DNS service.
     d. Click ♑again to list additional IP addresses or networks.
   - To limit access to specified IPv6 addresses and networks:
     a. Click **IPv6 Addresses**.
     b. For **Add Address**, click ♑
     c. For **Address**, enter the IPv6 address or network that can access the device's DNS service. Allowed values are:
        - A single IP address or host name.
        - A network designation in CIDR notation, for example, 2001:db8::/48.
        - **any**: No limit to IPv6 addresses that can access the DNS service.
     d. Click ♑again to list additional IP addresses or networks.
   - To limit access to hosts connected through a specified interface on the AnywhereUSB Plus device:
     a. Click **Interfaces**.
     b. For **Add Interface**, click ♑
     c. For **Interface**, select the appropriate interface from the dropdown.
     d. Click ♑again to allow access through additional interfaces.
   - To limit access based on firewall zones:
     a. Click **Zones**.
     b. For **Add Zone**, click ♑
     c. For **Zone**, select the appropriate firewall zone from the dropdown.

        See Firewall configuration for information about firewall zones.
     d. Click ♑again to allow access through additional firewall zones.

5. (Optional) **Cache negative responses** is enabled by default. Disabling this option may improve performance on networks with transient DNS results, when one or more DNS servers may have positive results. To disable, click **Cache negative responses**.
6. (Optional) **Query all servers** is enabled by default. This option is useful when only some DNS servers will be able to resolve hostnames. To disable, click **Query all servers**.
7. (Optional) **Rebind protection**, if enabled, prevents upstream DNS servers from returning private IP addresses. To enable, click **Rebind protection**.
8. (Optional) **Allow localhost rebinding** is enabled by default if **Rebind protection** is enabled. This is useful for Real-time Black List (RBL) servers.
9. (Optional) To add additional DNS servers:
   a. Click **DNS servers**.
   b. For **Add Server**, click ♑
   c. (Optional) Enter a label for the DNS server.
   d. For **DNS server**, enter the IP address of the DNS server.
   e. **Domain** restricts the device's use of this DNS server based on the domain. If no domain are listed, then all queries may be sent to this server.
10. (Optional) To add host names and their IP addresses that the device's DNS server will resolve:
    a. Click **Additional DNS hostnames**.
    b. For **Add Host**, click ♑
    c. Type the **IP address** of the host.
    d. For **Name**, type the hostname.
11. Click **Apply** to save the configuration and apply the change.

    The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Configure access control:
   - To limit access to specified IPv4 addresses and networks:

     ```
     (config)> add service dns acl address end value
     (config)>
     ```

     Where *value* can be:
     - A single IP address or host name.
     - A network designation in CIDR notation, for example, 192.168.1.0/24.
     - **any**: No limit to IPv4 addresses that can access the DNS service.

     Repeat this step to list additional IP addresses or networks.
   - To limit access to specified IPv6 addresses and networks:

     ```
     (config)> add service dns acl address6 end value
     (config)>
     ```

     Where *value* can be:
     - A single IP address or host name.
     - A network designation in CIDR notation, for example, 2001:db8::/48.
     - **any**: No limit to IPv6 addresses that can access the DNS service.

     Repeat this step to list additional IP addresses or networks.
   - To limit access to hosts connected through a specified interface on the AnywhereUSB Plus device:

     ```
     (config)> add service dns acl interface end value
     (config)>
     ```

     Where *value* is an interface defined on your device.

     Display a list of available interfaces:

     Use **... network interface ?** to display interface information:

     ```
     (config)> ... network interface ?

     Interfaces

     Additional Configuration
     -------------------------------------------
      defaultip               Default IP
      defaultlinklocal        Default Link-local IP
      eth1                    ETH1
      eth2                    ETH2
      loopback                Loopback
      modem                   Modem

     (config)>
     ```

     Repeat this step to list additional interfaces.

- To limit access based on firewall zones:

```
(config)> add service dns acl zone end value
```

Where *value* is a firewall zone defined on your device, or the **any** keyword.

Display a list of available firewall zones:

Type **... firewall zone ?** at the config prompt:

```
(config)> ... firewall zone ?

Zones: A list of groups of network interfaces that can be
referred to by packet
filtering rules and access control lists.

 Additional Configuration
 ---------------------------------------------------------
----------------------
   any
   dynamic_routes
   edge
   external
   hotspot
   internal
   ipsec
   loopback
   setup

(config)>
```

Repeat this step to list additional firewall zones.

4. (Optional) Cache negative responses

   By default, the device's DNS server caches negative responses. Disabling this option may improve performance on networks with transient DNS results, when one or more DNS servers may have positive results. To disable:

```
(config)> service dns cache_negative_responses false
(config>
```

5. (Optional) Query all servers

   By default, the device's DNS server queries all available DNS servers. Disabling this option may improve performance on networks with transient DNS results, when one or more DNS servers may have positive results. To disable:

```
(config)> service dns query_all_servers false
(config>
```

6. (Optional) Rebind protection

   By default, rebind protection is disabled. If enabled, this prevents upstream DNS servers from returning private IP addresses. To enable:

```
(config)> service dns stop_dns_rebind false
(config)>
```

7. (Optional) Allow localhost rebinding

   By default, localhost rebinding is enabled by default if rebind protection is enabled. This is useful for Real-time Black List (RBL) servers. To disable:

   ```
   (config)> service dns rebind_localhost_ok false
   (config)>
   ```

8. (Optional) Add additional DNS servers

   a. Add a DNS server:

   ```
   (config)> add service dns server end
   (config service dns server 0)>
   ```

   b. Set the IP address of the DNS server:

   ```
   (config service dns server 0)> address ip-addr
   (config service dns server 0)>
   ```

   c. To restrict the device's use of this DNS server based on the domain, use the **domain** command. If no domain are listed, then all queries may be sent to this server.

   ```
   (config service dns server 0)> domain domain
   (config service dns server 0)>
   ```

   d. (Optional) Set a label for this DNS server:

   ```
   (config service dns server 0)> label label
   (config service dns server 0)>
   ```

9. (Optional) Add host names and their IP addresses that the device's DNS server will resolve

   a. Add a host:

   ```
   (config)> add service dns host end
   (config service dns host 0)>
   ```

   b. Set the IP address of the host:

   ```
   (config service dns host 0)> address ip-addr
   (config service dns host 0)>
   ```

   c. Set the host name:

   ```
   (config service dns host 0)> name host-name
   (config service dns host 0)>
   ```

10. Save the configuration and apply the change:

```
(config)> save
Configuration saved.
>
```

11. Type **exit** to exit the Admin CLI.

    Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Simple Network Management Protocol (SNMP)

Simple Network Management Protocol (SNMP) is a protocol for remotely managing and monitoring network devices. Network administrators can use the SNMP architecture to manage nodes, including servers, workstations, routers, switches, hubs, and other equipment on an IP network, manage network performance, find and solve network problems, and plan for network growth.

SNMP Security

By default, the AnywhereUSB Plus device automatically blocks SNMP packets from being received over WAN and LAN interfaces. As a result, if you want a AnywhereUSB Plus device to receive SNMP packets, you must configure the SNMP access control list to allow the device to receive the packets. See Configure Simple Network Management Protocol (SNMP).

Configure Simple Network Management Protocol (SNMP)

Required configuration items

- Enable SNMP.
- Firewall configuration using access control to allow remote connections to the SNMP agent.
- The user name and password used to connect to the SNMP agent.

Additional configuration items

- The port used by the SNMP agent.
- Authentication type (either MD5 or SHA).
- Privacy protocol (either DES or AES).
- Privacy passphrase, if different that the SNMP user password.
- Enable Multicast DNS (mDNS) support.

To configure the SNMP agent on your AnywhereUSB Plus device:

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Services** > **SNMP**.
4. Click **Enable**.
5. Click **Access control list** to configure access control:
   - To limit access to specified IPv4 addresses and networks:
     a. Click **IPv4 Addresses**.
     b. For **Add Address**, click ♑
     c. For **Address**, enter the IPv4 address or network that can access the device's SNMP agent. Allowed values are:

- A single IP address or host name.
- A network designation in CIDR notation, for example, 192.168.1.0/24.
- **any**: No limit to IPv4 addresses that can access the SNMP agent.

d. Click ♑again to list additional IP addresses or networks.

- ■ To limit access to specified IPv6 addresses and networks:
  a. Click **IPv6 Addresses**.
  b. For **Add Address**, click ♑.
  c. For **Address**, enter the IPv6 address or network that can access the device's SNMP agent. Allowed values are:
     - A single IP address or host name.
     - A network designation in CIDR notation, for example, 2001:db8::/48.
     - **any**: No limit to IPv6 addresses that can access the SNMP agent.

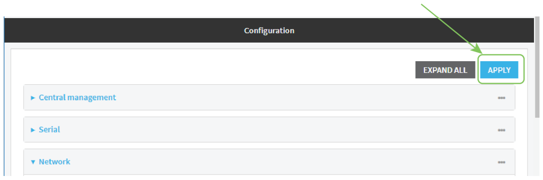
  d. Click ♑again to list additional IP addresses or networks.
- ■ To limit access to hosts connected through a specified interface on the AnywhereUSB Plus device:
  a. Click **Interfaces**.
  b. For **Add Interface**, click ♑.
  c. For **Interface**, select the appropriate interface from the dropdown.
  d. Click ♑again to allow access through additional interfaces.
- ■ To limit access based on firewall zones:
  a. Click **Zones**.
  b. For **Add Zone**, click ♑.
  c. For **Zone**, select the appropriate firewall zone from the dropdown.

     See Firewall configuration for information about firewall zones.

  d. Click ♑again to allow access through additional firewall zones.

6. Type the **Username** used to connect to the SNMP agent.
7. Type the **Password** used to connect to the SNMP agent.
8. (Optional) For **Port**, type the port number. The default is **161**.
9. (Optional) Multicast DNS (mDNS) is disabled by default. mDNS is a protocol that resolves host names in small networks that do not have a DNS server. To enable mDNS, click **Enable mDNS**.
10. (Optional) Select the **Authentication type**, either **MD5** or **SHA**. The default is **MD5**.
11. (Optional) Type the **Privacy passphrase**. If not set, the password, entered above, is used.
12. (Optional) Select the **Privacy protocol**, either **DES** or **AES**. The default is **DES**.
13. Click **Apply** to save the configuration and apply the change.

    The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Enable the SNMP agent:

```
(config)> service location snmp true
(config)>
```

4. Configure access control:

   - To limit access to specified IPv4 addresses and networks:

   ```
   (config)> add service snmp acl address end value
   (config)>
   ```

     Where *value* can be:

     - A single IP address or host name.
     - A network designation in CIDR notation, for example, 192.168.1.0/24.
     - **any**: No limit to IPv4 addresses that can access the SNMP service.

     Repeat this step to list additional IP addresses or networks.

   - To limit access to specified IPv6 addresses and networks:

   ```
   (config)> add service snmp acl address6 end value
   (config)>
   ```

     Where *value* can be:

     - A single IP address or host name.
     - A network designation in CIDR notation, for example, 2001:db8::/48.
     - **any**: No limit to IPv6 addresses that can access the SNMP service.

     Repeat this step to list additional IP addresses or networks.

   - To limit access to hosts connected through a specified interface on the AnywhereUSB Plus device:

   ```
   (config)> add service snmp acl interface end value
   (config)>
   ```

Where *value* is an interface defined on your device.

Display a list of available interfaces:

Use **... network interface ?** to display interface information:

```
(config)> ... network interface ?

Interfaces

Additional Configuration
-------------------------------------------
 defaultip               Default IP
 defaultlinklocal        Default Link-local IP
 eth1                    ETH1
 eth2                    ETH2
 loopback                Loopback
 modem                   Modem

(config)>
```

Repeat this step to list additional interfaces.

- To limit access based on firewall zones:

```
(config)> add service snmp acl zone end value
```

Where *value* is a firewall zone defined on your device, or the **any** keyword.

Display a list of available firewall zones:

Type **... firewall zone ?** at the config prompt:

```
(config)> ... firewall zone ?

Zones: A list of groups of network interfaces that can be
referred to by packet
filtering rules and access control lists.

 Additional Configuration
 ----------------------------------------------------------
----------------------
  any
  dynamic_routes
  edge
  external
  hotspot
  internal
  ipsec
  loopback
  setup

(config)>
```

Repeat this step to list additional firewall zones.

5. Set the name of the user that will be used to connect to the SNMP agent.

   ```
   (config)> service snmp username name
   (config)>
   ```

6. Set the password for the user that will be used to connect to the SNMP agent:

   ```
   (config)> service snmp password pwd
   (config)>
   ```

7. (Optional) Set the port number for the SNMP agent. The default is **161**.

   ```
   (config)> service snmp port port
   (config)>
   ```

8. (Optional) Configure Multicast DNS (mDNS)

   mDNS is a protocol that resolves host names in small networks that do not have a DNS server. For the SNMP agent, mDNS is disabled by default. To enable:

   ```
   (config)> service snmp mdns enable true
   (config>
   ```

9. (Optional) Set the authentication type. Allowed values are **MD5** or **SHA**. The default is **MD5**.

   ```
   (config)> service snmp auth_type SHA
   (config)>
   ```

10. (Optional) Set the privacy passphrase. If not set, the password, entered above, is used.

    ```
    (config)> service snmp privacy pwd
    (config)>
    ```

11. (Optional) Set the privacy protocol, either **DES** or **AES**. The default is **DES**.

    ```
    (config)> service snmp privacy_protocol AES
    (config)>
    ```

12. Save the configuration and apply the change:

    ```
    (config)> save
    Configuration saved.
    >
    ```

13. Type **exit** to exit the Admin CLI.

    Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

System time

By default, the AnywhereUSB Plus device synchronizes the system time by periodically connecting to the Digi NTP server, **time.devicecloud.com**. In this mode, the device queries the time server based on following events and schedule:

- At boot time.
- Once a day.

The default configuration has the system time zone set to UTC. No additional configuration is required for the system time if the default configuration is sufficient. However, you can change the default time zone and the default NTP server, as well as configuring additional NTP servers. If multiple servers are configured, a number of time samples are obtained from each of the servers and a subset of the NTP clock filter and selection algorithms are applied to select the best of these. See Configure the system time for details about changing the default configuration.

The AnywhereUSB Plus device can also be configured to use Network Time Protocol (NTP). In this configuration, the device serves as an NTP server, providing NTP services to downstream devices. See Network Time Protocol for more information about NTP server support.

Configure the system time

This procedure is optional.

The AnywhereUSB Plus device's default system time configuration uses the Digi NTP server, **time.devicecloud.com**, and has the time zone set to **UTC**. You can change the default NTP server and the default time zone, as well as configuring additional NTP servers.

Required Configuration Items

- The time zone for the AnywhereUSB Plus device.
- At least one upstream NTP server for synchronization.

Additional Configuration Options

- Additional upstream NTP servers.

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

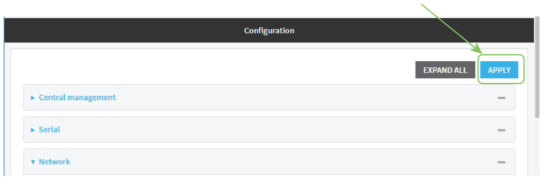
   The **Configuration** window is displayed.
3. Click **System** > **Time**
4. (Optional) Select the **Timezone** for the location of your AnywhereUSB Plus device.
5. (Optional) Add upstream NTP servers that the device will use to synchronize its time. The default setting is **time.devicecloud.com**.
   - To change the default value of the NTP server:
     a. Click **NTP servers**.
     b. For **Server**, type a new server name.

- To add an NTP server:
  a. Click **NTP servers**.
  b. For **Add Server**, click ♑.
  c. For **Server**, enter the hostname of the upstream NTP server that the device will use to synchronize its time.
  d. Click ♑to add additional NTP servers. If multiple servers are included, servers are tried in the order listed until one succeeds.

Note This list is synchronized with the list of servers included with NTP server configuration, and changes made to one will be reflected in the other. See Configure the device as an NTP server for more information about NTP server configuration.

6. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. (Optional) Set the timezone for the location of your AnywhereUSB Plus device. The default is **UTC**.

```
(config)> system time timezone value
(config)>
```

   Where *value* is the timezone using the format specified with the following command:

```
(config)> system time timezone ?

Timezone: The timezone for the location of this device. This is used to
adjust the time for log
messages. It also affects actions that occur at a specific time of day.
Format:
  Africa/Abidjan
  Africa/Accra
  Africa/Addis_Ababa
```

```
 ...

(config)>
```

4. (Optional) Add an upstream NTP server that the device will use to synchronize its time to the appropriate location in the list of NTP servers. The default setting is **time.devicecloud.com**.
   - To delete the default NTP server, **time.devicecloud.com**:

     ```
     (config)> del service ntp server 0
     ```

   - To add the NTP server to the beginning of the list, use the index value of **0** to indicate that it should be added as the first server:

     ```
     (config)> add service ntp server 0 time.server.com
     (config)>
     ```

   - To add the NTP server to the end of the list, use the index keyword **end**:

     ```
     (config)> add service ntp server end time.server.com
     (config)>
     ```

   - To add the NTP server in another location in the list, use an index value to indicate the appropriate position. For example:

     ```
     (config)> add service ntp server 1 time.server.com
     (config)>
     ```

   Note This list is synchronized with the list of servers included with NTP server configuration, and changes made to one will be reflected in the other. See Configure the device as an NTP server for more information about NTP server configuration.

5. Save the configuration and apply the change:

   ```
   (config)> save
   Configuration saved.
   >
   ```

6. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Network Time Protocol

Network Time Protocol (NTP) enables devices connected on local and worldwide networks to synchronize their internal software and hardware clocks to the same time source. The AnywhereUSB Plus device can be configured as an NTP server, allowing downstream hosts that are attached to the device's Local Area Networks to synchronize with the device.

When the device is configured as an NTP server, it also functions as an NTP client. The NTP client will be consistently synchronized with one or more upstream NTP servers, which means that NTP packets are transferred every few seconds. A minimum of one upstream NTP server is required. Additional NTP servers can be configured. If multiple servers are configured, a number of time samples are obtained from each of the servers and a subset of the NTP clock filter and selection algorithms are applied to select the best of these.

See Configure the device as an NTP server for information about configuring your device as an NTP server.

Configure the device as an NTP server

Required Configuration Items

- Enable the NTP service.
- At least one upstream NTP server for synchronization. The default setting is the Digi NTP server, **time.devicecloud.com**.

Additional Configuration Options

- Additional upstream NTP servers.
- Access control list to limit downstream access to the AnywhereUSB Plus device's NTP service.
- The time zone setting, if the default setting of UTC is not appropriate.

To configure the AnywhereUSB Plus device's NTP service:

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Services** > **NTP**.
4. Enable the AnywhereUSB Plus device's NTP service by clicking **Enable**.
5. (Optional) Configure the access control list to limit downstream access to the AnywhereUSB Plus device's NTP service.
   - To limit access to specified IPv4 addresses and networks:
     a. Click **IPv4 Addresses**.
     b. For **Add Address**, click +
     c. For **Address**, enter the IPv4 address or network that can access the device's NTP service. Allowed values are:
        - A single IP address or host name.
        - A network designation in CIDR notation, for example, 192.168.1.0/24.
        - **any**: No limit to IPv4 addresses that can access the NTP service.
     d. Click +again to list additional IP addresses or networks.
   - To limit access to specified IPv6 addresses and networks:
     a. Click **IPv6 Addresses**.
     b. For **Add Address**, click +
     c. For **Address**, enter the IPv6 address or network that can access the device's NTP service. Allowed values are:

- A single IP address or host name.
- A network designation in CIDR notation, for example, 2001:db8::/48.
- **any**: No limit to IPv6 addresses that can access the NTP service.

d. Click ♑ again to list additional IP addresses or networks.

- To limit access to hosts connected through a specified interface on the AnywhereUSB Plus device:

  a. Click **Interfaces**.

  b. For **Add Interface**, click ♑.

  c. For **Interface**, select the appropriate interface from the dropdown.

  d. Click ♑ again to allow access through additional interfaces.

- To limit access based on firewall zones:

  a. Click **Zones**.

  b. For **Add Zone**, click ♑.

  c. For **Zone**, select the appropriate firewall zone from the dropdown.

  See Firewall configuration for information about firewall zones.

  d. Click ♑ again to allow access through additional firewall zones.

Note By default, the access control list for the NTP service is empty, which means that all downstream hosts connected to the AnywhereUSB Plus device can use the NTP service.

6. (Optional) Add upstream NTP servers that the device will use to synchronize its time. The default setting is **time.devicecloud.com**.

   - To change the default value of the NTP server:

     a. Click **NTP servers**.

     b. For **Server**, type a new server name.

   - To add an NTP server:

     a. Click **NTP servers**.

     b. For **Add Server**, click ♑.

     c. For **Server**, enter the hostname of the upstream NTP server that the device will use to synchronize its time.

     d. Click ♑ to add additional NTP servers. If multiple servers are included, servers are tried in the order listed until one succeeds.

Note This list is synchronized with the list of servers included with NTP client configuration, and changes made to one will be reflected in the other. See Configure the system time for more information about NTP client configuration.

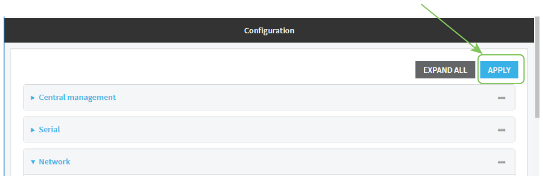
7. (Optional) Configure the system time zone. The default is **UTC**.

   a. Click **System** > **Time**

   b. Select the **Timezone** for the location of your AnywhereUSB Plus device.

8. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Enable the NTP service:

```
(config)> service NTP enable true
(config)>
```

4. (Optional) Add an upstream NTP server that the device will use to synchronize its time to the appropriate location in the list of NTP servers. The default setting is **time.devicecloud.com**.

   - To delete the default NTP server, **time.devicecloud.com**:

   ```
   (config)> del service ntp server 0
   ```

   - To add the NTP server to the beginning of the list, use the index value of **0** to indicate that it should be added as the first server:

   ```
   (config)> add service ntp server 0 time.server.com
   (config)>
   ```

   - To add the NTP server to the end of the list, use the index keyword **end**:

   ```
   (config)> add service ntp server end time.server.com
   (config)>
   ```

   - To add the NTP server in another location in the list, use an index value to indicate the appropriate position. For example:

   ```
   (config)> add service ntp server 1 time.server.com
   (config)>
   ```

   Note This list is synchronized with the list of servers included with NTP client configuration, and changes made to one will be reflected in the other. See Configure the system time for more information about NTP client configuration.

5. (Optional) Configure the access control list to limit downstream access to the AnywhereUSB Plus device's NTP service.

   - To limit access to specified IPv4 addresses and networks:

```
(config)> add service ntp acl address end value
(config)>
```

Where *value* can be:

- A single IP address or host name.
- A network designation in CIDR notation, for example, 192.168.1.0/24.
- **any**: No limit to IPv4 addresses that can access the NTP server agent.

Repeat this step to list additional IP addresses or networks.

- To limit access to specified IPv6 addresses and networks:

```
(config)> add service ntp acl address6 end value
(config)>
```

Where *value* can be:

- A single IP address or host name.
- A network designation in CIDR notation, for example, 2001:db8::/48.
- **any**: No limit to IPv6 addresses that can access the NTP server agent.

Repeat this step to list additional IP addresses or networks.

- To limit access to hosts connected through a specified interface on the AnywhereUSB Plus device:

```
(config)> add service ntp acl interface end value
(config)>
```

Where *value* is an interface defined on your device.

Display a list of available interfaces:

Use **... network interface ?** to display interface information:

```
(config)> ... network interface ?

Interfaces

Additional Configuration
-------------------------------------------
 defaultip               Default IP
 defaultlinklocal        Default Link-local IP
 eth1                    ETH1
 eth2                    ETH2
 loopback                Loopback
 modem                   Modem

(config)>
```

Repeat this step to list additional interfaces.

- To limit access based on firewall zones:

```
(config)> add service ntp acl zone end value
```

Where *value* is a firewall zone defined on your device, or the **any** keyword.

Display a list of available firewall zones:

Type **... firewall zone ?** at the config prompt:

```
(config)> ... firewall zone ?

Zones: A list of groups of network interfaces that can be
referred to by packet
filtering rules and access control lists.

 Additional Configuration
 ---------------------------------------------------------
----------------------
  any
  dynamic_routes
  edge
  external
  hotspot
  internal
  ipsec
  loopback
  setup

(config)>
```

Repeat this step to list additional firewall zones.

Note By default, the access control list for the NTP service is empty, which means that all downstream hosts connected to the AnywhereUSB Plus device can use the NTP service.

6. (Optional) Set the timezone for the location of your AnywhereUSB Plus device. The default is **UTC**.

```
(config)> system time timezone value
(config)>
```

Where *value* is the timezone using the format specified with the following command:

```
(config)> system time timezone ?

Timezone: The timezone for the location of this device. This is used to
adjust the time for log
messages. It also affects actions that occur at a specific time of day.
Format:
  Africa/Abidjan
  Africa/Accra
  Africa/Addis_Ababa
  ...

(config)>
```

7. Save the configuration and apply the change:

```
(config)> save
Configuration saved.
>
```

8. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Configure a multicast route

Multicast routing allows a device to transmit data to a single multicast address, which is then distributed to a group of devices that are configured to be members of that group.

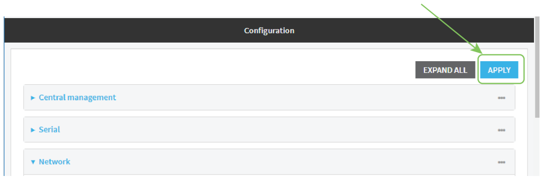
To configure a multicast route:

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Services** > **Multicast**.
4. For **Add Multicast route**, type a name for the route and click ♑
5. The new route is enabled by default. To disable, uncheck **Enable**.
6. Type the **Source address** for the route. This must be a multicast IP address between 224.0.0.1 and 239.255.255.255.
7. Type the **Source port**. Ensure the port is not used by another protocol.
8. Select a **Source interface** where multicast packets will arrive.
9. Select a **Destination interface** that the AnywhereUSB Plus device will use to send mutlicast packets.
10. Click **Apply** to save the configuration and apply the change.

    The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Add the multicast route. For example, to add a route named **test**:

```
(config)> add service multicast test
(config service multicast test)>
```

4. The multicast route is enabled by default. If it has been disabled, enable the route:

```
(config service multicast test)> enable true
(config service multicast test)>
```

5. Set the source address for the route. This must be a multicast IP address between 224.0.0.1 and 239.255.255.255.

```
(config service multicast test)> dst ip-address
(config service multicast test)>
```

6. Set the source port for the route. Ensure the port is not used by another protocol.

```
(config service multicast test)> port port
(config service multicast test)>
```

7. Set the source interface for the route where multicast packets will arrive:

   a. Use the **?** to determine available interfaces:

```
(config service multicast test)> src_interface ?

Source interface: Where the multicast packets will arrive. IP routes do
not have an effect in the incoming stream.
Format:
  /network/interface/defaultip
  /network/interface/defaultlinklocal
  /network/interface/eth1
  /network/interface/eth2
  /network/interface/loopback
Current value:

(config service multicast test)> src_interface
```

   b. Set the interface. For example:

```
(config service multicast test)> src_interface /network/interface/
(config service multicast test)>
```

8. Set the destination interface that the AnywhereUSB Plus device will use to send mutlicast packets.

```
(config service multicast test)> interface interface
(config service multicast test)>
```

   a. Use the **?** to determine available interfaces:

```
(config service multicast test)> interface ?

Destination interface: Which interface to send the multicast packets.
Format:
  /network/interface/defaultip
  /network/interface/defaultlinklocal
  /network/interface/eth1
  /network/interface/eth2
  /network/interface/loopback
Current value:

(config service multicast test)> interface
```

b. Set the interface. For example:

```
(config service multicast test)> interface /network/interface/
(config service multicast test)>
```

9. Save the configuration and apply the change:

```
(config)> save
Configuration saved.
>
```

10. Type **exit** to exit the Admin CLI.

    Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Enable service discovery (mDNS)

Multicast DNS mDNS is a protocol that resolves host names in small networks that do not have a DNS server. You can enable the AnywhereUSB Plus device to use mDNS.

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Services** > **Service Discovery (mDNS)**.
4. **Enable** the mDNS service.
5. Click **Access control list** to configure access control:
   - To limit access to specified IPv4 addresses and networks:
     a. Click **IPv4 Addresses**.
     b. For **Add Address**, click ♑
     c. For **Address**, enter the IPv4 address or network that can access the device's mDNS service. Allowed values are:
        - A single IP address or host name.
        - A network designation in CIDR notation, for example, 192.168.1.0/24.
        - **any**: No limit to IPv4 addresses that can access the mDNS service.

     d. Click ♑again to list additional IP addresses or networks.
   - To limit access to specified IPv6 addresses and networks:
     a. Click **IPv6 Addresses**.
     b. For **Add Address**, click ♑
     c. For **Address**, enter the IPv6 address or network that can access the device's mDNS service. Allowed values are:
        - A single IP address or host name.
        - A network designation in CIDR notation, for example, 2001:db8::/48.
        - **any**: No limit to IPv6 addresses that can access the mDNS service.

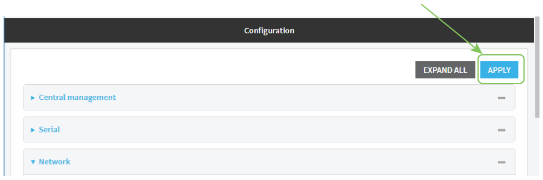
     d. Click ♑again to list additional IP addresses or networks.
   - To limit access to hosts connected through a specified interface on the AnywhereUSB Plus device:
     a. Click **Interfaces**.
     b. For **Add Interface**, click ♑
     c. For **Interface**, select the appropriate interface from the dropdown.
     d. Click ♑again to allow access through additional interfaces.
   - To limit access based on firewall zones:
     a. Click **Zones**.
     b. For **Add Zone**, click ♑
     c. For **Zone**, select the appropriate firewall zone from the dropdown.

        See Firewall configuration for information about firewall zones.

   d. Click ƴ again to allow access through additional firewall zones.

6. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.

Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Enable the mDNS service:

```
(config)> service mdns enable true
(config)>
```

4. Configure access control:

   - To limit access to specified IPv4 addresses and networks:

     ```
     (config)> add service mdns acl address end value
     (config)>
     ```

     Where *value* can be:

     - A single IP address or host name.
     - A network designation in CIDR notation, for example, 192.168.1.0/24.
     - **any**: No limit to IPv4 addresses that can access the mDNS service.

     Repeat this step to list additional IP addresses or networks.

   - To limit access to specified IPv6 addresses and networks:

     ```
     (config)> add service mdns acl address6 end value
     (config)>
     ```

     Where *value* can be:

     - A single IP address or host name.
     - A network designation in CIDR notation, for example, 2001:db8::/48.
     - **any**: No limit to IPv6 addresses that can access the mDNS service.

     Repeat this step to list additional IP addresses or networks.

   - To limit access to hosts connected through a specified interface on the AnywhereUSB Plus device:

```
(config)> add service mdns acl interface end value
(config)>
```

Where *value* is an interface defined on your device.

Display a list of available interfaces:

Use **... network interface ?** to display interface information:

```
(config)> ... network interface ?

Interfaces

Additional Configuration
-------------------------------------------
 defaultip               Default IP
 defaultlinklocal        Default Link-local IP
 eth1                    ETH1
 eth2                    ETH2
 loopback                Loopback
 modem                   Modem

(config)>
```

Repeat this step to list additional interfaces.

- To limit access based on firewall zones:

```
(config)> add service mdns acl zone end value
```

Where *value* is a firewall zone defined on your device, or the **any** keyword.

Display a list of available firewall zones:

Type **... firewall zone ?** at the config prompt:

```
(config)> ... firewall zone ?

Zones: A list of groups of network interfaces that can be
referred to by packet
filtering rules and access control lists.

 Additional Configuration
 ---------------------------------------------------------
----------------------
  any
  dynamic_routes
  edge
  external
  hotspot
  internal
  ipsec
  loopback
```

```
     setup

(config)>
```

Repeat this step to list additional firewall zones.

5. Save the configuration and apply the change:

```
(config)> save
Configuration saved.
>
```

6. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Use the iPerf service

Your AnywhereUSB Plus device includes an iPerf3 server that you can use to test the performance of your network.

IPerf3 is a command-line tool that measures the maximum network throughput an interface can handle. This is useful when diagnosing network speed issues, to determine, for example, whether a cellular connection is providing expected throughput.

The AnywhereUSB Plus implementation of iPerf3 supports testing with both TCP and UDP.

Required configuration items

- Enable the iPerf server on the AnywhereUSB Plus device.
- An iPerf3 client installed on a remote host. iPerf3 software can be downloaded at https://iperf.fr/iperf-download.php.

Additional configuration Items

- The port that the AnywhereUSB Plus device's iPerf server will use to listen for incoming connections.
- The access control list for the iPerf server.

  When the iPerf server is enabled, the AnywhereUSB Plus device will automatically configure its firewall rules to allow incoming connections on the configured listening port. You can restrict access by configuring the access control list for the iPerf server.

To enable the Iperf3 server:

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Services** > **IPerf**.
4. Click **Enable**.
5. (Optional) For **Iperf Server Port**, type the appropriate port number for the iPerf server listening port.
6. (Optional) Click to expand **Access control list** to restrict access to the iPerf server:
   - To limit access to specified IPv4 addresses and networks:
     a. Click **IPv4 Addresses**.
     b. For **Add Address**, click ♑
     c. For **Address**, enter the IPv4 address or network that can access the device's service-type. Allowed values are:
        - A single IP address or host name.
        - A network designation in CIDR notation, for example, 192.168.1.0/24.
        - **any**: No limit to IPv4 addresses that can access the service-type.

     d. Click ♑again to list additional IP addresses or networks.
   - To limit access to specified IPv6 addresses and networks:
     a. Click **IPv6 Addresses**.
     b. For **Add Address**, click ♑
     c. For **Address**, enter the IPv6 address or network that can access the device's service-type. Allowed values are:
        - A single IP address or host name.
        - A network designation in CIDR notation, for example, 2001:db8::/48.
        - **any**: No limit to IPv6 addresses that can access the service-type.

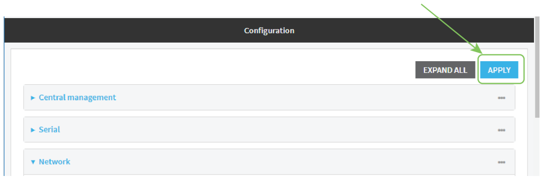
     d. Click ♑again to list additional IP addresses or networks.
   - To limit access to hosts connected through a specified interface on the AnywhereUSB Plus device:
     a. Click **Interfaces**.
     b. For **Add Interface**, click ♑
     c. For **Interface**, select the appropriate interface from the dropdown.
     d. Click ♑again to allow access through additional interfaces.
   - To limit access based on firewall zones:
     a. Click **Zones**.
     b. For **Add Zone**, click ♑
     c. For **Zone**, select the appropriate firewall zone from the dropdown.

        See Firewall configuration for information about firewall zones.

     d. Click ♑again to allow access through additional firewall zones.

7. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Enable the iPerf server:

```
(config)> service iperf enable true
(config)>
```

4. (Optional) Set the port number for the iPerf server listening port. The default is 5201.

```
(config)> service iperf port port_number
(config)>
```

5. (Optional) Set the access control list to restrict access to the iPerf server:

   - To limit access to specified IPv4 addresses and networks:

     ```
     (config)> add service iperf acl address end value
     (config)>
     ```

     Where *value* can be:

     - A single IP address or host name.
     - A network designation in CIDR notation, for example, 192.168.1.0/24.
     - **any**: No limit to IPv4 addresses that can access the service-type.

     Repeat this step to list additional IP addresses or networks.

   - To limit access to specified IPv6 addresses and networks:

     ```
     (config)> add service iperf acl address6 end value
     (config)>
     ```

     Where *value* can be:

     - A single IP address or host name.
     - A network designation in CIDR notation, for example, 2001:db8::/48.
     - **any**: No limit to IPv6 addresses that can access the service-type.

Repeat this step to list additional IP addresses or networks.

- To limit access to hosts connected through a specified interface on the AnywhereUSB Plus device:

```
(config)> add service iperf acl interface end value
(config)>
```

Where *value* is an interface defined on your device.

Display a list of available interfaces:

Use **... network interface ?** to display interface information:

```
(config)> ... network interface ?

Interfaces

Additional Configuration
-------------------------------------------
 defaultip              Default IP
 defaultlinklocal       Default Link-local IP
 eth1                   ETH1
 eth2                   ETH2
 loopback               Loopback
 modem                  Modem

(config)>
```

Repeat this step to list additional interfaces.

- To limit access based on firewall zones:

```
(config)> add service iperf acl zone end value
```

Where *value* is a firewall zone defined on your device, or the **any** keyword.

Display a list of available firewall zones:

Type **... firewall zone ?** at the config prompt:

```
(config)> ... firewall zone ?

Zones: A list of groups of network interfaces that can be
referred to by packet
filtering rules and access control lists.

 Additional Configuration
 ---------------------------------------------------------
----------------------
  any
  dynamic_routes
  edge
  external
  hotspot
  internal
  ipsec
  loopback
  setup

(config)>
```

Repeat this step to list additional firewall zones.

6. Save the configuration and apply the change:

```
(config)> save
Configuration saved.
>
```

7. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Example performance test using Iperf3

On a remote host with Iperf3 installed, enter the following command:

```
$ iperf3 -c device_ip
```

where *device_ip* is the IP address of the AnywhereUSB Plus device. For example:

```
$ iperf3 -c 192.168.2.1
Connecting to host 192.168.2.1, port 5201
[  4] local 192.168.3.100 port 54934 connected to 192.168.1.1 port 5201
[ ID] Interval           Transfer     Bandwidth       Retr  Cwnd
[  4]   0.00-1.00   sec  26.7 MBytes   224 Mbits/sec    8   2.68 MBytes
[  4]   1.00-2.00   sec  28.4 MBytes   238 Mbits/sec   29   1.39 MBytes
[  4]   2.00-3.00   sec  29.8 MBytes   250 Mbits/sec    0   1.46 MBytes
[  4]   3.00-4.00   sec  31.2 MBytes   262 Mbits/sec    0   1.52 MBytes
[  4]   4.00-5.00   sec  32.1 MBytes   269 Mbits/sec    0   1.56 MBytes
[  4]   5.00-6.00   sec  32.5 MBytes   273 Mbits/sec    0   1.58 MBytes
[  4]   6.00-7.00   sec  33.9 MBytes   284 Mbits/sec    0   1.60 MBytes
[  4]   7.00-8.00   sec  33.7 MBytes   282 Mbits/sec    0   1.60 MBytes
[  4]   8.00-9.00   sec  33.5 MBytes   281 Mbits/sec    0   1.60 MBytes
[  4]   9.00-10.00  sec  33.2 MBytes   279 Mbits/sec    0   1.60 MBytes
- - - - - - - - - - - - - - - - - - - - - - - - -
[ ID] Interval           Transfer     Bandwidth       Retr
[  4]   0.00-10.00  sec   315 MBytes   264 Mbits/sec   37             sender
[  4]   0.00-10.00  sec   313 MBytes   262 Mbits/sec                  receiver

iperf Done.
$
```

User authentication

This chapter contains the following topics:

AnywhereUSB Plus user authentication

User authentication on the AnywhereUSB Plus has the following features and default configuration:

Feature	Description	Default configuration
Idle timeout	Determines how long a user session can be idle before the system automatically disconnects.	■ None
Methods	Determines how users are authenticated for access: **local users**, **TACACS+**, or **RADIUS**.	■ **local users**
Groups	Associates access permissions for a group. . You can modify the released groups and create additional groups as needed for your site. A user can be assigned to more than one group.	■ **admin**: Provides the logged-in user with administrative and shell access. ■ **serial**: Provides the logged-in user with access to serial ports
Users	Local users for the AnywhereUSB Plus.	■ **admin**: Belongs to both the **admin** and **serial** groups.
TACACS+	Terminal Access Controller Access-Control System Plus servers and users.	■ Not configured.
RADIUS	Remote Authentication Dial-In User Service servers and users.	■ Not configured.

User authentication methods

Authentication methods determine how users of the AnywhereUSB Plus device are authenticated. Available authentication methods are:

- **Local users**: User are authenticated on the local device.
- **RADIUS**: Users authenticated by using a remote RADIUS server for authentication.

  See Remote Authentication Dial-In User Service (RADIUS) for information about configuring RADIUS authentication.
- **TACACS+**: Users authenticated by using a remote TACACS+ server for authentication.

  See Terminal Access Controller Access-Control System Plus (TACACS+) for information about configuring TACACS+ authentication.

Add a new authentication method

Required configuration items

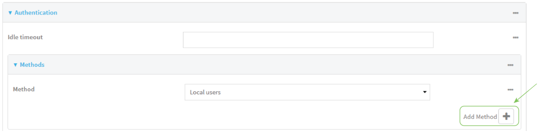
- The types of authentication method to be used:

To add an authentication method:

WebUI

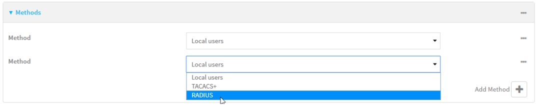
1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Authentication** > **Methods**.
4. For **Add Method**, click ♑

   Method: Local users

5. Select the appropriate authentication type for the new method from the **Method** drop-down.

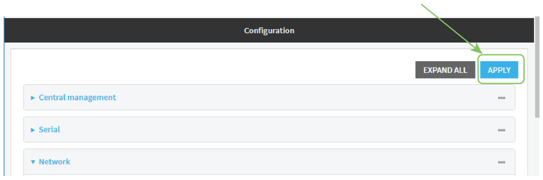
   Method: Local users

   Method: Local users

   > **Note** Authentication methods are attempted in the order they are listed until the first successful authentication result is returned. See Rearrange the position of authentication methods for information about how to reorder the authentication methods.

6. Repeat these steps to add additional methods.
7. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.

Command line

Authentication methods are attempted in the order they are listed until the first successful authentication result is returned. This procedure describes how to add methods to various places in the list.

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

2. At the command line, type **config** to enter configuration mode:

   ```
   > config
   (config)>
   ```

3. Add the new authentication method to the appropriate location in the list:

   - To determine the current list of authentication methods:

     a. Log into the AnywhereUSB Plus command line as a user with Admin access.

        Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

     b. At the command line, type **config** to enter configuration mode:

        ```
        > config
        (config)>
        ```

     c. Use the **show auth method** command to display the current authentication methods configuration:

        ```
        (config)> show auth method
        0 local
        (config)>
        ```

   - To add the new authentication method to the beginning of the list, use the index value of **0** to indicate that it should be added as the first method:

     ```
     (config)> add auth method 0 auth_type
     (config)>
     ```

     where *auth_type* is one of **local**, **radius**, or **tacacs+**.

   - To add the new authentication method to the end of the list, use the index keyword **end**:

     ```
     (config)> add auth method end auth_type
     (config)>
     ```

     where *auth_type* is one of **local**, **radius**, or **tacacs+**.

   - To add the new authentication in another location in the list, use an index value to indicate the appropriate position. For example:

     ```
     (config)> add auth method 1 auth_type
     (config)>
     ```

     where *auth_type* is one of **local**, **radius**, or **tacacs+**.

   - You can also use the **move** command to rearrange existing methods. See Rearrange the position of authentication methods for information about how to reorder the authentication methods.

4. Save the configuration and apply the change:

```
(config)> save
Configuration saved.
>
```

5. Type **exit** to exit the Admin CLI.

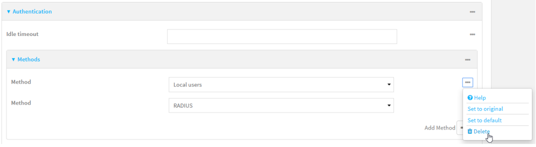
   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Delete an authentication method

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Authentication** > **Methods**.
4. Click the menu icon (**...**) next to the method and select **Delete**.

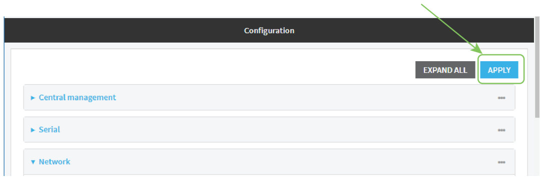


Method: Local users

Method: RADIUS

5. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Use the **show auth method** command to determine the index number of the authentication method to be deleted:

```
(config)> show auth method
0 local
1 radius
2 tacacs+
(config)>
```

4. Delete the appropriate authentication method:

   ```
   (config)> del auth method n
   ```

   Where *n* is index number of the authentication method to be deleted. For example, to delete the TACACS+ authentication method as displayed by the example **show** command, above:

   ```
   (config)> del auth method 2
   ```

5. Save the configuration and apply the change:

   ```
   (config)> save
   Configuration saved.
   >
   ```

6. Type **exit** to exit the Admin CLI.

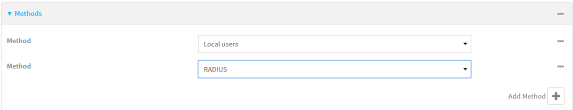
   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Rearrange the position of authentication methods

WebUI

Authentication methods are reordered by changing the method type in the **Method** drop-down for each authentication method to match the appropriate order.

For example, the following configuration has **Local users** as the first method, and **RADIUS** as the second.



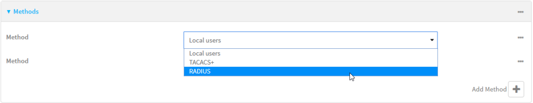
Method: Local users

Method: RADIUS

To reorder these so that **RADIUS** is first and **Local users** is second:

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

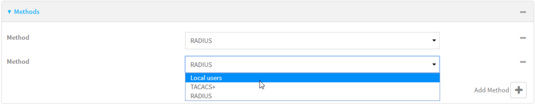
   The **Configuration** window is displayed.
3. Click to expand the first **Method**.
4. In the **Method** drop-down, select **RADIUS**.

   Method: Local users

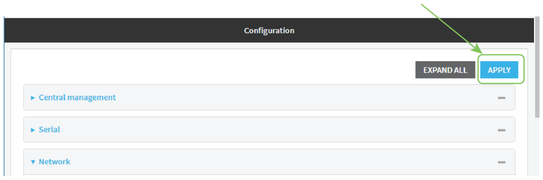
5. Click to expand the second **Method**.

6. In the **Method** drop-down, select **Local users**.



7. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Use the **show** command to display current configuration:

```
(config)> show auth method
0 local
1 radius
(config)>
```

4. Use the **move** command to rearrange the methods:

```
(config)> move auth method 1 0
(config)>
```

5. Use the **show** command again to verify the change:

```
(config)> show auth method
0 radius
1 local
(config)>
```

6. Save the configuration and apply the change:

```
(config)> save
Configuration saved.
>
```

7. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Authentication groups

Authentication groups are used to assign access rights to AnywhereUSB Plus users. Three types of access rights can be assigned:

- **Admin access**: Users with Admin access have the ability to manage the AnywhereUSB Plus device by using the WebUI or the CLI.
- **Shell access**: Users with Shell access have the ability to access the shell when logging into the AnywhereUSB Plus via ssh or the serial console.
- **Serial access**: Users with Serial access have the ability to log into the AnywhereUSB Plus device by using the serial console.

Preconfigured authentication groups

The AnywhereUSB Plus device has two preconfigured authentication groups:

- The **admin** group is configured by default to have **Admin access** and **Shell access**.
- The **serial** group is configured by default to have **Serial access**.

The preconfigured authentication groups cannot be deleted, but the access rights defined for the group are configurable.

This section contains the following topics:

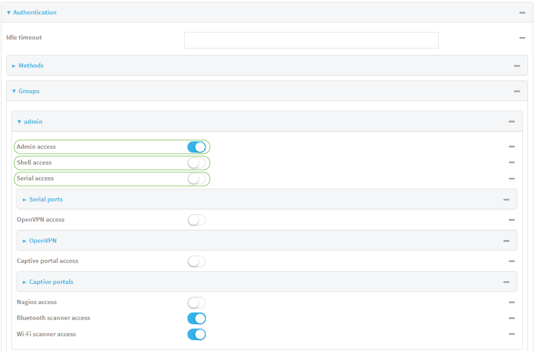
Change the access rights for a predefined group

By default, two authentication groups are predefined: **admin** and **serial**. To change the access rights of the predefined groups:

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

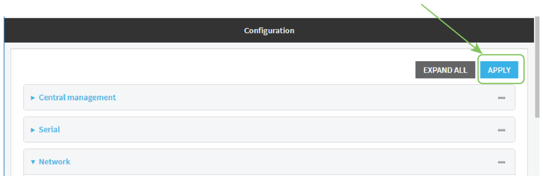
   The **Configuration** window is displayed.
3. Click **Authentication** > **Groups**.
4. Click the authentication group to be changed, either **admin** or **serial**, to expand its configuration node.
5. Click the box next to the following options, as appropriate, to enable or disable access rights for each:
   - **Admin access**
   - **Shell access**
   - **Serial access**



Admin access ☑
Shell access ☐
Serial access ☐
OpenVPN access ☐
Captive portal access ☐
Nagios access ☐
Bluetooth scanner access ☑
Wi-Fi scanner access ☑

6. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

2. At the command line, type **config** to enter configuration mode:

   ```
   > config
   (config)>
   ```

3. Enable or disable access rights for the group. For example:
   - Admin access:
     - To disable Admin access for the **admin** group:

       ```
       (config)> auth group admin acl admin enable false
       ```

   - Shell access:
     - To enable Shell access for the **serial** group:

       ```
       (config)> auth group serial acl shell enable true
       ```

   - Serial access:
     - To enable Serial access for the **admin** group:

       ```
       (config)> auth group admin acl serial enable true
       ```

4. Save the configuration and apply the change:

   ```
   (config)> save
   Configuration saved.
   >
   ```

5. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Add an authentication group

Required configuration items

- The access rights to be assigned to users that are assigned to this group.

Additional configuration items

- Access rights to OpenVPN tunnels, and the tunnels to which they have access.
- Access rights to captive portals, and the portals to which they have access.
- Access rights to query the device for Nagios monitoring.

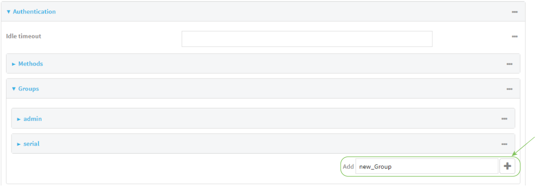
To add an authentication group:

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

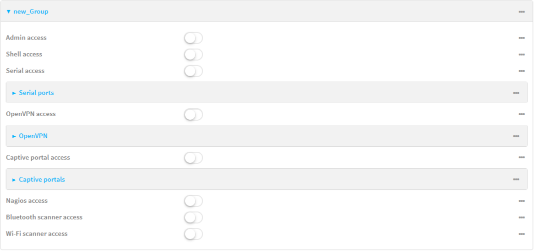
   The **Configuration** window is displayed.
3. Click **Authentication** > **Groups**.

4. For **Add**, type a name for the group and click ♑

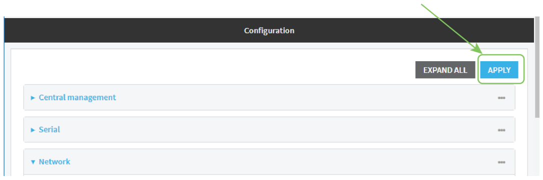
   Add new_Group

   The group configuration window is displayed.

5. Click the following options, as appropriate, to enable or disable access rights for each:
   - **Admin access**
   - **Shell access**
   - **Serial access**
6. (Optional) Configure OpenVPN access. See for further information.
7. (Optional) Configure captive portal access:
   a. Enable captive portal access rights for users of this group by checking the box next to **Captive portal access**.
   b. Click **Captive portals** to expand the **Captive portal** node.
   c. For **Add Captive portal**, click ♑
   d. In the **Captive portal** dropdown, select a captive portal to which users of this group will have access.
   e. Click ♑again to add additional captive portals.
8. (Optional) Enable users that belong to this group to query the device for Nagios monitoring by checking the box next to **Nagios access**.
9. (Optional) Enable users that belong to this group to access the Bluetooth scanning service by checking the box next to **Bluetooth scanner access**.
10. (Optional) Enable users that belong to this group to access the Wi-Fi scanning service by checking the box next to **Wi-Fi scanner access**.
11. Click **Apply** to save the configuration and apply the change.

    The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Use the **add auth group** command to add a new authentication. For example, to add a group named **test**:

```
(config)> add auth group test
(config auth group test)>
```

4. Enable access rights for the group:
   - Admin access:

   ```
   (config auth group test)> acl admin enable true
   ```

   - Shell access:

   ```
   (config auth group test)> acl shell enable true
   ```

   - Serial access:

   ```
   (config auth group test)> acl serial enable true
   ```

5. (Optional) Configure captive portal access:
   a. Return to the config prompt by typing three periods (**...**):

   ```
   (config auth group test)> ...
   (config)>
   ```

   b. Enable captive portal access rights for users of this group:

   ```
   (config)> auth group test acl portal enable true
   ```

   c. Add a captive portal to which users of this group will have access:
      i. Determine available portals:

      ```
      (config)> show firewall portal
      portal1
              auth none
      ```

```
       enable true
       http redirect
       no interface
       no message
       no redirect_url
       no terms
       timeout 24h
       no title
(config)>
```

ii. Add a captive portal:

```
(config)> add auth group test acl portal portals end portal1
(config)>
```

6. (Optional) Configure Nagios monitoring:

```
(config)> auth group test acl nagios enable true
(config)>
```

7. (Optional) Enable users that belong to this group to access the Bluetooth scanning service:

```
(config)> auth group test acl bluetooth_scanner enable true
(config)>
```

8. (Optional) Enable users that belong to this group to access the Wi-Fi scanning service:

```
(config)> auth group group test acl wifi_scanner enable true
(config)>
```

9. Save the configuration and apply the change:

```
(config)> save
Configuration saved.
>
```

10. Type **exit** to exit the Admin CLI.

    Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Delete an authentication group

By default, the AnywhereUSB Plus device has two preconfigured authentication groups: **admin** and **serial**. These groups cannot be deleted.

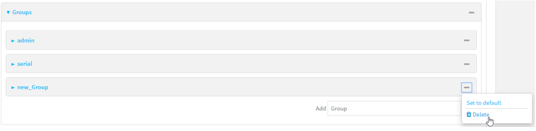
To delete an authentication group that you have created:

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

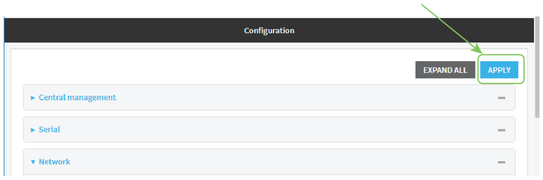
   The **Configuration** window is displayed.
3. Click **Authentication** > **Groups**.

4. Click the menu icon **(...)** next to the group to be deleted and select **Delete**.



5. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. At the config prompt, type:

```
(config)> del auth group groupname
```

4. Save the configuration and apply the change:

```
(config)> save
Configuration saved.
>
```

5. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Local users

Local users are authenticated on the device without using an external authentication mechanism such as TACACS+ or RADIUS. Local user authentication is enabled by default, with one preconfiged default user.

Default user

At manufacturing time, each AnywhereUSB Plus device comes with a default user configured as follows:

- Username: **admin**.
- Password: The default password is displayed on the label on the bottom of the device.

Note The default password is a unique password for the device, and is the most critical security feature for the device. If you reset the device to factory defaults, you must log in using the default user and password, and you should immediately change the password to a custom password. Before deploying or mounting the AnywhereUSB Plus device, record the default password, so you have the information available when you need it even if you cannot physically access the label on the bottom of the device.

The default **admin** user is preconfigured with both Admin and Serial access. You can configure the **admin** user account to fit with the needs of your environment.

This section contains the following topics:

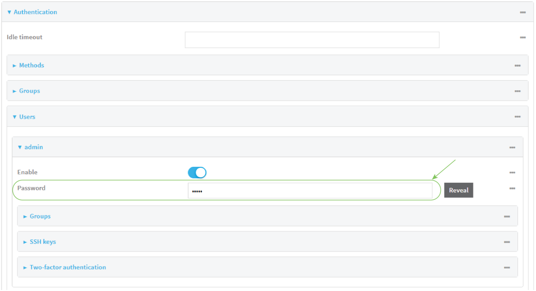
Change a local user's password

To change a user's password:

WebUI

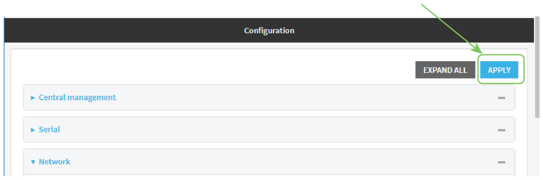
1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Authentication** > **Users**.
4. Click the username to expand the user's configuration node.
5. For **Password**, enter the new password.



6. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

   ```
   > config
   (config)>
   ```
3. At the config prompt, type:

   ```
   (config)> auth user username password pwd
   ```

   Where:

   - *username* is the name of the user.
   - *pwd* is the new password for the user.
4. Save the configuration and apply the change:

   ```
   (config)> save
   Configuration saved.
   >
   ```
5. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Configure a local user

Required configuration items

- A username.
- A password. For security reasons, passwords are stored in hash form. There is no way to get or display passwords in clear-text form, although prior to saving the configuration, the password can be shown by clicking **Reveal**.
- The authentication group or groups from which the user will inherit access rights. See Authentication groups for information about configuring groups.

Additional configuration items

- An optional public ssh key, to authenticate the user when using passwordless SSH login.
- Two-factor authentication information for user login over SSH and the serial console:
  - The verification type for two-factor authentication: Either time-based or counter-based.
  - The security key.
  - Whether to allow passcode reuse (time based verification only).
  - The passcode refresh interval (time based verification only).
  - The valid code window size.
  - The login limit.

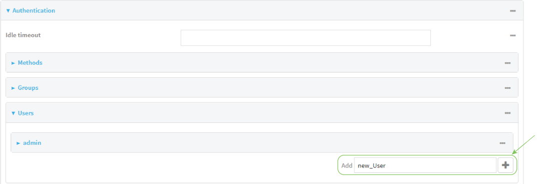
- The login limit period.
- One-time use eight-digit emergency scratch codes.

To configure a local user:

WebUI

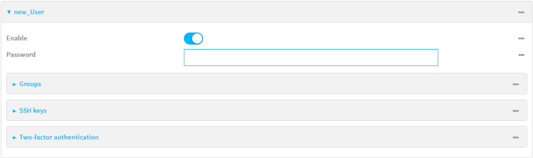
1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Authentication** > **Users**.
4. In **Add User**, type a name for the user and click ♑

   Add new_User

   The user configuration window is displayed.

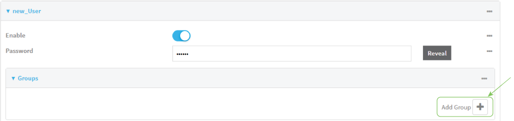
   

   The user is enabled by default. To disable, click to toggle off **Enable**.
5. Enter a password for the user.
6. Add groups for the user.

   Groups define user access rights. See Authentication groups for information about configuring groups.

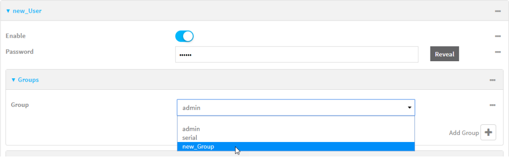
   a. Click **Groups**.

   b. For **Add Group**, click ♑

   Password ••••••

   c. For **Group**, select an appropriate group.

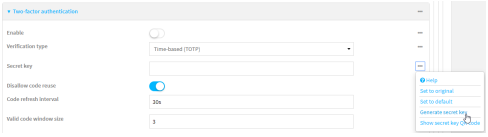
   

   Password ••••••

   Group admin

Note Every user must be configured with at least one group. You can add multiple groups to a user by clicking **Add** again and selecting the next group.

7. (Optional) Add SSH keys for the user to use passwordless SSH login:
   a. Click **SSH keys**.
   b. In **Add SSH key**, paste or type a public encryption key that this user can use for passwordless SSH login and click ♑
8. (Optional) Configure two-factor authentication for SSH, and serial console login:
   a. Click **Two-factor authentication**.
   b. Check **Enable** to enable two-factor authentication for this user.
   c. Select the **Verification type**:
      - **Time-based (TOTP)**: Time-based One-Time Password (TOTP) authentication uses the current time to generate a one-time password.
      - **Counter-based (HOTP)**: HMAC-based One-Time Password (HOTP) uses a counter to validate a one-time password.
   d. Generate a **Secret key**:
      i. Click **...** next to the field label and select **Generate secret key**.



▾ Two-factor authentication

Enable ○

Verification type: Time-based (TOTP)

Secret key

Disallow code reuse ●

Code refresh interval: 30s

Valid code window size: 3

      ii. To display the QR code for the secret key, click **...** next to the field label and select **Show secret key QR code**.
      iii. Copy the secret key, or scan or copy the QR code, for use with an application or mobile device to generate passcodes.

Note To copy the QR code, right-click the QR code and select your browser's save image functionality.

   e. For time-based verification only, select **Disallow code reuse** to prevent a code from being used more than once during the time that it is valid.
   f. For time-based verification only, in **Code refresh interval**, type the amount of time that a code will remain valid.

      Allowed values are any number of weeks, days, hours, minutes, or seconds, and take the format ***number***{**w**|**d**|**h**|**m**|**s**}. For example, to set **Code refresh interval** to ten minutes, enter **10m** or **600s**.
   g. In **Valid code window size**, type the allowed number of concurrently valid codes. In cases where TOTP is being used, increasing the **Valid code window size** may be necessary when the clocks used by the server and client are not synchronized.
   h. For **Login limit**, type the number of times that the user is allowed to attempt to log in during the **Login limit period**. Set **Login limit** to **0** to allow an unlimited number of login attempts during the **Login limit period**.
   i. For **Login limit period**, type the amount of time that the user is allowed to attempt to log in.

Allowed values are any number of weeks, days, hours, minutes, or seconds, and take the format ***number***{**w**|**d**|**h**|**m**|**s**}. For example, to set **Login limit period** to ten minutes, enter **10m** or **600s**.

j. Scratch codes are emergency codes that may be used once, at any time. To add a scratch code:

   i. Click **Scratch codes**.

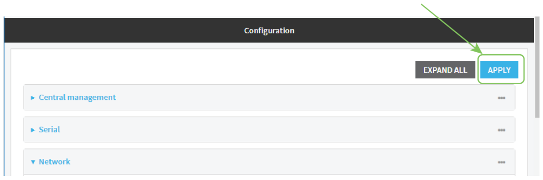
   ii. For **Add Code**, click ♑.

   iii. For **Code**, enter the scratch code. The code must be eight digits, with a minimum of 10000000.

   iv. Click ♑again to add additional scratch codes.

9. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Add a user. For example, to create a user named **new_user**:

```
(config)> add auth user new_user
(config auth user new_user)>
```

   The user is enabled by default. To disable the user, type:

```
(config auth user new_user)> enable false
(config auth user new_user)>
```

4. Assign a password to the user:

```
(config auth user new_user> password pwd
(config auth user new_user)>
```

5. Add groups for the user.

   Groups define user access rights. See Authentication groups for information about configuring groups.

a. Add a group to the user. For example, to add the admin group to the user:

```
(config auth user new_user> add group end admin
(config auth user new_user)>
```

Note Every user must be configured with at least one group.

b. (Optional) Add additional groups by repeating the add group command:

```
(config auth user new_user> add group end serial
(config auth user new_user)>
```

To remove a group from a user:

a. Use the **show** command to determine the index number of the group to be deleted:

```
(config auth user new_user> show group
0 admin
1 serial
(config auth user new_user>
```

b. Type the following:

```
(config auth user new_user)> del group n
(config auth user new_user)>
```

Where *n* is index number of the authentication method to be deleted. For example, to delete the serial group as displayed by the example **show** command, above:

```
(config auth user new_user)> del group 1
(config auth user new_user)>
```

6. (Optional) Add SSH keys for the user to use passwordless SSH login:

a. Change to the user's ssh_key node:

```
(config auth user new_user)> ssh_key
(config auth user new_user ssh_key)>
```

b. Add the key by using the ssh_key command and pasting or typing a public encryption key that this user can use for passwordless SSH login:

```
(config auth user new_user ssh_key)> ssh_key key
(config auth user new_user ssh_key)>
```

7. (Optional) Configure two-factor authentication for SSH and serial console login:

a. Change to the user's two-factor authentication node:

```
(config auth user new_user)> 2fa
(config auth user new_user 2fa)>
```

b. Enable two-factor authentication for this user:

```
(config auth user new_user 2fa)> enable true
(config auth user new_user 2fa)>
```

c. Configure the verification type. Allowed values are:

- **totp**: Time-based One-Time Password (TOTP) authentication uses the current time to generate a one-time password.
- **hotp**: HMAC-based One-Time Password (HOTP) uses a counter to validate a one-time password.

The default value is **totp**.

```
(config auth user new_user 2fa)> type totp
(config auth user new_user 2fa)>
```

d. Add a secret key:

```
(config auth user new_user 2fa)> secret key
(config auth user new_user 2fa)>
```

This key should be used by an application or mobile device to generate passcodes.

e. For time-based verification only, enable **disallow_reuse** to prevent a code from being used more than once during the time that it is valid.

```
(config auth user new_user 2fa)> disallow_reuse true
(config auth user new_user 2fa)>
```

f. For time-based verification only, configure the code refresh interval. This is the amount of time that a code will remain valid.

```
(config auth user new_user 2fa)> refresh_interval value
(config auth user new_user 2fa)>
```

where *value* is any number of weeks, days, hours, minutes, or seconds, and takes the format ***number***{**w**|**d**|**h**|**m**|**s**}.

For example, to set **refresh_interval** to ten minutes, enter either **10m** or **600s**:

```
(config auth user name 2fa)> refresh_interval 600s
(config auth user name 2fa)>
```

The default is **30s**.

g. Configure the valid code window size. This represents the allowed number of concurrently valid codes. In cases where TOTP is being used, increasing the valid code window size may be necessary when the clocks used by the server and client are not synchronized.

```
(config auth user new_user 2fa)> window_size 3
(config auth user new_user 2fa)>
```

h. Configure the login limit. This represents the number of times that the user is allowed to attempt to log in during the Login limit period. Set to 0 to allow an unlimited number of login attempts during the Login limit period

```
(config auth user new_user 2fa)> login_limit 3
(config auth user new_user 2fa)>
```

i. Configure the login limit period. This is the amount of time that the user is allowed to attempt to log in.

```
(config auth user new_user 2fa)> login_limit_period value
(config auth user new_user 2fa)>
```

where *value* is any number of weeks, days, hours, minutes, or seconds, and takes the format ***number***{**w**|**d**|**h**|**m**|**s**}.

For example, to set **login_limit_period** to ten minutes, enter either **10m** or **600s**:

```
(config auth user name 2fa)> login_limit_period 600s
(config auth user name 2fa)>
```

The default is **30s**.

j. Scratch codes are emergency codes that may be used once, at any time. To add a scratch code:

   i. Change to the user's scratch code node:

```
(config auth user new_user 2fa)> scratch_code
(config auth user new_user 2fa scratch_code)>
```

   ii. Add a scratch code:

```
(config auth user new_user 2fa scratch_code)> add end code
(config auth user new_user 2fa scratch_code)>
```

   Where code is an digit number, with a minimum of 10000000.

   iii. To add additional scratch codes, use the **add end *code*** command again.

8. Save the configuration and apply the change:

```
(config auth user new 2fa scratch_code)> save
Configuration saved.
>
```

9. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Delete a local user

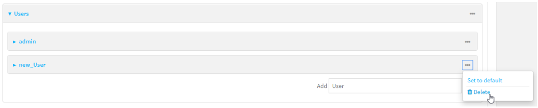
To delete a user from your AnywhereUSB Plus:

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

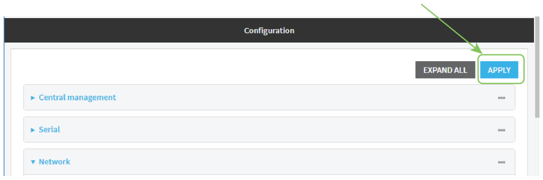
   The **Configuration** window is displayed.

3. Click **Authentication** > **Users**.
4. Click the menu icon (**...**) next to the name of the user to be deleted and select **Delete**.



5. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

2. At the command line, type **config** to enter configuration mode:

   ```
   > config
   (config)>
   ```

3. At the config prompt, type:

   ```
   (config)> del auth user username
   ```

4. Save the configuration and apply the change:

   ```
   (config)> save
   Configuration saved.
   >
   ```

5. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Terminal Access Controller Access-Control System Plus (TACACS+)

Your AnywhereUSB Plus device supports Terminal Access Controller Access-Control System Plus (TACACS+), a networking protocol that provides centralized authentication and authorization management for users who connect to the device. With TACACS+ support, the AnywhereUSB Plus device acts as a TACACS+ client, which sends user credentials and connection parameters to a TACACS+ server over TCP. The TACACS+ server then authenticates the TACACS+ client requests and sends back a response message to the device.

When you are using TACACS+ authentication, you can have both local users and TACACS+ users able to log in to the device. To use TACACS+ authentication, you must set up a TACACS+ server that is accessible by the AnywhereUSB Plus device prior to configuration. The process of setting up a TACACS+ server varies by the server environment.

This section contains the following topics:

TACACS+ user configuration

After setting up the TACACS+ server, you will need to configure one or more users on the server. When configured with TACACS+ support, the AnywhereUSB Plus device uses the TACACS+ server for authentication (password verification) and authorization (assigning the access level of the user).

Example TACACS+ Configuration

With TACACS+, users are defined in the server configuration file. On Ubuntu, the default location and filename for the server configuration file is **/etc/tacacs+/tac_plus.conf**.

Note TACACS+ configuration, including filenames and locations, may vary depending on your platform and installation. This example assumes a Ubuntu installation.

To define users:

1. Open the TACACS+ server configuration file in a text editor. For example:

   ```
   $ sudo gedit /etc/tacacs+/tac_plus.conf
   ```

2. Add users to the file using the following format. This example will create two users, one with admin and serial access, and one with only serial access.

   ```
   user = user1 {
          name ="User1 for AnywhereUSB Plus"
          pap = cleartext password1
          service = system {
            groupname = admin,serial
          }
   }
   user = user2 {
          name ="User2 for AnywhereUSB Plus"
          pap = cleartext password2
          service = system {
            groupname = serial
          }
   }
   ```

   The value of the groupname attribute must correspond to authentication groups configured on your AnywhereUSB Plus device. See Authentication groups for more information about authentication groups. The groupname attribute can contain one group or multiple groups in a comma-separated list.

3. Save and close the file.
4. Verify that your changes did not introduce any syntax errors:

   ```
   sudo tac_plus -C /etc/tacacs+/tac_plus.conf -P
   ```

   If successful, this command will echo the configuration file to standard out. If the command encounters any syntax errors, a message similar to this will display:

   ```
   Error: Unrecognised token on line 1
   ```

5. Restart the TACACS+ server:

   ```
   sudo /etc/init.d/tacacs_plus restart
   ```

TACACS+ server failover and fallback to local authentication

In addition to the primary TACACS+ server, you can also configure your AnywhereUSB Plus device to use backup TACACS+ servers. Backup TACACS+ servers are used for authentication requests when the primary TACACS+ server is unavailable.

Falling back to local authentication

With user authentication methods, you can configure your AnywhereUSB Plus device to use multiple types of authentication. For example, you can configure both TACACS+ authentication and local authentication, so that local authentication can be used as a fallback mechanism if the primary and backup TACACS+ servers are unavailable. Additionally, users who are configured locally but are not configured on the TACACS+ are still able to log into the device. Authentication methods are attempted in the order they are listed until the first successful authentication result is returned; therefore if you want to ensure that users are authenticated first through the TACACS+ server, and only authenticated locally if the TACACS+ server is unavailable or if the user is not defined on the TACACS+ server, then you should list the TACACS+ authentication method prior to the Local users authentication method.

See User authentication methods for more information about authentication methods.

If the TACACS+ servers are unavailable and the AnywhereUSB Plus device falls back to local authentication, only users defined locally on the device are able to log in. TACACS+ users cannot log in until the TACACS+ servers are brought back online.

Configure your AnywhereUSB Plus device to use a TACACS+ server

This section describes how to configure a AnywhereUSB Plus device to use a TACACS+ server for authentication and authorization.

Required configuration items

- Define the TACACS+ server IP address or domain name.
- Define the TACACS+ server shared secret.
- The group attribute configured in the TACACS+ server configuration.
- The service field configured in the TACACS+ server configuration.
- Add TACACS+ as an authentication method for your AnywhereUSB Plus device.

Additional configuration items

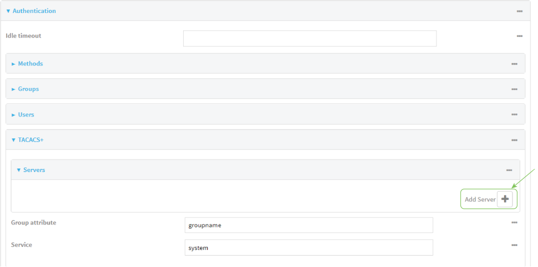
- Define the TACACS+ server port. It is configured to 49 by default.
- Add additional TACACS+ servers in case the first TACACS+ server is unavailable.

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Authentication** > **TACACS+** > **Servers**.

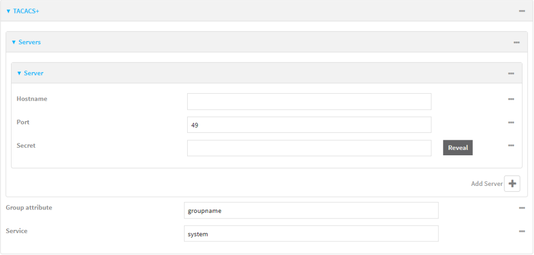
4. For **Add server**, click ♑



Group attribute groupname

Service system

The TACACS+ server configuration window is displayed.



Port 49

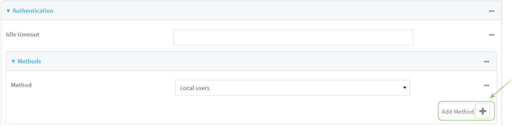
Group attribute groupname

Service system

5. For **Hostname**, type the hostname or IP address of the TACACS+.
6. (Optional) Change the default **Port** setting to the appropriate port.
7. For **Secret**, type the TACACS+ server's shared secret. This is configured in the key parameter of the TACACS+ server's tac_plus.conf file, for example:

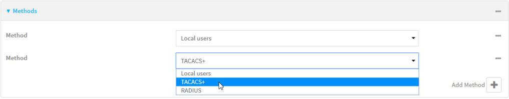
```
key = testing123
```

8. (Optional) For **Group attribute**, type the name of the attribute used in the TACACS+ server's configuration to identify the AnywhereUSB Plus authentication group or groups that the user is a member of. For example, in TACACS+ user configuration, the group attribute in the sample tac_plus.conf file is **groupname**, which is also the default setting in the AnywhereUSB Plus configuration.
9. (Optional) For **Service**, type the value of the **service** attribute in the the TACACS+ server's configuration. For example, in TACACS+ user configuration, the value of the **service** attribute in the sample tac_plus.conf file is **system**, which is also the default setting in the AnywhereUSB Plus configuration.
10. (Optional) Click ♑again to add additional TACACS+ servers.
11. Add TACACS+ to the authentication methods:
    a. Click **Authentication** > **Methods**.
    b. For **Add method**, click ♑



Method Local users

c. Select **TACACS+** for the new method from the **Method** drop-down.



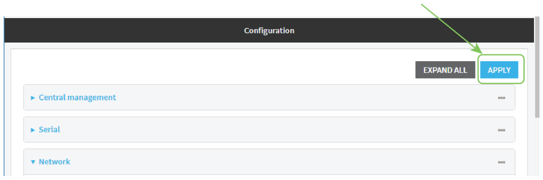
Method: Local users

Method: TACACS+

Authentication methods are attempted in the order they are listed until the first successful authentication result is returned.

12. Click **Apply** to save the configuration and apply the change.

    The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Add a TACACS+ server:

```
(config)> add auth tacacs+ server end
(config auth tacacs+ server 0)>
```

4. Enter the server IP address or hostname:

```
(config auth tacacs+ server 0)> hostname hostname|ip-address
(config auth tacacs+ server 0)>
```

5. (Optional) Change the default port setting to the appropriate port:

```
(config auth tacacs+ server 0)> port port
(config auth tacacs+ server 0)>
```

6. Enter the TACACS+ server's shared secret. This is configured in the key parameter of the TACACS+ server's tac_plus.conf file. For example:

```
(config auth tacacs+ server 0)> secret testing123
(config auth tacacs+ server 0)>
```

7. Return to the config prompt by typing three periods:

   ```
   (config auth tacacs+ server 0)> ...
   (config)>
   ```

8. (Optional) Configure the group_attribute. This is the name of the attribute used in the TACACS+ server's configuration to identify the AnywhereUSB Plus authentication group or groups that the user is a member of. For example, in TACACS+ user configuration, the group attribute in the sample tac_plus.conf file is **groupname**, which is also the default setting for the group_attribute in the AnywhereUSB Plus configuration.

   ```
   (config)> auth tacacs+ group_attribute attribute-name
   (config)>
   ```

9. (Optional) Configure the type of service. This is the value of the **service** attribute in the the TACACS+ server's configuration. For example, in TACACS+ user configuration, the value of the **service** attribute in the sample tac_plus.conf file is **system**, which is also the default setting in the AnywhereUSB Plus configuration.

   ```
   (config)> auth tacacs+ service service-name
   (config)>
   ```

10. (Optional) Repeat the above steps to add additional TACACS+ servers.

11. Add TACACS+ to the authentication methods. Authentication methods are attempted in the order they are listed until the first successful authentication result is returned. This example will add TACACS+ to the end of the list. See User authentication methods for information about adding methods to the beginning or middle of the list.

    ```
    (config)> add auth method end tacacs+
    (config)>
    ```

12. Save the configuration and apply the change:

    ```
    (config)> save
    Configuration saved.
    >
    ```

13. Type **exit** to exit the Admin CLI.

    Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Remote Authentication Dial-In User Service (RADIUS)

Your AnywhereUSB Plus device supports Remote Authentication Dial-In User Service (RADIUS), a networking protocol that provides centralized authentication and authorization management for users who connect to the device. With RADIUS support, the AnywhereUSB Plus device acts as a RADIUS client, which sends user credentials and connection parameters to a RADIUS server over UDP. The RADIUS server then authenticates the RADIUS client requests and sends back a response message to the device.

When you are using RADIUS authentication, you can have both local users and RADIUS users able to log in to the device. To use RADIUS authentication, you must set up a RADIUS server that is accessible by the AnywhereUSB Plus device prior to configuration. The process of setting up a RADIUS server varies by the server environment. An example of a RADIUS server is FreeRADIUS.

This section contains the following topics:

RADIUS user configuration

After setting up the RADIUS server, you will need to configure one or more users on the server. When configured with RADIUS support, the AnywhereUSB Plus device uses the RADIUS server for authentication (password verification) and authorization (assigning the access level of the user).

Example FreeRADIUS Configuration

With FreeRADIUS, users are defined in the **users** file in your FreeRADIUS installation. To define users:

1. Open the FreeRadius user file in a text editor. For example:

   ```
   $ sudo gedit /etc/freeradius/3.0/users
   ```

2. Add users to the file using the following format:

   ```
   user1 Cleartext-Password := "user1"
          Unix-FTP-Group-Names := "admin"

   user2 Cleartext-Password := "user2"
          Unix-FTP-Group-Names := "serial"
   ```

   The value of the Unix-FTP-Group-Names attribute must correspond to authentication groups configured on your AnywhereUSB Plus. See Authentication groups for more information about authentication groups. The groupname attribute can contain one group or multiple groups in a comma-separated list.

3. Save and close the file.
4. Verify that your changes did not introduce any syntax errors:

   ```
   sudo freeradius -CX
   ```

   This should return a message that completes similar to:

   ```
   ...
   Configuration appears to be OK
   ```

5. Restart the FreeRADIUS server:

   ```
   sudo /etc/init.d/freeradius restart
   ```

RADIUS server failover and fallback to local configuration

In addition to the primary RADIUS server, you can also configure your AnywhereUSB Plus device to use backup RADIUS servers. Backup RADIUS servers are used for authentication requests when the primary RADIUS server is unavailable.

Falling back to local authentication

With user authentication methods, you can configure your AnywhereUSB Plus device to use multiple types of authentication. For example, you can configure both RADIUS authentication and local authentication, so that local authentication can be used as a fallback mechanism if the primary and backup RADIUS servers are unavailable. Additionally, users who are configured locally but are not configured on the RADIUS are still able to log into the device. Authentication methods are attempted in the order they are listed until the first successful authentication result is returned; therefore if you want to ensure that users are authenticated first through the RADIUS server, and only authenticated locally if the RADIUS server is unavailable or if the user is not defined on the RADIUS server, then you should list the RADIUS authentication method prior to the Local users authentication method.

See User authentication methods for more information about authentication methods.

If the RADIUS servers are unavailable and the AnywhereUSB Plus device falls back to local authentication, only users defined locally on the device are able to log in. RADIUS users cannot log in until the RADIUS servers are brought back online.

Configure your AnywhereUSB Plus device to use a RADIUS server

This section describes how to configure a AnywhereUSB Plus device to use a RADIUS server for authentication and authorization.

Required configuration items

- Define the RADIUS server IP address or domain name.
- Define the RADIUS server shared secret.
- Add RADIUS as an authentication method for your AnywhereUSB Plus device.

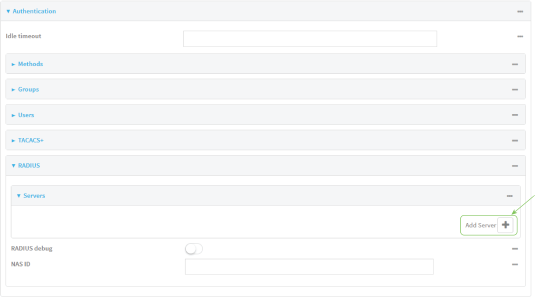
Additional configuration items

- Define the RADIUS server port. It is configured to 1812 by default.
- Add additional RADIUS servers in case the first RADIUS server is unavailable.
- The server NAS ID. If left blank, the default value is used:
  - If you are access the AnywhereUSB Plus device by using the WebUI, the default value is for NAS ID is **httpd**.
  - If you are access the AnywhereUSB Plus device by using ssh, the default value is **sshd**.
- Time in seconds before the request to the server times out. The default is 3 seconds and the maximum possible value is 60 seconds.
- Enable additional debug messages from the RADIUS client.

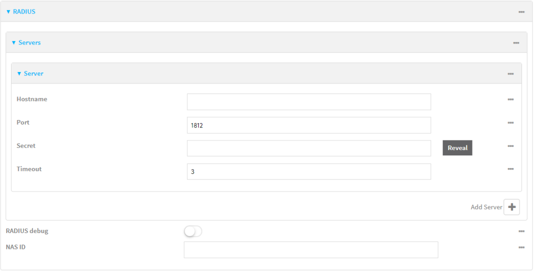
WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Authentication** > **RADIUS** > **Servers**.
4. For **Add server**, click ♑

   The RADIUS server configuration window is displayed.

   Port 1812

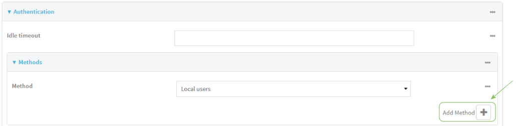
   Timeout 3

5. For **Hostname**, type the hostname or IP address of the RADIUS.
6. (Optional) Change the default **Port** setting to the appropriate port.
7. For **Secret**, type the RADIUS server's shared secret. This is configured in the secret parameter of the RADIUS server's client.conf file, for example:

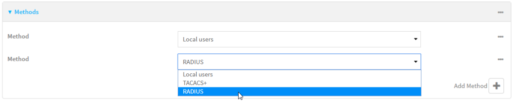
   ```
   secret=testing123
   ```

8. For **Timeout**, type or select amount of time in seconds to wait for the RADIUS server to respond. Allowed value is any integer from **3** to **60**. The default value is **3**.
9. (Optional) Click **RADIUS debug** to enable additional debug messages from the RADIUS client.
10. (Optional) For **NAS ID**, type the unique identifier for this network access server (NAS). You can use the fully-qualified domain name of the NAS or any arbitrary string. If not set, the default value is used:
    - If you are accessing the AnywhereUSB Plus device by using the WebUI, the default value is for NAS ID is **httpd**.
    - If you are accessing the AnywhereUSB Plus device by using ssh, the default value is **sshd**.
11. (Optional) Click ♑again to add additional RADIUS servers.

12. Add RADIUS to the authentication methods:
    a. Click **Authentication** > **Methods**.
    b. For **Add method**, click ♑



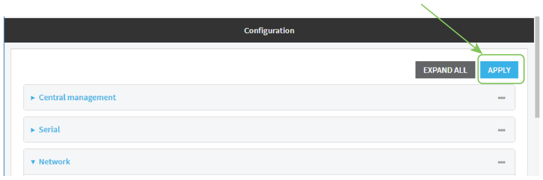
    c. Select **RADIUS** for the new method from the **Method** drop-down.



Authentication methods are attempted in the order they are listed until the first successful authentication result is returned.

13. Click **Apply** to save the configuration and apply the change.

    The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Add a RADIUS server:

```
(config)> add auth radius server end
(config auth radius server 0)>
```

4. Enter the server IP address or hostname:

```
(config auth radius server 0)> hostname hostname|ip-address
(config auth radius server 0)>
```

5. (Optional) Change the default port setting to the appropriate port:

```
(config auth radius server 0)> port port
(config auth radius server 0)>
```

6. Enter the RADIUS server's shared secret. This is configured in the secret parameter of the RADIUS server's client.conf file. For example:

   ```
   (config auth radius server 0)> secret testing123
   (config auth radius server 0)>
   ```

7. Configure the amount of time in seconds to wait for the RADIUS server to respond. Allowed value is any integer from **3** to **60**. The default value is **3**.

   ```
   (config auth radius server 0)> timeout value
   (config)>
   ```

8. Return to the config prompt by typing three periods:

   ```
   (config auth radius server 0)> ...
   (config)>
   ```

9. (Optional) Enable debug messages from the RADIUS client:

   ```
   (config)> auth radius debug true
   ```

10. (Optional) Configure the NAS ID. This is a unique identifier for this network access server (NAS). You can use the fully-qualified domain name of the NAS or any arbitrary string. If not set, the default value is used:

    - If you are accessing the AnywhereUSB Plus device by using the WebUI, the default value is for NAS ID is **httpd**.
    - If you are accessing the AnywhereUSB Plus device by using ssh, the default value is **sshd**.

    ```
    (config)> auth radius nas_id id
    (config)>
    ```

11. (Optional) Repeat the above steps to add additional RADIUS servers.

12. Add RADIUS to the authentication methods. Authentication methods are attempted in the order they are listed until the first successful authentication result is returned. This example will add RADIUS to the end of the list. See User authentication methods for information about adding methods to the beginning or middle of the list.

    ```
    (config)> add auth method end radius
    (config)>
    ```

13. Save the configuration and apply the change:

    ```
    (config)> save
    Configuration saved.
    >
    ```

14. Type **exit** to exit the Admin CLI.

    Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Set the idle timeout for AnywhereUSB Plus users

To configure the amount of time that the user's active session can be inactive before it is automatically disconnected, set the **Idle timeout** parameter.

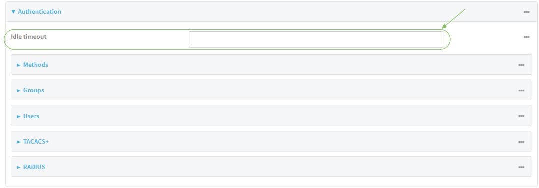
WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Authentication**.
4. For **Idle timeout**, enter the amount of time that the active session can be idle before the user is automatically logged out.

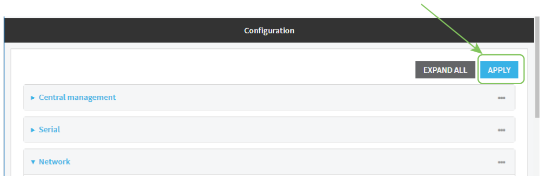
   Allowed values are any number of weeks, days, hours, minutes, or seconds, and take the format ***number***{**w**|**d**|**h**|**m**|**s**}.

   For example, to set **Idle timeout** to ten minutes, enter **10m** or **600s**.



5. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. At the config prompt, type:

```
(config)# auth idle_timeout value
```

   where *value* is any number of weeks, days, hours, minutes, or seconds, and takes the format ***number***{**w**|**d**|**h**|**m**|**s**}.

For example, to set **idle_timeout** to ten minutes, enter either **10m** or **600s**:

```
(config)> auth idle_timeout  600s
(config)>
```

4. Save the configuration and apply the change:

```
(config)> save
Configuration saved.
>
```

5. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Example user configuration

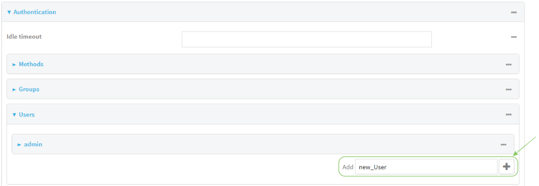
Example 1: Administrator user with local authentication

Goal: To create a user with administrator rights who is authenticated locally on the device.

WebUI

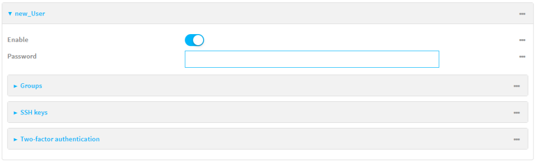
1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Authentication** > **Users**.
4. In **Add User:** enter a name for the user and click ♑

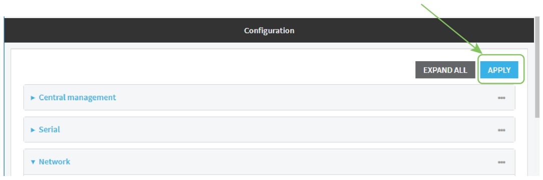
   Add new_User

   The user configuration window is displayed.

5. Enter a **Password** for the user.
6. Assign the user to the **admin** group:
   a. Click **Groups**.
   b. For **Add Group**, click ♑
   c. For **Group**, select the **admin** group.
   d. Verify that the **admin** group has administrator rights:
      i. Click **Authentication** > **Groups**.
      ii. Click **admin**.
      iii. Verify that the admin group has **Admin access** enabled. If not, click **Admin access** to enable.
   e. Verify that **Local users** is one of the configured authentication methods:
      i. Click **Authentication** > **Methods**.
      ii. Verify that **Local users** is one of the methods listed in the list. If not:
         i. For **Add Method**, click ♑
         ii. For **Method**, select **Local users**.
7. Click **Apply** to save the configuration and apply the change.

The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Verify that the **admin** group has administrator rights:

```
(config)> show auth group admin acl
admin
       enable true
...
(config)>
```

   If **admin** > **enable** is set to false:

```
(config)> auth group admin acl admin enable true
```

4. Verify that **local** is one of the configured authentication methods:

```
(config)> show auth method
0 local
(config)>
```

   If **local** is not listed:

```
(config)> add auth method end local
(config)>
```

5. Create the user. In this example, the user is being created with the username **adminuser**:

```
(config)> add auth user adminuser
(config auth user adminuser)>
```

6. Assign a password to the user:

```
(config auth user adminuser)> password pwd
(config auth user adminuser)>
```

7. Assign the user to the **admin** group:

   ```
   (config auth user adminuser)> add group end admin
   (config auth user adminuser)>
   ```

8. Save the configuration and apply the change:

   ```
   (config auth user adminuser)> save
   Configuration saved.
   >
   ```

9. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Example 2: RADIUS, TACACS+, and local authentication for one user

Goal: To create a user with administrator rights who is authenticated by using all three authentication methods.

In this example, when the user attempts to log in to the AnywhereUSB Plus device, user authentication will occur in the following order:

1. The user is authenticated by the RADIUS server. If the RADIUS server is unavailable,
2. The user is authenticated by the TACACS+ server. If both the RADIUS and TACACS+ servers are unavailable,
3. The user is authenticated by the AnywhereUSB Plus device using local authentication.

This example uses a FreeRadius 3.0 server running on ubuntu, and a TACACS+ server running on ubuntu. Server configuration may vary depending on the platforms or type of servers used in your environment.

WebUI

1. Configure a user on the RADIUS server:
   a. On the ubuntu machine hosting the FreeRadius server, open the **/etc/freeradius/3.0/users** file:

   ```
   $ sudo gedit /etc/freeradius/3.0/users
   ```

   b. Add a RADIUS user to the **users** file:

   ```
   admin1 Cleartext-Password := "password1"
          Unix-FTP-Group-Names := "admin"
   ```

   In this example:

   - The user's username is **admin1**.
   - The user's password is **password1**.
   - The authentication group on the AnywhereUSB Plus device, **admin**, is identified in the **Unix-FTP-Group-Names** parameter.

   c. Save and close the **users** file.
2. Configure a user on the TACACS+ server:
   a. On the ubuntu machine hosting the TACACS+ server, open the **/etc/tacacs+/tac_plus.conf** file:

   ```
   $ sudo gedit /etc/tacacs+/tac_plus.conf
   ```

   b. Add a TACACS+ user to the **tac_plus.conf** file:

   ```
   user = admin1 {
          name ="Admin1 for TX64"
          pap = cleartext password1
          service = system {
                  groupname = admin
                  }
          }
   }
   ```

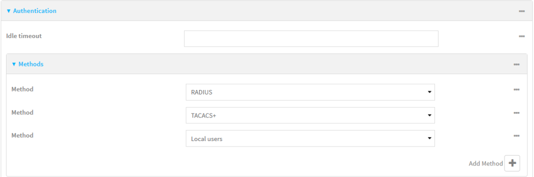
   In this example:

   - The user's username is **admin1**.
   - The user's password is **password1**.
   - The authentication group on the AnywhereUSB Plus device, **admin**, is identified in the **groupname** parameter.

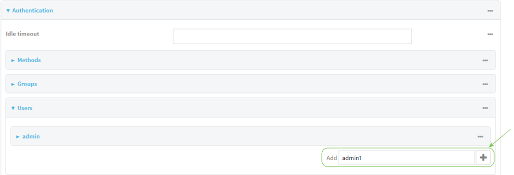
   c. Save and close the **tac_plus.conf** file.
3. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
4. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.

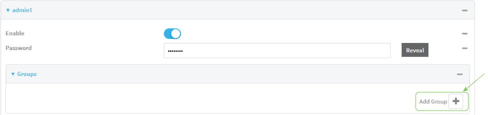
5. Configure the authentication methods:
   a. Click **Authentication** > **Methods**.
   b. For **Method**, select **RADIUS**.
   c. For **Add Method**, click + to add a new method.
   d. For the new method, select **TACACS+**.
   e. Click + to add another new method.
   f. For the new method, select **Local users**.



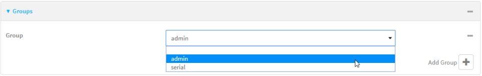
6. Create the local user:
   a. Click **Authentication** > **Users**.
   b. In **Add User:**, type **admin1** and click +



   c. For **password**, type **password1**.
   d. Assign the user to the **admin** group:
      i. Click **Groups**.
      ii. For **Add Group**, click +



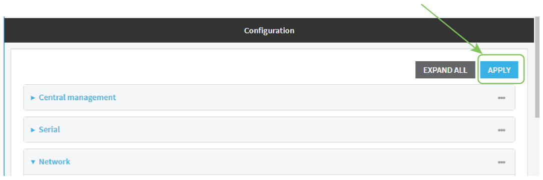
      iii. For **Group**, select the **admin** group.



   Verify that the **admin** group has administrator rights:
      i. Click **Authentication** > **Groups**.
      ii. Click **admin**.
      iii. Verify that the admin group has **Admin access** enabled. If not, click **Admin access** to enable.

7. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Configure a user on the RADIUS server:
   a. On the ubuntu machine hosting the FreeRadius server, open the **/etc/freeradius/3.0/users** file:

   ```
   $ sudo gedit /etc/freeradius/3.0/users
   ```

   b. Add a RADIUS user to the **users** file:

   ```
   admin1 Cleartext-Password := "password1"
          Unix-FTP-Group-Names := "admin"
   ```

   In this example:

   - The user's username is **admin1**.
   - The user's password is **password1**.
   - The authentication group on the AnywhereUSB Plus device, **admin**, is identified in the **Unix-FTP-Group-Names** parameter.

   c. Save and close the **users** file.
2. Configure a user on the TACACS+ server:
   a. On the ubuntu machine hosting the TACACS+ server, open the **/etc/tacacs+/tac_plus.conf** file:

   ```
   $ sudo gedit /etc/tacacs+/tac_plus.conf
   ```

   b. Add a TACACS+ user to the **tac_plus.conf** file:

   ```
   user = admin1 {
          name ="Admin1 for TX64"
          pap = cleartext password1
          service = system {
                  groupname = admin
                  }
          }
   }
   ```

   In this example:

   - The user's username is **admin1**.
   - The user's password is **password1**.
   - The authentication group on the AnywhereUSB Plus device, **admin**, is identified in the **groupname** parameter.

   c. Save and close the **tac_plus.conf** file.

3. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

4. At the command line, type **config** to enter configuration mode:

   ```
   > config
   (config)>
   ```

5. Configure the authentication methods:

   a. Determine the current authentication method configuration:

   ```
   (config)> show auth method
   0 local
   (config)>
   ```

   This output indicates that on this example system, only local authentication is configured.

   b. Add RADIUS authentication to the beginning of the list:

   ```
   (config)> add auth method 0 radius
   (config)>
   ```

   c. Add TACACS+ authentication second place in the list:

   ```
   (config)> add auth method 1 tacacs+(config)>
   ```

   d. Verify that authentication will occur in the correct order:

   ```
   (config)> show auth method
   0 radius
   1 tacacs+
   2 local
   (config)>
   ```

6. Verify that the **admin** group has administrator rights:

   ```
   (config)> show auth group admin acl
   admin
          enable true
   ...
   (config)>
   ```

   If **admin** > **enable** is set to false:

   ```
   (config)> auth group admin acl admin enable true
   ```

7. Configure the local user:

   a. Create a local user with the username **admin1**:

   ```
   (config)> add auth user admin1
   (config auth user admin1)>
   ```

   b. Assign a password to the user:

   ```
   (config auth user adminuser)> password password1
   (config auth user adminuser)>
   ```

   c. Assign the user to the **admin** group:

   ```
   (config auth user adminuser)> add group end admin
   (config auth user adminuser)>
   ```

8. Save the configuration and apply the change:

   ```
   (config auth user adminuser)> save
   Configuration saved.
   >
   ```

9. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Firewall

This chapter contains the following topics:

Firewall configuration

Firewall configuration includes the following configuration options:

- **Zones**: A zone is a firewall access group to which network interfaces can be added. You then use zones to configure packet filtering and access control lists for interfaces that are included in the zone. Preconfigured zones include:
  - **Any**: Matches any network interface, even if they are not assigned to this zone.
  - **Loopback**: Zone for interfaces that are used for communication between processes running on the device.
  - **Internal**: Used for interfaces connected to trusted networks. By default, the firewall will allow most access from this zone.
  - **External**: Used for interfaces connect to untrusted zones, such as the internet. This zone has Network Address Translation (NAT) enabled by default. By default, the firewall will block most access from this zone.
  - **Edge**: Used for interfaces connected to trusted networks, where the device is a client on the edge of the network rather than a router or gateway.
  - **Setup**: Used for interfaces involved in the initial setup of the device. By default, the firewall will only allow this zone to access administration services.
  - **IPsec**: The default zone for IPsec tunnels.
  - **Dynamic routes**: Used for routes learned using routing services.
- **Port forwarding**: A list of rules that allow network connections to the AnywhereUSB Plus to be forwarded to other servers by translating the destination address.
- **Packet filtering**: A list of packet filtering rules that determine whether to accept or reject network connections that are forwarded through the AnywhereUSB Plus.
- **Custom rules**: A script that is run to install advanced firewall rules beyond the scope/capabilities of the standard device configuration.
- **Quality Of Service**: Quality of Service (QOS) options for bandwidth allocation and policy-based traffic shaping and prioritizing.

Create a custom firewall zone

In addition to the preconfigured zones, you can create your custom zones that can be used to configure packet filtering and access control lists for network interfaces.

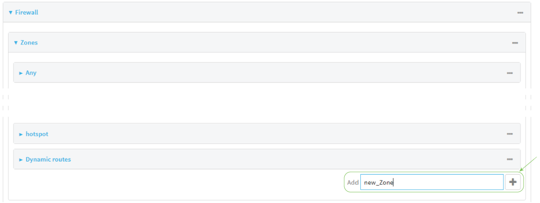
To create a zone:

WebUI

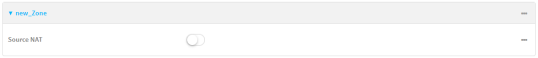
1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Firewall** > **Zones**.

4. In **Add Zone**, enter a name for the zone and click ♑.

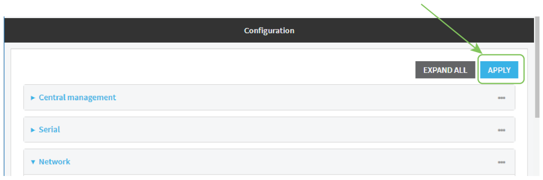


The firewall configuration window is displayed.



5. (Optional) If traffic on this zone will be forwarded from a private network to the internet, enable Network Address Translation (NAT).
6. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



See Configure the firewall zone for a network interface for information about how to configure network interfaces to use a zone.

Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Add the new zone. For example, to add a zone named **my_zone**:

```
(config)> add firewall zone my_zone
(config firewall zone my_zone)>
```

4. (Optional) Enable Network Address Translation (NAT):

```
(config firewall zone my_zone)> src_nat true
(config firewall zone my_zone)>
```

5. Save the configuration and apply the change:

```
(config firewall zone my_zone)> save
Configuration saved.
>
```

6. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

See Configure the firewall zone for a network interface for information about how to configure network interfaces to use a zone.

Configure the firewall zone for a network interface

Firewall zones allow you to group network interfaces for the purpose of packet filtering and access control. There are several preconfigured firewall zones, and you can create custom zones as well. The firewall zone that a network interfaces uses is selected during interface configuration.

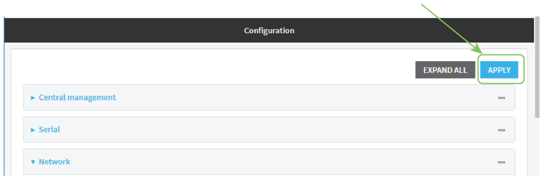
This example procedure uses an existing network interface named and changes the firewall zone from the default zone, **Internal**, to **External**.

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Network** > **Interfaces** > .
4. For **Zone**, select **External**.
5. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. At the config prompt, type:

```
(config)> network interface  zone my_zone
(config)>
```

4. Save the configuration and apply the change:

```
(config)> save
Configuration saved.
>
```

5. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

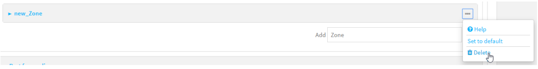
Delete a custom firewall zone

You cannot delete preconfigured firewall zones. To delete a custom firewall zone:

WebUI

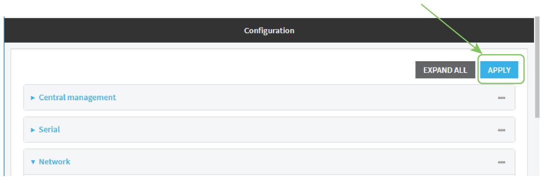
1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Firewall** > **Zones**.
4. Click the menu icon (**...**) next to the appropriate custom firewall zone and select **Delete**.



5. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

2. At the command line, type **config** to enter configuration mode:

   ```
   > config
   (config)>
   ```

3. Use the **del** command to delete a custom firewall rule. For example:

   ```
   (config)> del firewall zone my_zone
   ```

4. Save the configuration and apply the change:

   ```
   (config)> save
   Configuration saved.
   >
   ```

5. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Port forwarding rules

Most computers are protected by a firewall that prevents users on a public network from accessing servers on the private network. To allow a computer on the Internet to connect to a specific server on a private network, set up one or more port forwarding rules. Port forwarding rules provide mapping instructions that direct incoming traffic to the proper device on a LAN.

Configure port forwarding

Required configuration items

- The network interface for the rule.

  Network connections will only be forwarded if their destination address matches the IP address of the selected network interface.
- The public-facing port number that network connections must use for their traffic to be forwarded.
- The IP address of the server to which traffic should be forwarded.
- The port on the server to which traffic should be forwarded.

Additional configuration items

- A label for the port forwarding rule.
- The IP version (either IPv4 or IPv6) that incoming network connections must match.
- The protocols that incoming network connections must match.

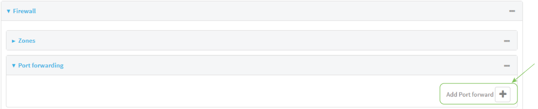
- A white list of devices, based on either IP address or firewall zone, that are authorized to leverage this forwarding rule.

To configure a port forwarding rule:

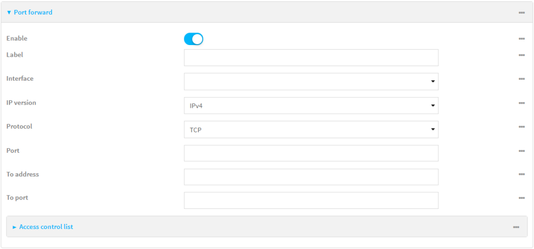
WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Firewall** > **Port forwarding**.
4. For **Add port forward**, click +

   The port forwarding rule configuration window is displayed.

   
   ▾ Port forward

   Enable
   Label
   Interface
   IP version: IPv4
   Protocol: TCP
   Port
   To address
   To port

   ▸ Access control list

   Port forwarding rules are enabled by default. To disable, click to toggle off **Enable**.
5. (Optional) Type a **Label** that will be used to identify the rule.
6. For **Interface**, select the network interface for the rule.

   Network connections will only be forwarded if their destination address matches the IP address of the selected network interface.
7. For **IP version**, select either **IPv4** or **IPv6**.

   Network connections will only be forwarded if they match the selected IP version.
8. For **Protocol**, select the type of internet protocol.

   Network connections will only be forwarded if they match the selected protocol.
9. For **Port**, type the public-facing port number that network connections must use for their traffic to be forwarded.
10. For **To Address**, type the IP address of the server to which traffic should be forwarded.
11. For **To port**, type the port number of the port on the server to which traffic should be forwarded.
12. (Optional) Click **Access control list** to create a white list of devices that are authorized to leverage this forwarding rule, based on either the IP address or firewall zone:
    - To white list IP addresses:

a. Click **Addresses**.

b. For **Add Address**, enter an IP address and click ♑

c. Repeat for each additional IP address that should be white listed.

- To specify firewall zones for white listing:

a. Click **Zones**.

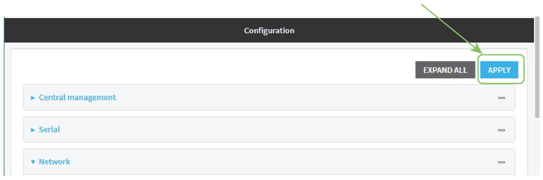
b. For **Add zone**, click ♑

c. For **Zone**, select the appropriate zone.

d. Repeat for each additional zone.

13. Click **Apply** to save the configuration and apply the change.

The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. At the config prompt, type:

```
(config)> add firewall dnat end
(config firewall dnat 0)>
```

Port forwarding rules are enabled by default. To disable the rule:

```
(config firewall dnat 0)> enable false
(config firewall dnat 0)>
```

4. Set the network interface for the rule.

```
(config firewall dnat 0)> interface
(config firewall dnat 0)>
```

Network connections will only be forwarded if their destination address matches the IP address of this network interface.

a. Use the **?** to determine available interfaces:

```
(config firewall dnat 0)> interface ?
```

```
Interface: Network connections will only be forwarded if their
destination address matches the IP address of this network interface.
Format:
  defaultip
  defaultlinklocal
  eth1
  eth2
  loopback
Current value:

(config firewall dnat 0)> interface
```

b. Set the interface. For example:

```
(config firewall dnat 0)> interface
(config firewall dnat 0)>
```

5. Set the IP version. Allowed values are **ipv4** and **ipv6**. The default is **ipv4**.

```
(config firewall dnat 0)> ip_version ipv6
(config firewall dnat 0)>
```

6. Set the public-facing port number that network connections must use for their traffic to be forwarded.

```
(config firewall dnat 0)> port port
(config firewall dnat 0)>
```

7. Set the type of internet protocol .

```
(config firewall dnat 0)> protocol value
(config firewall dnat 0)>
```

   Network connections will only be forwarded if they match the selected protocol. Allowed values are **custom**, **tcp**, **tcpudp**, or **upd**. The default is **tcp**.

8. Set the IP address of the server to which traffic should be forwarded:
   - For IPv4 addresses:

```
(config firewall dnat 0)> to_address ip-address
(config firewall dnat 0)>
```

   - For IPv6 addresses:

```
(config firewall dnat 0)> to_address6 ip-address
(config firewall dnat 0)>
```

9. Set the public-facing port number that network connections must use for their traffic to be forwarded.

```
(config firewall dnat 0)> to_port port
(config firewall dnat 0)>
```

10. (Optional) To create a white list of devices that are authorized to leverage this forwarding rule, based on either the IP address or firewall zone, change to the acl node:

```
(config firewall dnat 0)> acl
(config firewall dnat 0 acl)>
```

- To white list an IP address:
    - For IPv4 addresses:

    ```
    (config firewall dnat 0 acl)> add address end ip-address
    (config firewall dnat 0 acl)>
    ```

    - For IPv6 addresses:

    ```
    (config firewall dnat 0 acl)> add address6 end ip-address
    (config firewall dnat 0 acl)>
    ```

    Repeat for each appropriate IP address.
- To specify the firewall zone for white listing:

    ```
    (config firewall dnat 0 acl)> add zone end zone
    ```

    Repeat for each appropriate zone.

    To view a list of available zones:

    ```
    (config firewall dnat 0 acl)> .. .. .. zone ?

    Zones: A list of groups of network interfaces that can be referred to
    by packet filtering rules
    and access control lists.

     Additional Configuration
     ---------------------------------------------------------------------
    ---------
      any
      dynamic_routes
      edge
      external
      hotspot
      internal
      ipsec
      loopback
      setup

    (config firewall dnat 0 acl)>
    ```

11. Save the configuration and apply the change:

```
(config)> save
Configuration saved.
>
```

12. Type **exit** to exit the Admin CLI.

    Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

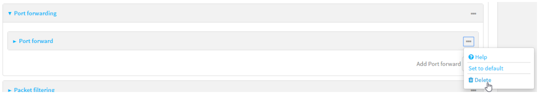
Delete a port forwarding rule

To delete a port forwarding rule:

WebUI

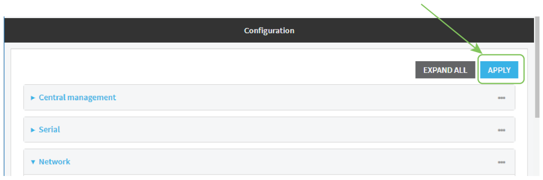
1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Firewall** > **Port forwarding**.
4. Click the menu icon (**...**) next to the appropriate port forwarding rule and select **Delete**.



5. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Determine the index number of the port forwarding rule you want to delete:

```
(config)> show firewall dnat
0
        acl
                no address
                no zone
        enable true
        interface
        ip_version ipv4
        label IPv4 port forwarding rule
        port 10000
        protocol tcp
        to_address6 10.10.10.10
        to_port 10001

1
        acl
                no address6
                no zone
        enable false
        interface
        ip_version ipv6
        label IPv6 port forwarding rule
        port 10002
        protocol tcp
        to_address6 c097:4533:bd63:bb12:9a6f:5569:4b53:c29a
        to_port 10003
(config)>
```

4. To delete the rule, use the index number with the **del** command. For example:

```
(config)> del firewall dnat 1
```

5. Save the configuration and apply the change:

```
(config)> save
Configuration saved.
>
```

6. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Packet filtering

Configure packet filtering

Required configuration items

- The action that the packet filtering rule will perform, either **Accept**, **Reject**, or **Drop**.
- The source firewall zone: Packets originating from interfaces on this zone will be monitored by this rule.
- The destination firewall zone: Packets destined for interfaces on this zone will be accepted, rejected, or dropped by this rule.

Additional configuration requirements

- A label for the rule.
- The IP version to be matched, either **IPv4**, **IPv6**, or **Any**.
- The protocol to be matched, one of:
    - **TCP**
    - **UDP**
    - **ICMP**
    - **ICMP6**
    - **Any**

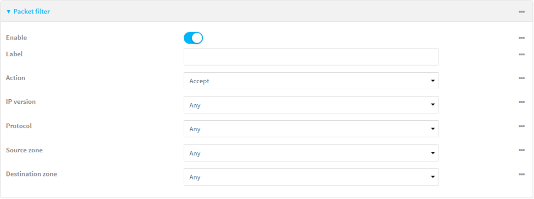
To configure a packet filtering rule:

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Firewall** > **Packet filtering**.
    - To create a new packet filtering rule, for **Add packet filter**, click ♑
    - To edit the default packet filtering rule or another existing packet filtering rule, click to expand the rule.

   The packet filtering rule configuration window is displayed.



▾ Packet filter

Enable: ●

Label:

Action: Accept

IP version: Any

Protocol: Any

Source zone: Any

Destination zone: Any

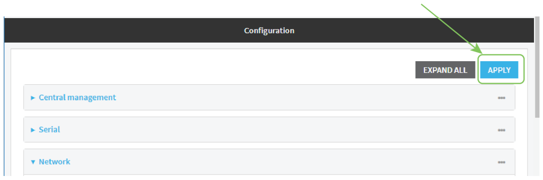
Packet filters are enabled by default. To disable, click to toggle off **Enable**.

4. (Optional) Type a **Label** that will be used to identify the rule.
5. For **Action**, select one of:
   - **Accept**: Allows matching network connections.
   - **Reject**: Blocks matching network connections, and sends an ICMP error if appropriate.
   - **Drop**: Blocks matching network connections, and does not send a reply.
6. Select the **IP version**.
7. Select the **Protocol**.
8. For **Source zone**, select the firewall zone that will be monitored by this rule for incoming connections from network interfaces that are a member of this zone.

   See Firewall configuration for more information about firewall zones.
9. For **Destination zone**, select the firewall zone. Packets destined for network interfaces that are members of this zone will either be accepted, rejected or dropped by this rule.

   See Firewall configuration for more information about firewall zones.
10. Click **Apply** to save the configuration and apply the change.

    The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

To edit the default packet filtering rule or another existing packet filtering rule:

a. Determine the index number of the appropriate packet filtering rule:

```
(config)> show firewall filter
0
    action accept
    dst_zone any
    enable true
    ip_version any
    label Allow all outgoing traffic
    protocol any
    src_zone internal
```

```
1
    action drop
    dst_zone internal
    enable true
    ip_version any
    label myfilter
    protocol any
    src_zone external
(config)>
```

   b. Select the appropriate rule by using its index number:

   ```
   (config)> firewall filter 1
   (config firewall filter 1)>
   ```

   To create a new packet filtering rule:

   ```
   (config)> add firewall filter end
   (config firewall filter 1)>
   ```

   Packet filtering rules are enabled by default. To disable the rule:

   ```
   (config firewall filter 1)> enable false
   (config firewall filter 1)>
   ```

3. (Optional) Set the label for the rule.

   ```
   (config firewall filter 1)> label "My filter rule"
   (config firewall filter 1)>
   ```

4. Set the action to be performed by the filter rule.

   ```
   (config firewall filter 1)> action value
   (config firewall filter 1)>
   ```

   where *value* is one of:

   - **accept**: Allows matching network connections.
   - **reject**: Blocks matching network connections, and sends an ICMP error if appropriate.
   - **drop**: Blocks matching network connections, and does not send a reply.

5. Set the firewall zone that will be monitored by this rule for incoming connections from network interfaces that are a member of this zone:

   See Firewall configuration for more information about firewall zones.

   ```
   (config firewall filter 1)> src_zone my_zone
   (config firewall filter 1)>
   ```

6. Set the destination firewall zone. Packets destined for network interfaces that are members of this zone will either be accepted, rejected or dropped by this rule.

   See Firewall configuration for more information about firewall zones.

```
(config firewall filter 1)> dst_zone my_zone
(config firewall filter 1)>
```

7. Set the IP version.

   ```
   (config firewall filter 1)> ip_version value
   (config firewall filter 1)>
   ```

   where *value* is one of:

   - **any**
   - **ipv4**
   - **ipv6**
   - The default is **any**.

8. Set the protocol.

   ```
   (config firewall filter 1)> protocol value
   (config firewall filter 1)>
   ```

   where value is one of:

   - **any**
   - **icmp**
   - **icmpv6**
   - **tcp**
   - **upd**

   The default is **any**.

9. Save the configuration and apply the change:

   ```
   (config)> save
   Configuration saved.
   >
   ```

10. Type **exit** to exit the Admin CLI.

    Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Enable or disable a packet filtering rule

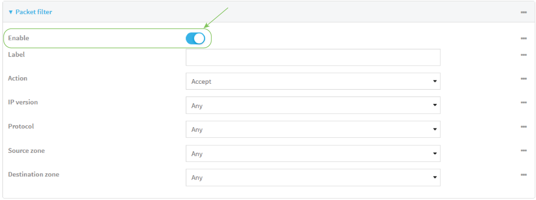
To enable or disable a packet filtering rule:

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

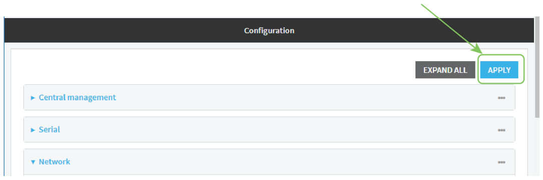
   The **Configuration** window is displayed.
3. Click **Firewall** > **Packet filtering**.
4. Click the appropriate packet filtering rule.

5. Click **Enable** to toggle the rule between enabled and disabled.



6. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Determine the index number of the appropriate port forwarding rule:

```
(config)> show firewall filter
0
    action accept
    dst_zone any
    enable true
    ip_version any
    label Allow all outgoing traffic
    protocol any
    src_zone internal
1
    action drop
    dst_zone internal
    enable true
    ip_version any
    label My packet filter
    protocol any
    src_zone external
(config)>
```

4. To enable a packet filtering rule, use the index number with the **enable true** command. For example:

```
(config)> firewall filter 1 enable true
```

5. To disable a packet filtering rule, use the index number with the **enable false** command. For example:

```
(config)> firewall filter 1 enable false
```

6. Save the configuration and apply the change:

```
(config)> save
Configuration saved.
>
```

7. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

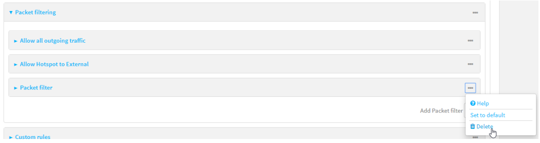
Delete a packet filtering rule

To delete a packet filtering rule:

WebUI

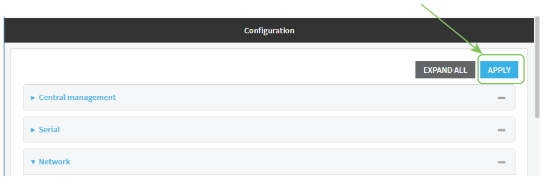
1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Firewall** > **Packet filtering**.
4. Click the menu icon (**...**) next to the appropriate packet filtering rule and select **Delete**.



5. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Determine the index number of the packet filtering rule you want to delete:

```
(config)> show firewall filter
0
    action accept
    dst_zone any
    enable true
    ip_version any
    label Allow all outgoing traffic
    protocol any
    src_zone internal
1
    action drop
    dst_zone internal
    enable true
    ip_version any
    label My packet filter
    protocol any
    src_zone external
(config)>
```

4. To delete the rule, use the index number with the **del** command. For example:

```
(config)> del firewall filter 1
```

5. Save the configuration and apply the change:

```
(config)> save
Configuration saved.
>
```

6. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Configure custom firewall rules

Custom firewall rules consist of a script of shell commands that can be used to install firewall rules, ipsets, and other system configuration. These commands are run whenever system configuration changes occur that might cause changes to the firewall.

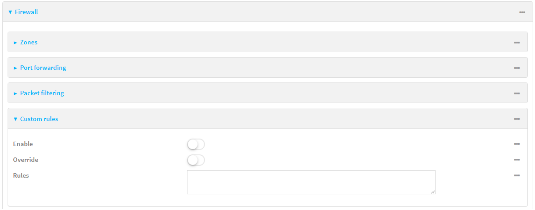
To configure custom firewall rules:

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

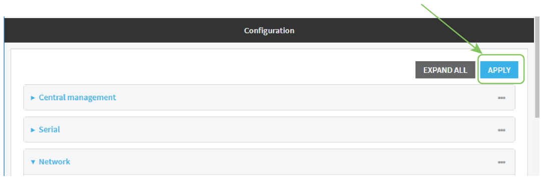
The **Configuration** window is displayed.

3. Click **Firewall** > **Custom rules**.



4. **Enable** the custom rules.
5. (Optional) Enable **Override** to override all preconfigured firewall behavior and rely solely on the custom firewall rules.
6. For **Rules**, type the shell command that will execute the custom firewall rules script.
7. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

   ```
   > config
   (config)>
   ```
3. Enable custom firewall rules:

   ```
   (config)> firewall custom enable true
   (config)>
   ```
4. (Optional) Instruct the device to override all preconfigured firewall behavior and rely solely on the custom firewall rules:

   ```
   (config)> firewall custom override true
   (config)>
   ```
5. Set the shell command that will execute the custom firewall rules script:

   ```
   (config)> firewall custom rules shell-command
   (config)>
   ```
6. Save the configuration and apply the change:

   ```
   (config)> save
   Configuration saved.
   >
   ```
7. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Configure Quality of Service options

Quality of Service (QoS) options allow you to manage the traffic performance of various services, such as Voice over IP (VoIP), cloud computing, traffic shaping, traffic prioritizing, and bandwidth allocation. When configuring QOS, you can only control the queue for outgoing packets on each interface (egress packets), not what is received on the interface (packet ingress).

A QoS *binding* contains the policies and rules that apply to packets exiting the AnywhereUSB Plus device on the binding's interface. By default, the AnywhereUSB Plus device has two preconfigured QoS bindings, **Outbound** and **Inbound**. These bindings are an example configuration designed for a typical VoIP site:

- **Outbound** provides an example of matching packets as they are routed from the device onto the WAN interface.
- **Inbound** provides an example of matching packets as they are routed from the device onto a LAN interface.

These example bindings are disabled by default.

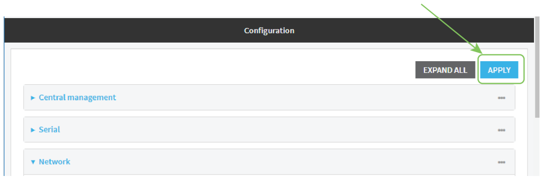
Enable the preconfigured bindings

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Firewall** > **Quality of Service**.
4. Click to expand either **Outbound** or **Inbound**.
5. **Enable** the binding.
6. Select an **Interface**.
7. Examine the remaining default settings and modify as appropriate for your network.
8. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Enable one of the preconfiged bindings:
   - To enable the Outbound binding:

```
(config)> firewall qos 0 enable true
(config)>
```

   - To enable the Inbound binding:

```
(config)> firewall qos 1 enable true
(config)>
```

4. Set the interface for the binding. Use the index number of the binding; for example, to set the interface for the Outbound binding:
   a. Use the **?** to determine available interfaces:

```
(config)> firewall qos 0 interface ?
```

```
Interface: The network interface.
Format:
  /network/interface/defaultip
  /network/interface/defaultlinklocal
  /network/interface/eth1
  /network/interface/eth2
  /network/interface/loopback
Current value:

(config)> firewall qos 0 interface
```

b. Set the interface. For example:

```
(config)> firewall qos 0 interface /network/interface/
(config)>
```

5. Examine the remaining default settings and modify as appropriate for your network.
6. Save the configuration and apply the change:

```
(config)> save
Configuration saved.
>
```

7. Type **exit** to exit the Admin CLI.

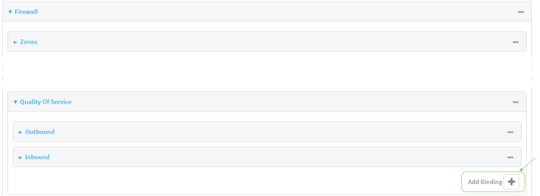
   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Create a new binding

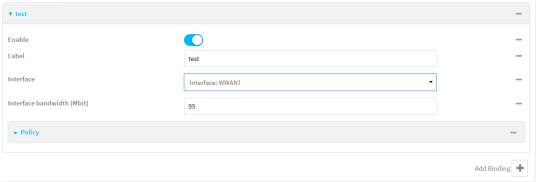
WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Firewall** > **Quality of Service**.
4. For **Add Binding**, click ♑



   The quality of service binding configuration window is displayed.



▾ test

Enable: ●

Label: test

Interface: Interface: WWAN1

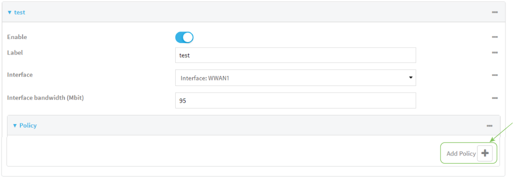
Interface bandwidth (Mbit): 95

5. **Enable** the binding.
6. (Optional) Type a **Label** for the binding.
7. Select an **Interface** to queue egress packets on. The binding will only match traffic that is being sent out on this interface.
8. (Optional) For **Interface bandwidth (Mbit)**, set the maximum egress bandwidth of the interface, in megabits, allocated to this binding. Typically, this should be 95% of the available bandwidth. Allowed value is any integer between **1** and **1000**.
9. Create a policy for the binding:

   At least one policy is required for each binding. Each policy can contain up to 30 rules.

   a. Click to expand **Policy**.

   b. For **Add Policy**, click ♑

   ▾ test

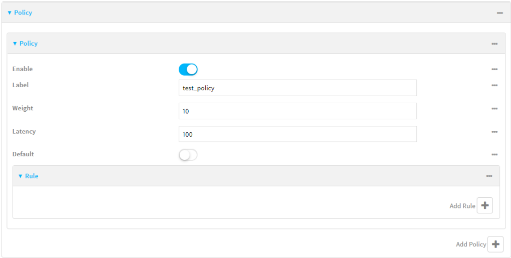
   Enable: ●

   Label: test

   Interface: Interface: WWAN1

   Interface bandwidth (Mbit): 95

   The QoS binding policy configuration window is displayed.

   ▾ Policy

   ▾ Policy

   Enable: ●

   Label: test_policy

   Weight: 10

   Latency: 100

   Default: ○

   New QoS binding policies are enabled by default. To disable, click **Enable**.

   c. (Optional) Type a **Label** for the binding policy.

   d. For **Weight**, type a value for the amount of available bandwidth allocated to the policy, relative to other policies for this binding.

   The larger the weight, with respect to the other policy weights, the larger portion of the maximum bandwidth is available for this policy. For example, if a binding contains three policies, and each policy contains a weight of 10, each policy will be allocated one third of the total interface bandwidth.

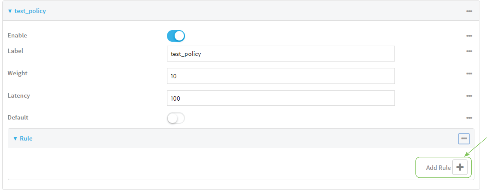
   e. For **Latency**, type the maximum delay before the transmission of packets. A lower latency means that the packets will be scheduled more quickly for transmission.

f. Select **Default** to identify this policy as a fall-back policy. The fall-back policy will be used for traffic that is not matched by any other policy. If there is no default policy associated with this binding, packets that do not match any policy rules will be dropped.

g. If **Default** is disabled, you must configure at least one rule:

   i. Click to expand **Rule**.

   ii. For **Add Rule**, click ♑.



▾ test_policy

Enable: ●

Label: test_policy

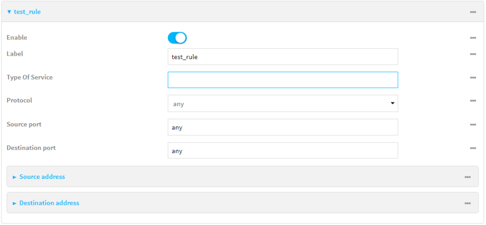
Weight: 10

Latency: 100

Default: ○

▾ Rule

The QoS binding policy rule configuration window is displayed.



▾ test_rule

Enable: ●

Label: test_rule

Type Of Service:

Protocol: any

Source port: any

Destination port: any

New QoS binding policy rules are enabled by default. To disable, click **Enable**.

   iii. (Optional) Type a **Label** for the binding policy rule.

   iv. For **Type Of Service**, type the value of the Type of Service (ToS) packet header that defines packet priority. If unspecified, this field is ignored.

   See https://www.tucny.com/Home/dscp-tos for a list of common TOS values.

   v. For **Protocol**, select the IP protocol matching criteria for this rule.

   vi. For **Source port**, type the port, or **any**, as a source traffic matching criteria.

   vii. For **Destination port**, type the port, or **any**, as a destination traffic matching criteria.

   viii. Click to expand **Source address** and select the **Type**:

   - **Any**: Source traffic from any address will be matched.
   - **Interface**: Only traffic from the selected **Interface** will be matched.
   - **IPv4 address**: Only traffic from the IP address typed in **IPv4 address** will be matched. Use the format ***IPv4_address***[/***netmask***], or use **any** to match any IPv4 address.
   - **IPv6 address**: Only traffic from the IP address typed in **IPv6 address** will be matched. Use the format ***IPv6_address*[/*prefix_length*]**, or use **any** to match any IPv6 address.
   - **MAC address**: Only traffic from the MAC address typed in **MAC address** will be matched.

   ix. Click to expand **Destination address** and select the **Type**:

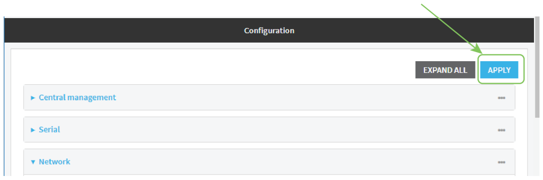
   - **Any**: Traffic destined for anywhere will be matched.
   - **Interface**: Only traffic destined for the selected **Interface** will be matched.

- **IPv4 address**: Only traffic destined for the IP address typed in **IPv4 address** will be matched. Use the format ***IPv4_address***[/***netmask***], or use **any** to match any IPv4 address.
- **IPv6 address**: Only traffic destined for the IP address typed in **IPv6 address** will be matched. Use the format ***IPv6_address*[/*prefix_length*]**, or use **any** to match any IPv6 address.

Repeat to add a new rule. Up to 30 rules can be configured.

10. Click **Apply** to save the configuration and apply the change.

    The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

2. At the command line, type **config** to enter configuration mode:

   ```
   > config
   (config)>
   ```

3. Add a binding:

   ```
   (config)> add firewall qos end
   (config firewall qos 2)>
   ```

   New binding are enabled by default. To disable:

   ```
   (config firewall qos 2)> enable false
   (config firewall qos 2)>
   ```

4. (Optional) Set a label for the new binding:

   ```
   (config firewall qos 2)> label my_binding
   (config firewall qos 2)>
   ```

5. Set the interface to queue egress packets on. The binding will only match traffic that is being sent out on this interface:

   a. Use the **?** to determine available interfaces:

   ```
   (config firewall qos 2)> interface ?

   Interface: The network interface.
   Format:
     /network/interface/defaultip
     /network/interface/defaultlinklocal
     /network/interface/eth1
     /network/interface/eth2
     /network/interface/loopback
   Current value:

   (config firewall qos 2)> interface
   ```

   b. Set the interface. For example:

   ```
   (config firewall qos 2)> interface /network/interface/
   (config firewall qos 2)>
   ```

6. (Optional) Set the maximum egress bandwidth of the interface, in megabits, allocated to this binding.

   ```
   (config firewall qos 2)> bandwidth int
   (config firewall qos 2)>
   ```

where *int* is an integer between **1** and **1000**. Typically, this should be 95% of the available bandwidth. The default is **95**.

7. Create a policy for the binding:

   At least one policy is required for each binding. Each policy can contain up to 30 rules.

   a. Change to the policy node of the configuration:

   ```
   (config firewall qos 2)> policy
   (config firewall qos 2 policy)>
   ```

   b. Add a policy:

   ```
   (config firewall qos 2 policy)> add end
   (config firewall qos 2 policy 0)>
   ```

   New QoS binding policies are enabled by default. To disable:

   ```
   (config firewall qos 2 policy 0)> enable false
   (config firewall qos 2 policy 0)>
   ```

   c. (Optional) Set a label for the new binding policy:

   ```
   (config firewall qos 2 policy 0)> label my_binding_policy
   (config firewall qos 2 policy 0)>
   ```

   d. Set a value for the amount of available bandwidth allocated to the policy, relative to other policies for this binding.

   The larger the weight, with respect to the other policy weights, the larger portion of the maximum bandwidth is available for this policy. For example, if a binding contains three policies, and each policy contains a weight of 10, each policy will be allocated one third of the total interface bandwidth.

   ```
   (config firewall qos 2 policy 0)> weight int
   (config firewall qos 2 policy 0)>
   ```

   where *int* is any integer between **1** and **65535**. The default is **10**.

   e. Set the maximum delay before the transmission of packets. A lower number means that the packets will be scheduled more quickly for transmission.

   ```
   (config firewall qos 2 policy 0)> latency int
   (config firewall qos 2 policy 0)>
   ```

   where *int* is any integer, **1** or greater. The default is **100**.

   f. To identify this policy as a fall-back policy:

   ```
   (config firewall qos 2 policy 0)> default true
   (config firewall qos 2 policy 0)>
   ```

   The fall-back policy will be used for traffic that is not matched by any other policy. If there is no default policy associated with this binding, packets that do not match any policy rules will be dropped. If the policy is not a fall-back policy, you must configure at least one rule:

i. Change to the rule node of the configuration:

```
(config firewall qos 2 policy 0)> rule
(config firewall qos 2 policy 0 rule)>
```

ii. Add a rule:

```
(config firewall qos 2 policy 0 rule)> add end
(config firewall qos 2 policy 0 rule 0)>
```

New QoS binding policy rules are enabled by default. To disable:

```
(config firewall qos 2 policy 0 rule 0)> enable false
(config firewall qos 2 policy 0 rule 0)>
```

iii. (Optional) Set a label for the new binding policy rule:

```
(config firewall qos 2 policy 0 rule 0)> label my_binding_policy_
rule
(config firewall qos 2 policy 0 rule 0)>
```

iv. Set the value of the Type of Service (ToS) packet header that defines packet priority. If unspecified, this field is ignored.

```
(config firewall qos 2 policy 0 rule 0)> tos value
(config firewall qos 2 policy 0 rule 0)>
```

where value is a hexadecimal number. See https://www.tucny.com/Home/dscp-tos for a list of common TOS values.

v. Set the IP protocol matching criteria for this rule:

```
(config firewall qos 2 policy 0 rule 0)> protocol value
(config firewall qos 2 policy 0 rule 0)>
```

where *value* is one of **tcp**, **udp**, or **any**.

vi. Set the source port to define a source traffic matching criteria:

```
(config firewall qos 2 policy 0 rule 0)> srcport value
(config firewall qos 2 policy 0 rule 0)>
```

where *value* is the IP port number, a range of port numbers using the format *IP_port-IP_port*, or **any**.

vii. Set the destination port to define a destination matching criteria:

```
(config firewall qos 2 policy 0 rule 0)> dstport value
(config firewall qos 2 policy 0 rule 0)>
```

where *value* is the IP port number, a range of port numbers using the format *IP_port-IP_port*, or **any**.

viii. Set the source address type:

```
(config network qos 2 policy 0 rule 0)> src type value
(config network qos 2 policy 0 rule 0)>
```

where *value* is one of:

- **any**: Source traffic from any address will be matched.

  See Firewall configuration for more information about firewall zones.
- **interface**: Only traffic from the selected interface will be matched. Set the interface:

  i. Use the **?** to determine available interfaces:

  ```
  (config network qos 2 policy 0 rule 0)> src interface ?

  Interface: Match the IP address with the specified
  interface's network address.
  Format:
    /network/interface/defaultip
    /network/interface/defaultlinklocal
    /network/interface/eth1
    /network/interface/eth2
    /network/interface/loopback
  Current value:

  (config network qos 2 policy 0 rule 0)> src interface
  ```

  ii. Set the interface. For example:

  ```
  (config network qos 2 policy 0 rule 0)> src interface
  /network/interface/
  (config network qos 2 policy 0 rule 0)>
  ```
- **address**: Only traffic from the IP address typed in **IPv4 address** will be matched. Set the address that will be matched:

  ```
  (config network qos 2 policy 0 rule 0)> src address value
  (config network qos 2 policy 0 rule 0)>
  ```

  where value uses the format ***IPv4_address***[***/netmask***], or **any** to match any IPv4 address.
- **address6**: Only traffic from the IP address typed in **IPv6 address** will be matched. Set the address that will be matched:

  ```
  (config network qos 2 policy 0 rule 0)> src address6 value
  (config network qos 2 policy 0 rule 0)>
  ```

  where value uses the format ***IPv6_address***[***/prefix_length***], or **any** to match any IPv6 address.
- **mac**: Only traffic from the MAC address typed in **MAC address** will be matched. Set the MAC address to be matched:

```
(config network qos 2 policy 0 rule 0)> src mac MAC_address
(config network qos 2 policy 0 rule 0)>
```

ix. Set the destination address type:

```
(config network qos 2 policy 0 rule 0)> dst type value
(config network qos 2 policy 0 rule 0)>
```

where *value* is one of:

- **any**: Traffic destined for anywhere will be matched.

  See Firewall configuration for more information about firewall zones.
- **interface**: Only traffic destined for the selected **Interface** will be matched. Set the interface:

  i. Use the **?** to determine available interfaces:

  ```
  (config network qos 2 policy 0 rule 0)> dst interface ?

  Interface: Match the IP address with the specified
  interface's network address.
  Format:
    /network/interface/defaultip
    /network/interface/defaultlinklocal
    /network/interface/eth1
    /network/interface/eth2
    /network/interface/loopback
  Current value:

  (config network qos 2 policy 0 rule 0)> dst interface
  ```

  ii. Set the interface. For example:

  ```
  (config network qos 2 policy 0 rule 0)> dst interface
  /network/interface/
  (config network qos 2 policy 0 rule 0)>
  ```

- **address**: Only traffic destined for the IP address typed in **IPv4 address** will be matched. Set the address that will be matched:

  ```
  (config network qos 2 policy 0 rule 0)> src address value
  (config network qos 2 policy 0 rule 0)>
  ```

  where value uses the format ***IPv4_address***[/***netmask***], or **any** to match any IPv4 address.
- **address6**: Only traffic destined for the IP address typed in **IPv6 address** will be matched. Set the address that will be matched:

  ```
  (config network qos 2 policy 0 rule 0)> src address6 value
  (config network qos 2 policy 0 rule 0)>
  ```

where value uses the format ***IPv6_address***[***/prefix_length***], or **any** to match any IPv6 address.

Repeat to add a new rule. Up to 30 rules can be configured.

8. Save the configuration and apply the change:

```
(config)> save
Configuration saved.
>
```

9. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

System administration

This chapter contains the following topics:

Review device status

You can review the system of your device from either the **Status** page of the Web interface, or from the command line:

WebUI

To display system information:

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the main menu, click **Status**.

   A secondary menu appears, along with a status panel.
3. On the secondary menu, click to display the details panel for the status you want to view.

Command line

To display system information, use the show system command.

- Show basic system information:
  1. Log into the AnywhereUSB Plus command line as a user with Admin access.

     Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
  2. Enter **show system** at the prompt:

```
> show system

 Hostname                    : AnywhereUSB Plus
 FW Version                  : 19.11.72.17
 MAC                         : 00:40:D0:13:35:36
 Model                       : Digi AnywhereUSB Plus
 Current Time                : Mon, 11 November 2019 21:14:12 +0000
 Uptime                      : 21 days, 21 hours, 22 minutes, 44 seconds
(336164s)

>
```

- Show more detailed system information:
  1. Log into the AnywhereUSB Plus command line as a user with Admin access.

     Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
  2. Enter **show system verbose** at the prompt:

```
> show system verbose

 Hostname                    : AnywhereUSB Plus FW Version
: 19.5.166.0
 FW Build Date               : Mon, 11 November 2019 21:14:12 +0000
 Schema Version              : 445
 MAC                         : 00:40:D0:13:35:36
 Model                       : Digi AnywhereUSB Plus
 Timezone                    : UTC
 Current Time              : Mon, 11 November 2019 21:14:12 +0000
 Uptime                    : 21 days, 21 hours, 23 minutes, 44 seconds
(336224s)

 Disk
 ----
 Load Average              : 0.15, 0.11, 0.03
 RAM Usage                 : 266.580MB/1926.688MB(13%)
 Disk /etc/config Usage    : 10.920MB/5309.752MB(0%)
 Disk /opt Usage           : 10.920MB/5309.752MB(0%)
 Disk /overlay Usage       : MB/MB(%)
 Disk /tmp Usage           : 0.004MB/262.144MB(0%)
 Disk /var Usage           : 1.132MB/262.144MB(0%)

>
```

Configure system information

You can configure information related to your AnywhereUSB Plus device, such as providing a name and location for the device.

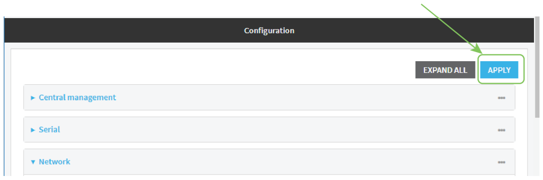
Configuration items

- A name for the device.
- The name of a contact for the device.
- The location of the device.
- A description of the device.
- A banner that will be displayed when users access terminal services on the device.

To enter system information:

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.
   The **Configuration** window is displayed.
3. Click **System**.
4. For **Name**, type a name for the device. This name will appear in log messages and at the command prompt.
5. For **Contact**, type the name of a contact for the device.
6. For **Location**, type the location of the device.
7. For **Banner**, type a banner message that will be displayed when users log into terminal services on the device.
8. Click **Apply** to save the configuration and apply the change.
   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Set a name for the device. This name will appear in log messages and at the command prompt.

```
(config)> system name 192.168.3.1
192.168.3.1(config)>
```

4. Set the contact for the device:

```
192.168.3.1(config)> system contact "Jane User"
192.168.3.1(config)>
```

5. Set the location for the device:

```
192.168.3.1(config)> system location "9350 Excelsior Blvd., Suite 700,
Hopkins, MN"
192.168.3.1(config)>
```

6. Set the banner for the device. This is displayed when users access terminal services on the device.

```
192.168.3.1(config)> system banner "Welcome to the Digi AnywhereUSB Plus."
192.168.3.1(config)>
```

7. Save the configuration and apply the change:

```
192.168.3.1(config)> save
Configuration saved.
192.168.3.1>
```

8. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Update system firmware

The AnywhereUSB Plus operating system firmware images consist of a single file with the following naming convention:

***platform-version*.bin**

For example, **AnywhereUSB Plus-19.11.72.17.bin**.

Manage firmware updates using Digi Remote Manager

If you have a network of many devices, you can use Digi Remote Manager **Profiles** to manage firmware updates. Profiles ensure all your devices are running the correct firmware version and that all newly installed devices are updated to that same version. For more information, see the **Profiles** section of the *Digi Remote Manager User Guide*.

Certificate management for firmware images

The system firmware files are signed to ensure that only Digi-approved firmware load onto the device. The AnywhereUSB Plus device validates the system firmware image as part of the update process and only successfully updates if the system firmware image can be authenticated.

WebUI

1. Download the AnywhereUSB Plus operating system firmware from the Digi Support FTP site to your local machine.
2. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
3. On the main menu, click **System**.
4. In the **Device Firmware** section, for **Firmware Image**, click **Choose File**.
5. Browse to the system firmware file location and select the file.
6. Click **Update Firmware**.

Command line

1. Download the AnywhereUSB Plus operating system firmware from the Digi Support FTP site to your local machine.
2. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
3. Load the firmware image onto the device:

   ```
   > scp host hostname-or-ip user username remote remote-path local local-path
   to local
   ```

   where:

   - *hostname-or-ip* is the hostname or ip address of the remote host.
   - *username* is the name of the user on the remote host.
   - *remote-path* is the path and filename of the file on the remote host that will be copied to the AnywhereUSB Plus device.
   - *local-path* is the location on the AnywhereUSB Plus device where the copied file will be placed.

   For example:

   ```
   > scp host 192.168.4.1 user admin remote /home/admin/bin/AnywhereUSB Plus-
   19.11.72.17.bin local /etc/config/ to local
   admin@192.168.4.1's password: adminpwd
   AnywhereUSB Plus->19.11.72.17.bin                      100%    36MB    11.1MB/s        00:
   >
   ```
4. Verify that the firmware file has been successfully uploaded to the device:

   ```
   > ls /etc/config/
   -rw-r--r--    1 root     root      37511229 May 16 20:10 AnywhereUSB Plus-
   19.11.72.17.bin
   -rw-r--r--    1 root     root          2580 May 16 16:44 accns.json
   drw-------    2 root     root          4096 Apr 29 18:51 analyzer
   -rw-r--r--    1 root     root            47 Apr 30 06:59 dhcp.leases
   drwxr-xr-x    2 root     root          4096 May 15 17:53 fcron
   ...
   >
   ```
5. Update the firmware by entering the update firmware command, specifying the firmware file name.
6. Reboot the device to run the new firmware image using the reboot command.

   ```
   > reboot
   Rebooting system
   >
   ```
7. Once the device has rebooted, log into the AnywhereUSB Plus's command line as a user with Admin access and verify the running firmware version by entering the show system command.

```
> show system

 Hostname                      : AnywhereUSB Plus
 FW Version                    : 19.11.72.17
 MAC                           : 0040FF800120
 Model                         : Digi AnywhereUSB Plus
 Current Time                  : Mon, 11 November 2019 21:14:12 +0000
 Uptime                        : 42 seconds (42s)

>
```

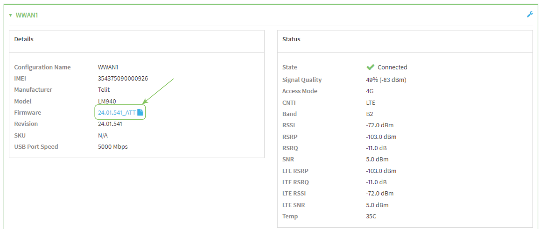
Update cellular module firmware

You can update modem firmware by downloading firmware from the Digi firmware repository, or by uploading firmware from your local storage onto the device.

WebUI

This operation is available from the WebUI only. There is no equivalent functionality at the CLI.

1. (Optional) Download the appropriate modem firmware from the Digi repository to your local machine.
2. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
3. From the main menu, click **Status** > **Modems**.
4. Click the modem firmware version.



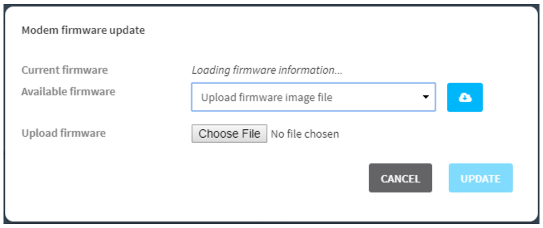
Details

Configuration Name	WWAN1
IMEI	354375090000926
Manufacturer	Telit
Model	LM940
Firmware	24.01.541_ATT
Revision	24.01.541
SKU	N/A
USB Port Speed	5000 Mbps

Status

State	✓ Connected
Signal Quality	49% (-83 dBm)
Access Mode	4G
CNTI	LTE
Band	B2
RSSI	-72.0 dBm
RSRP	-103.0 dBm
RSRQ	-11.0 dB
SNR	5.0 dBm
LTE RSRP	-103.0 dBm
LTE RSRQ	-11.0 dB
LTE RSSI	-72.0 dBm
LTE SNR	5.0 dBm
Temp	35C

The **Modem firmware update** window opens.


Modem firmware update

Current firmware: *Loading firmware information...*
Available firmware: Upload firmware image file
Upload firmware: Choose File No file chosen

5. To update using firmware from the Digi firmware repository:
   a. Click ☁ to view availabled versions.
   b. For Available firmware, select the firmware.
6. To update using firmware from your local filesystem:
   a. Click **Choose File**.
   b. Select the firmware.

7. Click **Update**.

Reboot your AnywhereUSB Plus device

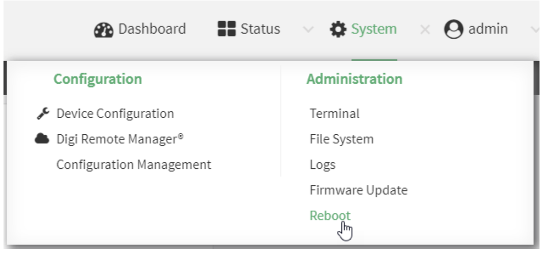
You can reboot the AnywhereUSB Plus device immediately or schedule a reboot for a specific time every day.

Note You may want to save your configuration settings to a file before rebooting. See Save configuration to a file.

Reboot your device immediately

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. From the main menu, click **System**.
3. Click **Reboot**.



4. Click **Reboot** to confirm that you want to reboot the device.

Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the prompt, type:

```
> reboot
```

Schedule reboots of your device

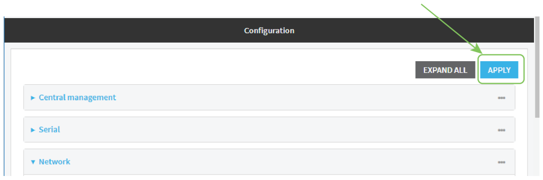
WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Select **System** > **Scheduled tasks**.
4. For **Reboot time**, enter the time of the day that the device should reboot, using the format *HH*:*MM*. The device will reboot at this time every day.

   If a value is set for **Reboot time** but the device is unable to synchronize its time with an NTP server, the device will reboot after it has been up for 24 hours. See System time for information about configuring NTP servers.
5. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

   ```
   > config
   (config)>
   ```
3. Set the reboot time:

   ```
   (config)>> system schedule reboot_time time
   (config)>
   ```

   where *time* is the time of the day that the device should reboot, using the format *HH:MM*. For example, the set the device to reboot at two in the morning every day:

   ```
   (config)>> system schedule reboot_time 02:00
   (config)>
   ```

   If a value is set for **reboot_time** but the device is unable to synchronize its time with an NTP server, the device will reboot after it has been up for 24 hours. See System time for information about configuring NTP servers.
4. Save the configuration and apply the change:

   ```
   (config)> save
   Configuration saved.
   >
   ```
5. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Reset the device to factory defaults

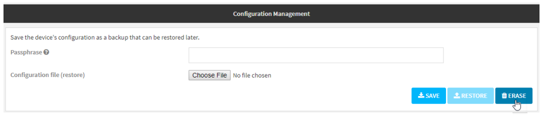
Resetting the device to factory defaults performs the following actions:

- Clears all configuration settings. When the device restarts, it uses the default configuration.
- Deletes all user files including Python scripts.
- Erases all automatically generated keys.
- Clears event and system log files.

You can reset the device in the WebUI, at the command line, or by using the **Reset** button on the device. You can also reset the device to the default configuration without removing scripts, keys, and logfiles by using the **revert** command.

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the main menu, click **System** > **Configuration Management**.
3. Click **Erase**.



Configuration Management

Save the device's configuration as a backup that can be restored later.

Passphrase

Configuration file (restore) No file chosen

4. Click **Confirm**.

Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. Enter the following:

```
> system factory-erase
```

Reset the device by using the Reset button

Note Using the reset button is the most extreme factory reset option.

If the AnywhereUSB Hub is physically accessible, you can use the **RESET** button on the Hub to restore the configuration to factory defaults. The restore process clears all current settings (including all previously stored client IDs and certificates), deletes all Hub and **AnywhereUSB Manager** keys, resets the password for the administrative user, and restores the settings to the factory defaults.

After you restore the factory defaults on a Hub, none of the existing **AnywhereUSB Managers** will be able to connect to the Hub. When the Hub is restored, the Hub creates a new Hub certificate, which will not be accepted by the existing **AnywhereUSB Managers**. To ensure that the new Hub certificate is accepted by the existing **AnywhereUSB Managers**, you must re-deploy the Hub.

1. Locate the **RESET** button on your device.
   - AnywhereUSB Plus 2 port: The **RESET** button is on the front panel.
   - AnywhereUSB Plus 8 port: The **RESET** button is on the back panel.
   - AnywhereUSB Plus 24 port: The **RESET** button is on the side of the device.
2. Press and hold the **RESET** button for about 10 seconds, until all the USB LEDs blink twice.
3. Release the **RESET** button. The Hub automatically reboots.
4. After resetting the device, you must re-deploy the Hub.

Reset the device with the revert command

You can reset the device to the default configuration without removing scripts, keys, and logfiles by using the **revert** command:

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

2. At the command line, type **config** to enter configuration mode:

   ```
   > config
   (config)>
   ```

3. At the config prompt, enter **revert**:

   ```
   (config)> revert
   (config)>
   ```

4. Set the password for the admin user prior to saving the changes:

   ```
   (config)> auth user admin password pwd
   (config)>
   ```

5. Save the configuration and apply the change:

   ```
   (config)> save
   Configuration saved.
   >
   ```

6. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Configuration files

The AnywhereUSB Plus configuration file, /etc/config/accns.json, contains all configuration changes that have been made to the device. It does not contain the complete device configuration; it only contains changes to the default configuration. Both the default configuration and the changes contained in the accns.json file are applied when the device reboots.

Save configuration changes

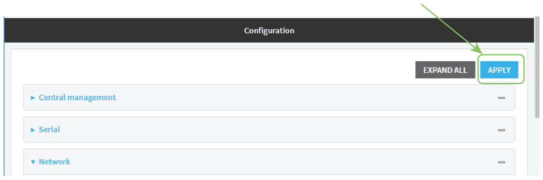
When you make changes to the AnywhereUSB Plus configuration, the changes are not automatically saved. You must explicitly save configuration changes, which also applies the changes. If you do not save configuration changes, the system discards the changes.

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Make any necessary configuration changes.
4. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Make any necessary configuration changes.
4. Save the configuration and apply the change:

```
(config)> save
Configuration saved.
>
```

5. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Save configuration to a file

You can save your AnywhereUSB Plus device's configuration to a file and use this file to restore the configuration, either to the same device or to similar devices.

WebUI

This procedure creates a binary archive file containing the device's configuration, certificates and keys, and other information.

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the main menu, click **System**.
3. (Optional) Encrypt the configuration using a passphrase:
   - In the **Configuration Management** section, for **Passphrase (save/restore)**, enter the passphrase.
4. In the **Configuration Management** section, click **Save Config**.

   The file will be downloaded using your browser's standard download process.

Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. Enter the following:

   ```
   > system backup path [passphrase passphrase] type type
   ```

   where
   - *path* is the location on the AnywhereUSB Plus's filesystem where the configuration backup file should be saved.
   - *passphrase* (optional) is a passphrase used to encrypt the configuration backup.
   - *type* is the type of backup, either:
     - **archive**: Creates a binary archive file containing the device's configuration, certificates and keys, and other information.
     - **cli-config**: Creates a text file containing only the configuration changes.

   For example:

   ```
   > system backup /etc/config/ type archive
   ```
3. (Optional) Use **scp** to copy the file from your device to another host:

   ```
   > scp host hostname-or-ip user username remote remote-path local local-path
   to remote
   ```

   where:

- *hostname-or-ip* is the hostname or ip address of the remote host.
- *username* is the name of the user on the remote host.
- *remote-path* is the location on the remote host where the file will be copied.
- *local-path* is the path and filename on the AnywhereUSB Plus device.

For example:

```
> scp host 192.168.4.1 user admin remote /home/admin/bin/ local
/etc/config/backup-archive-0040FF800120-19.05.17-19.01.17.bin to remote
```

Restore the device configuration

You can restore a configuration file to your AnywhereUSB Plus device by using a backup from the device, or a backup from a similar device.

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the main menu, click **System**.
3. If a passphrase was used to create the configuration backup:
   - In the **Configuration Management** section, for **Passphrase (save/restore)**, enter the passphrase.
4. Under **Configuration Management**, click **Choose File**.
5. Browse to the system firmware file location and select the file.
6. Click **Restore Config**.
7. Click **OK** to confirm.

The configuration will be restored and the device will be rebooted.

Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. If the configuration backup is on a remote host, use **scp** to copy the file from the host to your device:

   ```
   > scp host hostname-or-ip user username remote remote-path local local-path
   to local
   ```

   where:

   - *hostname-or-ip* is the hostname or ip address of the remote host.
   - *username* is the name of the user on the remote host.
   - *remote-path* is the path and filename of the file on the remote host that will be copied to the AnywhereUSB Plus device.
   - *local-path* is the location on the AnywhereUSB Plus device where the copied file will be placed.

For example:

```
> scp host 192.168.4.1 user admin remote /home/admin/bin/backup-archive-
0040FF800120-19.05.17-19.01.17.bin local /etc/config/ to local
```

3. Enter the following:

```
> system restore path [passphrase passphrase]
```

where

- *path* is the location of configuration backup file on the AnywhereUSB Plus's filesystem (*local-path* in the previous step).
- *passphrase* (optional) is the passphrase to restore the configuration backup, if a passphrase was used when the backup was created.

For example:

```
> system restore /etc/config/
```

Schedule system maintenance tasks

You can configure tasks and custom scripts to be run during a specified maintenance window.

Required configuration items

- The time that the system maintenance tasks will start.
- The duration window during which the system maintenance tasks can run.
- The frequency (either daily or weekly) that the tasks will run.
- The tasks to be performed. Options are:
    - Modem firmware update.
    - Configuration check.

Additional configuration items

- Custom scripts that should be run as part of the configuration check.

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

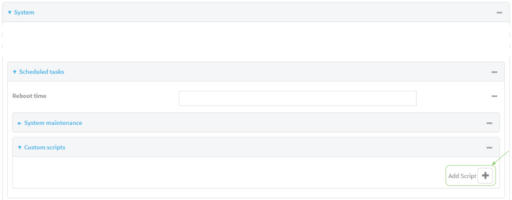
   The **Configuration** window is displayed.
3. Click **System** > **Scheduled tasks** > **System maintenance**.
4. For **Start time**, type the time of day that the maintenance window should start, using the syntax *HH*:*MM*. If **Start time** is not set, maintenance tasks are not scheduled and will not be run.

   The behavior of **Start time** varies depending on the setting of **Duration window**, which is configured in the next step.
    - If **Duration window** is set to **Immediately**, all scheduled tasks will begin at the exact time specified in **Start time**.
    - If **Duration window** is set to **24 hours**, **Start time** is effectively obsolete and the maintenance tasks will be scheduled to run at any time. Setting **Duration window** to **24 hours** can potentially overstress the device and should be used with caution.
    - If **Duration window** is set to any value other than to **Immediately** or **24 hours**, the maintenance tasks will run at a random time during the time allotted for the duration window.
    - If **Duration window** is set to one or more hours, the minutes field in **Start time** is ignored and the duration window will begin at the beginning of the specified hour.
5. For **Duration window**, select the amount of time that the maintenance tasks will be run. If **Immediately** is selected, all scheduled tasks will begin at the exact time specified in **Start time**.
6. For **Frequency**, select either **Daily** or **Weekly** for the frequency that the maintenance tasks should be run.

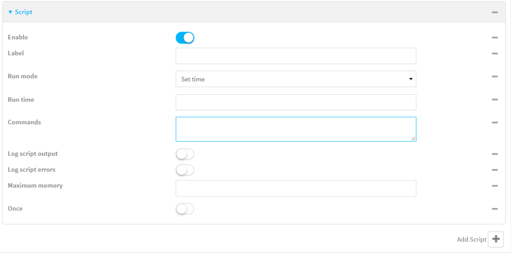
7. (Optional) Click to enable **Modem firmware update** to instruct the system to look for any updated modem firmware during the maintenance window. If updated firmware is found, it will then be installed. **Modem firmware update** looks for updated firmware both on the local device and over the network, using either a WAN or cellular connection.
8. (Optional) Click to enable **Configuration check** to allow for the configuration to be updated, including by custom scripts, during the maintenance window.
9. (Optional) To schedule custom scripts:
   a. Click **Custom scripts**.

   > **Note** This feature does not provide syntax or error checking. Certain commands can render the device inoperable. Use with care. Scripts created here are also automatically entered in **Configuration** > **Applications**.

   b. For **Add Script**, click ♑

   The schedule script configuration window is displayed.

   Enable ●
   Label
   Run mode: Set time
   Run time
   Commands
   Log script output ○
   Log script errors ○
   Maximum memory
   Once ○

   Scheduled scripts are enabled by default. To disable, click **Enable** to toggle off.

   c. (Optional) For **Label**, provide a label for the script.

   d. For **Run mode**, select the mode that will be used to run the script. Available options are:

      - **On boot**: The script will run once each time the device boots.
        - If **On boot** is selected, select the action that will be taken when the script completes in **Exit action**. Available options are:
          - **None**: Action taken when the script exits.
          - **Restart script**: Runs the script repeatedly.
          - **Reboot**: The device will reboot when the script completes.
      - **Interval**: The script will start running at the specified interval, within 30 seconds after the configuration change is saved.
        - If **Interval** is selected, in **Interval**, type the interval.

          Allowed values are any number of weeks, days, hours, minutes, or seconds, and take the format ***number***{**w**|**d**|**h**|**m**|**s**}.

          For example, to set **Interval** to ten minutes, enter **10m** or **600s**.

    - Click to enable **Run single** to run only a single instance of the script at a time.

      If **Run single** is not selected, a new instance of the script will be started at every interval, regardless of whether the script is still running from a previous interval.

  - **Set time**: Runs the script at a specified time of the day.
    - If **Set Time** is selected, specify the time that the script should run in **Run time**, using the format *HH*:*MM*.
  - **During system maintenance**: The script will run during the system maintenance time window.

e. For **Commands**, enter the commands that will execute the script.

   If the script begins with **#!**, then the script will be invoked in the location specified by the path for the script command. Otherwise, the default shell will be used (equivalent to **#!/bin/sh**).

f. Script logging options:

   i. Click to enable **Log script output** to log the script's output to the system log.

   ii. Click to enable **Log script errors** to log script errors to the system log.

   If neither option is selected, only the script's exit code is written to the system log.

g. For **Maximum memory**, enter the maximum amount of memory available to be used by the script and its subprocesses, using the format *number* {**b**|**bytes**|**KB**|**k**|**MB**|**MB**|**M**|**GB**|**G**|**TB**|**T**}.

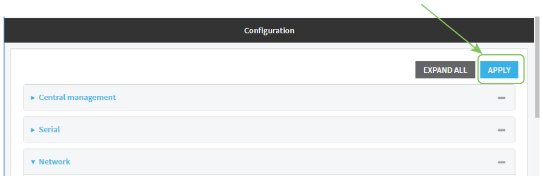
h. Click to enable **Once** to configure the script to run only once at the specified time.

   If **Once** is enabled, rebooting the device will cause the script to not run again. The only way to re-run the script is to:

   - Remove the script from the device and add it again.
   - Make a change to the script.
   - Uncheck **Once**.

10. Click **Apply** to save the configuration and apply the change.

    The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

2. At the command line, type **config** to enter configuration mode:

   ```
   > config
   (config)>
   ```

3. Schedule system maintenance:

   a. Configure the time of day that the maintenance window should start, using the syntax *HH*:*MM*. If the start time is not set, maintenance tasks are not scheduled and will not be run.

      ```
      (config)> system schedule maintenance from HH:MM
      (config)>
      ```

      The behavior of the start time varies depending on the setting of the duration length, which is configured in the next step.

      - If the duration length is set to **0**, all scheduled tasks will begin at the exact time specified in the start time.
      - If the duration length is set to **24 hours**, the start time is effectively obsolete and the maintenance tasks will be scheduled to run at any time. Setting the duration length to **24 hours** can potentially overstress the device and should be used with caution.
      - If the duration length is set to any value other than to **0** or **24 hours**, the maintenance tasks will run at a random time during the time allotted for the duration window.
      - If the duration length is set to one or more hours, the minutes field in the start time is ignored and the duration window will begin at the beginning of the specified hour.

   b. Configure the duration length (the amount of time that the maintenance tasks will be run). If **0** is used, all scheduled tasks will begin at the start time, defined in the previous step.

      ```
      system schedule maintenance length num
      (config)>
      ```

      where *num* is any whole number between **0** and **24**.

   c. Configure the frequency that the maintenance tasks should be run:

      ```
      system schedule maintenance frequency value
      (config)>
      ```

      where *value* is either **daily** or **weekly**. **Daily** is the default.

   d. Configure the device to look for any updated modem firmware during the maintenance window. If updated firmware is found, it will then be installed. The device will look for updated firmware both on the local device and over the network, using either a WAN or cellular connection.

      ```
      system schedule maintenance modem_fw_update value
      (config)>
      ```

      where *value* is either **true** or **false**. **yes** or **no**, and **1** or **0** are also allowed.

   e. Allow for the configuration to be updated, including by custom scripts, during the maintenance window:

      ```
      system schedule maintenance config_check value
      (config)>
      ```

      where *value* is either **true** or **false**. **yes** or **no**, and **1** or **0** are also allowed.

4. (Optional) Schedule custom scripts:
   a. Add a script:

      ```
      (config)> add system schedule script end
      (config system schedule script 0)>
      ```

      Scheduled scripts are enabled by default. To disable:

      ```
      (config system schedule script 0)> enable false
      (config system schedule script 0)>
      ```

   b. (Optional) Provide a label for the script.

      ```
      (config system schedule script 0)> label value
      (config system schedule script 0)>
      ```

      where *value* is any string. if spaces are used, enclose *value* within double quotes.

   c. Set the mode that will be used to run the script:

      ```
      (config system schedule script 0)> when mode
      (config system schedule script 0)>
      ```

      where *mode* is one of the following:

      - **boot**: The script will run once each time the device boots.
        - If **boot** is selected, set the action that will be taken when the script completes:

          ```
          (config system schedule script 0)> exit_action action
          (config system schedule script 0)>
          ```

          where *action* is one of the following:

          - **none**: Action taken when the script exits.
          - **restart**: Runs the script repeatedly.
          - **reboot**: The device will reboot when the script completes.
      - **interval**: The script will start running at the specified interval, within 30 seconds after the configuration change is saved. If **interval** is selected:
        - Set the interval:

          ```
          (config system schedule script 0)> on_interval value
          (config system schedule script 0)>
          ```

          where *value* is any number of weeks, days, hours, minutes, or seconds, and takes the format ***number***{**w**|**d**|**h**|**m**|**s**}.

          For example, to set **on_interval** to ten minutes, enter either **10m** or **600s**:

```
(config system schedule script 0)> on_interval  600s
(config system schedule script 0)>
```

- (Optional) Configure the script to run only a single instance at a time:

```
(config system schedule script 0)> once true
(config system schedule script 0)>
```

If **once** is set to **false**, a new instance of the script will be started at every interval, regardless of whether the script is still running from a previous interval.

- **set_time**: Runs the script at a specified time of the day.
    - If **set_time** is set, set the time that the script should run, using the format *HH*:*MM*:

```
(config system schedule script 0)> run_time HH:MM
(config system schedule script 0)>
```

- **maintenance_time**: The script will run during the system maintenance time window.

d. Set the commands that will execute the script:

```
(config system schedule script 0)> commands filename
(config system schedule script 0)>
```

where *filename* is the path and filename of the script, and any related command line information.

If the script begins with **#!**, then the script will be invoked in the location specified by the path for the script command. Otherwise, the default shell will be used (equivalent to **#!/bin/sh**).

e. Script logging options:

- To log the script's output to the system log:

```
(config system schedule script 0)> syslog_stdout true
(config system schedule script 0)>
```

- To log script errors to the system log:

```
(config system schedule script 0)> syslog_stderr true
(config system schedule script 0)>
```

If **syslog_stdout** and **syslog_stderr** are not enabled, only the script's exit code is written to the system log.

f. Set the maximum amount of memory available to be used by the script and its subprocesses:

```
(config system schedule script 0)> max_memory value
(config system schedule script 0)>
```

where *value* uses the syntax ***number***{**b**|**bytes**|**KB**|**k**|**MB**|**MB**|**M**|**GB**|**G**|**TB**|**T**}.

   g. To run the script only once at the specified time:

      ```
      (config system schedule script 0)> once true
      (config system schedule script 0)>
      ```

      If **once** is enabled, rebooting the device will cause the script to run again. The only way to re-run the script is to:

      - Remove the script from the device and add it again.
      - Make a change to the script.
      - Disable **once**.

5. Save the configuration and apply the change:

   ```
   (config)> save
   Configuration saved.
   >
   ```

6. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Monitoring

This chapter contains the following topics:

intelliFlow

intelliFlow monitors system information, network data usage, and traffic information, and displays the information in a series of charts available in the local WebUI. To use intelliFlow, the AnywhereUSB Plus must be powered on and you must have access to the local WebUI. Once you enable intelliFlow, the **Status** > **intelliFlow** option is available in the main menu. By default, intelliFlow is disabled.

intelliFlow provides charts on the following information:

- System utilisation
- Top data usage by host
- Top data usage by server
- Top data usage by service
- Host data usage over time

intelliFlow charts are dymanic; at any point, you can click inside the chart to drill down to view more granular information, and menu options allow you to change various aspects of the information being displayed.

Note When intelliFlow is enabled, it adds an estimated 50MB of data usage for the device by reporting the metrics to Digi Remote Manager.

Enable intelliFlow

Required configuration items

- Enable intelliFlow.

Additional configuration items

- The firewall zone for internal clients being monitored by intelliFlow.

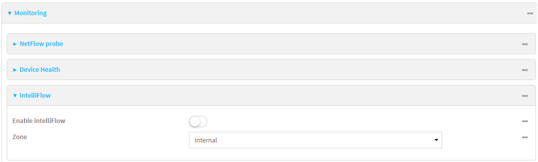
To enable intelliFlow:

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Monitoring** > **intelliFlow**.

   The intelliFlow configuration window is displayed.

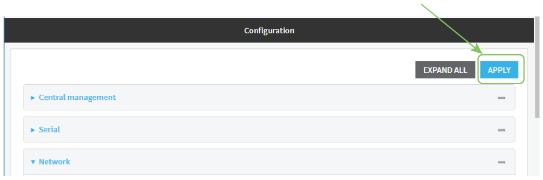
   

   Enable intelliFlow

   Zone: Internal
4. Click **Enable intelliFlow**.

5. For **Zone**, select the firewall zone. Internal clients that are being monitored by IntelliFlow should be present on the specified zone.
6. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Enable IntelliFlow:

```
(config)> monitoring intelliflow enable true
```

4. Set the firewall zone. Internal clients that are being monitored by IntelliFlow should be present on the specified zone:
   a. Determine available zones:

```
(config)> monitoring intelliflow zone ?

Zone: The firewall zone which is assigned to the network interface(s)
that
intelliFlow will see as internal clients.  intelliFlow relies on an
internal to
external relationship, where the internal clients are present on the
zone specified.
Format:
  any
  dynamic_routes
  edge
  external
  hotspot
  internal
  ipsec
  loopback
  setup
Default value: internal
Current value: internal
```

```
(config)>
```

b. Set the zone to be used by IntelliFlow:

```
(config)> monitoring intelliflow zone my_zone
```

5. Save the configuration and apply the change:

```
(config)> save
Configuration saved.
>
```

6. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Use intelliFlow to display average CPU and RAM usage

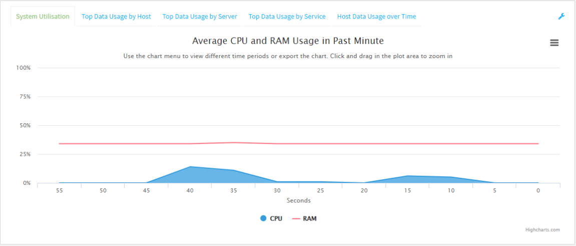
This procedure is only available from the WebUI.

To display display average CPU and RAM usage:

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. If you have not already done so, enable intelliFlow. See Enable intelliFlow.
3. From the menu, click **Status** > **intelliFlow**.

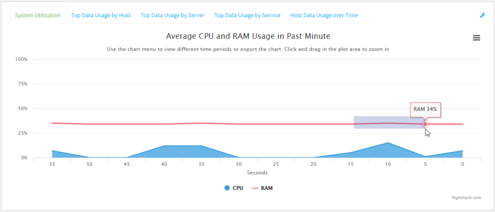
The System Utilisation chart is displayed:



Average CPU and RAM Usage in Past Minute

Use the chart menu to view different time periods or export the chart. Click and drag in the plot area to zoom in

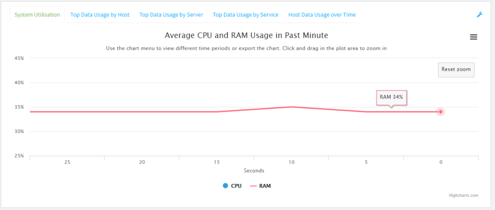
- Display more granular information:
  1. Click and drag over an area in the chart to zoom into that area and provide more granular information.

     Average CPU and RAM Usage in Past Minute

     Use the chart menu to view different time periods or export the chart. Click and drag in the plot area to zoom in

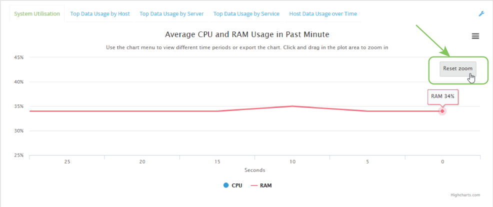
  2. Release to display the selected portion of the chart:

     Average CPU and RAM Usage in Past Minute

     Use the chart menu to view different time periods or export the chart. Click and drag in the plot area to zoom in

3. Click **Reset zoom** to return to the original display:


Average CPU and RAM Usage in Past Minute

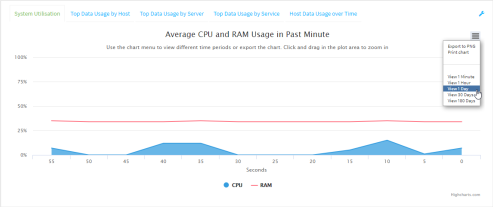
Use the chart menu to view different time periods or export the chart. Click and drag in the plot area to zoom in

- Change the time period displayed by the chart.

  By default, the **System utilisation** chart displays the average CPU and RAM usage over the last minute. You can change this to display the average CPU and RAM usage:

  - Over the last hour.
  - Over the last day.
  - Over the last 30 days.
  - Over the last 180 days.

  1. Click the menu icon (.
  2. Select the time period to be displayed.


Average CPU and RAM Usage in Past Minute

Use the chart menu to view different time periods or export the chart. Click and drag in the plot area to zoom in

- Save or print the chart.

  1. Click the menu icon (.
  2. To save the chart to your local filesystem, select **Export to PNG**.
  3. To print the chart, select **Print chart**.

Use intelliFlow to display top data usage information

With intelliFlow, you can display top data usage information based on the following:

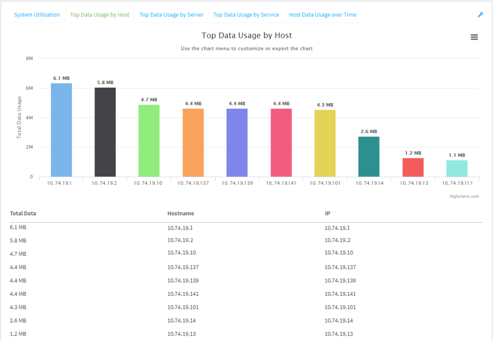
- Top data usage by host
- Top data usage by server
- Top data usage by service

To generate a top data usage chart:

WebUI

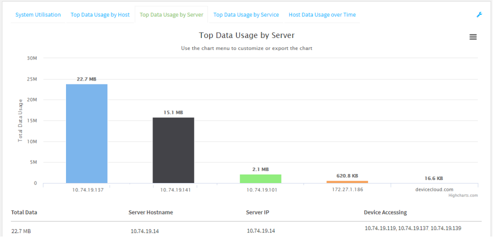
1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. If you have not already done so, enable intelliFlow. See Enable intelliFlow.
3. From the menu, click **Status** > **intelliFlow**.

4. Display a data usage chart:
   - To display the **Top Data Usage by Host** chart, click **Top Data Usage by Host**.



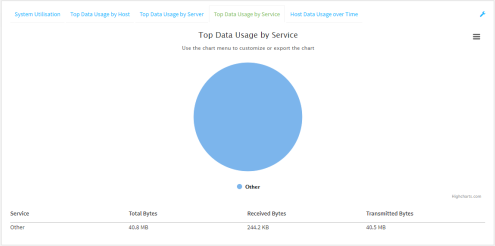
Total Data	Hostname	IP
6.1 MB	10.74.19.1	10.74.19.1
5.8 MB	10.74.19.2	10.74.19.2
4.7 MB	10.74.19.10	10.74.19.10
4.4 MB	10.74.19.137	10.74.19.137
4.4 MB	10.74.19.139	10.74.19.139
4.4 MB	10.74.19.141	10.74.19.141
4.3 MB	10.74.19.101	10.74.19.101
2.6 MB	10.74.19.14	10.74.19.14
1.2 MB	10.74.19.13	10.74.19.13

   - To display the **Top Data Usage by Server** chart, click **Top Data Usage by Server**.



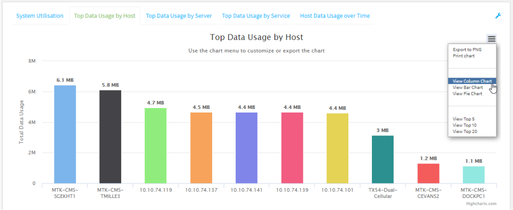
Total Data	Server Hostname	Server IP	Device Accessing
22.7 MB	10.74.19.14	10.74.19.14	10.74.19.119, 10.74.19.137, 10.74.19.139

   - To display the **Top Data Usage by Service** chart, click **Top Data Usage by Service**.


System Utilisation
Top Data Usage by Host
Top Data Usage by Server
Top Data Usage by Service
Host Data Usage over Time
Top Data Usage by Service
Use the chart menu to customize or export the chart
● Other
Highcharts.com

Service	Total Bytes	Received Bytes	Transmitted Bytes
Other	40.8 MB	244.2 KB	40.5 MB

5. Change the type of chart that is used to display the data:
   a. Click the menu icon (≡.
   b. Select the type of chart.

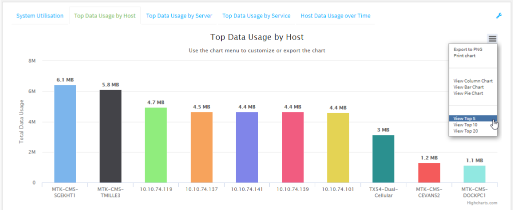


6. Change the number of top users displayed.

   You can display the top five, top ten, or top twenty data users.

a. Click the menu icon (.

b. Select the number of top users to displayed.



7. Save or print the chart.

    a. Click the menu icon (.

    b. To save the chart to your local filesystem, select **Export to PNG**.

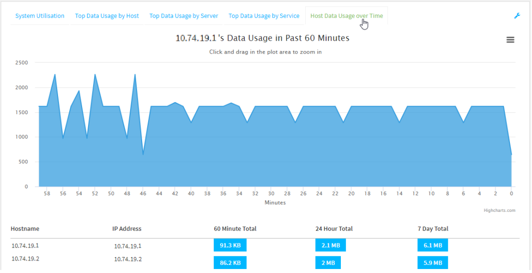
    c. To print the chart, select **Print chart**.

Use intelliFlow to display data usage by host over time

To generate a chart displaying a host's data usage over time:

WebUI

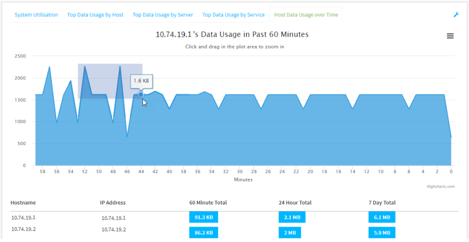
1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. If you have not already done so, enable intelliFlow. See Enable intelliFlow.
3. From the menu, click **Status** > **intelliFlow**.
4. Click **Host Data Usage Over Time**.



Hostname	IP Address	60 Minute Total	24 Hour Total	7 Day Total
10.74.19.1	10.74.19.1	91.3 KB	2.1 MB	6.1 MB
10.74.19.2	10.74.19.2	86.2 KB	2 MB	5.9 MB

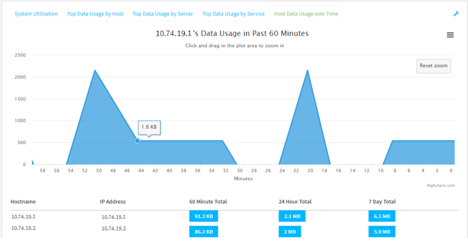
- Display more granular information:

    a. Click and drag over an area in the chart to zoom into that area and provide more granular information.



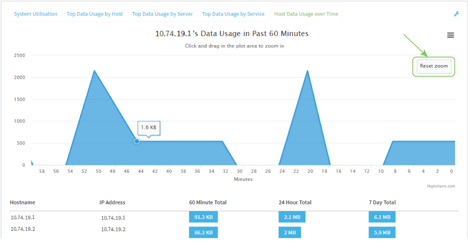
Hostname	IP Address	60 Minute Total	24 Hour Total	7 Day Total
10.74.19.1	10.74.19.1	91.3 KB	2.1 MB	6.1 MB
10.74.19.2	10.74.19.2	86.2 KB	2 MB	5.9 MB

b. Release to display the selected portion of the chart:



Hostname	IP Address	60 Minute Total	24 Hour Total	7 Day Total
10.74.19.1	10.74.19.1	91.3 KB	2.1 MB	6.1 MB
10.74.19.2	10.74.19.2	86.2 KB	2 MB	5.9 MB

c. Click **Reset zoom** to return to the original display:



Hostname	IP Address	60 Minute Total	24 Hour Total	7 Day Total
10.74.19.1	10.74.19.1	91.3 KB	2.1 MB	6.1 MB
10.74.19.2	10.74.19.2	86.2 KB	2 MB	5.9 MB

- Save or print the chart.
  a. Click the menu icon (≡).
  b. To save the chart to your local filesystem, select **Export to PNG**.
  c. To print the chart, select **Print chart**.

Configure NetFlow Probe

NetFlow probe is used to probe network traffic on the AnywhereUSB Plus device and export statistics to NetFlow collectors.

Required configuration items

- Enable NetFlow.
- The IP address of a NetFlow collector.

Additional configuration items

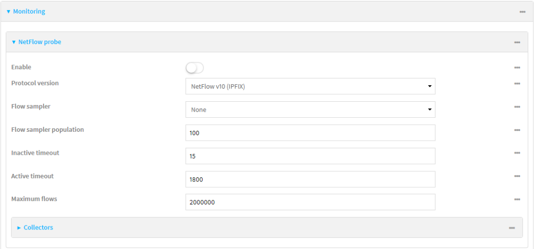
- The NetFlow version.
- Enable flow sampling and select the flow sampling technique.
- The number of flows from which the flow sampler can sample.
- The number of seconds that a flow is inactive before it is exported to the NetFlow collectors.
- The number of seconds that a flow is active before it is exported to the NetFlow collectors.
- The maximum number of simultaneous flows.
- A label for the NetFlow collector.
- The port of the NetFlow collector.
- Additional NetFlow collectors.

To probe network traffic and export statistics to NetFlow collectors:

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Monitoring** > **NetFlow probe**.



Enable ○
Protocol version: NetFlow v10 (IPFIX)
Flow sampler: None
Flow sampler population: 100
Inactive timeout: 15
Active timeout: 1800
Maximum flows: 2000000

4. **Enable** NetFlow probe.
5. **Protocol version:** Select the **Protocol version**. Available options are:
   - **NetFlow v5**—Supports IPv4 only.
   - **NetFlow v9**—Supports IPv4 and IPv6.
   - **NetFlow v10 (IPFIX)**—Supports both IPv4 and IPv6 and includes IP Flow Information Export (IPFIX).

   The default is **NetFlow v10 (IPFIX)**.
6. Enable **Flow sampler** by selecting a sampling technique. Flow sampling can reduce flow processing and transmission overhead by providing a representative subset of all flows. Available options are:
   - **None**—No flow sampling method is used. Each flow is accounted.
   - **Deterministic**—Selects every *n*th flow, where *n* is the value of **Flow sampler population**.
   - **Random**—Randomly selects one out of every *n* flows, where *n* is the value of **Flow sampler population**.
   - **Hash**—Randomly selects one out of every *n* flows using the hash of the flow key, where *n* is the value of **Flow sampler population**.
7. For **Flow sampler population**, if you selected a flow sampler, enter the number of flows for the sampler. Allowed value is any number between **2** and **16383**. The default is **100**.
8. For **Inactive timeout**, type the the number of seconds that a flow can be inactive before sent to a collector. Allowed value is any number between **1** and **15**. The default is **15**.
9. For **Active timeout**, type the number of seconds that a flow can be active before sent to a collector. Allowed value is any number between **1** and **1800**. The default is **1800**.
10. For **Maximum flows**, type the maximum number of flows to probe simultaneously. Allowed value is any number between **0** and **2000000**. The default is **2000000**.
11. Add collectors:
    a. Click to expand **Collectors**.
    b. For **Add Collector**, click ♑

c. (Optional) Type a **Label** for the collector.

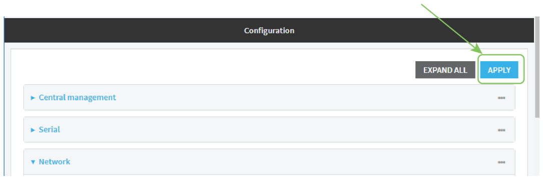
d. For **Address**, type the IP address of the collector.

e. (Optional) For **Port**, enter the port number used by the collector. The default is 2055.

Repeat to add additional collectors.

12. Click **Apply** to save the configuration and apply the change.

    The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Enable NetFlow:

```
(config)> monitoring netflow enable true
(config)>
```

4. Set the protocol version:

```
(config)> monitoring netflow protocol version
                                                    (config)>
```

   where *version* is one of:

   - **v5**—NetFlow v5 supports IPv4 only.
   - **v9**—NetFlow v9 supports IPv4 and IPv6.
   - **v10**—NetFlow v10 (IPFIX) supports both IPv4 and IPv6 and includes IP Flow Information Export (IPFIX).

   The default is **v10**.

4. Enable flow sampling by selecting a sampling technique. Flow sampling can reduce flow processing and transmission overhead by providing a representative subset of all flows.

```
(config)> monitoring netflow sampler type
(config)>
```

where *type* is one of:

- **none**—No flow sampling method is used. Each flow is accounted.
- **deterministic**—Selects every *n*th flow, where *n* is the value of the flow sample population.
- **random**—Randomly selects one out of every *n* flows, where *n* is the value of the flow sample population.
- **hash**—Randomly selects one out of every *n* flows using the hash of the flow key, where *n* is the value of the flow sample population.

5. If you are using a flow sampler, set the number of flows for the sampler:

   ```
   (config)> monitoring netflow sampler_population value
   (config)>
   ```

   where *value* is any number between **2** and **16383**. The default is **100**.

6. Set the number of seconds that a flow can be inactive before sent to a collector:

   ```
   (config)> monitoring netflow inactive_timeout value
   (config)>
   ```

   where *value* is any is any number between **1** and **15**. The default is **15**.

7. Set the number of seconds that a flow can be active before sent to a collector:

   ```
   (config)> monitoring netflow active_timeout value
   (config)>
   ```

   where *value* is any is any number between **1** and **1800**. The default is **1800**.

8. Set the maximum number of flows to probe simultaneously:

   ```
   (config)> monitoring netflow max_flows value
   (config)>
   ```

   where *value* is any is any number between **0** and **2000000**. The default is **2000000**.

9. Add collectors:

   a. Add a collector:

   ```
   (config)> add monitoring netflow collector end
   (config monitoring netflow collector 0)>
   ```

   b. Set the IP address of the collector:

   ```
   (config monitoring netflow collector 0)> address ip_address
   (config monitoring netflow collector 0)>
   ```

   c. (Optional) Set the port used by the collector:

   ```
   (config monitoring netflow collector 0)> port port
   (config monitoring netflow collector 0)>
   ```

d. (Optional) Set a label for the collector:

```
(config monitoring netflow collector 0)> label "This is a collector."
(config monitoring netflow collector 0)>
```

Repeat to add additional collectors.

10. Save the configuration and apply the change:

```
(config monitoring netflow collector 0)> save
Configuration saved.
>
```

11. Type **exit** to exit the Admin CLI.

Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Central management with Digi Remote Manager

This chapter contains the following topics:

Digi Remote Manager support

Digi Remote Manager (DRM) is a hosted remote configuration and management system that allows you to remotely manage a large number of devices. Digi Remote Manager includes a web-based interface that you can use to perform device operations, such as viewing and changing device configurations and performing firmware updates. DRM servers also provide a data storage facility.

To use Digi Remote Manager, you must set up a DRM account. To set up a DRM account and learn more about Digi Remote Manager, go to www.digi.com/products/cloud/digi-remote-manager.

To learn more about DRM features and functions, see the *Digi Remote Manager User Guide*.

Configure Digi Remote Manager

By default, your AnywhereUSB Plus device is configured to use central management using Digi Remote Manager.

Additional configuration options

These additional configuration settings are not typically configured, but you can set them as needed:

- Disable the Digi Remote Manager connection if it is not required. You can also configure an alternate cloud-based central management application.
- Change the reconnection timer.
- The non-cellular keepalive timeout.
- The cellular keepalive timeout.
- The keepalive count before the Remote Manager connection is dropped.
- SMS support.

To configure Digi Remote Manager:

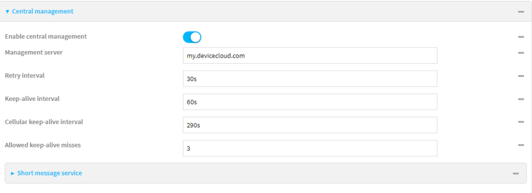
WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.

3. Click **Central management**.

   The Central management configuration window is displayed.

   ▾ Central management

   Enable central management: ●

   Management server: my.devicecloud.com

   Retry interval: 30s

   Keep-alive interval: 60s

   Cellular keep-alive interval: 290s

   Allowed keep-alive misses: 3

   ▸ Short message service

   Digi Remote Manager support is enabled by default. To disable, click **Enable central management**.

4. (Optional) For **Management server**, type the URL for the central management server. The default is the Digi Remote Manager server, my.devicecloud.com.
5. (Optional) For **Retry interval**, type the amount of time that the AnywhereUSB Plus device should wait before reattempting to connect to the Digi Remote Manager server after being disconnected. The default is 30 seconds.

   Allowed values are any number of hours, minutes, or seconds, and take the format ***number*** {**h**|**m**|**s**}.

   For example, to set **Retry interval** to ten minutes, enter **10m** or **600s**.
6. (Optional) For **Keep-alive interval**, type the amount of time that the AnywhereUSB Plus device should wait between sending keep-alive messages to the Digi Remote Manager when using a non-cellular interface. The default is 60 seconds.

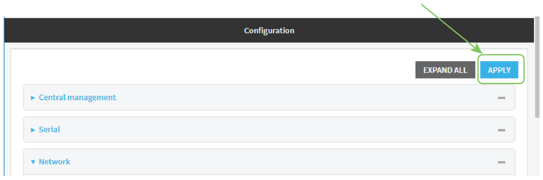
   Allowed values are any number of hours, minutes, or seconds, and take the format ***number*** {**h**|**m**|**s**}.

   For example, to set **Keep-alive interval** to ten minutes, enter **10m** or **600s**.
7. (Optional) For **Cellular keep-alive interval**, type the amount of time that the AnywhereUSB Plus device should wait between sending keep-alive messages to the Digi Remote Manager when using a cellular interface. The default is 290 seconds.

   Allowed values are any number of hours, minutes, or seconds, and take the format ***number*** {**h**|**m**|**s**}.

   For example, to set **Cellular keep-alive interval** to ten minutes, enter **10m** or **600s**.
8. (Optional) For **Allowed keep-alive misses**, type the number of allowed keep-alive misses. The default is **3**.
9. (Optional) Configure the AnywhereUSB Plus device to communicate with DRM by using SMS:
   a. Click to expand **Short message service**.
   b. **Enable** SMS messaging.
   c. For **Destination phone number**, type the phone number for Digi Remote Manager.
   d. (Optional) Type the **Service identifier**.
10. Click **Apply** to save the configuration and apply the change.

    The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Digi Remote Manager support is enabled by default. To disable Digi Remote Manager support:

```
(config)> cloud enable false
(Config)>
```

4. (Optional) Set the URL for the central management server. The default is the Digi Remote Manager server, my.devicecloud.com.

```
(config)> cloud drm drm_url url
(config)>
```

5. (Optional) Set the amount of time that the AnywhereUSB Plus device should wait before reattempting to connect to the Digi Remote Manager server after being disconnected. The minimum value is ten seconds. The default is 30 seconds.

```
(config)> cloud drm retry_interval value
```

   where *value* is any number of hours, minutes, or seconds, and takes the format ***number*{h|m|s}**.

   For example, to set **the retry interval** to ten minutes, enter either **10m** or **600s**:

```
(config)> cloud drm retry_interval 600s
(config)>
```

6. (Optional) Set the amount of time that the AnywhereUSB Plus device should wait between sending keep-alive messages to the Digi Remote Manager when using a non-cellular interface. Allowed values are from 30 seconds to two hours. The default is 60 seconds.

```
(config)> cloud drm keep_alive value
(config)>
```

   where *value* is any number of hours, minutes, or seconds, and takes the format ***number*{h|m|s}**.

   For example, to set **the keep-alive interval** to ten minutes, enter either **10m** or **600s**:

```
(config)> cloud drm keep_alive 600s
(config)>
```

7. (Optional) Set the amount of time that the AnywhereUSB Plus device should wait between sending keep-alive messages to the Digi Remote Manager when using a cellular interface. Allowed values are from 30 seconds to two hours. The default is 290 seconds.

    ```
    (config)> cloud drm cellular_keep_alive value
    (config)>
    ```

    where *value* is any number of hours, minutes, or seconds, and takes the format ***number***{**h**|**m**|**s**}.

    For example, to set **the cellular keep-alive interval** to ten minutes, enter either **10m** or **600s**:

    ```
    (config)> cloud drm cellular_keep_alive 600s
    (config)>
    ```

8. Set the number of allowed keep-alive misses. Allowed values are any integer between **2** and **64**. The default is **3**.

    ```
    (config)> cloud drm keep_alive_misses integer
    (config)>
    ```

9. (Optional) Configure the AnywhereUSB Plus device to communicate with DRM by using SMS:

    a. **Enable** SMS messaging:

    ```
    (config)> cloud drm sms enable true
    (config)>
    ```

    b. Set the phone number for Digi Remote Manager:

    ```
    (config)> cloud drm sms destination drm_phone_number
    (config)>
    ```

    c. (Optional) Set the service identifier:

    ```
    (config)> cloud drm sms sercice_id id
    (config)>
    ```

10. Save the configuration and apply the change:

    ```
    (config)> save
    Configuration saved.
    >
    ```

11. Type **exit** to exit the Admin CLI.

    Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Collect device health data and set the sample interval

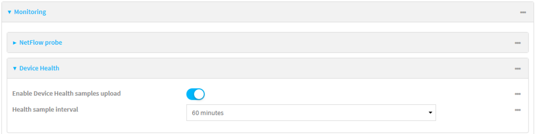
You can enable or disable the collection of device health data to upload to Digi Remote Manager, and configure the interval between health sample uploads. By default, device health data upload is enabled, and the health sample interval is set to 60 minutes.

To disable the collection of device health data or enable it if it has been disabled, or to change the health sample interval:

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Monitoring** > **Device Health**.

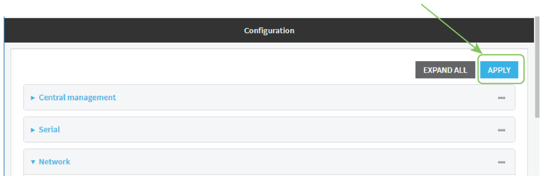
   

   Enable Device Health samples upload

   Health sample interval: 60 minutes

   Device health data upload is enabled by default. To disable, click to toggle off **Enable Device Health samples upload**.
4. For **Health sample interval**, select the interval between health sample uploads.
5. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.

Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

   ```
   > config
   (config)>
   ```
3. Device health data upload is enabled by default. To enable or disable:
   - To enable:

     ```
     (config)> monitoring devicehealth enable true
     (config)>
     ```
   - To disable:

     ```
     (config)> monitoring devicehealth enable false
     (config)>
     ```
4. The interval between health sample uploads is set to 60 minutes by default. To change:

   ```
   (config)> monitoring devicehealth interval value
   ```

   where *value* is one of **1**, **5**, **15**, **30**, or **60**, and represents the number of minutes between uploads of health sample data.
5. Save the configuration and apply the change:

   ```
   (config)> save
   Configuration saved.
   >
   ```
6. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Log into Digi Remote Manager

To start Digi Remote Manager

1. If you have not already done so, click here to sign up for a Digi Remote Manager account.
2. Check your email for Digi Remote Manager login instructions.
3. Go to remotemanager.digi.com.
4. Log into your Digi Remote Manager account.

Use Digi Remote Manager to view and manage your device

To view and manage your device:

1. If you have not already done so, connect to your Digi Remote Manager account.

Add a device to Digi Remote Manager

1. If you have not already done so, connect to your Digi Remote Manager account.
2. Select **MAC Address** and enter the Ethernet MAC address for your device.
3. For **Install Code**, enter the default password on the printed label packaged with your device. The same default password is also shown on the label affixed to the bottom of the device.
4. Click **Add**.
5. Click **OK**.

Digi Remote Manager adds your AnywhereUSB Plus device to your account and it appears in the **Device Management** view.

View Digi Remote Manager connection status

To view the current Digi Remote Manager configuration:

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. The dashboard includes a Digi Remote Manager status pane:

Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. View the central management configuration:

```
(config)> show cloud
drm
       cellular_keep_alive 290s
       drm_url my.devicecloud.com
       keep_alive 60s
       keep_alive_misses 3
       retry_interval 30s
enable true
(config)>
```

1. Type **cancel** to exit configuration mode:

   ```
   (config)> cancel
   >
   ```

2. Type exit to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

To view the status of your device's connection to Remote Manager, use the show cloud command at the command line:

Command line

```
> show cloud

 Device Cloud Status
 -------------------

 Status    : Connected
 Server    : my.devicecloud.com
 Device ID : 00000000-00000000-0040FFFF-FF0F4594
>
```

The **Device ID** is the unique identifier for the device, as used by the Remote Manager.

Use the Digi Remote Manager mobile app

If you have a smart phone or tablet, you can use the Digi Remote Manager mobile app to automatically provision a new devices and monitor devices in your account.

To download the mobile app:

- For iPhone, go to the **App Store**
- For Android phones, go to **Google Play**

To sign up for a new Digi Remote Manager account using the mobile app:

1. From the menu, click **Log in or Sign Up**.
2. Click **Sign up** to create a new account.
3. You'll receive an email with login instructions.
4. From the **Digi Remote Manager** mobile app, click **Log in** and log into your new account.

To register a new device:

1. From the menu, select **Install a device with a QR or bar code** and scan the installation QR code on the label.
2. Follow the prompts to complete your AnywhereUSB Plus registration.

Digi Remote Manager registers your AnywhereUSB Plus and adds it to your Digi Remote Manager device list. You can now manage the device remotely using Digi Remote Manager.

Configure multiple devices using profiles

Digi recommends you take advantage of Digi Remote Manager profiles to manage multiple AnywhereUSB Plus routers. Typically, if you want to provision multiple AnywhereUSB Plus routers:

1. Using the AnywhereUSB Plus local WebUI, configure one AnywhereUSB Plus router to use as the model configuration for all subsequent AnywhereUSB Pluss you need to manage.
2. Register the configured AnywhereUSB Plus device in your Digi Remote Manager account.
3. In Digi Remote Manager, create a profile based on the configured AnywhereUSB Plus.
4. Apply the profile to the AnywhereUSB Plus devices you need to configure.

Digi Remote Manager provides multiple methods for applying profiles to registered devices. You can also include site-specific settings with a profile to override settings on a device-by-device basis.

Learn more

- For information on using Digi Remote Manager to configure and manage AnywhereUSB Plus routers, see the *Digi Remote Manager User Guide*.
- For information on using Digi Remote Manager APIs to develop custom applications, see the *Digi Remote Manager Programmer Guide*.

Diagnostics

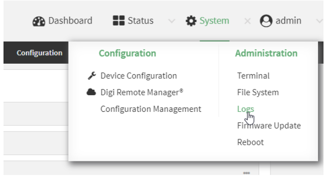
This chapter contains the following topics:

Generate a support report

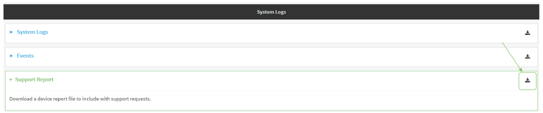
To generate and download a support report:

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the main menu, click **System** > **Logs**.



3. Collapse the system logs viewer by click **System Logs**, or scroll down to **Support Report**.
4. Click to expand **Support Report**.
5. Click to generate and download the support report.



Download a device report file to include with support requests.

Attach the support report to any support requests.

Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Use the **system support-report** command to generate the report:

```
> system support-report /etc/config/
Saving support report to /etc/config/support-report-0040D0133536-19-11-11-
13.22.15.bin
Support report saved.
>
```

4. Use the **scp** command to transfer the report to a remote host:

```
> scp host 192.168.4.1 user admin remote /home/admin/temp/ local
/etc/config/support-report-00:40:D0:13:35:36-19-11-11-13.22.15.bin to
remote
admin@192.168.4.1's password: adminpwd
```

```
support-report-0040D0133536-19-11-11-13.22.15.bin
>
```

5. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

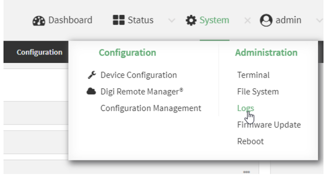
View system event logs

See Configure options for the event and system logs for information about configuring the information displayed in event and system logs.

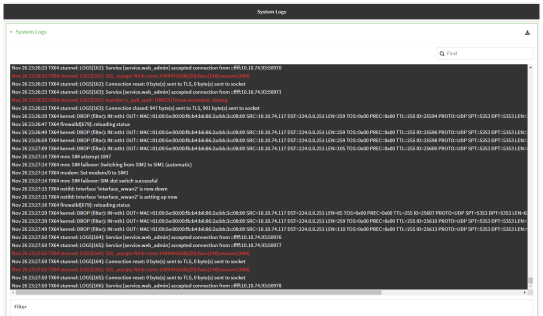
View System Logs

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the main menu, click **System** > **Logs**.

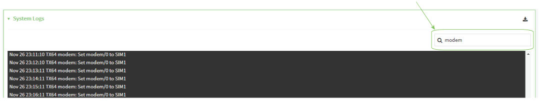


The system log displays:



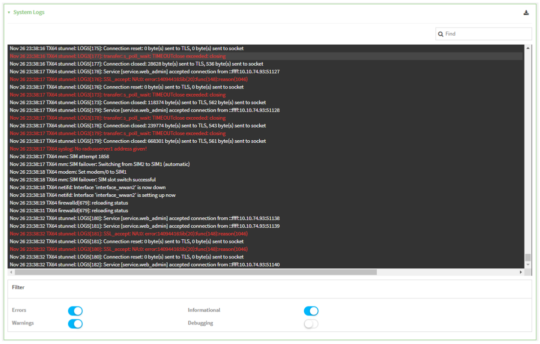
```
Nov 26 23:26:33 TX64 stunnel: LOG5[162]: Service [service.web_admin] accepted connection from ::ffff:10.10.74.93:50970
Nov 26 23:26:33 TX64 stunnel: LOG3[162]: SSL_accept: NA:0: error:14094416:lib(20):func(148):reason(1046)
Nov 26 23:26:33 TX64 stunnel: LOG5[162]: Connection reset: 0 byte(s) sent to TLS, 0 byte(s) sent to socket
Nov 26 23:26:33 TX64 stunnel: LOG5[163]: Service [service.web_admin] accepted connection from ::ffff:10.10.74.93:50971
Nov 26 23:26:33 TX64 stunnel: LOG3[163]: transfer: s_poll_wait: TIMEOUTclose exceeded: closing
Nov 26 23:26:33 TX64 stunnel: LOG5[163]: Connection closed: 947 byte(s) sent to TLS, 901 byte(s) sent to socket
Nov 26 23:26:39 TX64 kernel: DROP (filter): IN=eth1 OUT= MAC=01:00:5e:00:00:fb:b4:b6:86:2a:bb:3c:08:00 SRC=10.10.74.117 DST=224.0.0.251 LEN=259 TOS=0x00 PREC=0x00 TTL=255 ID=25594 PROTO=UDP SPT=5353 DPT=5353 LEN=
Nov 26 23:26:47 TX64 firewalld[679]: reloading status
Nov 26 23:26:49 TX64 kernel: DROP (filter): IN=eth1 OUT= MAC=01:00:5e:00:00:fb:b4:b6:86:2a:bb:3c:08:00 SRC=10.10.74.117 DST=224.0.0.251 LEN=259 TOS=0x00 PREC=0x00 TTL=255 ID=25596 PROTO=UDP SPT=5353 DPT=5353 LEN=
Nov 26 23:26:59 TX64 kernel: DROP (filter): IN=eth1 OUT= MAC=01:00:5e:00:00:fb:b4:b6:86:2a:bb:3c:08:00 SRC=10.10.74.117 DST=224.0.0.251 LEN=259 TOS=0x00 PREC=0x00 TTL=255 ID=25598 PROTO=UDP SPT=5353 DPT=5353 LEN=
Nov 26 23:27:09 TX64 kernel: DROP (filter): IN=eth1 OUT= MAC=01:00:5e:00:00:fb:b4:b6:86:2a:bb:3c:08:00 SRC=10.10.74.117 DST=224.0.0.251 LEN=105 TOS=0x00 PREC=0x00 TTL=255 ID=25600 PROTO=UDP SPT=5353 DPT=5353 LEN=
Nov 26 23:27:14 TX64 mm: SIM attempt 1847
Nov 26 23:27:14 TX64 mm: SIM failover: Switching from SIM2 to SIM1 (automatic)
Nov 26 23:27:14 TX64 modem: Set modem/0 to SIM1
Nov 26 23:27:14 TX64 mm: SIM failover: SIM slot switch successful
Nov 26 23:27:15 TX64 netifd: Interface 'interface_wwan2' is now down
Nov 26 23:27:15 TX64 netifd: Interface 'interface_wwan2' is setting up now
Nov 26 23:27:16 TX64 firewalld[679]: reloading status
Nov 26 23:27:29 TX64 kernel: DROP (filter): IN=eth1 OUT= MAC=01:00:5e:00:00:fb:b4:b6:86:2a:bb:3c:08:00 SRC=10.10.74.117 DST=224.0.0.251 LEN=85 TOS=0x00 PREC=0x00 TTL=255 ID=25607 PROTO=UDP SPT=5353 DPT=5353 LEN=6
Nov 26 23:27:39 TX64 kernel: DROP (filter): IN=eth1 OUT= MAC=01:00:5e:00:00:fb:b4:b6:86:2a:bb:3c:08:00 SRC=10.10.74.117 DST=224.0.0.251 LEN=259 TOS=0x00 PREC=0x00 TTL=255 ID=25610 PROTO=UDP SPT=5353 DPT=5353 LEN=
Nov 26 23:27:49 TX64 kernel: DROP (filter): IN=eth1 OUT= MAC=01:00:5e:00:00:fb:b4:b6:86:2a:bb:3c:08:00 SRC=10.10.74.117 DST=224.0.0.251 LEN=110 TOS=0x00 PREC=0x00 TTL=255 ID=25613 PROTO=UDP SPT=5353 DPT=5353 LEN=
Nov 26 23:27:50 TX64 stunnel: LOG5[164]: Service [service.web_admin] accepted connection from ::ffff:10.10.74.93:50976
Nov 26 23:27:50 TX64 stunnel: LOG5[165]: Service [service.web_admin] accepted connection from ::ffff:10.10.74.93:50977
Nov 26 23:27:50 TX64 stunnel: LOG3[164]: SSL_accept: NA:0: error:14094416:lib(20):func(148):reason(1046)
Nov 26 23:27:50 TX64 stunnel: LOG5[164]: Connection reset: 0 byte(s) sent to TLS, 0 byte(s) sent to socket
Nov 26 23:27:50 TX64 stunnel: LOG3[165]: SSL_accept: NA:0: error:14094416:lib(20):func(148):reason(1046)
Nov 26 23:27:50 TX64 stunnel: LOG5[165]: Connection reset: 0 byte(s) sent to TLS, 0 byte(s) sent to socket
Nov 26 23:27:50 TX64 stunnel: LOG5[166]: Service [service.web_admin] accepted connection from ::ffff:10.10.74.93:50978
```

3. Limit the display in the system log by using the **Find** search tool.



```
Nov 26 23:11:10 TX64 modem: Set modem/0 to SIM1
Nov 26 23:12:10 TX64 modem: Set modem/0 to SIM1
Nov 26 23:13:11 TX64 modem: Set modem/0 to SIM1
Nov 26 23:14:11 TX64 modem: Set modem/0 to SIM1
Nov 26 23:15:11 TX64 modem: Set modem/0 to SIM1
Nov 26 23:16:11 TX64 modem: Set modem/0 to SIM1
```

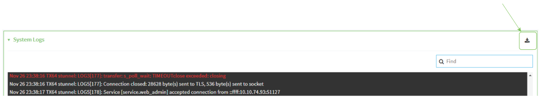
4. Use filters to configure the types of information displayed in the system logs.



```
Nov 26 23:38:16 TX64 stunnel: LOG5[175]: Connection reset: 0 byte(s) sent to TLS, 0 byte(s) sent to socket
Nov 26 23:38:16 TX64 stunnel: LOG3[177]: transfer: s_poll_wait: TIMEOUTclose exceeded: closing
Nov 26 23:38:16 TX64 stunnel: LOG5[177]: Connection closed: 28628 byte(s) sent to TLS, 536 byte(s) sent to socket
Nov 26 23:38:17 TX64 stunnel: LOG5[178]: Service [service.web_admin] accepted connection from ::ffff:10.10.74.93:51127
Nov 26 23:38:17 TX64 stunnel: LOG3[176]: SSL_accept: NA:0: error:14094416:lib(20):func(148):reason(1046)
Nov 26 23:38:17 TX64 stunnel: LOG5[176]: Connection reset: 0 byte(s) sent to TLS, 0 byte(s) sent to socket
Nov 26 23:38:17 TX64 stunnel: LOG3[173]: transfer: s_poll_wait: TIMEOUTclose exceeded: closing
Nov 26 23:38:17 TX64 stunnel: LOG5[173]: Connection closed: 118374 byte(s) sent to TLS, 562 byte(s) sent to socket
Nov 26 23:38:17 TX64 stunnel: LOG5[179]: Service [service.web_admin] accepted connection from ::ffff:10.10.74.93:51128
Nov 26 23:38:17 TX64 stunnel: LOG3[178]: transfer: s_poll_wait: TIMEOUTclose exceeded: closing
Nov 26 23:38:17 TX64 stunnel: LOG5[178]: Connection closed: 239774 byte(s) sent to TLS, 543 byte(s) sent to socket
Nov 26 23:38:17 TX64 stunnel: LOG3[179]: transfer: s_poll_wait: TIMEOUTclose exceeded: closing
Nov 26 23:38:17 TX64 stunnel: LOG5[179]: Connection closed: 668301 byte(s) sent to TLS, 561 byte(s) sent to socket
Nov 26 23:38:17 TX64 syslog: No radiusserver1 address given!
Nov 26 23:38:17 TX64 mm: SIM attempt 1858
Nov 26 23:38:17 TX64 mm: SIM failover: Switching from SIM2 to SIM1 (automatic)
Nov 26 23:38:18 TX64 modem: Set modem/0 to SIM1
Nov 26 23:38:18 TX64 mm: SIM failover: SIM slot switch successful
Nov 26 23:38:18 TX64 netifd: Interface 'interface_wwan2' is now down
Nov 26 23:38:18 TX64 netifd: Interface 'interface_wwan2' is setting up now
Nov 26 23:38:19 TX64 firewalld[679]: reloading status
Nov 26 23:38:31 TX64 firewalld[679]: reloading status
Nov 26 23:38:32 TX64 stunnel: LOG5[180]: Service [service.web_admin] accepted connection from ::ffff:10.10.74.93:51138
Nov 26 23:38:32 TX64 stunnel: LOG5[181]: Service [service.web_admin] accepted connection from ::ffff:10.10.74.93:51139
Nov 26 23:38:32 TX64 stunnel: LOG3[181]: SSL_accept: NA:0: error:14094416:lib(20):func(148):reason(1046)
Nov 26 23:38:32 TX64 stunnel: LOG5[181]: Connection reset: 0 byte(s) sent to TLS, 0 byte(s) sent to socket
Nov 26 23:38:32 TX64 stunnel: LOG3[180]: SSL_accept: NA:0: error:14094416:lib(20):func(148):reason(1046)
Nov 26 23:38:32 TX64 stunnel: LOG5[180]: Connection reset: 0 byte(s) sent to TLS, 0 byte(s) sent to socket
Nov 26 23:38:32 TX64 stunnel: LOG5[182]: Service [service.web_admin] accepted connection from ::ffff:10.10.74.93:51140
```

Errors ●
Warnings ●
Informational ●
Debugging ○

5. Click to download the system log.



```
Nov 26 23:38:16 TX64 stunnel: LOG3[177]: transfer: s_poll_wait: TIMEOUTclose exceeded: closing
Nov 26 23:38:16 TX64 stunnel: LOG5[177]: Connection closed: 28628 byte(s) sent to TLS, 536 byte(s) sent to socket
Nov 26 23:38:17 TX64 stunnel: LOG5[178]: Service [service.web_admin] accepted connection from ::ffff:10.10.74.93:51127
```

Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

2. Use show log at the Admin CLI prompt:

```
> show log

Timestamp        Message
--------------  -----------------------------------------------------------
--
Nov 26 21:54:34  AnywhereUSB Plus netifd: Interface 'interface_wan' is
setting up now
Nov 26 21:54:35  AnywhereUSB Plus firewalld[621]: reloading status
...
>
```

3. (Optional) Use the **show log number *num*** command to limit the number of lines that are displayed. For example, to limit the log to the most recent ten lines:

```
> show log number 10

Timestamp        Message
--------------  -----------------------------------------------------------
--
Nov 26 21:54:34  AnywhereUSB Plus netifd: Interface 'interface_wan' is
setting up now
Nov 26 21:54:35  AnywhereUSB Plus firewalld[621]: reloading status
...
>
```

4. (Optional) Use the **show log filter *value*** command to limit the number of lines that are displayed. Allowed values are **critical**, **warning**, **info**, and **debug**. For example, to limit the event list to only info messages:

```
> show log filter info

Timestamp        Type    Category  Message
---------------- ------- --------- ----------------------------------------
---
Nov 26 22:01:26  info    user
name=admin~service=cli~state=opened~remote=192.168.1.2
Nov 26 22:01:25  info    user
name=admin~service=cli~state=closed~remote=192.168.1.2
...
>
```

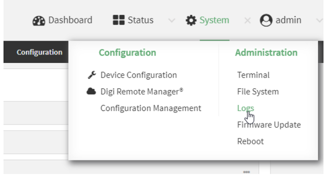
5. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

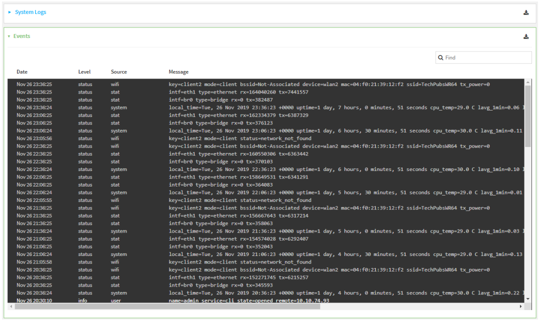
View Event Logs

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the main menu, click **System** > **Logs**.

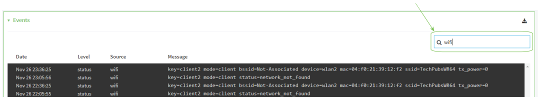


3. Click **System Logs** to collapse the system logs viewer, or scroll down to **Events**.
4. Click **Events** to expand the event viewer.



```
Date             Level    Source    Message
Nov 26 23:36:25  status   wifi      key=client2 mode=client bssid=Not-Associated device=wlan2 mac=04:f0:21:39:12:f2 ssid=TechPubsWR64 tx_power=0
Nov 26 23:36:25  status   stat      intf=eth1 type=ethernet rx=164040260 tx=7441557
Nov 26 23:36:25  status   stat      intf=br0 type=bridge rx=0 tx=382487
Nov 26 23:36:24  status   system    local_time=Tue, 26 Nov 2019 23:36:23 +0000 uptime=1 day, 7 hours, 0 minutes, 51 seconds cpu_temp=29.0 C lavg_1min=0.06
Nov 26 23:06:25  status   stat      intf=eth1 type=ethernet rx=162334379 tx=6387329
Nov 26 23:06:25  status   stat      intf=br0 type=bridge rx=0 tx=376123
Nov 26 23:06:24  status   system    local_time=Tue, 26 Nov 2019 23:06:23 +0000 uptime=1 day, 6 hours, 30 minutes, 51 seconds cpu_temp=30.0 C lavg_1min=0.11
Nov 26 23:05:56  status   wifi      key=client2 mode=client status=network_not_found
Nov 26 22:36:25  status   wifi      key=client2 mode=client bssid=Not-Associated device=wlan2 mac=04:f0:21:39:12:f2 ssid=TechPubsWR64 tx_power=0
Nov 26 22:36:25  status   stat      intf=eth1 type=ethernet rx=160550306 tx=6363442
Nov 26 22:36:25  status   stat      intf=br0 type=bridge rx=0 tx=370103
Nov 26 22:36:24  status   system    local_time=Tue, 26 Nov 2019 22:36:23 +0000 uptime=1 day, 6 hours, 0 minutes, 51 seconds cpu_temp=30.0 C lavg_1min=0.10
Nov 26 22:06:25  status   stat      intf=eth1 type=ethernet rx=158649531 tx=6341291
Nov 26 22:06:25  status   stat      intf=br0 type=bridge rx=0 tx=364083
Nov 26 22:06:24  status   system    local_time=Tue, 26 Nov 2019 22:06:23 +0000 uptime=1 day, 5 hours, 30 minutes, 51 seconds cpu_temp=29.0 C lavg_1min=0.01
Nov 26 22:05:55  status   wifi      key=client2 mode=client status=network_not_found
Nov 26 21:36:25  status   wifi      key=client2 mode=client bssid=Not-Associated device=wlan2 mac=04:f0:21:39:12:f2 ssid=TechPubsWR64 tx_power=0
Nov 26 21:36:25  status   stat      intf=eth1 type=ethernet rx=156667643 tx=6317214
Nov 26 21:36:25  status   stat      intf=br0 type=bridge rx=0 tx=358063
Nov 26 21:36:24  status   system    local_time=Tue, 26 Nov 2019 21:36:23 +0000 uptime=1 day, 5 hours, 0 minutes, 51 seconds cpu_temp=29.0 C lavg_1min=0.03
Nov 26 21:06:25  status   stat      intf=eth1 type=ethernet rx=154574028 tx=6292407
Nov 26 21:06:25  status   stat      intf=br0 type=bridge rx=0 tx=352043
Nov 26 21:06:24  status   system    local_time=Tue, 26 Nov 2019 21:06:23 +0000 uptime=1 day, 4 hours, 30 minutes, 51 seconds cpu_temp=29.0 C lavg_1min=0.13
Nov 26 21:05:58  status   wifi      key=client2 mode=client status=network_not_found
Nov 26 20:36:25  status   wifi      key=client2 mode=client bssid=Not-Associated device=wlan2 mac=04:f0:21:39:12:f2 ssid=TechPubsWR64 tx_power=0
Nov 26 20:36:25  status   stat      intf=eth1 type=ethernet rx=152271745 tx=6215257
Nov 26 20:36:25  status   stat      intf=br0 type=bridge rx=0 tx=345593
Nov 26 20:36:24  status   system    local_time=Tue, 26 Nov 2019 20:36:23 +0000 uptime=1 day, 4 hours, 0 minutes, 51 seconds cpu_temp=30.0 C lavg_1min=0.22
Nov 26 20:30:10  info     user      name=admin service=cli state=opened remote=10.10.74.93
```

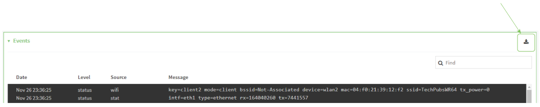
5. Limit the display in the event log by using the **Find** search tool.



Find: wifi

```
Date             Level    Source    Message
Nov 26 23:36:25  status   wifi      key=client2 mode=client bssid=Not-Associated device=wlan2 mac=04:f0:21:39:12:f2 ssid=TechPubsWR64 tx_power=0
Nov 26 23:05:56  status   wifi      key=client2 mode=client status=network_not_found
Nov 26 22:36:25  status   wifi      key=client2 mode=client bssid=Not-Associated device=wlan2 mac=04:f0:21:39:12:f2 ssid=TechPubsWR64 tx_power=0
Nov 26 22:05:55  status   wifi      key=client2 mode=client status=network_not_found
```

6. Click to download the event log.



```
Date             Level    Source    Message
Nov 26 23:36:25  status   wifi      key=client2 mode=client bssid=Not-Associated device=wlan2 mac=04:f0:21:39:12:f2 ssid=TechPubsWR64 tx_power=0
Nov 26 23:36:25  status   stat      intf=eth1 type=ethernet rx=164040260 tx=7441557
```

Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. Use show event at the Admin CLI prompt:

```
> show event

Timestamp           Type     Category  Message
```

```
---------------- ------- --------- ----------------------------------------
---
Nov 26 21:42:37  status  stat
intf=eth1~type=ethernet~rx=11332435~tx=5038762
Nov 26 21:42:35  status  system    local_time=Thu, 08 Aug 2019 21:42:35
+0000~uptime=3 hours, 0 minutes, 48 seconds
...
>
```

3. (Optional) Use the **show event number *num*** command to limit the number of lines that are displayed. For example, to limit the event list to the most recent ten lines:

```
> show event number 10

Timestamp        Type    Category  Message
---------------- ------- --------- ----------------------------------------
---
Nov 26 21:42:37  status  stat
intf=eth1~type=ethernet~rx=11332435~tx=5038762
Nov 26 21:42:35  status  system    local_time=Thu, 08 Aug 2019 21:42:35
+0000~uptime=3 hours, 0 minutes, 48 seconds
...
>
```

4. (Optional) Use the **show event table *value*** command to limit the number of lines that are displayed. Allowed values are **error**, **info**, and **status**. For example, to limit the event list to only info messages:

```
> show event table info

Timestamp        Type    Category  Message
---------------- ------- --------- ----------------------------------------
---
Nov 26 22:01:26  info    user
name=admin~service=cli~state=opened~remote=192.168.1.2
Nov 26 22:01:25  info    user
name=admin~service=cli~state=closed~remote=192.168.1.2
...
>
```

5. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

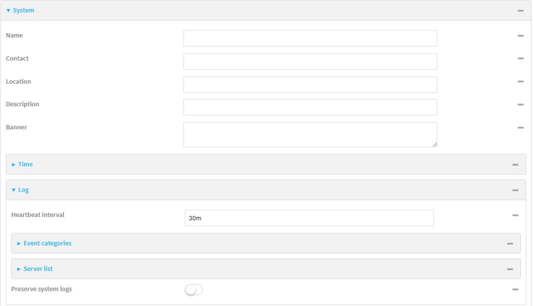
Configure syslog servers

You can configure remote syslog servers for storing event and system logs.

WebUI

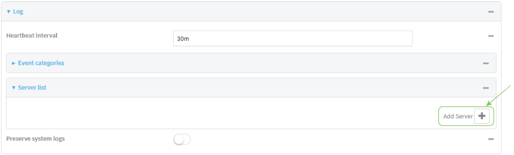
1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **System** > **Log**.

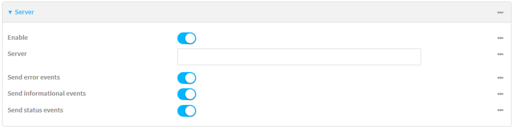
   Heartbeat interval: 30m

4. Add and configure a remote syslog server:
   a. Click to expand **Server list**.
   b. For **Add Server**, click ♑

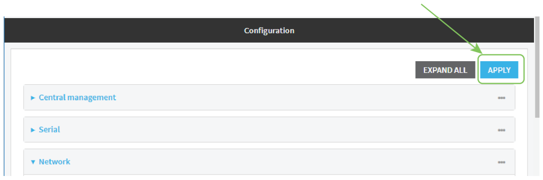
      Heartbeat interval: 30m

      The log server configuration window is displayed.

      Log servers are enabled by default. To disable, click to toggle off **Enable**.
   c. Type the host name or IP address of the **Server**.
   d. Select the event categories that will be sent to the server.
5. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

   ```
   > config
   (config)>
   ```

3. (Optional) To configure remote syslog servers:
   a. Add a remote server:

      ```
      (config)> add system log remote end
      (config system log remote 1)>
      ```

   b. Enable the server:

      ```
      (config system log remote 1)> enable true
      (config system log remote 1)>
      ```

   c. Set the host name or IP address of the server:

      ```
      (config system log remote 1)> server hostname
      (config system log remote 1)>
      ```

   d. The event categories that will be sent to the server are automatically enabled when the server is enabled. To disable:
      - To disable informational event messages:

        ```
        (config system log remote 1)> info false
        (config system log remote 1)>
        ```

      - To disable status event messages:

        ```
        (config system log remote 1)> status false
        (config system log remote 1)>
        ```

      - To disable informational event messages:

        ```
        (config system log remote 1)> error false
        (config system log remote 1)>
        ```

4. Save the configuration and apply the change:

```
(config)> save
Configuration saved.
>
```

5. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Configure options for the event and system logs

The default configuration for event and system logging is:

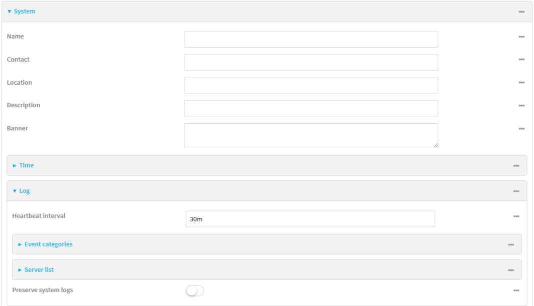
- The heartbeat interval, which determines the amount of time to wait before sending a heartbeat event if no other events have been sent, is set to 30 minutes.
- All event categories are enabled.

To change or disable the heartbeat interval, or to disable event categories, and to perform other log configuration:

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **System** > **Log**.



Heartbeat interval 30m

4. (Optional) To change the **Heartbeat interval** from the default of 30 minutes, type a new value. The heartbeat interval determines the amount of time to wait before sending a heartbeat event if no other events have been sent.

   Allowed values are any number of weeks, days, hours, minutes, or seconds, and take the format ***number***{**w**|**d**|**h**|**m**|**s**}.

   For example, to set **Heartbeat interval** to ten minutes, enter **10m** or **600s**.

   To disable the **Heartbeat interval**, enter **0s**.
5. (Optional) To disable event categories, or to enable them if they have been disabled:
   a. Click to expand **Event Categories**.
   b. Click an event category to expand.

   c. Depending on the event category, you can enable or disable informational events, status events, and error events. Some categories also allow you to set the **Status interval**, which is the time interval between periodic status events.

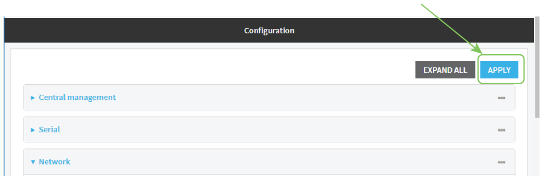
6. (Optional) See Configure syslog servers for information about configuring remote syslog servers to which log messages will be sent.
7. Enable **Preserve system logs** to save the current session's system log after a reboot.

   By default, the AnywhereUSB Plus device erases system logs each time the device is powered off or rebooted.

   Note You should only enable **Preserve system logs** temporarily to debug issues. Once you are finished debugging, immediately disable **Preserve system logs** to avoid unnecessary wear to the flash memory.

8. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. (Optional) To change the heartbeat interval from the default of 30 minutes, set a new value. The heartbeat interval determines the amount of time to wait before sending a heartbeat event if no other events have been sent.

```
(config)> system log heartbeat_interval value
(config)>
```

   where *value* is any number of weeks, days, hours, minutes, or seconds, and takes the format ***number*****{w|d|h|m|s}**.

   For example, to set **the heartbeat interval** to ten minutes, enter either **10m** or **600s**:

```
(config)> system log heartbeat_interval 600s
(config)>
```

   To disable the heartbeat interval, set the value to **0s**

4. Enable preserve system logs functionality to save the current session's system log after a reboot. By default, the AnywhereUSB Plus device erases system logs each time the device is powered off or rebooted.

   Note You should only enable **Preserve system logs** temporarily to debug issues. Once you are finished debugging, immediately disable **Preserve system logs** to avoid unnecessary wear to the flash memory.

   ```
   (config)> system log persistent true
   (config)>
   ```

5. (Optional) To disable event categories, or to enable them if they have been disabled:
   a. Use the question mark (**?**) to determine available event categories:

      ```
      (config)> system log event ?

      Event categories: Settings to enable individual event categories.

       Additional Configuration
       ------------------------------------------------------------------------
      --------
       arping                    ARP ping
       config                    Configuration
       dhcpserver                DHCP server
       firmware                  Firmware
       location                  Location
       modem                     Modem
       netmon                    Active recovery
       network                   Network interfaces
       openvpn                   OpenVPN
       portal                    Captive portal
       remote                    Remote control
       restart                   Restart
       serial                    Serial
       sms                       SMS commands
       speed                     Speed
       stat                      Network statistics
       user                      User
       wireless                  WiFi
       wol                       Wake-On-LAN

      (config)> system log event
      ```

   b. Depending on the event category, you can enable or disable informational events, status events, and error events. Some categories also allow you to set the status interval, which is the time interval between periodic status events. For example, to configure DHCP server logging:
      i. Use the question mark (**?**) to determine what events are available for DHCP server logging configuration:

```
(config)> system log event dhcpserver ?
...
DHCP server: Settings for DHCP server events. Informational events
are generated
when a lease is obtained or released. Status events report the
current list of
leases.

 Parameters                Current Value
 -------------------------------------------------------------------
------------
 info                      true          Enable informational events
 status                    true          Enable status events
 status_interval           30m           Status interval

(config)> system log event dhcpserver
```

ii. To disable informational messages for the DHCP server:

```
(config)> system log event dhcpserver info false
(config)>
```

iii. To change the status interval:

```
(config)> system log event dhcpserver status_interval value
(config)>
```

where *value* is any number of weeks, days, hours, minutes, or seconds, and takes the format ***number***{**w|d|h|m|s**}.

For example, to set **the status interval** to ten minutes, enter either **10m** or **600s**:

```
(config)> system log event dhcpserver status_interval 600s
(config)>
```

6. (Optional) See Configure syslog servers for information about configuring remote syslog servers to which log messages will be sent.
7. Save the configuration and apply the change:

```
(config)> save
Configuration saved.
>
```

8. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Analyze network traffic

The AnywhereUSB Plus device includes a network analyzer tool that captures data traffic on any interface and decodes the captured data traffic for diagnostics. You can capture data traffic on multiple interfaces at the same time and define capture filters to reduce the captured data. You can capture up to 10 MB of data traffic in two 5 MB files per interface.

To perform a more detailed analysis, you can download the captured data traffic from the device and view it using a third-party application.

Note Data traffic is captured to RAM and the captured data is lost when the device reboots unless you save the data to a file. See Save captured data traffic to a file.

This section contains the following topics:

Configure packet capture for the network analyzer

To use the network analyzer, you must configure one or more packet capture filter.

Required configuration items

- The filter expression for this packet capture filter.
- The interface used by this packet capture filter.

Additional configuration items

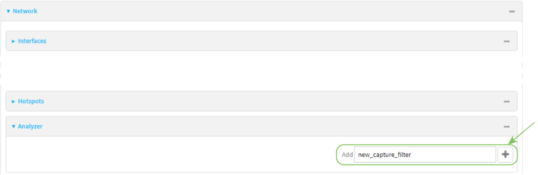
- Schedule the analyzer to run based on a specified event or at a particular time:
  - The events or time that will trigger the analyzer to run, using this capture filter.
  - The amount of time that the analyzer session will run.
  - The frequency with which captured events will be saved.

To configure a packet capture filter:

WebUI

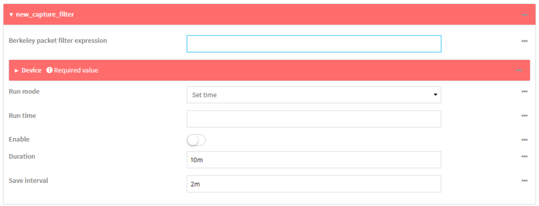
1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Network** > **Analyzer**.
4. For **Add Capture settings**, type a name for the capture filter and click ♑

   Add new_capture_filter +

   The new capture filter configuration is displayed.

   ▾ new_capture_filter

   Berkeley packet filter expression

   ▸ Device ❗ Required value

   Run mode: Set time

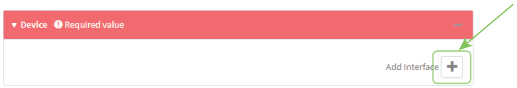
   Run time

   Enable: ○

   Duration: 10m

   Save interval: 2m
5. For **Berkeley packet filter expression**, type a filter using Berkeley Packet Filter (BPF) syntax. See Example filters for capturing data traffic for examples of filters using BPF syntax.

6. Add one or more interface to the capture filter:
   a. Click to expand **Device**.
   b. Click + to add an interface to the capture setting instance.



   c. For **Interface**, select an interface.
   d. Repeat to add additional interfaces to the capture filter.
7. (Optional) Schedule the analyzer to run, using this capture filter, based on a specified event or at a particular time:
   a. For **Run mode**, select the mode that will be used to run the capture filter. Available options are:
      - **On boot**: The capture filter will run once each time the device boots.
      - **Interval**: The capture filter will start running at the specified interval, within 30 seconds after the configuration change is saved.
        - If **Interval** is selected, in **Interval**, type the interval.

          Allowed values are any number of weeks, days, hours, minutes, or seconds, and take the format ***number***{**w**|**d**|**h**|**m**|**s**}.

          For example, to set **Interval** to ten minutes, enter **10m** or **600s**.
      - **Set time**: Runs the capture filter at a specified time of the day.
        - If **Set Time** is selected, specify the time that the capture filter should run in **Run time**, using the format *HH:MM*.
      - **During system maintenance**: The capture filter will run during the system maintenance time window.
   b. **Enable** the capture filter schedule.
   c. For **Duration**, type the amount of time that the scheduled analyzer session will run.

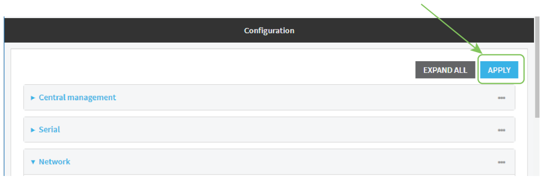
      Allowed values are any number of weeks, days, hours, minutes, or seconds, and take the format ***number***{**w**|**d**|**h**|**m**|**s**}.

      For example, to set **Duration** to ten minutes, enter **10m** or **600s**.
   d. For **Save interval**, type the frequency with which captured events will be saved.

      Allowed values are any number of weeks, days, hours, minutes, or seconds, and take the format ***number***{**w**|**d**|**h**|**m**|**s**}.

      For example, to set **Save interval** to ten minutes, enter **10m** or **600s**.
8. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

   ```
   > config
   (config)>
   ```

3. Add a new capture filter:

   ```
   (config)> add network analyzer name
   (config network analyzer name)>
   ```

4. Set a filter for the capture filter:

   ```
   (config network analyzer name)> filter value
   (config network analyzer name)>
   ```

   where *value* is a filter using Berkeley Packet Filter (BPF) syntax. Values that contain spaces should be enclosed in double quotes (**"**). See Example filters for capturing data traffic for examples of filters using BPF syntax.
5. Add an interface to the capture filter:

   ```
   (config network analyzer name)> add interfaces end device
   (config network analyzer name)>
   ```

   Repeat to add additional interfaces.
6. (Optional) Schedule the analyzer to run, using this capture filter, based on a specified event or at a particular time:
   a. Enable scheduling for this capture filter:

      ```
      (config network analyzer name)> schedule enable true
      (config network analyzer name)>
      ```

   b. Set the mode that will be used to run the capture filter:

      ```
      (config network analyzer name)> when mode
      (config network analyzer name)>
      ```

      where *mode* is one of the following:

      - **boot**: The script will run once each time the device boots.
      - **interval**: The script will start running at the specified interval, within 30 seconds after the configuration change is saved. If **interval** is selected, set the interval:

        ```
        (config add network analyzer name)> on_interval value
        (config add network analyzer name)>
        ```

        where *value* is any number of weeks, days, hours, minutes, or seconds, and takes the format ***number*{w|d|h|m|s}**.

        For example, to set **on_interval** to ten minutes, enter either **10m** or **600s**:

```
(config network analyzer name)> on_interval  600s
(config network analyzer name)>
```

- **set_time**: Runs the script at a specified time of the day. If **set_time** is set, set the time that the script should run, using the format *HH*:*MM*:

```
(config network analyzer name)> run_time HH:MM
(config network analyzer name)>
```

- **maintenance_time**: The script will run during the system maintenance time window.

c. Set the amount of time that the scheduled analyzer session will run:

```
(config network analyzer name)> duration value
(config network analyzer name)>
```

where *value* is any number of weeks, days, hours, minutes, or seconds, and takes the format ***number***{**w**|**d**|**h**|**m**|**s**}.

For example, to set **duration** to ten minutes, enter either **10m** or **600s**:

```
(config network analyzer name)> save_interval 600s
(config network analyzer name)>
```

d. Set the frequency with which captured events will be saved:

```
(config network analyzer name)> save_interval value
(config network analyzer name)>
```

where *value* is any number of weeks, days, hours, minutes, or seconds, and takes the format ***number***{**w**|**d**|**h**|**m**|**s**}.

For example, to set **save_interval** to ten minutes, enter either **10m** or **600s**:

```
(config network analyzer name)> save_interval 600s
(config network analyzer name)>
```

7. Save the configuration and apply the change:

```
(config)> save
Configuration saved.
>
```

8. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Example filters for capturing data traffic

The following are examples of filters using Berkeley Packet Filter (BPF) syntax for capturing several types of network data. See https://biot.com/capstats/bpf.html for detailed information about BPF syntax.

Example IPv4 capture filters

- Capture traffic to and from IP host 192.168.1.1:

  ```
  ip host 192.168.1.1
  ```

- Capture traffic from IP host 192.168.1.1:

  ```
  ip src host 192.168.1.1
  ```

- Capture traffic to IP host 192.168.1.1:

  ```
  ip dst host 192.168.1.1
  ```

- Capture traffic for a particular IP protocol:

  ```
  ip proto protocol
  ```

  where *protocol* is a number in the range of **1** to **255** or one of the following keywords: **icmp**, **icmp6**, **igmp**, **pim**, **ah**, **esp**, **vrrp**, **udp**, or **tcp**.

- Capture traffic to and from a TCP port 80:

  ```
  ip proto tcp and port 80
  ```

- Capture traffic to UDP port 53:

  ```
  ip proto udp and dst port 53
  ```

- Capture traffic from UDP port 53:

  ```
  ip proto udp and src port 53
  ```

- Capture to and from IP host 10.0.0.1 but filter out ports 22 and 80:

  ```
  ip host 10.0.0.1 and not (port 22 or port 80)
  ```

Example Ethernet capture filters

- Capture Ethernet packets to and from a host with a MAC address of 00:40:D0:13:35:36:

  ```
  ether host 00:40:D0:13:35:36
  ```

- Capture Ethernet packets from host 00:40:D0:13:35:36:

  ```
  ether src 00:40:D0:13:35:36:
  ```

- Capture Ethernet packets to host 00:40:D0:13:35:36:

  ```
  ether dst 00:40:D0:13:35:36
  ```

Capture packets from the command line

You can start packet capture at the command line with the analyzer start command. Alternatively, you can schedule the network analyzer to run based on a specified event or at a particular time. See Configure packet capture for the network analyzer for information about scheduling packet capturing.

Additional analyzer commands allow you to:

- Stop capturing packets.
- Save captured data traffic to a file.
- Clear captured data.

Required configuration items

- A configured packet capture filter. See Configure packet capture for the network analyzer for packet capture filter configuration information.

To start packet capture from the command line:

Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

2. Type the following at the Admin CLI prompt:

```
> analyzer start name capture_filter
>
```

   where *capture_filter* is the name of a configured capture filter. See Configure packet capture for the network analyzer for more information.

   To determine available capture filters, use the **?**:

```
> anaylzer start name ?

name: Name of the capture filter to use.
Format:
  test_capture_filter
  capture_filter_ping

> anaylzer start name
```

You can capture up to 10 MB of data traffic in two 5 MB files per interface.

Note Data traffic is captured to RAM and the captured data is lost when the device reboots unless you save the data to a file. See Save captured data traffic to a file.

Stop capturing packets

You can stop packet capture at the command line with the analyzer stop command.

To stop packet capture from the command line:

Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. Type the following at the Admin CLI prompt:

   ```
   > analyzer stop name capture_filter
   >
   ```

   where *capture_filter* is the name of a configured capture filter. See Configure packet capture for the network analyzer for more information.

   To determine available capture filters, use the **?**:

   ```
   > anaylzer stop name ?

   name: Name of the capture filter to use.
   Format:
     test_capture_filter
     capture_filter_ping

   > anaylzer stop name
   ```

Show captured traffic data

To view captured data traffic, use the show analyzer command. The command output show the following information for each packet:

- The packet number.
- The timestamp for when the packet was captured.
- The length of the packet and the amount of data captured.
- Whether the packet was sent or received by the device.
- The interface on which the packet was sent or received.
- A hexadecimal dump of the packet of up to 256 bytes.
- Decoded information of the packet.

To show captured data traffic:

Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. Type the following at the Admin CLI prompt:

   ```
   > show analyzer name capture_filter

   Packet 1 : Nov-11-2019 20:34:19.287682, Length 60 bytes (Captured Length 60
   bytes)
   ```

```
Received on interface eth1

      00 40 ff 80 01 20 b4 b6  86 21 b5 73 08 00 45 00   .@... .. .!.s..E.
      00 28 3d 36 40 00 80 06  14 bc 0a 0a 4a 82 0a 0a   .(=6@... ....J..
      4a 48 cd ae 00 16 a4 4b  ff 5f ee 1f d8 23 50 10   JH.....K ._...#P.
      08 02 c7 40 00 00 00 00  00 00 00 00               ...@.... ....

    Ethernet Header
      Destination MAC Addr : 00:40:D0:13:35:36
      Source MAC Addr      : fb:03:53:05:11:2f
      Ethernet Type        : IP (0x0800)
    IP Header
      IP Version           : 4
      Header Length        : 20 bytes
      ToS                  : 0x00
      Total Length         : 40 bytes
      ID                   : 15670 (0x3d36)
      Flags                : Do not fragment
      Fragment Offset      : 0 (0x0000)
      TTL                  : 128 (0x80)
      Protocol             : TCP (6)
      Checksum             : 0x14bc
      Source IP Address    : 10.10.74.130
      Dest. IP Address     : 10.10.74.72
    TCP Header
      Source Port          : 52654
      Destination Port     : 22
      Sequence Number      : 2756443999
      Ack Number           : 3995064355
      Data Offset          : 5
      Flags                : ACK
      Window               : 2050
      Checksum             : 0xc740
      Urgent Pointer       : 0
    TCP Data
      00 00 00 00 00 00                                  ......


>
```

where *capture_filter* is the name of a configured capture filter. See Configure packet capture for the network analyzer for more information.

To determine available capture filters, use the **?**:

```
> show anaylzer name ?

name: Name of the capture filter to use.
Format:
  test_capture_filter
  capture_filter_ping
```

```
> show anaylzer name
```

Save captured data traffic to a file

Data traffic is captured to RAM and when the device reboots, the data is lost. To retain the captured data, first save the data to a file and then upload the file to a PC.

To save captured traffic data to a file, use the analyzer save command:

Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. Type the following at the Admin CLI prompt:

```
> analyzer save filename name capture_filter
>
```

where:

- *filename* is the name of the file that the captured data will be saved to.

  Determine filenames already in use:

  Use the tab autocomplete feature to determine filenames that are currently in use:

```
> analyzer save name <tab>
test1_analyzer_capture     test2_analyzer_capture
> analyzer save name
```

- *capture_filter* is the name of a configured capture filter. See Configure packet capture for the network analyzer for more information.

  To determine available capture filters, use the **?**:

```
> analyzer save name ?

name: Name of the capture filter to use.
Format:
  test_capture_filter
  capture_filter_ping

> analyzer save name
```

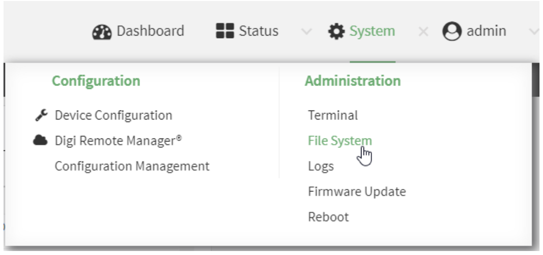
The file is stored in the **/etc/config/analyzer** directory. To transfer the file to your PC, see Download captured data to your PC.

Download captured data to your PC

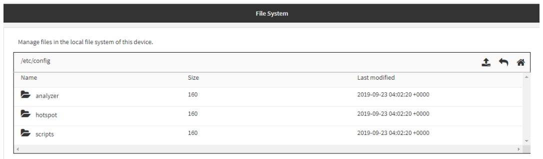
After saving captured data to a file (see Save captured data traffic to a file), you can download the file from the WebUI or from the command line by using the scp (secure copy file) command.

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System**. Under **Administration**, click **File System**.

   The **File System** page appears.

   File System

   Manage files in the local file system of this device.

   /etc/config

Name	Size	Last modified
analyzer	160	2019-09-23 04:02:20 +0000
hotspot	160	2019-09-23 04:02:20 +0000
scripts	160	2019-09-23 04:02:20 +0000

3. Highlight the **analyzer** directory and click to open the directory.
4. Select the saved analyzer report you want to download and click (download).

Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. Type **scp** to use the Secure Copy program to copy the file to your PC:

   ```
   > scp host hostname-or-ip user username remote remote-path local local-path
   to remote
   ```

   where:

   - *hostname-or-ip* is the hostname or ip address of the remote host.
   - *username* is the name of the user on the remote host.
   - *remote-path* is the location on the remote host where the file will be copied.
   - *local-path* is the path and filename on the AnywhereUSB Plus device.

   For example:

   To download the traffic saved in the file **/etc/config/analyzer/eth0.pcpng** to a PC with the IP **192.168.210.2**, for a user named **maria**, to the **/home/maria** directory:

   ```
   > scp host 192.168.210.2 user maria remote /home/maria local
   /etc/config/analyzer/eth0.pcpng to remote

   maria@192.168.210.2's password:
   eth0.pcpng                                   100%   11KB 851.3KB/s   00:00
   ```

Clear captured data

To clear captured data traffic in RAM, use the analyzer clear command:

Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

2. Type the following at the Admin CLI prompt:

   ```
   > analyzer clear name capture_filter
   >
   ```

   where *capture_filter* is the name of a configured capture filter. See Configure packet capture for the network analyzer for more information.

   To determine available capture filters, use the **?**:

   ```
   > anaylzer clear name ?

   name: Name of the capture filter to use.
   Format:
     test_capture_filter
     capture_filter_ping

   > anaylzer clear name
   ```

Note You can remove data traffic saved to a file using the rm command.

Use the ping command to troubleshoot network connections

Use the ping command troubleshoot connectivity problems.

Ping to check internet connection

To check your internet connection:

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the Admin CLI prompt, type the ping command followed by the host name or IP address of the server to be pinged:

```
> ping 8.8.8.8
PING 8.8.8.8 (8.8.8.8) 56(84) bytes of data.
64 bytes from 8.8.8.8: icmp_seq=1 ttl=54 time=11.1 ms
64 bytes from 8.8.8.8: icmp_seq=2 ttl=54 time=10.8 ms
64 bytes from 8.8.8.8: icmp_seq=3 ttl=54 time=10.7 ms
...
>
```

3. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Stop ping commands

To stop pings when the number of pings to send (the **count** parameter) has been set to a high value, enter **Ctrl+C**.

Use the traceroute command to diagnose IP routing problems

Use the **traceroute** command to diagnose IP routing problems. This command traces the route to a remote IP host and displays results. The **traceroute** command differs from ping in that traceroute shows where the route fails, while ping simply returns a single error on failure.

See the traceroute command description for command syntax and examples. The **traceroute** command has several parameters. Only **host** is required.

- **host**: The IP address of the destination host.
- **bypass**: Send directly to a host on an attached network.
- **debug**: Enable socket level debugging.
- **dontfragment**: Do not fragment probe packets.
- **first_ttl**: Specifies with what TTL to start. (Default: 1)
- **gateway**: Route the packet through a specified gateway.
- **icmp**: Use ICMP ECHO for probes.
- **interface**: Specifies the interface.

- **ipchecksums**: Calculate ip checksums.
- **max_ttl**: Specifies the maximum number of hops. (Default: 30)
- **nomap**: Do not map IP addresses to host names
- **nqueries**: Sets the number of probe packets per hop. (Default: 3)
- **packetlen**: Total size of the probing packet. (Default: -1)
- **pausemsecs**: Minimal time interval between probes (Default: 0)
- **port**: Specifies the destination port. (Default: -1)
- **src_addr**: Chooses an alternative source address.
- **tos**: Set Type of Service. (Default: -1)
- **verbose**: Verbose output.
- **waittime**: Max wait for a response to a probe. (Default: 5)

Example

This example shows using **traceroute** to verify that the AnywhereUSB device can route to host **8.8.8.8** (www.google.com) through the default gateway. The command output shows that **15** routing hops were required to reach the host:

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the Admin CLI prompt, use the **traceroute** command to view IP routing information:

```
> traceroute 8.8.8.8
traceroute to 8.8.8.8 (8.8.8.8), 30 hops max, 52 byte packets
 1  192.168.8.1 (192.168.8.1)  0 ms  0 ms  0 ms
 2  10.10.10.10 (10.10.10.10)  0 ms  2 ms  2 ms
 3  * 10.10.8.23 (10.10.8.23)  1 ms  1 ms
 4  96.34.84.22 (96.34.84.22)  1 ms  1 ms  1 ms
 5  96.34.81.190 (96.34.81.190)  2 ms  2 ms  2 ms
 6  * * *
 7  96.34.2.12 (96.34.2.12)  11 ms  11 ms  11 ms
 8  * * *
 9  8.8.8.8 (8.8.8.8)  11 ms  11 ms  11 ms
>
```

By entering a **whois** command on a Unix device, the output shows that the route is as follows:

1. **192/8**: The local network of the AnywhereUSB Plus device.
2. **192.168.8.1**: The local network gateway to the Internet.
3. **96/8**: Charter Communications, the network provider.
4. **216/8**: Google Inc.

Stop the traceroute process

To stop the traceroute process, enter **Ctrl-C**.

File system

This chapter contains the following topics:

The AnywhereUSB Plus local file system

The AnywhereUSB Plus local file system has approximately of space available for storing files, such as Python programs, alternative configuration files and firmware versions, and release files, such as cellular module images. The writable directories within the filesystem are:

- /tmp
- /opt
- /etc/config

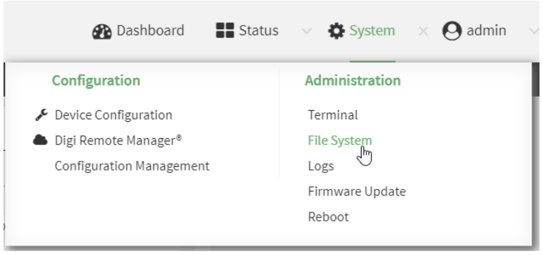
Files stored in the /tmp directory do not persist across reboots. Therefore, /tmp is a good location to upload temporary files, such as files used for firmware updates. Files stored in /opt and /etc/config do persist across reboots, but are deleted if a factory reset of the system is performed. See Reset the device to factory defaults for more information.

Display directory contents

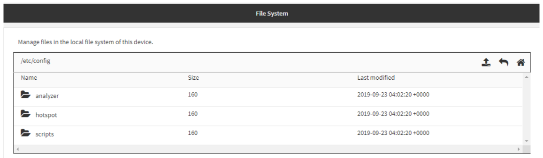
To display directory contents by using the WebUI or the Admin CLI:

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System**. Under **Administration**, click **File System**.



The **File System** page appears.



Manage files in the local file system of this device.

/etc/config

Name	Size	Last modified
analyzer	160	2019-09-23 04:02:20 +0000
hotspot	160	2019-09-23 04:02:20 +0000
scripts	160	2019-09-23 04:02:20 +0000

3. Highlight a directory and click ⏏to open the directory and view the files in the directory.

Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

2. At the Admin CLI prompt, type **ls** ***/path/dir_name***. For example, to display the contents of the **/etc/config** directory:

```
> ls /etc/config
-rw-r--r--    1 root     root           856 Nov 20 20:12 accns.json
drw-------    2 root     root           160 Sep 23 04:02 analyzer
drwxr-xr-x    3 root     root           224 Sep 23 04:02 cc_acl
-rw-r--r--    1 root     root            47 Sep 23 04:02 dhcp.leases
...
>
```

3. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Create a directory

Command line

This procedure is not available through the WebUI. To make a new directory, use the mkdir command, specifying the name of the directory.

For example:

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the Admin CLI prompt, type **mkdir** ***/path/dir_name***. For example, to create a directory named **temp** in **/etc/config**:

```
> mkdir /etc/config/temp
>
```

3. Verify that the directory was created:

```
> ls /etc/config
...
-rw-r--r--    1 root     root          1436 Aug 12 21:36 ssl.crt
-rw-------    1 root     root          3895 Aug 12 21:36 ssl.pem
-rw-r--r--    1 root     root            10 Aug  5 06:41 start
drwxr-xr-x    2 root     root           160 Aug 25 17:49 temp
>
```

4. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Display file contents

This procedure is not available through the WebUI. To display the contents of a file by using the Admin CLI, , use the more command, specifying the name of the directory.

For example:

Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the Admin CLI prompt, type **more *|path|filename***. For example, to view the contenct of the file **accns.json** in **/etc/config**:

```
> more /etc/config/accns.json
{
    "auth":
        "user": {
            "admin": {
                "password":
"$2a$05$W1sls1oxsadf/n4J0XT.Rgr6ewr1yerHtXQdbafsatGswKg0YUm"
            }
        }
    },
    "schema": {
        "version": "461"
    }
}
>
```

3. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Copy a file or directory

This procedure is not available through the WebUI. To copy a file or directory by using the Admin CLI, use the cp command, specifying the existing path and filename followed by the path and filename of the new file, or specifying the existing path and directory name followed by the path and directory name of the new directory.

Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the Admin CLI prompt, type **cp *|path|filename*|*dir_name* *|path*[*filename*]|*dir_name***. For example:

- To copy the file **/etc/config/accns.json** to a file named **backup_cfg.json** in a directory named **/etc/config/test**, enter the following:

```
> cp /etc/config/accns.json /etc/config/test/backup_cfg.json
>
```

- To copy a directory named **/etc/config/test** to **/opt**:

```
> cp /etc/config/test/ /opt/
>
```

3. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Move or rename a file or directory

This procedure is not available through the WebUI. To move or rename a file or directory by using the Admin CLI, use the mv command.

Command line

To rename a file named **test.py** in **/etc/config/scripts** to **final.py**:

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the Admin CLI prompt, type:

```
> mv /etc/config/scripts/test.py /etc/config/scripts/final.py
>
```

3. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

To move **test.py** from **/etc/config/scripts** to **/opt**:

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the Admin CLI prompt, type:

```
> mv /etc/config/scripts/test.py /opt/
>
```

3. Type **exit** to exit the Admin CLI.

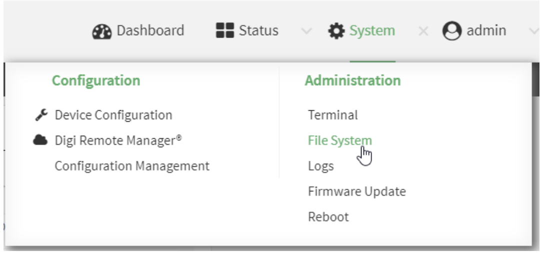
   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Delete a file or directory

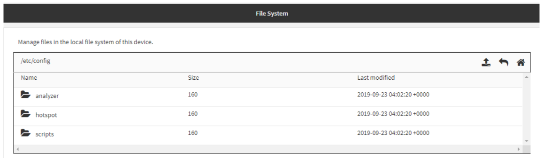
To delete a file or directory by using the WebUI or the Admin CLI:

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System**. Under **Administration**, click **File System**.

   The **File System** page appears.

   File System

   Manage files in the local file system of this device.

   /etc/config

Name	Size	Last modified
analyzer	160	2019-09-23 04:02:20 +0000
hotspot	160	2019-09-23 04:02:20 +0000
scripts	160	2019-09-23 04:02:20 +0000

3. Highlight the directory containing the file to be deleted and click ⏏to open the directory.
4. Highlight the file to be deleted and click .
5. Click **OK** to confirm.

Command line

To delete a file named **test.py** in **/etc/config/scripts**:

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the Admin CLI prompt, type:

```
> rm /etc/config/scripts/test.py
rm: remove '/etc/config/scripts/test.py'? yes
>
```

3. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

To delete a directory named **temp** from **/opt**:

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

2. At the Admin CLI prompt, type:

```
> rm /opt/temp/
rm: descend into directory '/opt/temp'? yes
rm: remove directory '/opt/temp'? yes
>
```

3. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

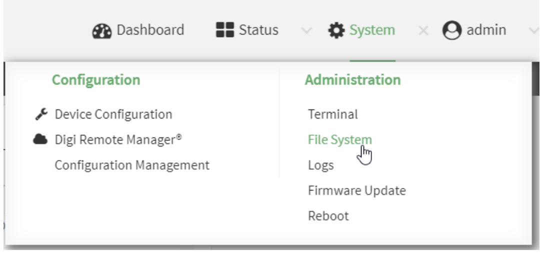
Upload and download files

You can download and upload files by using the WebUI or from the command line by using the scp Secure Copy command, or by using a utility such as SSH File Transfer Protocol (SFTP) or an SFTP application like FileZilla.

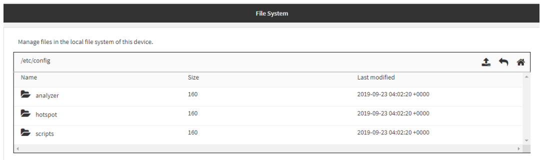
Upload and download files by using the WebUI

Upload files

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System**. Under **Administration**, click **File System**.



   The **File System** page appears.



File System

Manage files in the local file system of this device.

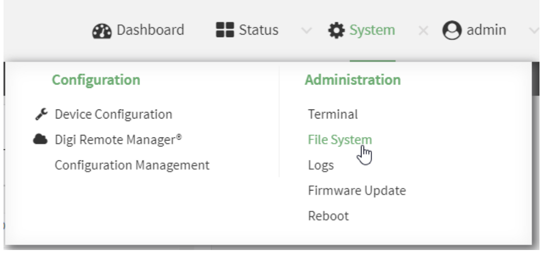
/etc/config

Name	Size	Last modified
analyzer	160	2019-09-23 04:02:20 +0000
hotspot	160	2019-09-23 04:02:20 +0000
scripts	160	2019-09-23 04:02:20 +0000

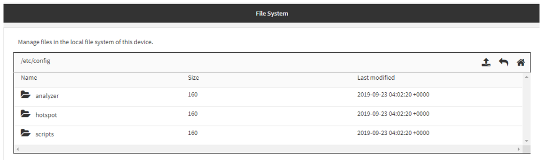
3. Highlight the directory to which the file will be uploaded and click ♎to open the directory.
4. Click ❽(upload).
5. Browse to the location of the file on your local machine. Select the file and click **Open** to upload the file.

Download files

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System**. Under **Administration**, click **File System**.



The **File System** page appears.



Manage files in the local file system of this device.

/etc/config

Name	Size	Last modified
analyzer	160	2019-09-23 04:02:20 +0000
hotspot	160	2019-09-23 04:02:20 +0000
scripts	160	2019-09-23 04:02:20 +0000

3. Highlight the directory to which the file will be uploaded and click ⤒to open the directory.
4. Highlight the appropriate file and click (download).

Upload and download files by using the Secure Copy command

Copy a file from a remote host to the AnywhereUSB Plus device

To copy a file from a remote host to the AnywhereUSB Plus device, use the scp command as follows:

```
> scp host hostname-or-ip user username remote remote-path local local-path to
local
```

where:

- *hostname-or-ip* is the hostname or ip address of the remote host.
- *username* is the name of the user on the remote host.
- *remote-path* is the path and filename of the file on the remote host that will be copied to the AnywhereUSB Plus device.
- *local-path* is the location on the AnywhereUSB Plus device where the copied file will be placed.

For example:

To copy firmware from a remote host with an IP address of 192.168.4.1 to the /etc/config directory on the AnywhereUSB Plus device, issue the following command:

```
> scp host 192.168.4.1 user admin remote /home/admin/bin/AnywhereUSB Plus-
19.11.72.17.bin local /etc/config/ to local
admin@192.168.4.1's password: adminpwd
AnywhereUSB Plus-19.11.72.17.bin                       100%    36MB    11.1MB/s        00:03
>
```

Transfer a file from the AnywhereUSB Plus device to a remote host

To copy a file from the AnywhereUSB Plus device to a remote host, use the scp command as follows:

```
> scp host hostname-or-ip user username remote remote-path local local-path to
remote
```

where:

- *hostname-or-ip* is the hostname or ip address of the remote host.
- *username* is the name of the user on the remote host.
- *remote-path* is the location on the remote host where the file will be copied.
- *local-path* is the path and filename on the AnywhereUSB Plus device.

For example:

To copy a support report from the AnywhereUSB Plus device to a remote host at the IP address of 192.168.4.1:

1. Use the **system support-report** command to generate the report:

```
> system support-report /etc/config/
Saving support report to /etc/config/support-report-0040D0133536-19-11-11-
13.22.15.bin
Support report saved.
>
```

2. Use the **scp** command to transfer the report to a remote host:

```
> scp host 192.168.4.1 user admin remote /home/admin/temp/ local
/etc/config/support-report-00:40:D0:13:35:36-19-11-11-13.22.15.bin to
remote
admin@192.168.4.1's password: adminpwd
support-report-0040D0133536-19-11-11-13.22.15.bin
>
```

Upload and download files using SFTP

Transfer a file from a remote host to the AnywhereUSB Plus device

This example uploads firmware from a remote host to the AnywhereUSB Plus device with an IP address of **192.168.2.1**, using the username **ahmed**:

```
$ sftp ahmed@192.168.2.1
Password:
Connected to 192.168.2.1
sftp> put AnywhereUSB Plus-19.11.72.17
Uploading AnywhereUSB Plus-19.11.72.17 to AnywhereUSB Plus-19.11.72.17
AnywhereUSB Plus-19.11.72.17
                100%  24M  830.4KB/s   00:00
sftp> exit
$
```

Transfer a file from the AnywhereUSB Plus device to a remote host

This example downloads a file named **test.py** from the AnywhereUSB device at the IP address of **192.168.2.1** with a username of **ahmed** to the local directory on the remote host:

```
$ sftp ahmed@192.168.2.1
Password:
Connected to 192.168.2.1
sftp> get test.py
Fetching test.py to test.py
test.py
  100%  254    0.3KB/s   00:00
sftp> exit
$
```

Routing

This chapter contains the following topics:

IP routing

The AnywhereUSB Plus device uses IP routes to decide where to send a packet it receives for a remote network. The process for deciding on a route to send the packet is as follows:

1. The device examines the destination IP address in the IP packet, and looks through the IP routing table to find a match for it.
2. If it finds a route for the destination, it forwards the IP packet to the configured IP gateway or interface.
3. If it cannot find a route for the destination, it uses a default route.
4. If there are two or more routes to a destination, the device uses the route with the longest mask.
5. If there are two or more routes to a destination with the same mask, the device uses the route with the lowest metric.

This section contains the following topics:

Configure a static route

A static route is a manually configured routing entry. Information about the route is manually entered rather than obtained from dynamic routing traffic.

Required configuration items

- The destination address or network.
- The interface to use to reach the destination.

Additional configuration items

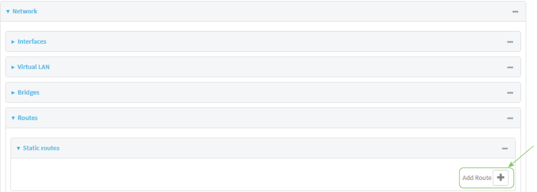
- A label used to identify this route.
- The IPv4 address of the gateway used to reach the destination.
- The metric for the route. When multiple routes are available to reach the same destination, the route with the lowest metric is used.
- The Maximum Transmission Units (MTU) of network packets using this route.

To configure a static route:

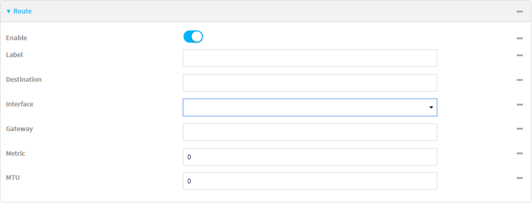
WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Network** > **Routes** > **Static routes**.
4. Click the ♑to add a new static route.



   The new static route configuration page is displayed:

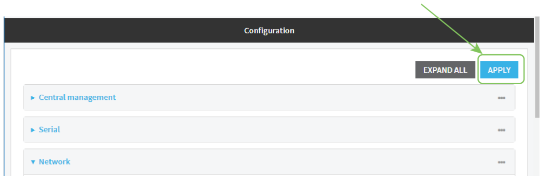


   New static route configurations are enabled by default. To disable, click to toggle **Enable** to off.
5. (Optional) For **Label**, type a label that will be used to identify this route.
6. For **Destination**, type the IP address or network of the destination of this route.

   For example, to route traffic to the 192.168.47.0 network that uses a subnet mask of 255.255.255.0, type **192.168.47.0/24**. The **any** keyword can also be used to route packets to any destination with this static route.

7. For **Interface**, select the interface on the AnywhereUSB Plus device that will be used with this static route.
8. (Optional) For **Gateway**, type the IPv4 address of the gateway used to reach the destination. Set to blank if the destination can be accessed without a gateway.
9. (Optional) For **Metric**, type the metric for the route. When multiple routes are available to reach the same destination, the route with the lowest metric is used.
10. (Optional) For **MTU**, type the Maximum Transmission Units (MTU) of network packets using this route.
11. Click **Apply** to save the configuration and apply the change.

    The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Add a new static route:

```
(config)> add network route static end
(config network route static 0)>
```

   New static route instances are enabled by default. To disable:

```
(config network route static 0)> enable false
(config network route static 0)>
```

4. (Optional) set a label that will be used to identify this route. For example:

```
(config network route static 0)> label "route to accounting network"
(config network route static 0)>
```

5. Set the IP address or network of the destination of this route. For example:

```
(config network route static 0)> destination ip_address[/netmask]
(config network route static 0)>
```

   For example, to route traffic to the 192.168.47.0 network that uses a subnet mask of 255.255.255.0:

```
(config network route static 0)> dst 192.168.47.0/24
(config network route static 0)>
```

The **any** keyword can also be used to route packets to any destination with this static route.

6. Set the interface on the AnywhereUSB Plus device that will be used with this static route:
   a. Use the **?** to determine available interfaces:

   ```
   (config network route static 0)> interface ?

   Interface: The network interface to use to reach the destination.
   Format:
     /network/interface/defaultip
     /network/interface/defaultlinklocal
     /network/interface/eth1
     /network/interface/eth2
     /network/interface/loopback
   Current value:

   (config network route static 0)> interface
   ```

   b. Set the interface. For example:

   ```
   (config network route static 0)> interface /network/interface/
   (config network route static 0)>
   ```

7. (Optional) Set the IPv4 address of the gateway used to reach the destination. Set to blank if the destination can be accessed without a gateway.

   ```
   (config network route static 0)> gateway IPv4_address
   (config network route static 0)>
   ```

8. (Optional) Set the metric for the route. When multiple routes are available to reach the same destination, the route with the lowest metric is used.

   ```
   (config network route static 0)> metric value
   (config network route static 0)>
   ```

   where *value* is an interger between **0** and **65535**. The default is **0**.

9. (Optional) Set the Maximum Transmission Units (MTU) of network packets using this route:

   ```
   (config network route static 0)> mtu integer
   (config network route static 0)>
   ```

10. Save the configuration and apply the change:

    ```
    (config)> save
    Configuration saved.
    >
    ```

11. Type **exit** to exit the Admin CLI.

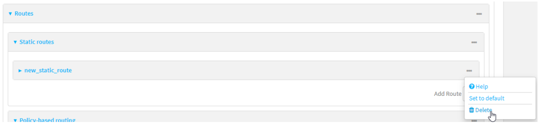
    Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Delete a static route

WebUI

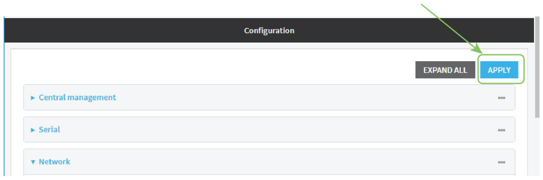
1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Network** > **Routes** > **Static routes**.
4. Click the menu icon (**...**) for a static route and select **Delete**.



5. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Determine the index number of the static route to be deleted:

```
(config)> show network route static
0
    dst 10.0.0.1
    enable true
    no gateway
    interface /network/interface/lan1
    label new_static_route
    metric 0
    mtu 0
1
    dst 192.168.5.1
    enable true
    gateway 192.168.5.1
    interface /network/interface/lan2
    label new_static_route_1
    metric 0
    mtu 0
(config)>
```

4. Use the index number to delete the static route:

```
(config)> del network route static 0
(config)>
```

5. Save the configuration and apply the change:

```
(config)> save
Configuration saved.
>
```

6. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Policy-based routing

Normally, a routing device determines how to route a network packet based on its destination address. However, you can use policy-based routing to forward the packet based on other criteria, such as the source of the packet. For example, you can configure the AnywhereUSB Plus device so that high-priority traffic is routed through the cellular connection, while all other traffic is routed through an Ethernet (WAN) connection.

Policy-based routing for the AnywhereUSB Plus device uses the following criteria to determine how to route traffic:

- Firewall zone (for example, internal/outbound traffic, external/inbound traffic, or IPSec tunnel traffic).
- Network interface (for example, the cellular connection, the WAN, or the LAN).
- IPv4 address.
- IPv6 address.
- MAC address.
- Domain.
- Protocol type (TCP, UDP, ICMP, or all).

The order of the policies is important. Routing policies are processed sequentially; as a result, if a packet matches an earlier policy, it will be routed using that policy's rules. It will not be processed by any subsequent rules.

Configure a routing policy

Required configuration items

- The packet matching parameters. It can any combination of the following:
  - Source interface.
  - Source address. This can be a firewall zone, an interface, a single IPv4/IPv6 address or network, or a MAC address.
  - Destination address. This can be a firewall zone, an interface, a single IPv4/IPv6 address or network, or a domain.
  - Protocol. This can be **any**, **tcp**, **udp** or **icmp**.
  - Source port. This is only used if the protocol is set to **tcp** or **udp**.
  - Destination port. This is only used if protocol is set to **tcp** or **udp**.
- The network interface used to reach the destination.

Additional configuration items

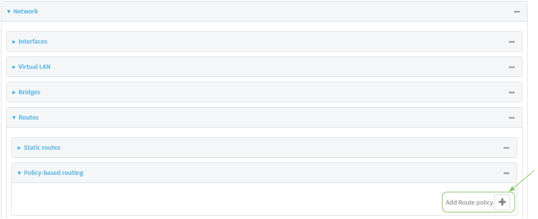
- A label for the routing policy.
- Whether packets that match this policy should be dropped when the gateway interface is disconnected, rather than forwarded through other interfaces.

To configure a routing policy:

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Network** > **Routes** > **Policy-based routing**.
4. Click the + to add a new route policy.

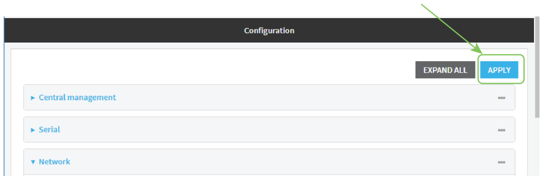
   

   The new route policy page is displayed:

   New route policies are enabled by default. To disable, click to toggle **Enable** to off.
5. (Optional) For **Label**, type a label that will be used to identify this route policy.
6. For **Interface**, select the interface on the AnywhereUSB Plus device that will be used with this route policy.
7. (Optional) Enable **Exclusive** to configure the policy to drop packets that match the policy when the gateway interface is disconnected, rather than forwarded through other interfaces.
8. For **IP version**, select **Any**, **IPv4**, or **IPv6**.

9. For **Protocol**, select **Any**, **TCP**, **UDP**, or **ICMP**.
   - If **TCP** or **UDP** is selected for **Protocol**, type the port numbers of the **Source port** and **Destination port**, or set to **any** to match for any port.
   - If **ICMP** is selected for **Protocol**, type the ICMP type and optional code, or set to **any** to match for any ICMP type.
10. Configure source address information:
    a. Click to expand **Source address**.
    b. For **Type**, select one of the following:
       - **Zone**: Matches the source IP address to the selected firewall zone. See Firewall configuration for more information about firewall zones.
       - **Interface**: Matches the source IP address to the selected interface's network address.
       - **IPv4 address**: Matches the source IP address to the specified IP address or network. Use the format ***IPv4_address***[/***netmask***], or use **any** to match any IPv4 address.
       - **IPv6 address**: Matches the source IP address to the specified IP address or network. Use the format ***IPv6_address*[/*prefix_length*]**, or use **any** to match any IPv6 address.
       - **MAC address**: Matches the source MAC address to the specified MAC address.
11. Configure the destination address information:
    a. Click to expand **Destination address**.
    b. For **Type**, select one of the following:
       - **Zone**: Matches the destination IP address to the selected firewall zone. See Firewall configuration for more information about firewall zones.
       - **Interface**: Matches the destination IP address to the selected interface's network address.
       - **IPv4 address**: Matches the destination IP address to the specified IP address or network. Use the format *IPv4_address*/[*netmask*], or use **any** to match any IPv4 address.
       - **IPv6 address**: Matches the destination IP address to the specified IP address or network. Use the format *IPv6_address*/[*prefix_length*], or use **any** to match any IPv6 address.
       - **Domain**: Matches the destination IP address to the specified domain names. To specify domains:
         i. Click to expand **Domains**.
         ii. Click the ƴ to add a domain.
         iii. For **Domain**, type the domain name.
         iv. Repeat to add additional domains.
12. Click **Apply** to save the configuration and apply the change.

    The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

   ```
   > config
   (config)>
   ```
3. Add a new routing policy:

   ```
   (config)> add network route policy end
   (config network route policy 0)>
   ```

   New route policies are enabled by default. To disable:

   ```
   (config network route policy 0)> enable false
   (config network route policy 0)>
   ```
4. (Optional) Set the label that will be used to identify this route policy:

   ```
   (config network route policy 0)> label "New route policy"
   (config network route policy 0)>
   ```
5. Set the interface on the AnywhereUSB Plus device that will be used with this route policy:
   a. Use the **?** to determine available interfaces:

      ```
      (config network route policy 0)> interface ?

      Interface: The network interface used to reach the destination. Packets
      that satisfy the matching criteria will be routed through this
      interface. If the interface has a gateway then it will be used as the
      next hop.
      Format:
        /network/interface/defaultip
        /network/interface/defaultlinklocal
        /network/interface/eth1
        /network/interface/eth2
        /network/interface/loopback
      Current value:

      (config network route policy 0)> interface
      ```

   b. Set the interface. For example:

      ```
      (config network route policy 0)> interface /network/interface/
      (config network route policy 0)>
      ```

6. (Optional) Enable **exclusive** to configure the policy to drop packets that match the policy when the gateway interface is disconnected, rather than forwarded through other interfaces:

   ```
   (config network route policy 0)> exclusive true
   (config network route policy 0)>
   ```

7. Select the IP version:

   ```
   (config network route policy 0)> ip_version value
   (config network route policy 0)>
   ```

   where *value* is one of **any**, **ipv4**, or **ipv6**.

8. Set the protocol:

   ```
   (config network route policy 0)> protocol value
   (config network route policy 0)>
   ```

   where *value* is one of:

   - **any**: All protocols are matched.
   - **tcp**: Source and destination ports are matched:
     a. Set the source port:

        ```
        (config network route policy 0)> src_port value
        (config network route policy 0)>
        ```

        where *value* is the port number, or the keyword **any** to match any port as the source port.

     b. Set the destination port:

        ```
        (config network route policy 0)> dst_port value
        (config network route policy 0)>
        ```

        where *value* is the port number, or the keyword **any** to match any port as the destination port.

   - **upd**: Source and destination ports are matched:
     a. Set the source port:

        ```
        (config network route policy 0)> src_port value
        (config network route policy 0)>
        ```

        where *value* is the port number, or the keyword **any** to match any port as the source port.

b. Set the destination port:

```
(config network route policy 0)> dst_port value
(config network route policy 0)>
```

where *value* is the port number, or the keyword **any** to match any port as the destination port.

- **icmp**: The ICMP protocol is matched. Identify the ICMP type:

```
(config network route policy 0)> icmp_type value
(config network route policy 0)>
```

where *value* is the ICMP type and optional code, or set to **any** to match for any ICMP type.

9. Set the source address type:

```
(config network route policy 0)> src type value
(config network route policy 0)>
```

where *value* is one of:

- **zone**: Matches the source IP address to the selected firewall zone. Set the zone:

a. Use the **?** to determine available zones:

```
(config network route policy 0)> src zone ?

Zone: Match the IP address to the specified firewall zone.
Format:
  any
  dynamic_routes
  edge
  external
  hotspot
  internal
  ipsec
  loopback
  setup

Default value: any
Current value: any

(config network route policy 0)> src zone
```

b. Set the zone. For example:

```
(config network route policy 0)> src zone external
(config network route policy 0)>
```

See Firewall configuration for more information about firewall zones.

- **interface**: Matches the source IP address to the selected interface's network address. Set the interface:

a. Use the **?** to determine available interfaces:

```
(config network route policy 0)> src interface ?

Interface: The network interface.
Format:
  /network/interface/defaultip
  /network/interface/defaultlinklocal
  /network/interface/eth1
  /network/interface/eth2
  /network/interface/loopback
Current value:

(config network route policy 0)> src interface
```

b. Set the interface. For example:

```
(config network route policy 0)> src interface /network/interface/
(config network route policy 0)>
```

- **address**: Matches the source IPv4 address to the specified IP address or network. Set the address that will be matched:

```
(config network route policy 0)> src address value
(config network route policy 0)>
```

where value uses the format ***IPv4_address***[**/*netmask***], or **any** to match any IPv4 address.

- **address6**: Matches the source IPv6 address to the specified IP address or network. Set the address that will be matched:

```
(config network route policy 0)> src address6 value
(config network route policy 0)>
```

where value uses the format ***IPv6_address***[**/*prefix_length***], or **any** to match any IPv6 address.

- **mac**: Matches the source MAC address to the specified MAC address. Set the MAC address to be matched:

```
(config network route policy 0)> src mac MAC_address
(config network route policy 0)>
```

10. Set the destination address type:

```
(config network route policy 0)> dst type value
(config network route policy 0)>
```

where *value* is one of:

- **zone**: Matches the destination IP address to the selected firewall zone. Set the zone:

a. Use the **?** to determine available zones:

```
(config network route policy 0)> dst zone ?
```

```
Zone: Match the IP address to the specified firewall zone.
Format:
  any
  dynamic_routes
  edge
  external
  hotspot
  internal
  ipsec
  loopback
  setup

Default value: any
Current value: any

(config network route policy 0)> dst zone
```

   b. Set the zone. For example:

```
(config network route policy 0)> dst zone external
(config network route policy 0)>
```

   See Firewall configuration for more information about firewall zones.

- **interface**: Matches the destination IP address to the selected interface's network address. Set the interface:
   a. Use the **?** to determine available interfaces:

```
(config network route policy 0)> dst interface ?

Interface: The network interface.
Format:
  /network/interface/defaultip
  /network/interface/defaultlinklocal
  /network/interface/eth1
  /network/interface/eth2
  /network/interface/loopback
Current value:

(config network route policy 0)> dst interface
```

   b. Set the interface. For example:

```
(config network route policy 0)> dst interface /network/interface/
(config network route policy 0)>
```

- **address**: Matches the destination IPv4 address to the specified IP address or network. Set the address that will be matched:

```
(config network route policy 0)> dst address value
(config network route policy 0)>
```

where value uses the format ***IPv4_address***[/***netmask***], or **any** to match any IPv4 address.

- **address6**: Matches the destination IPv6 address to the specified IP address or network. Set the address that will be matched:

```
(config network route policy 0)> dst address6 value
(config network route policy 0)>
```

where value uses the format ***IPv6_address***[/***prefix_length***], or **any** to match any IPv6 address.

- **mac**: Matches the destination MAC address to the specified MAC address. Set the MAC address to be matched:

```
(config network route policy 0)> dst mac MAC_address
(config network route policy 0)>
```

11. Save the configuration and apply the change:

```
(config)> save
Configuration saved.
>
```

12. Type **exit** to exit the Admin CLI.

    Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Routing services

Your AnywhereUSB Plus includes support for dynamic routing services and protocols. The following routing services are supported:

Service or protocol	Information
RIP	The IPv4 Routing Information Protocol (RIP) service supports RIPv2 (RFC2453) and RIPv1 (RFC1058).
RIPng	The IPv6 Routing Information Protocol (RIP) service supports RIPng (RFC2080).
OSPFv2	The IPv4 Open Shortest Path First (OSPF) service supports OSPFv2 (RFC2328).
OSPFv3	The IPv6 Open Shortest Path First (OSPF) service supports OSPFv3 (RFC2740).
BGP	The Border Gateway Protocol (BGP) service supports BGP-4 (RFC1771).
Babel	The IPv4 and IPv6 Babel service.
IS-IS	The IPv4 and IPv6 Intermediate System to Intermediate System (IS-IS) service.

Configure routing services

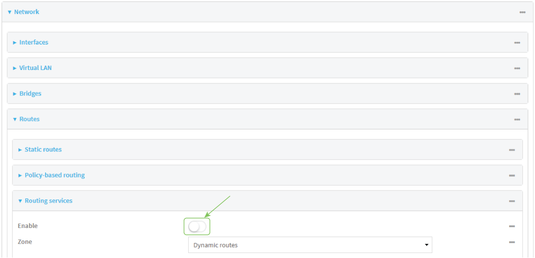
Required configuration items

- Enable routing services.
- Enable and configure the types of routing services that will be used.

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

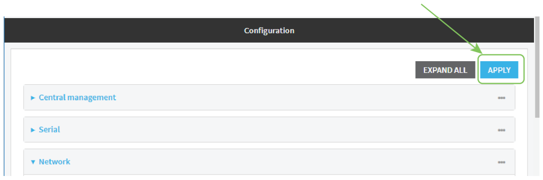
   The **Configuration** window is displayed.
3. Click **Network** > **Routes** > **Routing services**.
4. Click **Enable**.

   Zone: Dynamic routes

   The default firewall zone setting, **Dynamic routes**, is specifically designed to work with routing services and should be left as the default.
5. Configure the routing services that will be used:
   1. Click to expand a routing service.
   2. **Enable** the routing service.
   3. Complete the configuration of the routing service.
6. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.

Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Enable routing services:

```
(config)> network route service enable true
(config)>
```

4. Configure routing services that will be used:
   a. Use the **?** to display available routing services:

```
(config)> network route service ?

Routing services: Settings for dynamic routing services and protocols.

 Parameters                Current Value
 ------------------------------------------------------------------------
--------
 enable                    true            Enable
 zone                      dynamic_routes  Zone

 Additional Configuration
 ------------------------------------------------------------------------
--------
 babel                     Babel
 bgp                       BGP
 isis                      IS-IS
 ospfv2                    OSPFv2
 ospfv3                    OSPFv3
 rip                       RIP
 ripng                     RIPng

(config)>
```

   b. Enable a routing service that will be used. For example, to enable the RIP service:

```
(config)> network route service rip enable true
(config)>
```

   c. Complete the configuration of the routing service. For example, use the **?** to view the available parameters for the RIP service:

```
(config)> network route service rip ?

 Parameters                Current Value
 ------------------------------------------------------------------------
--------
 ecmp                      false          Allow ECMP
 enable                    true           Enable

 Additional Configuration
 ------------------------------------------------------------------------
--------
 interface                 Interfaces
 neighbour                 Neighbours
 redis                     Route redistribution
 timer                     Timers

(config)>
```

5. Save the configuration and apply the change:

```
(config)> save
Configuration saved.
>
```

6. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Show the routing table

To display the routing table:

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Status** > **Routes**.

   The **Network Routing** window is displayed.
4. Click **IPv4 Load Balance** to view IPv4 load balancing.
5. Click **IPv6 Load Balance** to view IPv6 load balancing.

Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the Admin CLI prompt, type show route:

   You can limit the display to only IPv4 entries by using **show route ipv4**, or to IPv6 entries by using **show route ipv6**. You can also display more information by adding the **verbose** option to the **show route** and **show route *ip_type*** commands.
3. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Dynamic DNS

The Domain Name System (DNS) uses name servers to provide a mapping between computer-readable IP addresses and human-readable hostnames. This allows users to access websites and personal networks with easy-to-remember URLs. Unfortunately, IP addresses change frequently, invalidating these mappings when they do. Dynamic DNS has become the standard method of addressing this problem, allowing devices to update name servers with their new IP addresses.

By providing the AnywhereUSB Plus device with the domain name and credentials obtained from a dynamic DNS provider, the router can automatically update the remote nameserver whenever your WAN or public IP address changes.

Your AnywhereUSB Plus device supports a number of Dynamic DNS providers as well as the ability to provide a custom provider that is not included on the list of providers.

Configure dynamic DNS

This section describes how to cofigure dynamic DNS on a AnywhereUSB Plus device.

Required configuration items

- Add a new Dynamic DNS service.
- The interface that has its IP address registered with the Dynamic DNS provider.
- The name of a Dynamic DNS provider.
- The domain name that is linked to the interface's IP address.
- The username and password to authenticate with the Dynamic DNS provider.

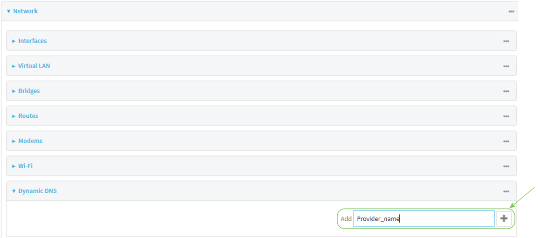
Additional configuration items

- If the Dynamic DNS service provider is set to **custom**, identify the URL that should be used to update the IP address with the Dynamic DNS provider.
- The amount of time to wait to check if the interface's IP address needs to be updated.
- The amount of time to wait to force an update of the interface's IP address.
- The amount of time to wait for an IP address update to succeed before retrying the update.
- The number of times to retry a failed IP address update.

WebUI

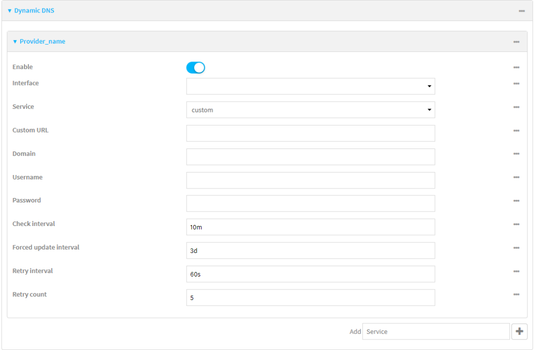
1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Network** > **Dynamic DNS**.
4. Type a name for this Dynamic DNS instance in **Add Service** and click ♑

   Add Provider_name

   The Dynamic DNS configuration page displays.

   Enable ●
   Interface
   Service custom
   Custom URL
   Domain
   Username
   Password
   Check interval 10m
   Forced update interval 3d
   Retry interval 60s
   Retry count 5
   Add Service

   New Dynamic DNS configurations are enabled by default. To disable, click to toggle **Enable** to off.
5. For **Interface**, select the interface that has its IP address registered with the Dynamic DNS provider.
6. For **Service**, select the Dynamic DNS provider, or select **custom** to enter a custom URL for the Dynamic DNS provider.
7. If **custom** is selected for **Service**, type the **Custom URL** that should be used to update the IP address with the Dynamic DNS provider.
8. Type the **Domain** name that is linked to the interface's IP address.
9. Type the **Username** and **Password** used to authenticate with the Dynamic DNS provider.
10. (Optional) For **Check Interval**, type the amount of time to wait to check if the interface's IP address needs to be updated.

    Allowed values are any number of weeks, days, hours, minutes, or seconds, and take the format ***number***{**w**|**d**|**h**|**m**|**s**}.

    For example, to set **Check interval** to ten minutes, enter **10m** or **600s**.
11. (Optional) For **Forced update interval**, type the amount of time to wait to force an update of the interface's IP address.

Allowed values are any number of weeks, days, hours, minutes, or seconds, and take the format ***number*****{w|d|h|m|s}**.

For example, to set **Forced update interval** to ten minutes, enter **10m** or **600s**.

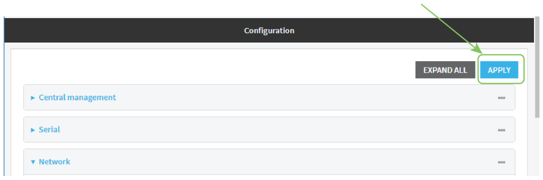
The setting for **Forced update interval** must be larger than the setting for **Check Interval**.

12. (Optional) For **Retry interval**, type the amount of time to wait for an IP address update to succeed before retrying the update.

    Allowed values are any number of weeks, days, hours, minutes, or seconds, and take the format ***number*****{w|d|h|m|s}**.

    For example, to set **Retry interval** to ten minutes, enter **10m** or **600s**.
13. (Optional) For **Retry count**, type the number of times to retry a failed IP address update.
14. Click **Apply** to save the configuration and apply the change.

    The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Add a new Dynamic DNS instance. For example, to add an instance named **new_ddns_instance**:

```
(config)> add network ddns new_ddns_instance
(config network ddns new_ddns_instance)>
```

New Dynamic DNS instances are enabled by default. To disable:

```
(config network ddns new_ddns_instance)> enable false
(config network ddns new_ddns_instance)>
```

4. Set the interface for the Dynamic DNS instance:
   a. Use the **?** to determine available interfaces:

```
(config network ddns new_ddns_instance)> interface ?

Interface: The network interface from which to obtain the IP address to
register with the dynamic DNS service.
```

```
Format:
  defaultip
  defaultlinklocal
  eth1
  eth2
  loopback
Current value:

(config network ddns new_ddns_instance)> interface
```

b. Set the interface. For example:

```
(config network ddns new_ddns_instance)> interface
(config network ddns new_ddns_instance)>
```

5. Set the Dynamic DNS provider service:

   a. Use the **?** to determine available services:

```
(config network ddns new_ddns_instance)> service ?

Service: The provider of the dynamic DNS service.
Format:
  custom
  3322.org
  changeip.com
  ddns.com.br
  dnsdynamic.org
  ...

Default value: custom
Current value: custom

(config network ddns new_ddns_instance)> service
```

   b. Set the service:

```
(config network ddns new_ddns_instance)> service service_name
(config network ddns new_ddns_instance)>
```

6. If **custom** is configured for **service**, set the custom URL that should be used to update the IP address with the Dynamic DNS provider:

```
(config network ddns new_ddns_instance)> custom url
(config network ddns new_ddns_instance)>
```

7. Set the domain name that is linked to the interface's IP address:

```
(config network ddns new_ddns_instance)> domain domain_name
(config network ddns new_ddns_instance)>
```

8. Set the username to authenticate with the Dynamic DNS provider:

```
(config network ddns new_ddns_instance)> username name
(config network ddns new_ddns_instance)>
```

9. Set the password to authenticate with the Dynamic DNS provider:

```
(config network ddns new_ddns_instance)> password pwd
(config network ddns new_ddns_instance)>
```

10. (Optional) Set the amount of time to wait to check if the interface's IP address needs to be updated:

```
(config network ddns new_ddns_instance)> check_interval value
(config network ddns new_ddns_instance)>
```

    where *value* is any number of weeks, days, hours, minutes, or seconds, and takes the format ***number***{**w**|**d**|**h**|**m**|**s**}.

    For example, to set **check_interval** to ten minutes, enter either **10m** or **600s**:

```
(config network ddns new_ddns_instance)> check_interval 600s
(config network ddns new_ddns_instance)>
```

    The default is **10m**.

11. (Optional) Set the amount of time to wait to force an update of the interface's IP address:

```
(config network ddns new_ddns_instance)> force_interval value
(config network ddns new_ddns_instance)>
```

    where *value* is any number of weeks, days, hours, minutes, or seconds, and takes the format ***number***{**w**|**d**|**h**|**m**|**s**}.

    For example, to set **force_interval** to ten minutes, enter either **10m** or **600s**:

```
(config network ddns new_ddns_instance)> force_interval 600s
(config network ddns new_ddns_instance)>
```

    The default is **3d**.

12. (Optional) Set the amount of time to wait for an IP address update to succeed before retrying the update:

```
(config network ddns new_ddns_instance)> retry_interval value
(config network ddns new_ddns_instance)>
```

    where *value* is any number of weeks, days, hours, minutes, or seconds, and takes the format ***number***{**w**|**d**|**h**|**m**|**s**}.

    For example, to set **retry_interval** to ten minutes, enter either **10m** or **600s**:

```
(config network ddns new_ddns_instance)> retry_interval 600s
(config network ddns new_ddns_instance)>
```

    The default is **60s**.

13. (Optional) Set the number of times to retry a failed IP address update:

```
(config network ddns new_ddns_instance)> retry_count value
(config network ddns new_ddns_instance)>
```

where *value* is any interger. The default is **5**.

14. Save the configuration and apply the change:

```
(config)> save
Configuration saved.
>
```

15. Type **exit** to exit the Admin CLI.

    Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Virtual Router Redundancy Protocol (VRRP)

Virtual Router Redundancy Protocol (VRRP) is a standard for gateway device redundancy and failover that creates a "virtual router" with a floating IP address. Devices connected to the LAN then use this virtual router as their default gateway. Responsibility for the virtual router is assigned to one of the VRRP-enabled devices on a LAN (the "master router"), and this responsibility transparently fails over to backup VRRP devices if the master router fails. This prevents the default gateway from being a single point of failure, without requiring configuration of dynamic routing or router discovery protocols on every host.

Multiple AnywhereUSB Plus devices can be configured as VRRP devices and assigned a priority. The router with the highest priority will be used as the master router. If the master router fails, then the IP address of the virtual router is mapped to the backup device with the next highest priority. Each VRRP router is configured with a unique LAN IP address, and the same shared VRRP address.

Configure VRRP

This section describes how to configure VRRP on a AnywhereUSB device.

Required configuration items

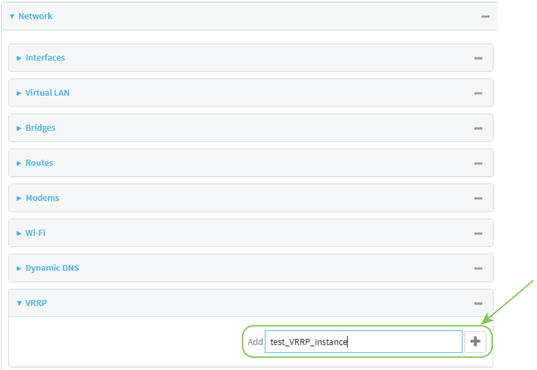
- Enable VRRP.
- The interface used by VRRP.
- The Router ID that identifies the virtual router instance. The Router ID must be the same on all VRRP devices that participate in the same VRRP device pool.
- The VRRP priority of this device.
- The shared virtual IP address for the VRRP virtual router that devices connected to the LAN will use as their default gateway.

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

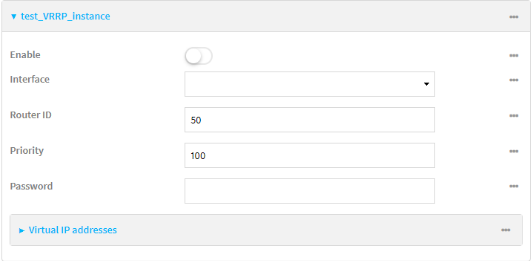
   The **Configuration** window is displayed.
3. Click **Network** > **VRRP**.

4. For **Add VRRP instance**, type a name for the VRRP instance and click +.



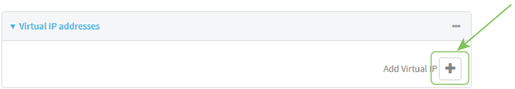
Add test_VRRP_instance

The new VRRP instance configuration is displayed.



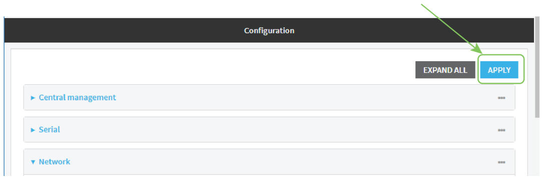
Enable ○
Interface
Router ID 50
Priority 100
Password

5. Click **Enable**.
6. For **Interface**, select the interface on which this VRRP instance should run.
7. For **Router ID** field, type the ID of the virtual router instance. The Router ID must be the same on all VRRP devices that participate in the same VRRP device pool. Allowed values are from **1** and **255**, and it is configured to **50** by default.
8. For **Priority**, type the priority for this router in the group. The router with the highest priority will be used as the master router. If the master router fails, then the IP address of the virtual router is mapped to the backup device with the next highest priority. If this device's actual IP address is being used as the virtual IP address of the VRRP pool, then the priority of this device should be set to **255** . Allowed values are from **1** and **255**, and it is configured to **100** by default.
9. (Optional) For **Password**, type a password that will be used to authenticate this VRRP router with VRRP peers. If the password length exceeds 8 characters, it will be truncated to 8 characters.
10. Configure the virtual IP addresses associated with this VRRP instance:
    a. Click to expand **Virtual IP addresses**.
    b. Click + to add a virtual IP address.



    c. For **Virtual IP**, type the IPv4 or IPv6 address for a virtual IP of this VRRP instance.
    d. (Optional) Repeat to add additional virtual IPs.
11. Click **Apply** to save the configuration and apply the change.

The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Add a VRRP instance. For example:

```
(config)> add network vrrp new_vrrp_instance
(config network vrrp new_vrrp_instance)>
```

4. Enable the VRRP instance:

```
(config network vrrp new_vrrp_instance)> enable true
(config network vrrp new_vrrp_instance)>
```

5. Set the interface on which this VRRP instance should run:
   a. Use the **?** to determine available interfaces:

```
(config network vrrp new_vrrp_instance)> interface ?

Interface: The network interface to communicate with VRRP peers on and
listen for traffic to virtual IP addresses.
Format:
  /network/interface/defaultip
  /network/interface/defaultlinklocal
  /network/interface/eth1
  /network/interface/eth2
  /network/interface/loopback
Current value:

(config network vrrp new_vrrp_instance)> interface
```

   b. Set the interface. For example:

```
(config network vrrp new_vrrp_instance)> interface /network/interface/
(config network vrrp new_vrrp_instance)>
```

6. Set the router ID. The Router ID must be the same on all VRRP devices that participate in the same VRRP device pool. Allowed values are from **1** and **255**, and it is configured to **50** by default.

```
(config network vrrp new_vrrp_instance)> router_id int
(config network vrrp new_vrrp_instance)>
```

7. Set the priority for this router in the group. The router with the highest priority will be used as the master router. If the master router fails, then the IP address of the virtual router is mapped to the backup device with the next highest priority. If this device's actual IP address is being used as the virtual IP address of the VRRP pool, then the priority of this device should be set to **255** . Allowed values are from **1** and **255**, and it is configured to **100** by default.

```
(config network vrrp new_vrrp_instance)> priority int
(config network vrrp new_vrrp_instance)>
```

8. (Optional) Set a password that will be used to authenticate this VRRP router with VRRP peers. If the password length exceeds 8 characters, it will be truncated to 8 characters.

```
(config network vrrp new_vrrp_instance)> password pwd
(config network vrrp new_vrrp_instance)>
```

9. Add a virtual IP address associated with this VRRP instance. This can be an IPv4 or IPv6 address.

```
(config network vrrp new_vrrp_instance)> add virtual_address end ip_address
(config network vrrp new_vrrp_instance)>
```

   Additional virtual IP addresses can be added by repeating this step with different values for *ip_address*.

10. Save the configuration and apply the change:

```
(config network vrrp new_vrrp_instance)> save
Configuration saved.
>
```

11. Type **exit** to exit the Admin CLI.

    Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Show VRRP status and statistics

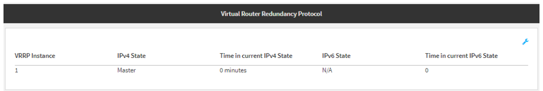
This section describes how to display VRRP status and statistics for a AnywhereUSB device. VRRP status is available from the Web UI only.

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Status** > **VRRP**.

   The **Virtual Router Redundancy Protocol** window is displayed.



Virtual Router Redundancy Protocol

VRRP Instance	IPv4 State	Time in current IPv4 State	IPv6 State	Time in current IPv6 State
1	Master	0 minutes	N/A	0

Virtual Private Networks (VPN)

Virtual Private Networks (VPNs) are used to securely connect two private networks together so that devices can connect from one network to the other using secure channels.

This chapter contains the following topics:

IPsec

IPsec is a suite of protocols for creating a secure communication link—an IPsec tunnel—between a host and a remote IP network or between two IP networks across a public network such as the Internet.

IPsec data protection

IPsec protects the data being sent across a public network by providing the following:

Data origin authentication
Authentication of data to validate the origin of data when it is received.

Data integrity
Authentication of data to ensure it has not been modified during transmission.

Data confidentiality
Encryption of data sent across the IPsec tunnel to ensure that an unauthorized device cannot read the data.

Anti-Replay
Authentication of data to ensure an unauthorized device has not injected it into the IPsec tunnel.

IPsec modes

IPsec can run in two different modes: **Tunnel** and **Transport**.

Tunnel
The entire IP packet is encrypted and/or authenticated and then encapsulated as the payload in a new IP packet.

Transport
Only the payload of the IP packet is encrypted and/or authenticated. The IP header is left untouched. This mode has limitations when using an authentication header, because the IP addresses in the IP header cannot be translated (for example, with Network Address Translation (NAT), as it would invalidate the authentication hash value.

Internet Key Exchange (IKE) settings

IKE is a key management protocol that allows IPsec to negotiate the security associations (SAs) that are used to create the secure IPsec tunnel. Both IKEv1 and IKEv2 are supported.

SA negotiations are performed in two phases, known as **phase 1** and **phase 2**.

Phase 1

In phase 1, IKE creates a secure authenticated communication channel between the device and the peer (the remote device which is at the other end of the IPsec tunnel) using the configured pre-shared key and the Diffie-Hellman key exchange. This creates the IKE SAs that are used to encrypt further IKE communications.

For IKEv1, there are two modes for the phase 1 negotiation: **Main mode** and **Aggressive mode**. IKEv2 does not use these modes.

Main mode
Main mode is the default mode. It is slower than aggressive mode, but more secure, in that all sensitive information sent between the device and its peer is encrypted.

Aggressive mode
Aggressive mode is faster than main mode, but is not as secure as main mode, because the device and its peer exchange their IDs and hash information in clear text instead of being encrypted.

Aggressive mode is usually used when one or both of the devices have a dynamic external IP address.

Phase 2

In phase 2, IKE negotiates the SAs for IPsec. This creates two unidirectional SAs, one for each direction. Once the phase 2 negotiation is complete, the IPsec tunnel should be fully functional.

IPsec and IKE renegotiation

To reduce the chances of an IPsec tunnel being compromised, the IPsec SAs and IKE SA are renegotiated at a regular interval. This results in different encryption keys being used in the IPsec tunnel.

Authentication

Client authenticaton

XAUTH (extended authentication) pre-shared key authentication mode provides additional security by using client authentication credentials in addition to the standard pre-shared key. The AnywhereUSB Plus device can be configured to authenticate with the remote peer as an XAUTH client.

RSA Signatures

With RSA signatures authentication, the AnywhereUSB Plus device uses a private RSA key to authenticate with a remote peer that is using a corresponding public key.

Certificate-based Authentication

X.509 certificate-based authentication makes use of private keys on both the server and client which are secured and never shared. Both the server and client have a certificate which is generated with their respective private key and signed by a Certificate Authority (CA).

The AnywhereUSB Plus implementation of IPsec can be configured to use X.509 certificate-based authentication using the private keys and certificates, along with a root CA certificate from the signing authority and, if available, a Certificate Revocation List (CRL).

Configure an IPsec tunnel

Configuring an IPsec tunnel with a remote device involves configuring the following items:

Required configuration items

- **IPsec tunnel configuration items:**
  - The mode: either tunnel or transport.
  - Enable the IPsec tunnel.

    The IPsec tunnel is enabled by default.
  - The firewall zone of the IPsec tunnel.
  - The authentication type and pre-shared key or other applicable keys and certificates.

    If SCEP certificates will be selected as the Authentication type, create the SCEP client prior to configuring the IPsec tunnel. See Configure a Simple Certificate Enrollment Protocol client for instructions.

  - The local endpoint type and ID values, and the remote endpoint host and ID values.
- **IKE configuration items**
  - The IKE version, either IKEv1 or IKEv2.
  - Whether to initiate a key exchange or wait for an incoming request.
  - The IKE mode, either main aggressive.
  - The IKE authentication protocol to use for the IPsec tunnel negotiation during phase 1 and phase 2.
  - The IKE encryption protocol to use for the IPsec tunnel negotiation during phase 1 and phase 2.
  - The IKE Diffie-Hellman group to use for the IPsec tunnel negotiation during phase 1 and phase 2.
- Enable dead peer detection and configure the delay and timeout.
- Destination networks that require source NAT.
- Active recovery configuration. See Configure active recovery for IPsec for information about IPsec active recovery.

Additional configuration items

The following additional configuration settings are not typically configured to get an IPsec tunnel working, but can be configured as needed:

- Determine whether the device should use UDP encapsulation even when it does not detect that NAT is being used.
- If using IPsec failover, identify the primary tunnel during configuration of the backup tunnel.
- The Network Address Translation (NAT) keep alive time.
- The protocol, either Encapsulating Security Payload (ESP) or Authentication Header (AH).
- The management priority for the IPsec tunnel interface. The active interface with the highest management priority will have its address reported as the preferred contact address for central management and direct device access.
- Enable XAUTH client authentication, and the username and password to be used to authenticate with the remote peer.
- Enable Mode-configuration (MODECFG) to receive configuration information, such as the private IP address, from the remote peer.
- Disable the padding of IKE packets. This should normally not be done except for compatibility purposes.
- Destination networks that require source NAT.
- **Tunnel and key renegotiating**
  - The lifetime of the IPsec tunnel before it is renegotiated.
  - The amount of time before the IKE phase 1 lifetime expires.
  - The amount of time before the IKE phase 2 lifetime expires
  - The lifetime margin, a randomizing amount of time before the IPsec tunnel is renegotiated.

WebUI

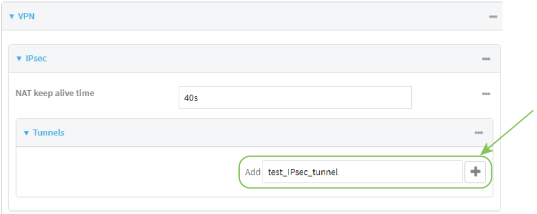
1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **VPN** > **IPsec**.
4. (Optional) Change the **NAT keep alive time**.

   Allowed values are any number of weeks, days, hours, minutes, or seconds, and take the format ***number***{**w**|**d**|**h**|**m**|**s**}.

   For example, to set **NAT keep alive time** to ten minutes, enter **10m** or **600s**.

   The default is 40 seconds.
5. Click to expand **Tunnels**.
6. For **Add IPsec tunnel**, type a name for the tunnel and click +



▾ VPN

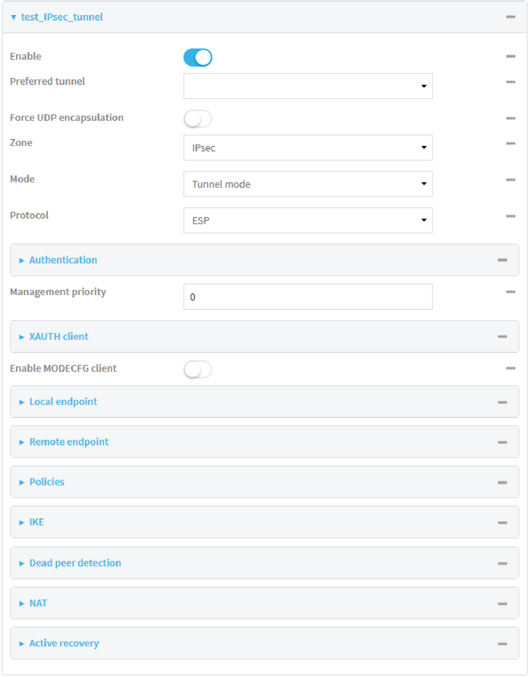
▾ IPsec

NAT keep alive time: 40s

▾ Tunnels

Add test_IPsec_tunnel +

The new IPsec tunnel configuration is displayed.



▾ test_IPsec_tunnel

Enable: on

Preferred tunnel:

Force UDP encapsulation: off

Zone: IPsec

Mode: Tunnel mode

Protocol: ESP

▸ Authentication

Management priority: 0

▸ XAUTH client

Enable MODECFG client: off

▸ Local endpoint

▸ Remote endpoint

▸ Policies

▸ IKE

▸ Dead peer detection

▸ NAT

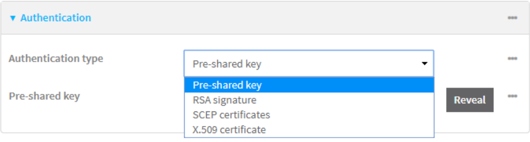
▸ Active recovery

7. The IPsec tunnel is enabled by default. To disable, click **Enable**.
8. (Optional) The **Preferred tunnel** option allows you to configure IPsec failover behavior. When configuring a backup IPsec tunnel, for **Preferred tunnel**, select the primary IPsec tunnel. This

instructs the backup tunnel to only start when the primary tunnel is determined to have failed. It will continue to operate until the preferred tunnel returns to full operational status.

When configuring the primary tunnel, and when configuring tunnels that will not fail over to a backup tunnel, leave this option blank.

9. (Optional) Enable **Force UDP encapsulation** to force the tunnel to use UDP encapsulation even when it does not detect that NAT is being used.
10. For **Zone**, select the firewall zone for the IPsec tunnel. Generally this should be left at the default of **IPsec**.
11. Select the Mode, either:
    - **Tunnel**: The entire IP packet is encrypted and/or authenticated and then encapsulated as the payload in a new IP packet.
    - **Transport**: Only the payload of the IP packet is encrypted and/or authenticated. The IP header is unencrypted.
12. Select the **Protocol**, either:
    - **ESP** (Encapsulating Security Payload): Provides encryption as well as authentication and integrity.
    - **AH** (Authentication Header): Provides authentication and integrity only.
13. Click to expand **Authentication**.



   a. For **Authentication type**, select one of the following:
      - **Pre-shared key**: Uses a pre-shared key (PSK) to authenticate with the remote peer.
        i. Type the **Pre-shared key**.
      - **RSA signature**: Uses a private RSA key to authenticate with the remote peer.
        i. For **Private key**, paste the device's private RSA key in PEM format.
        ii. Type the **Private key passphrase** that is used to decrypt the private key. Leave blank if the private key is not encrypted.
        iii. For **Peer public key**, paste the peer's public RSA key in PEM format.
      - **SCEP certificates**: Uses Simple Certificate Enrollment Protocol (SCEP) to download a private key, certificates, and an optional Certificate Revocation List (CRL) to the AnywhereUSB Plus device from a SCEP server.

        You must create the SCEP client prior to configuring the IPsec tunnel. See Configure a Simple Certificate Enrollment Protocol client for instructions.

        i. For **SCEP Client**, select the SCEP client.
      - **X.509 certificate**: Uses private key and X.509 certificates to authenticate with the remote peer.
        i. For **Private key**, paste the device's private RSA key in PEM format.
        ii. Type the **Private key passphrase** that is used to decrypt the private key. Leave blank if the private key is not encrypted.

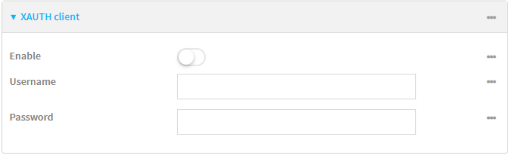
iii. For **Certificate**, paste the local X.509 certificate in PEM format.

iv. For Peer verification, select either:

- **Peer certificate**: For **Peer certificate**, paste the peer's X.509 certificate in PEM format.
- **Certificate Authority**: For **Certificate Authority chain**, paste the Certificate Authority (CA) certificates. These must include all peer certificates in the chain up to the root CA certificate, in PEM format.

14. (Optional) For **Management Priority**, set the priority for this IPsec tunnel.
15. (Optional) To configure the device to connect to its remote peer as an XAUTH client:

    a. Click to expand **XAUTH client**.

    b. Click **Enable**.

    c. Type the **Username** and **Password** that the device will use to authenticate as an XAUTH client with the peer.

16. (Optional) Click **Enable MODECFG client** to receive configuration information, such as the private IP address, from the remote peer.
17. Click to expand **Local endpoint**.

    a. For **Type**, select either:

    - **Default route**: Uses the same network interface as the default route.
    - **Interface**: Select the **Interface** to be used as the local endpoint.

    b. Click to expand **ID**.

    i. Select the ID type:

    - **Auto**: The ID will be automatically determined from the value of the tunnels endpoints.
    - **Raw**: Enter an ID and have it passed unmodified to the underlying IPsec stack.

      For **Raw ID value**, type the ID that will be passed.
    - **Any**: Any ID will be accepted.
    - **IPv4**: The ID will be interpreted as an IP address and sent as an ID_IPV4_ADDR IKE identity.

      For **IPv4 ID value**, type an IPv4 formatted ID. This can be a fully-qualified domain name or an IPv4 address.
    - **IPv6**: The ID will be interpreted as an IP address and sent as an ID_IPV6_ADDR IKE identity.

      For **IPv6 ID value**, type an IPv6 formatted ID. This can be a fully-qualified domain name or an IPv6 address.
    - **RFC822/Email**: The ID will be interpreted as an RFC822 (email address).

      For **RFC822 ID value**, type the ID in internet email address format.

- **FQDN**: The ID will be interpreted as FQDN (Fully Qualified Domain Name) and sent as an ID_FQDN IKE identity.

  For **FQDN ID value**, type the ID as an FQDN.
- **KeyID**: The ID will be interpreted as a Key ID and sent as an ID_KEY_ID IKE identity.

  For **KEYID ID value**, type the key ID.

18. Click to expand **Remote endpoint**.
    a. For **Hostname**, select either a hostname or IP address. If your device is not configured to initiate the IPsec connection (see **IKE** > **Initiate connection**), you can also use the keyword **any**, which means that the hostname is dynamic or unknown.
    b. Click to expand **ID**.
        i. Select the ID type:
            - **Auto**: The ID will be automatically determined from the value of the tunnels endpoints.
            - **Raw**: Enter an ID and have it passed unmodified to the underlying IPsec stack.

              For **Raw ID value**, type the ID that will be passed.
            - **Any**: Any ID will be accepted.
            - **IPv4**: The ID will be interpreted as an IPv4 address and sent as an ID_IPV4_ADDR IKE identity.

              For **IPv4 ID value**, type an IPv4 formatted ID. This can be a fully-qualified domain name or an IPv4 address.
            - **IPv6**: The ID will be interpreted as an IPv6 address and sent as an ID_IPV6_ADDR IKE identity.

              For **IPv6 ID value**, type an IPv6 formatted ID. This can be a fully-qualified domain name or an IPv6 address.
            - **RFC822/Email**: The ID will be interpreted as an RFC822 (email address).

              For **RFC822 ID value**, type the ID in internet email address format.
            - **FQDN**: The ID will be interpreted as FQDN (Fully Qualified Domain Name) and sent as an ID_FQDN IKE identity.

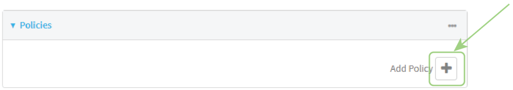
              For **FQDN ID value**, type the ID as an FQDN.
            - **KeyID**: The ID will be interpreted as a Key ID and sent as an ID_KEY_ID IKE identity.

              For **KEYID ID value**, type the key ID.

19. Click to expand **Policies**.

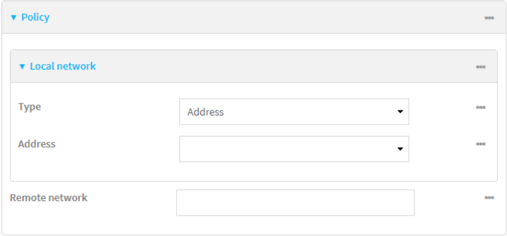
    Policies define the network traffic that will be encapsulated by this tunnel.

    a. Click ϒto create a new policy.



The new policy configuration is displayed.

b. Click to expand **Local network**.



▾ Policy

▾ Local network

Type: Address

Address:

Remote network:

c. For **Type**, select one of the following:

- **Address**: The address of a local network interface.

  For **Address**, select the appropriate interface.

- **Network**: The subnet of a local network interface.

  For **Address**, select the appropriate interface.

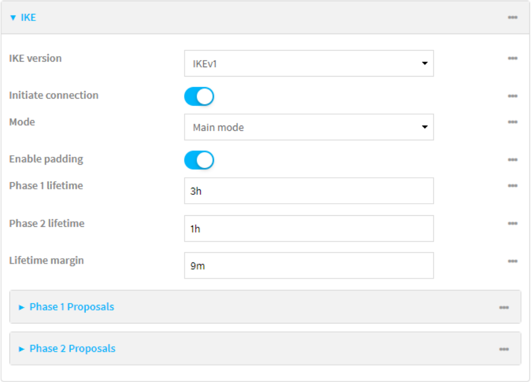
- **Custom network**: A user-defined network.

  For **Custom network**, enter the IPv4 address and optional netmask. The keyword **any** can also be used.

- **Request a network**: Requests a network from the remote peer.

d. For **Remote network**, enter the IP address and optional netmask of the remote network. The keyword **any** can also be used. .

20. Click to expand **IKE**.



▾ IKE

IKE version: IKEv1

Initiate connection: ●

Mode: Main mode

Enable padding: ●

Phase 1 lifetime: 3h

Phase 2 lifetime: 1h

Lifetime margin: 9m

▸ Phase 1 Proposals

▸ Phase 2 Proposals

a. For **IKE version**, select either IKEv1 or IKEv2. This setting must match the peer's IKE version.

b. **Initiate connection** instructs the device to initiate the key exchange, rather than waiting for an incoming request. This must be disabled if **Remote endpoint** > **Hostname** is set to **any**.

c. For **Mode**, select either **Main mode** or **Aggressive mode**.

d. For **Enable padding**, click to disable the padding of IKE packets. This should normally not be disabled except for compatibility purposes.

e. For Phase 1 lifetime, enter the amount of time that the IKE security association expires after a successful negotiation and must be re-authenticated.

Allowed values are any number of weeks, days, hours, minutes, or seconds, and take the format ***number***{**w**|**d**|**h**|**m**|**s**}.

For example, to set **Phase 1 lifetime** to ten minutes, enter **10m** or **600s**.

f. For Phase 2 lifetime, enter the amount of time that the IKE security association expires after a successful negotiation and must be rekeyed.

Allowed values are any number of weeks, days, hours, minutes, or seconds, and take the format ***number***{**w**|**d**|**h**|**m**|**s**}.

For example, to set **Phase 2 lifetime** to ten minutes, enter **10m** or **600s**.

g. For Lifetime margin, enter a randomizing amount of time before the IPsec tunnel is renegotiated.

Allowed values are any number of weeks, days, hours, minutes, or seconds, and take the format ***number***{**w**|**d**|**h**|**m**|**s**}.

For example, to set **Lifetime margin** to ten minutes, enter **10m** or **600s**.

h. Click to expand **Phase 1 Proposals**.

  i. Click + to create a new phase 1 proposal.

  ii. For **Cipher**, select the type of encryption.

  iii. For **Hash**, select the type of hash to use to verify communication integrity.

  iv. For **Diffie-Hellman group**, select the type of Diffie-Hellman group to use for key exchange.

  v. You can add additional Phase 1 proposals by clicking + next to **Add Phase 1 Proposal**.

i. Click to expand **Phase 2 Proposals**.

  i. Click + to create a new phase 2 proposal.

  ii. For **Cipher**, select the type of encryption.

  iii. For **Hash**, select the type of hash to use to verify communication integrity.

  iv. For **Diffie-Hellman group**, select the type of Diffie-Hellman group to use for key exchange.

  v. You can add additional Phase 2 proposals by clicking + next to **Add Phase 2 Proposal**.

21. (Optional) Click to expand **Dead peer detection**. Dead peer detection is enabled by default. Dead peer detection uses periodic IKE transmissions to the remote endpoint to detect whether tunnel communications have failed, allowing the tunnel to be automatically restarted when failure occurs.

  a. To enable or disable dead peer detection, click **Enable**.

  b. For **Delay**, type the number of seconds between transmissions of dead peer packets. Dead peer packets are only sent when the tunnel is idle.

  c. For **Timeout**, type the number of seconds to wait for a response from a dead peer packet before assuming the tunnel has failed.

22. (Optional) Click to expand **NAT** to create a list of destination networks that require source NAT.

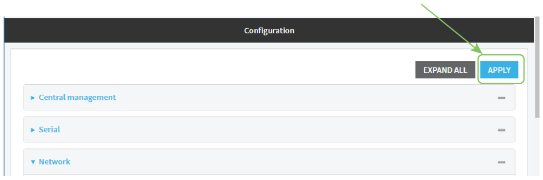
  a. Click + next to **Add NAT destination**.

  b. For **Destination network**, type the IPv4 address and optional netmask of a destination network that requires source NAT. You can also use **any**, meaning that any destination network connected to the tunnel will use source NAT.

23. See Configure active recovery for IPsec for information about IPsec **Active recovery**.

24. Click **Apply** to save the configuration and apply the change.

    The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

2. At the command line, type **config** to enter configuration mode:

   ```
   > config
   (config)>
   ```

3. Add an IPsec tunnel. For example, to add an IPsec tunnel named **ipsec_example**:

   ```
   (config)> add vpn ipsec tunnel ipsec_example
   (config vpn ipsec tunnel ipsec_example)>
   ```

   The IPsec tunnel is enabled by default. To disable:

   ```
   (config vpn ipsec tunnel ipsec_example)> enable false
   (config vpn ipsec tunnel ipsec_example)>
   ```

4. (Optional) Configure the device to serve as a backup IPsec tunnel.

   When configuring a backup IPsec tunnel the **ipsec_failover** parameter instructs the backup tunnel to only start when the primary tunnel is determined to have failed. It will continue to operate until the preferred tunnel returns to full operational status.

   When configuring the primary tunnel, and when configuring tunnels that will not fail over to a backup tunnel, do not set this parameter.

   a. Use the **?** to view a list of available tunnels:

      ```
      (config vpn ipsec tunnel ipsec_example)> ipsec_failover ?

      Preferred tunnel: This tunnel will not start until the preferred tunnel
      has failed. It will continue
      to operate until the preferred tunnel returns to full operation status.
      Format:
       primary_ipsec_tunnel
      Optional: yes
      Current value:

      (config vpn ipsec tunnel ipsec_example)> ipsec_failover
      ```

   b. Set the primary IPsec tunnel:

      ```
      (config vpn ipsec tunnel ipsec_example)> ipsec_failover primary_ipsec_
      tunnel
      (config vpn ipsec tunnel ipsec_example)>
      ```

5. (Optional) Set the tunnel to use UDP encapsulation even when it does not detect that NAT is being used:

   ```
   (config vpn ipsec tunnel ipsec_example)> force_udp_encap true
   (config vpn ipsec tunnel ipsec_example)>
   ```

6. Set the firewall zone for the IPsec tunnel. Generally this should be left at the default of **ipsec**.

```
(config vpn ipsec tunnel ipsec_example)> zone zone
(config vpn ipsec tunnel ipsec_example)>
```

   To view a list of available zones:

```
(config vpn ipsec tunnel ipsec_example)> zone ?

Zone: The firewall zone assigned to this IPsec tunnel. This can be used by
packet filtering rules
and access control lists to restrict network traffic on this tunnel.
Format:
  any
  dynamic_routes
  edge
  external
  hotspot
  internal
  ipsec
  loopback
  setup
Default value: ipsec
Current value: ipsec

(config vpn ipsec tunnel ipsec_example)>
```

7. Set the mode:

```
(config vpn ipsec tunnel ipsec_example)> mode mode
(config vpn ipsec tunnel ipsec_example)>
```

   where *mode* is either:

   - **tunnel**: The entire IP packet is encrypted and/or authenticated and then encapsulated as the payload in a new IP packet.
   - **transport**: Only the payload of the IP packet is encrypted and/or authenticated. The IP header is unencrypted.

   The default is **tunnel**.

8. Set the protocol:

```
(config vpn ipsec tunnel ipsec_example)> type protocol
(config vpn ipsec tunnel ipsec_example)>
```

   where *protocol* is either:

   - **esp** (Encapsulating Security Payload): Provides encryption as well as authentication and integrity.
   - **ah** (Authentication Header): Provides authentication and integrity only.

   The default is **esp**.

9. (Optional) Set the management priority for this IPsec tunnel:

   ```
   (config vpn ipsec tunnel ipsec_example)> mgmt value
   (config vpn ipsec tunnel ipsec_example)>
   ```

   where *value* is any interger between **0** and **1000**.

10. Set the authentication type:

    ```
    (config vpn ipsec tunnel ipsec_example)> auth type value
    (config vpn ipsec tunnel ipsec_example)>
    ```

    where *value* is one of:

    - **secret**: Uses a pre-shared key (PSK) to authenticate with the remote peer.

      a. Set the pre-shared key:

      ```
      (config vpn ipsec tunnel ipsec_example)> auth secret key
      (config vpn ipsec tunnel ipsec_example)>
      ```

    - **rsasig**: Uses a private RSA key to authenticate with the remote peer.

      a. For the **private_key** parameter, paste the device's private RSA key in PEM format:

      ```
      (config vpn ipsec tunnel ipsec_example)> auth private_key key
      (config vpn ipsec tunnel ipsec_example)>
      ```

      b. Set the private key passphrase that is used to decrypt the private key. Leave blank if the private key is not encrypted.

      ```
      (config vpn ipsec tunnel ipsec_example)> auth private_key_
      passphrase passphrase
      (config vpn ipsec tunnel ipsec_example)>
      ```

      c. For the **peer_public_key** parameter, paste the peer's public RSA key in PEM format:

      ```
      (config vpn ipsec tunnel ipsec_example)> auth peer_public_key key
      (config vpn ipsec tunnel ipsec_example)>
      ```

    - **x509**: Uses private key and X.509 certificates to authenticate with the remote peer.

      a. For the **private_key** parameter, paste the device's private RSA key in PEM format:

      ```
      (config vpn ipsec tunnel ipsec_example)> auth private_key key
      (config vpn ipsec tunnel ipsec_example)>
      ```

      b. Set the private key passphrase that is used to decrypt the private key. Leave blank if the private key is not encrypted.

      ```
      (config vpn ipsec tunnel ipsec_example)> auth private_key_
      passphrase passphrase
      (config vpn ipsec tunnel ipsec_example)>
      ```

c. For the **cert** parameter, paste the local X.509 certificate in PEM format:

```
(config vpn ipsec tunnel ipsec_example)> auth cert certificate
(config vpn ipsec tunnel ipsec_example)>
```

d. Set the method for verifying the peer's X.509 certificate:

```
(config vpn ipsec tunnel ipsec_example)> auth peer_verify value
(config vpn ipsec tunnel ipsec_example)>
```

where *value* is either:

- **cert**: Uses the peer's X.509 certificate in PEM format for verification.
    - For the **peer_cert** parameter, paste the peer's X.509 certificate in PEM format:

    ```
    (config vpn ipsec tunnel ipsec_example)> auth peer_cert
    certificate
    (config vpn ipsec tunnel ipsec_example)>
    ```

- **ca**: Uses the Certificate Authority chain for verification.
    - For the **ca_cert** parameter, paste the Certificate Authority (CA) certificates. These must include all peer certificates in the chain up to the root CA certificate, in PEM format.

    ```
    (config vpn ipsec tunnel ipsec_example)> auth ca_cert cert_
    chain
    (config vpn ipsec tunnel ipsec_example)>
    ```

11. (Optional) Configure the device to connect to its remote peer as an XAUTH client:

    a. Enable XAUTH client functionality:

    ```
    (config vpn ipsec tunnel ipsec_example)> xauth_client enable true
    (config vpn ipsec tunnel ipsec_example)>
    ```

    b. Set the XAUTH client username:

    ```
    (config vpn ipsec tunnel ipsec_example)> xauth_client username name
    (config vpn ipsec tunnel ipsec_example)>
    ```

    c. Set the XAUTH client password:

    ```
    (config vpn ipsec tunnel ipsec_example)> xauth_client password pwd
    (config vpn ipsec tunnel ipsec_example)>
    ```

12. (Optional) Enable MODECFG client functionality:

    MODECFG client functionality configures the device to receive configuration information, such as the private IP address, from the remote peer.

    a. Enable MODECFG client functionality:

    ```
    (config vpn ipsec tunnel ipsec_example)> modecfg_client enable true
    (config vpn ipsec tunnel ipsec_example)>
    ```

13. Configure the local endpoint:

    a. Set the method for determining the local network interface:

    ```
    (config vpn ipsec tunnel ipsec_example)> local type value
    (config vpn ipsec tunnel ipsec_example)>
    ```

    where *value* is either:

    - **defaultroute**: Uses the same network interface as the default route.
    - **interface**: Select the **Interface** to be used as the local endpoint.

    b. Set the ID type:

    ```
    (config vpn ipsec tunnel ipsec_example)> local id type value
    (config vpn ipsec tunnel ipsec_example)>
    ```

    where *value* is one of:

    - **auto**: The ID will be automatically determined from the value of the tunnels endpoints.
    - **raw**: Enter an ID and have it passed unmodified to the underlying IPsec stack.

      Set the unmodified ID that will be passed:

      ```
      (config vpn ipsec tunnel ipsec_example)> local id raw_id id
      (config vpn ipsec tunnel ipsec_example)>
      ```

    - **any**: Any ID will be accepted.
    - **ipv4**: The ID will be interpreted as an IPv4 address and sent as an ID_IPV4_ADDR IKE identity.

      Set an IPv4 formatted ID. This can be a fully-qualified domain name or an IPv4 address.

      ```
      (config vpn ipsec tunnel ipsec_example)> local id ipv4_id id
      (config vpn ipsec tunnel ipsec_example)>
      ```

    - **ipv6**: The ID will be interpreted as an IPv6 address and sent as an ID_IPV6_ADDR IKE identity.

      Set an IPv6 formatted ID. This can be a fully-qualified domain name or an IPv6 address.

      ```
      (config vpn ipsec tunnel ipsec_example)> local id ipv6_id id
      (config vpn ipsec tunnel ipsec_example)>
      ```

    - **rfc822**: The ID will be interpreted as an RFC822 (email address).

      Set the ID in internet email address format:

      ```
      (config vpn ipsec tunnel ipsec_example)> local id rfc822_id id
      (config vpn ipsec tunnel ipsec_example)>
      ```

    - **fqdn**: The ID will be interpreted as FQDN (Fully Qualified Domain Name) and sent as an ID_FQDN IKE identity.

Set the ID as an FQDN:

```
(config vpn ipsec tunnel ipsec_example)> local id rfc822_id id
(config vpn ipsec tunnel ipsec_example)>
```

- **keyid**: The ID will be interpreted as a Key ID and sent as an ID_KEY_ID IKE identity.

  Set the key ID:

  ```
  (config vpn ipsec tunnel ipsec_example)> local id keyid_id id
  (config vpn ipsec tunnel ipsec_example)>
  ```

14. Configure the remote endpoint:
    a. Set the hostname or IP address of the remote endpoint:

    ```
    (config vpn ipsec tunnel ipsec_example)> remote hostname value
    (config vpn ipsec tunnel ipsec_example)>
    ```

    If your device is not configured to initiate the IPsec connection (see ike initiate), you can also use the keyword **any**, which means that the hostname is dynamic or unknown.

    b. Set the ID type:

    ```
    (config vpn ipsec tunnel ipsec_example)> remote id type value
    (config vpn ipsec tunnel ipsec_example)>
    ```

    where *value* is one of:

    - **auto**: The ID will be automatically determined from the value of the tunnels endpoints.
    - **raw**: Enter an ID and have it passed unmodified to the underlying IPsec stack.

      Set the unmodified ID that will be passed:

      ```
      (config vpn ipsec tunnel ipsec_example)> remote id raw_id id
      (config vpn ipsec tunnel ipsec_example)>
      ```

    - **any**: Any ID will be accepted.
    - **ipv4**: The ID will be interpreted as an IPv4 address and sent as an ID_IPV4_ADDR IKE identity.

      Set an IPv4 formatted ID. This can be a fully-qualified domain name or an IPv4 address.

      ```
      (config vpn ipsec tunnel ipsec_example)> remote id ipv4_id id
      (config vpn ipsec tunnel ipsec_example)>
      ```

    - **ipv6**: The ID will be interpreted as an IPv6 address and sent as an ID_IPV6_ADDR IKE identity.

      Set an IPv6 formatted ID. This can be a fully-qualified domain name or an IPv6 address.

      ```
      (config vpn ipsec tunnel ipsec_example)> remote id ipv6_id id
      (config vpn ipsec tunnel ipsec_example)>
      ```

- **rfc822**: The ID will be interpreted as an RFC822 (email address).

  Set the ID in internet email address format:

  ```
  (config vpn ipsec tunnel ipsec_example)> remote id rfc822_id id
  (config vpn ipsec tunnel ipsec_example)>
  ```

- **fqdn**: The ID will be interpreted as FQDN (Fully Qualified Domain Name) and sent as an ID_FQDN IKE identity.

  Set the ID as an FQDN:

  ```
  (config vpn ipsec tunnel ipsec_example)> remote id rfc822_id id
  (config vpn ipsec tunnel ipsec_example)>
  ```

- **keyid**: The ID will be interpreted as a Key ID and sent as an ID_KEY_ID IKE identity.

  Set the key ID:

  ```
  (config vpn ipsec tunnel ipsec_example)> remote id keyid_id id
  (config vpn ipsec tunnel ipsec_example)>
  ```

15. Configure IKE settings:

    a. Set the IKE version:

    ```
    (config vpn ipsec tunnel ipsec_example)> ike version value
    (config vpn ipsec tunnel ipsec_example)>
    ```

    where *value* is either **ikev1** or **ikev2**. This setting must match the peer's IKE version.

    b. Determine whether the device should initiate the key exchange, rather than waiting for an incoming request. By default, the device will initiate the key exchange. This must be disabled if remote hostname is set to **any**. To disable:

    ```
    (config vpn ipsec tunnel ipsec_example)> ike initiate false
    (config vpn ipsec tunnel ipsec_example)>
    ```

    c. Set the IKE phase 1 mode:

    ```
    (config vpn ipsec tunnel ipsec_example)> ike mode value
    (config vpn ipsec tunnel ipsec_example)>
    ```

    where *value* is either **aggressive** or **main**.

    d. Padding of IKE packets is enabled by default and should normally not be disabled except for compatibility purposes. To disable:

    ```
    (config vpn ipsec tunnel ipsec_example)> ike pad false
    (config vpn ipsec tunnel ipsec_example)>
    ```

    e. Set the amount of time that the IKE security association expires after a successful negotiation and must be re-authenticated:

    ```
    (config vpn ipsec tunnel ipsec_example)> ike phase1_lifetime value
    (config vpn ipsec tunnel ipsec_example)>
    ```

where *value* is any number of weeks, days, hours, minutes, or seconds, and takes the format ***number***{**w**|**d**|**h**|**m**|**s**}.

For example, to set **phase1_lifetime** to ten minutes, enter either **10m** or **600s**:

```
(config vpn ipsec tunnel ipsec_example)> ike phase1_lifetime 600s
(config vpn ipsec tunnel ipsec_example)>
```

The default is three hours.

f. Set the amount of time that the IKE security association expires after a successful negotiation and must be rekeyed.

```
(config vpn ipsec tunnel ipsec_example)> ike phase2_lifetime value
(config vpn ipsec tunnel ipsec_example)>
```

where *value* is any number of weeks, days, hours, minutes, or seconds, and takes the format ***number***{**w**|**d**|**h**|**m**|**s**}.

For example, to set **phase2_lifetime** to ten minutes, enter either **10m** or **600s**:

```
(config vpn ipsec tunnel ipsec_example)> ike phase2_lifetime 600s
(config vpn ipsec tunnel ipsec_example)>
```

The default is one hour.

g. Set a randomizing amount of time before the IPsec tunnel is renegotiated:

```
(config vpn ipsec tunnel ipsec_example)> ike lifetime_margin value
(config vpn ipsec tunnel ipsec_example)>
```

where *value* is any number of weeks, days, hours, minutes, or seconds, and takes the format ***number***{**w**|**d**|**h**|**m**|**s**}.

For example, to set **lifetime_margin** to ten minutes, enter either **10m** or **600s**:

```
(config vpn ipsec tunnel ipsec_example)> ike lifetime_margin 600s
(config vpn ipsec tunnel ipsec_example)>
```

The default is nine minutes.

h. Configure the types of encryption, hash, and Diffie-Hellman group to use during phase 1:

i. Add a phase 1 proposal:

```
(config vpn ipsec tunnel ipsec_example)> add ike phase1_proposal end
(config vpn ipsec tunnel ipsec_example ike phase1_proposal 0)>
```

ii. Set the type of encryption to use during phase 1:

```
(config vpn ipsec tunnel ipsec_example ike phase1_proposal 0)>
cipher value
(config vpn ipsec tunnel ipsec_example ike phase1_proposal 0)>
```

where *value* is one of **3des**, **aes128**, **aes192**, **aes256**, or **null**. The default is **3des**.

iii. Set the type of hash to use during phase 1 to verify communication integrity:

```
(config vpn ipsec tunnel ipsec_example ike phase1_proposal 0)> hash
value
(config vpn ipsec tunnel ipsec_example ike phase1_proposal 0)>
```

where *value* is one of **md5**, **sha1**, **sha256**, **sha384**, or **sha512**. The default is **sha1**.

iv. Set the type of Diffie-Hellman group to use for key exchange during phase 1:

```
(config vpn ipsec tunnel ipsec_example ike phase1_proposal 0)> dh_
group value
(config vpn ipsec tunnel ipsec_example ike phase1_proposal 0)>
```

where *value* is one of **ecp384**, **modp768**, **modp1024**, **modp1536**, **modp2048**, **modp3072**, **modp4096**, **modp6144**, or **modp8192**, . The default is **modp1024**.

v. (Optional) Add additional phase 1 proposals:

i. Move back one level in the schema:

```
(config vpn ipsec tunnel ipsec_example ike phase1_proposal 0)>
..
(config vpn ipsec tunnel ipsec_example ike phase1_proposal)>
```

ii. Add an additional proposal:

```
(config vpn ipsec tunnel ipsec_example ike phase1_proposal)> add
end
(config vpn ipsec tunnel ipsec_example ike phase1_proposal 1)>
```

Repeat the above steps to set the type of encryption, hash, and Diffie-Hellman group for the additional proposal.

iii. Repeat to add more phase 1 proposals.

i. Configure the types of encryption, hash, and Diffie-Hellman group to use during phase 2:

i. Move back two levels in the schema:

```
(config vpn ipsec tunnel ipsec_example ike phase1_proposal 0)> .. ..
(config vpn ipsec tunnel ipsec_example ike)>
```

ii. Add a phase 2 proposal:

```
(config vpn ipsec tunnel ipsec_example ike)> add ike phase2_proposal
end
(config vpn ipsec tunnel ipsec_example ike phase2_proposal 0)>
```

iii. Set the type of encryption to use during phase 2:

```
(config vpn ipsec tunnel ipsec_example ike phase2_proposal 0)>
cipher value
(config vpn ipsec tunnel ipsec_example ike phase2_proposal 0)>
```

where *value* is one of **3des**, **aes128**, **aes192**, **aes256**, or **null**. The default is **3des**.

iv. Set the type of hash to use during phase 2 to verify communication integrity:

```
(config vpn ipsec tunnel ipsec_example ike phase2_proposal 0)> hash
value
(config vpn ipsec tunnel ipsec_example ike phase2_proposal 0)>
```

where *value* is one of **md5**, **sha1**, **sha256**, **sha384**, or **sha512**. The default is **sha1**.

v. Set the type of Diffie-Hellman group to use for key exchange during phase 2:

```
(config vpn ipsec tunnel ipsec_example ike phase2_proposal 0)> dh_
group value
(config vpn ipsec tunnel ipsec_example ike phase2_proposal 0)>
```

where *value* is one of **ecp384**, **modp768**, **modp1024**, **modp1536**, **modp2048**, **modp3072**, **modp4096**, **modp6144**, or **modp8192**, . The default is **modp1024**.

vi. (Optional) Add additional phase 2 proposals:

i. Move back one level in the schema:

```
(config vpn ipsec tunnel ipsec_example ike phase2_proposal 0)>
..
(config vpn ipsec tunnel ipsec_example ike phase2_proposal)>
```

ii. Add an additional proposal:

```
(config vpn ipsec tunnel ipsec_example ike phase2_proposal)> add
end
(config vpn ipsec tunnel ipsec_example ike phase2_proposal 1)>
```

Repeat the above steps to set the type of encryption, hash, and Diffie-Hellman group for the additional proposal.

iii. Repeat to add more phase 2 proposals.

16. (Optional) Configure dead peer detection:

Dead peer detection is enabled by default. Dead peer detection uses periodic IKE transmissions to the remote endpoint to detect whether tunnel communications have failed, allowing the tunnel to be automatically restarted when failure occurs.

a. Change to the root of the configuration schema:

```
(config vpn ipsec tunnel ipsec_example ike phase2_proposal 0)> ...
(config)>
```

b. To disable dead peer detection:

```
(config)> vpn ipsec tunnel ipsec_example dpd enable false
(config)>
```

c. Set the number of seconds between transmissions of dead peer packets. Dead peer packets are only sent when the tunnel is idle. The default is **60**.

```
(config)> vpn ipsec tunnel ipsec_example dpd delay value
(config)>
```

d. Set the number of seconds to wait for a response from a dead peer packet before assuming the tunnel has failed. The default is **90**.

```
(config)> vpn ipsec tunnel ipsec_example dpd timeout value
(config)>
```

17. (Optional) Create a list of destination networks that require source NAT:

a. Add a destination network:

```
(config)> add vpn ipsec tunnel ipsec_example nat end
(config vpn ipsec tunnel ipsec_example nat 0)>
```

b. Set the IPv4 address and optional netmask of a destination network that requires source NAT. You can also use **any**, meaning that any destination network connected to the tunnel will use source NAT.

```
(config vpn ipsec tunnel ipsec_example nat 0)> dst value
(config vpn ipsec tunnel ipsec_example nat 0)>
```

18. Configure policies that define the network traffic that will be encapsulated by this tunnel:

a. Change to the root of the configuration schema:

```
(config vpn ipsec tunnel ipsec_example nat 0)> ...
(config)>
```

b. Add a policy:

```
(config)> add vpn ipsec tunnel ipsec_example policy end
(config vpn ipsec tunnel ipsec_example policy 0)>
```

c. Set the type of local network policy:

```
(config vpn ipsec tunnel ipsec_example policy 0)> local type value
(config vpn ipsec tunnel ipsec_example policy 0)>
```

where *value* is one of:

- **address**: The address of a local network interface.

  Set the address:

  i. Use the **?** to determine available interfaces:

  ```
  (config vpn ipsec tunnel ipsec_example policy 0)> local
  address ?

  Address: The local network interface to use the address of.
  This field must be set when 'Type' is set to 'Address'.
  Format:
    defaultip
    defaultlinklocal
    eth1
    eth2
    loopback
  ```

```
Current value:

(config vpn ipsec tunnel ipsec_example policy 0)> local
address
```

ii. Set the interface. For example:

```
(config vpn ipsec tunnel ipsec_example policy 0)> local
address
(config vpn ipsec tunnel ipsec_example policy 0)>
```

- **network**: The subnet of a local network interface.

  Set the network:

  i. Use the **?** to determine available interfaces:

```
(config vpn ipsec tunnel ipsec_example policy 0)> local
network ?

Interface: The network interface.
Format:
  defaultip
  defaultlinklocal
  eth1
  eth2
  loopback
Current value:

(config vpn ipsec tunnel ipsec_example policy 0)> local
network
```

  ii. Set the interface. For example:

```
(config vpn ipsec tunnel ipsec_example policy 0)> local
network
(config vpn ipsec tunnel ipsec_example policy 0)>
```

- **custom**: A user-defined network.

  Set the custom network:

```
(config vpn ipsec tunnel ipsec_example policy 0)> local custom
value
(config vpn ipsec tunnel ipsec_example policy 0)>
```

  where *value* is the IPv4 address and optional netmask. The keyword **any** can also be used.

- **request**: Requests a network from the remote peer.

d. Set the IP address and optional netmask of the remote network. The keyword **any** can also be used.

```
(config vpn ipsec tunnel ipsec_example policy 0)> remote network value
(config vpn ipsec tunnel ipsec_example policy 0)>
```

19. (Optional) Change the NAT keep alive time:

    a. Change to the root of the configuration schema:

    ```
    (config vpn ipsec tunnel ipsec_example policy 0)> ...
    (config)>
    ```

    b.
    ```
    (config)> vpn ipsec advanced keep_alive value
    (config)>
    ```

    where *value* is any number of weeks, days, hours, minutes, or seconds, and takes the format ***number***{**w|d|h|m|s**}.

    For example, to set **keep_alive** to ten minutes, enter either **10m** or **600s**:

    ```
    (config)> vpn ipsec advanced keep_alive 600s
    (config)>
    ```

    The default is 40 seconds.

20. Save the configuration and apply the change:

    ```
    (config)> save
    Configuration saved.
    >
    ```

21. Type **exit** to exit the Admin CLI.

    Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Configure IPsec failover

You can configure the AnywhereUSB Plus device to fail over from a primary IPsec tunnel to a backup tunnel.

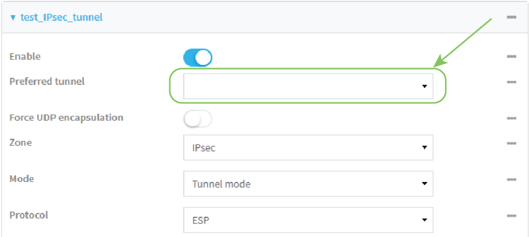
During configuration of the backup IPsec tunnel, identify the primary IPsec tunnel in the **Preferred tunnel** parameter. The **Preferred tunnel** parameter instructs the backup IPsec tunnel to start only when the preferred tunnel has been determined to have failed. It will continue to operate until the preferred tunnel returns to full operational status.

Required configuration items

- Two configured IPsec tunnels: The primary tunnel, and the backup tunnel.
- Identify the primary tunnel during configuration of the backup tunnel.

WebUI

1. Configure the primary IPsec tunnel. See Configure an IPsec tunnel for instructions.
2. Create a backup IPsec tunnel. See Configure an IPsec tunnel for instructions.
3. During configuration of the backup IPsec tunnel, identify the primary IPsec tunnel in the **Preferred tunnel** parameter.



▾ test_IPsec_tunnel

Enable

Preferred tunnel

Force UDP encapsulation

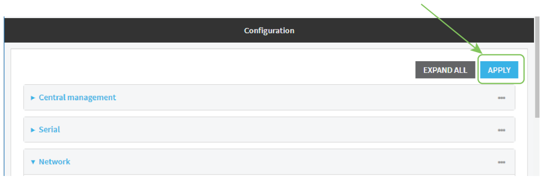
Zone: IPsec

Mode: Tunnel mode

Protocol: ESP

4. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Configure the primary IPsec tunnel. See Configure an IPsec tunnel for instructions.
2. Create a backup IPsec tunnel. See Configure an IPsec tunnel for instructions.
3. During configuration of the backup IPsec tunnel, identify the primary IPsec tunnel:
   a. Use the **?** to view a list of available tunnels:

```
(config vpn ipsec tunnel backup_ipsec_tunnel)> ipsec_failover ?
```

```
Preferred tunnel: This tunnel will not start until the preferred tunnel
has failed. It will continue
to operate until the preferred tunnel returns to full operation status.
Format:
 primary_ipsec_tunnel
 backup_ipsec_tunnel
Optional: yes
Current value:

(config vpn ipsec tunnel backup_ipsec_tunnel)> ipsec_failover
```

b. Set the primary IPsec tunnel:

```
(config vpn ipsec tunnel backup_ipsec_tunnel)> ipsec_failover primary_
ipsec_tunnel
(config vpn ipsec tunnel backup_ipsec_tunnel)>
```

4. Save the configuration and apply the change:

```
(config vpn ipsec tunnel backup_ipsec_tunnel)> save
Configuration saved.
>
```

5. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Configure active recovery for IPsec

You can configure the AnywhereUSB Plus device to regularly probe IPsec client connections to determine if the connection has failed and take remedial action.

You can also configure the IPsec tunnel to fail over to a backup tunnel. See Configure IPsec failover for further information.

Required configuration items

- A valid IPsec configuration. See Configure an IPsec tunnel for configuration instructions.
- Enable IPsec active recovery.
- The behavior of the AnywhereUSB Plus device upon IPsec failure: either
  - Restart the IPsec interface
  - Reboot the device.

Additional configuration items

- The interval between connectivity tests.
- Whether the interface should be considered to have failed if one of the test targets fails, or all of the test targets fail.
- The number of probe attempts before the IPsec connection is considered to have failed.

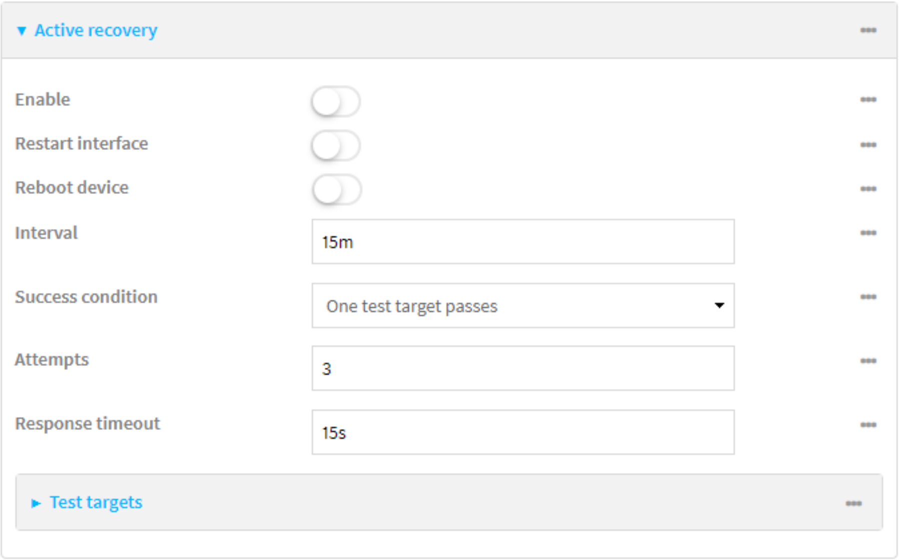
- The amount of time that the device should wait for a response to a probe attempt before considering it to have failed.

To configure the AnywhereUSB Plus device to regularly probe the IPsec connection:

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **VPN** > **IPsec**.
4. Create a new IPsec tunnel or select an existing one:
   - To create a new IPsec tunnel, see Configure an IPsec tunnel.
   - To edit an existing IPsec tunnel, click to expand the appropriate tunnel.
5. After creating or selecting the IPsec tunnel, click **Active recovery**.



▾ Active recovery

Enable ○

Restart interface ○

Reboot device ○

Interval 15m

Success condition One test target passes

Attempts 3

Response timeout 15s

▸ Test targets

6. **Enable** active recovery.
7. For **Restart interface**, enable to configure the device to restart the interface when its connection is considered to have failed. This is useful for interfaces that may regain connectivity after restarting, such as a cellular modem.
8. For **Reboot device**, enable to instruct the device to reboot when the WAN connection is considered to have failed.
9. Change the **Interval** between connectivity tests.

   Allowed values are any number of weeks, days, hours, minutes, or seconds, and take the format ***number***{**w**|**d**|**h**|**m**|**s**}.

   For example, to set **Interval** to ten minutes, enter **10m** or **600s**.

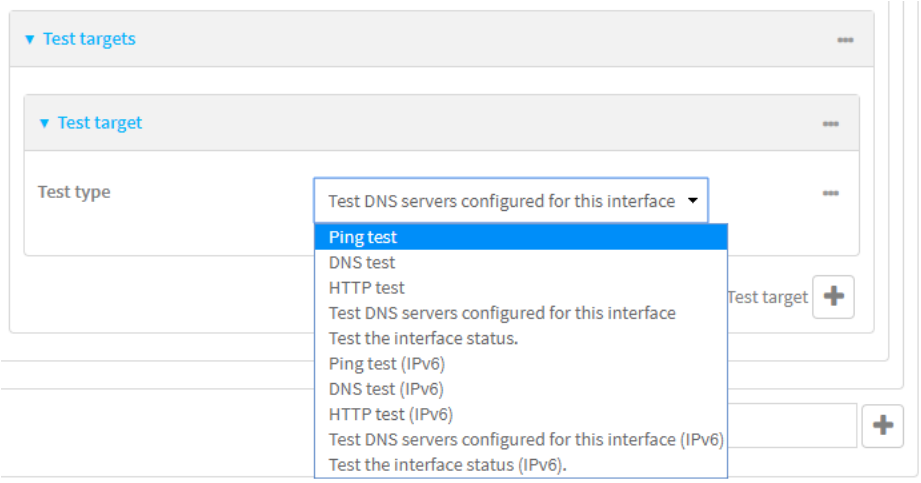
   The default is 15 minutes.

10. For **Success condition**, determine whether the interface should fail over based on the failure of one of the test targets, or all of the test targets.
11. For **Attempts**, type the number of probe attempts before the WAN is considered to have failed.
12. For **Response timeout**, type the amount of time that the device should wait for a response to a probe attempt before considering it to have failed.

    Allowed values are any number of weeks, days, hours, minutes, or seconds, and take the format ***number***{**w**|**d**|**h**|**m**|**s**}.

    For example, to set **Response timeout** to ten minutes, enter **10m** or **600s**.

    The default is 15 seconds.
13. Add a test target:
    a. Click to expand **Test targets**.


Test targets
Test target
Test type
Test DNS servers configured for this interface
Ping test
DNS test
HTTP test
Test DNS servers configured for this interface
Test the interface status.
Ping test (IPv6)
DNS test (IPv6)
HTTP test (IPv6)
Test DNS servers configured for this interface (IPv6)
Test the interface status (IPv6).
Test target

    b. For **Add Test target**, click ♑

    c. Select the **Test type**:

    - **Ping test** or **Ping test (IPv6)**: Tests connectivity by sending an ICMP echo request to the hostname or IP address specified in **Ping host**. You can also optionally change the number of bytes in the **Ping payload size**.
    - **DNS test** or **DNS test (IPv6)**: Tests connectivity by sending a DNS query to the specified **DNS server**.
    - **HTTP test HTTP test (IPv6)**: Tests connectivity by sending an HTTP or HTTPS GET request to the URL specified in **Web servers**. The URL should take the format of **http[s]://*hostname*/[*path*]**.
    - **Test DNS servers configured for this interface** or **Test DNS servers configured for this interface (IPv6)**: Tests connectivity by sending a DNS query to the DNS servers configured for this interface.
    - **Test the interface status** or **Test the interface status IPv6**: The interface is considered to be down based on:
        - **Down time**: The amount of time that the interface can be down before this test is considered to have failed.

Allowed values are any number of weeks, days, hours, minutes, or seconds, and take the format ***number*****{w|d|h|m|s}**.

For example, to set **Down time** to ten minutes, enter **10m** or **600s**.

The default is 60 seconds.

- **Initial connection time**: The amount of time to wait for an initial connection to the interface before this test is considered to have failed.

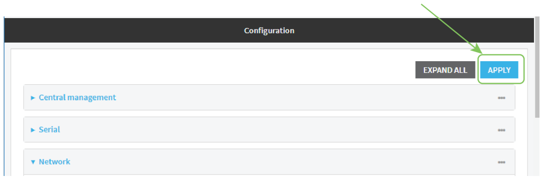
  Allowed values are any number of weeks, days, hours, minutes, or seconds, and take the format ***number*****{w|d|h|m|s}**.

  For example, to set **Initial connection time** to ten minutes, enter **10m** or **600s**.

  The default is 60 seconds.

14. Click **Apply** to save the configuration and apply the change.

    The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Create a new IPsec tunnel, or edit an existing one:

   - To create a new IPsec tunnel, see Configure an IPsec tunnel.
   - To edit an existing IPsec tunnel, change to the IPsec tunnel's node in the configuration schema. For example, for an IPsec tunnel named **ipsec_example**, change to the **ipsec_example** node in the configuration schema:

```
(config)> vpn ipsec tunnel ipsec_example
(config vpn ipsec tunnel ipsec_example)>
```

4. Enable active recovery:

```
(config vpn ipsec tunnel ipsec_example)> connection_monitor enable true
(config vpn ipsec tunnel ipsec_example)>
```

5. To configure the device to restart the interface when its connection is considered to have failed:

```
(config vpn ipsec tunnel ipsec_example)> connection_monitor restart true
(config vpn ipsec tunnel ipsec_example)>
```

This is useful for interfaces that may regain connectivity after restarting, such as a cellular modem.

6. To configure the device to reboot when the interface is considered to have failed:

```
(config vpn ipsec tunnel ipsec_example)> connection_monitor reboot enable
(config vpn ipsec tunnel ipsec_example)>
```

7. Set the **Interval** between connectivity tests:

```
(config vpn ipsec tunnel ipsec_example)> connection_monitor interval value
(config vpn ipsec tunnel ipsec_example)>
```

where *value* is any number of weeks, days, hours, minutes, or seconds, and takes the format ***number***{**w|d|h|m|s**}.

For example, to set **interval** to ten minutes, enter either **10m** or **600s**:

```
(config vpn ipsec tunnel ipsec_example)> connection_monitor interval 600s
(config vpn ipsec tunnel ipsec_example)>
```

The default is 15 minutes.

8. Determine whether the interface should fail over based on the failure of one of the test targets, or all of the test targets:

```
(config vpn ipsec tunnel ipsec_example)> connection_monitor success_
condition value
(config vpn ipsec tunnel ipsec_example)>
```

Where *value* is either **one** or **all**.

9. Set the number of probe attempts before the WAN is considered to have failed:

```
(config vpn ipsec tunnel ipsec_example)> connection_monitor attempts num
(config vpn ipsec tunnel ipsec_example)>
```

The default is **3**.

10. Set the amount of time that the device should wait for a response to a probe attempt before considering it to have failed:

```
(config vpn ipsec tunnel ipsec_example)> connection_monitor timeout value
(config vpn ipsec tunnel ipsec_example)>
```

where *value* is any number of weeks, days, hours, minutes, or seconds, and takes the format ***number***{**w|d|h|m|s**}.

For example, to set **timeout** to ten minutes, enter either **10m** or **600s**:

```
(config vpn ipsec tunnel ipsec_example)> connection_monitor interval 600s
(config vpn ipsec tunnel ipsec_example)>
```

The default is 15 seconds.

11. Configure test targets:

    a. Add a test target:

    ```
    (config vpn ipsec tunnel ipsec_example)> add connection_monitor target
    end
    (config vpn ipsec tunnel ipsec_example connection_monitor target 0)>
    ```

    b. Set the test type:

    ```
    (config vpn ipsec tunnel ipsec_example connection_monitor target 0)>
    test value
    (config vpn ipsec tunnel ipsec_example connection_monitor target 0)>
    ```

    where *value* is one of:

    - **ping** (IPv4) or **ping6** (IPv6): Tests connectivity by sending an ICMP echo request to a specified hostname or IP address.
        - Specify the hostname or IP address by using **ping_host** or **ping_host6**:

          ```
          (config vpn ipsec tunnel ipsec_example connection_monitor
          target 0)> ping_host host
          (config vpn ipsec tunnel ipsec_example connection_monitor
          target 0)>
          ```

        - (Optional) Set the size, in bytes, of the ping packet by using **ping_size** or **ping_size6**:

          ```
          (config vpn ipsec tunnel ipsec_example connection_monitor
          target 0)> ping_size [num]
          (config vpn ipsec tunnel ipsec_example connection_monitor
          target 0)>
          ```

    - **dns** (IPv4) or **dns6** (IPv6): Tests connectivity by sending a DNS query to the specified DNS server.
        - Specify the DNS server. Allowed value is the IP address of the DNS server.

          ```
          (config vpn ipsec tunnel ipsec_example connection_monitor
          target 0)> dns_server ip_address
          (config vpn ipsec tunnel ipsec_example connection_monitor
          target 0)>
          ```

    - **dns_configured** (IPv4) or **dns_configured6** (IPv6): Tests connectivity by sending a DNS query to the DNS servers configured for this interface.
    - **http** (IPv4) or **http6** (IPv6): Tests connectivity by sending an HTTP or HTTPS GET request to the specified URL.
        - Specify the url. Allowed value uses the format **http[s]://*hostname*/[*path*]**.

          ```
          (config vpn ipsec tunnel ipsec_example connection_monitor
          target 0)> http_url url
          (config vpn ipsec tunnel ipsec_example connection_monitor
          target 0)>
          ```

- **interface_up** (IPv4) or **interface_up6** (IPv6): : The interface is considered to be down based on the interfaces down time, and the amount of time an initial connection to the interface takes before this test is considered to have failed.
    - (Optional) Set the amount of time that the interface can be down before this test is considered to have failed:

      ```
      (config vpn ipsec tunnel ipsec_example connection_monitor
      target 0)> interface_down_time value
      (config vpn ipsec tunnel ipsec_example connection_monitor
      target 0)>
      ```

      where *value* is any number of weeks, days, hours, minutes, or seconds, and takes the format ***number***{**w|d|h|m|s**}.

      For example, to set **interface_down_time** to ten minutes, enter either **10m** or **600s**:

      ```
      (config ipsec tunnel ipsec_example connection_monitor target
      0)> interface_down_time 600s
      (config ipsec tunnel ipsec_example connection_monitor target
      0)>
      ```

      The default is 60 seconds.
    - (Optional) Set the amount of time to wait for an initial connection to the interface before this test is considered to have failed:

      ```
      (config vpn ipsec tunnel ipsec_example connection_monitor
      target 0)> interface_timeout value
      (config vpn ipsec tunnel ipsec_example connection_monitor
      target 0)>
      ```

      where *value* is any number of weeks, days, hours, minutes, or seconds, and takes the format ***number***{**w|d|h|m|s**}.

      For example, to set **interface_timeout** to ten minutes, enter either **10m** or **600s**:

      ```
      (config network interface my_wan ipv4 connection_monitor target
      0)> interface_timeout 600s
      (config network interface my_wan ipv4 connection_monitor target
      0)>
      ```

      The default is 60 seconds.

12. Save the configuration and apply the change:

    ```
    (config ipsec tunnel ipsec_example connection_monitor target 0)> save
    Configuration saved.
    >
    ```

13. Type **exit** to exit the Admin CLI.

    Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Show IPsec status and statistics

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, select **Status** > **IPsec**.

   The **IPsec** page appears.
3. To view configuration details about an IPsec tunnel, click the ⚙(configuration) icon in the upper right of the tunnel's status pane.

Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. To display details about all configured OpenVPN servers, type the following at the prompt:

```
> show ipsec all

 Name    Enable  Status   Hostname
 ------  ------  -------  ---------------
 ipsec1  true    up       192.168.2.1
 vpn1    false   pending  192.168.3.1

>
```

3. To display details about a specific server:

```
> show ipsec tunnel ipsec1

 Tunnel                    : ipsec1
 Enable                    : true
 Status                    : pending
 Hostname                  : 192.168.2.1
 Zone                      : ipsec
 Mode                      : tunnel
 Type                      : esp

>
```

4. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Configure a Simple Certificate Enrollment Protocol client

Simple Certificate Enrollment Protocol (SCEP) is a mechanism that allows for large-scale X.509 certificate deployment. You can configure AnywhereUSB Plus device to function as a SCEP client that will connect to a SCEP server that is used to sign Certificate Signing Requests (CSRs), provide Certificate Revocation Lists (CRLs), and distribute valid certificates from a Certificate Authority (CA).

Required configuration

- Enable the SCEP client.
- The fully-qualified domain name of the SCEP server to be used for certificate requests.
- The challenge password provided by the SCEP server that the SCEP client will use when making SCEP requests.
- The distinguished name to be used for the CSR.
- The file name of the Certificate Revocation List (CRL) from the Certificate Authority (CA).

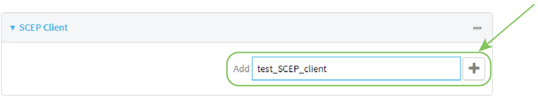
Additional configuration

- The number of days that the certificate enrollment can be renewed, prior to the request expiring.

WebUI

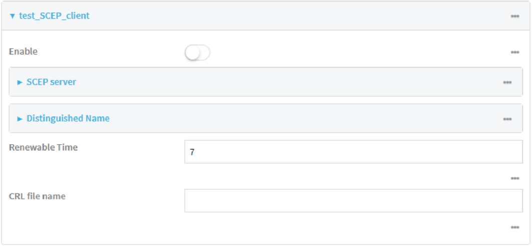
1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Network** > **SCEP Client**.
4. For **Add clients**, enter a name for the SCEP client and click ♑

   Add test_SCEP_client

   The new SCEP client configuration is displayed.

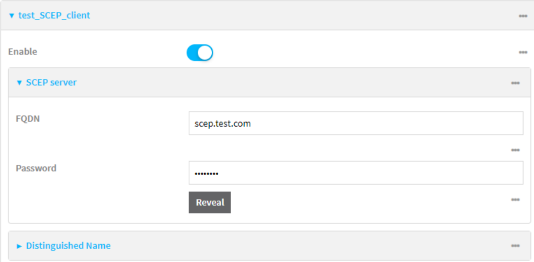
   

   Renewable Time 7

   CRL file name
5. Click **Enable** to enable the SCEP client.
6. For **Renewable Time**, type the number of days that the certificate enrollment can be renewed, prior to the request expiring. This value is configured on the SCEP server, and is used by the AnywhereUSB Plus device to determine when to start attempting to auto-renew an existing certificate. The default is **7**.
7. (Optional) For CRL file name, type the filename of the Certificate Revocation List (CRL) from the CA.

   The CRL is stored on the AnywhereUSB Plus device in the /etc/config/scep_client/*client_name* directory.

8. Click to expand **SCEP server**.



▾ test_SCEP_client

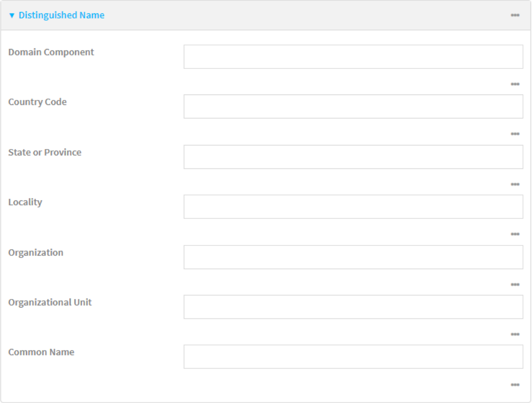
Enable: on

▾ SCEP server

FQDN: scep.test.com

Password: ••••••••

9. For **FQDN**, type the fully qualified domain name or IP address of the SCEP server.
10. For **Password**, type the challenge password as configured on the SCEP server.
11. Click to expand **Distinguished Name**.



▾ Distinguished Name

Domain Component:

Country Code:

State or Province:

Locality:

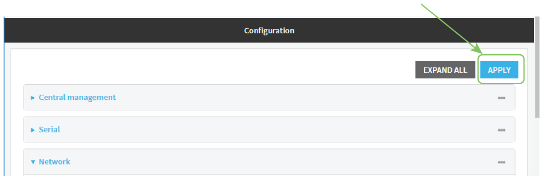
Organization:

Organizational Unit:

Common Name:

12. Type the value for each appropriate Distinguished Name attribute.
13. Click **Apply** to save the configuration and apply the change.

    The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Add a new SCEP client:

```
(config)> add network scep_client scep_client_name
(config network scep_client scep_client_name
)>
```

4. Enable the SCEP client:

```
(config network scep_client scep_client_name)> enable true
(config network scep_client scep_client_name)>
```

5. Set the url parameter to the fully qualified domain name or IP address of the SCEP server:

```
(config network scep_client scep_client_name)> server url
https://scep.example.com
(config network scep_client scep_client_name)>
```

6. Set the challenge password as configured on the SCEP server:

```
(config network scep_client scep_client_name)> server password challenge_
password
(config network scep_client scep_client_name)>
```

7. Set Distinguished Name attributes:
   a. Set the Domain Component:

   ```
   (config network scep_client scep_client_name)> distinguished_name dc
   value
   (config network scep_client scep_client_name)>
   ```

   b. Set the two letter Country Code:

   ```
   (config network scep_client scep_client_name)> distinguished_name c
   value
   (config network scep_client scep_client_name)>
   ```

   c. Set the State or Province:

   ```
   (config network scep_client scep_client_name)> distinguished_name st
   value
   (config network scep_clientscep_client_name )>
   ```

   d. Set the Locality:

   ```
   (config network scep_client scep_client_name)> distinguished_name l
   value
   (config network scep_client scep_client_name)>
   ```

   e. Set the Organization:

   ```
   (config network scep_client scep_client_name)> distinguished_name o
   value
   (config network scep_client scep_client_name)>
   ```

f. Set the Organizational Unit:

```
(config network scep_client scep_client_name)> distinguished_name ou
value
(config network scep_client scep_client_name)>
```

g. Set the Common Name:

```
(config network scep_client scep_client_name)> distinguished_name cn
value
(config network scep_client scep_client_name)>
```

8. Set the number of days that the certificate enrollment can be renewed, prior to the request expiring. This value is configured on the SCEP server, and is used by the AnywhereUSB Plus device to determine when to start attempting to auto-renew an existing certificate. The default is **7**.

```
(config network scep_client scep_client_name)> renewable_time interger
(config network scep_client scep_client_name)>
```

9. (Optional) Set the filename of the Certificate Revocation List (CRL) from the CA.

   The CRL is stored on the AnywhereUSB Plus device in the /etc/config/scep_client/*client_name* directory.

```
(config network scep_client scep_client_name)> crl_name name
(config network scep_client scep_client_name)>
```

10. Save the configuration and apply the change:

```
(config network scep_client scep_client_name)> save
Configuration saved.
>
```

11. Type **exit** to exit the Admin CLI.

    Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Example: SCEP client configuration with Fortinet SCEP server

In this example configuration, we will configure the AnywhereUSB Plus device as a SCEP client that will connect to a Fortinet SCEP server.

Fortinet configuration

On the Fortinet server:

1. Enable ports for SCEP services:

   a. From the menu, select **Network** > **Interfaces**.

   b. Select the appopriate port and click **Edit**.

   c. For **Access Rights** > **Services**, enable the following services:

      - **HTTPS** > **SCEP**
      - **HTTPS** > **CRL Downloads**

        - **HTTP** > **SCEP**
        - **HTTP** > **CRL Downloads**
    d. The remaining fields can be left at their defaults or changed as appropriate.
    e. Click **OK**.

2. Create a Certificate Authority (CA):
    a. From the menu, click **Certificate Authorities** > **Local CAs**.
    b. Click **Create New**.
    c. Type a **Certificate ID** for the CA, for example, **fortinet_example_ca**.
    d. Complete the **Subject Information** fields.
    e. The remaining fields can be left at their defaults or changed as appropriate.
    f. Click **OK**.
3. Edit SCEP settings:
    a. From the menu, click **SCEP** > **General**.
    b. Click **Enable SCEP** if it is not enabled.
    c. For **Default enrollment password**, enter a password. The password entered here must correspond to the challenge password configured for the SCEP client on the AnywhereUSB Plus device.
    d. The remaining fields can be left at their defaults or changed as appropriate.
    e. Click **OK**.
4. Create an **Enrollment Request**:
    a. From the menu, click **SCEP** > **Enrollment Requests**.
    b. Click **Create New**.
    c. For **Automatic request type**, select **Wildcard**.
    d. For **Certificate authority**, select the CA created in step 1, above.
    e. Complete the **Subject Information** fields. The Distinguished Name (DN) attributes entered here must correspond to the Distinguished Name attributes configured for the SCEP client on the AnywhereUSB Plus device.
    f. For **Renewal** > **Allow renewal *x* days before the certified is expired**, type the number of days that the certificate enrollment can be renewed, prior to the request expiring. The **Renewable Time** setting on the AnywhereUSB Plus device must match the setting of this parameter.
    g. The remaining fields can be left at their defaults or changed as appropriate.
    h. Click **OK**.

AnywhereUSB Plus configuration

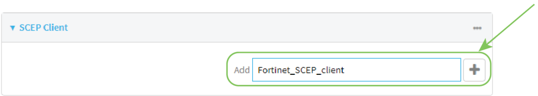
On the AnywhereUSB Plus device:

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

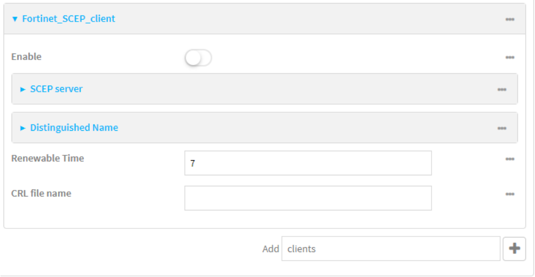
   The **Configuration** window is displayed.

3. Click **Network** > **SCEP Client**.
4. For **Add clients**, enter a name for the SCEP client and click ♑



Fortinet_SCEP_client

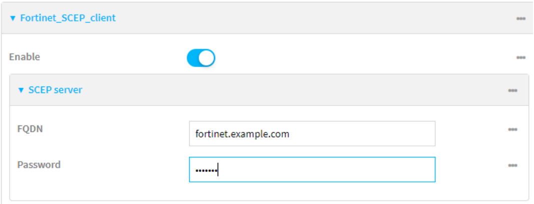
The new SCEP client configuration is displayed.



Renewable Time 7

CRL file name

5. Click **Enable** to enable the SCEP client.
6. For **Renewable Time**, type the number of days that the certificate enrollment can be renewed, prior to the request expiring. This value must match the setting of the **Allow renewal *x* days before the certified is expired** option on the Fortinet server.
7. (Optional) For CRL file name, type the filename of the Certificate Revocation List (CRL) from the CA. The filename of the CRL corresponds to the Certificate ID of the CA created on the Fortinet server, for example, **fortinet_example_ca.crl**.
8. Click to expand **SCEP server**.

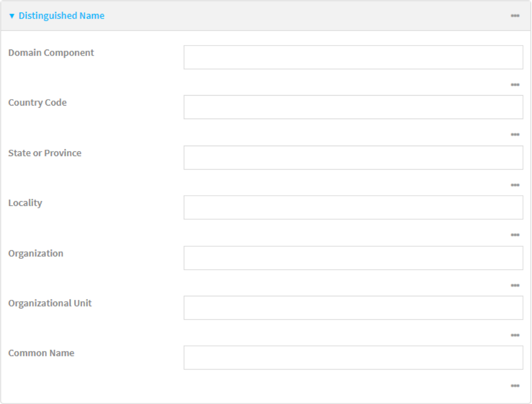


FQDN fortinet.example.com

Password •••••••

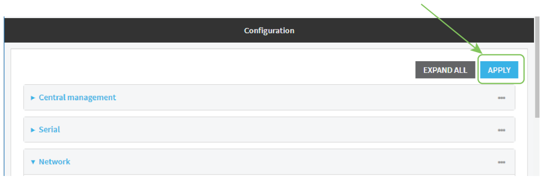
9. For **FQDN**, type the fully qualified domain name or IP address of the Fortinet server.
10. For **Password**, type the challenge password. This corresponds to the **Default enrollment password** on the Fortinet server.

11. Click to expand **Distinguished Name**.



12. Type the value for each appropriate Distinguished Name attribute. The values entered here must correspond to the DN attributes in the **Enrollment Request** on the Fortinet server.
13. Click **Apply** to save the configuration and apply the change.

    The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Add a new SCEP client, for example, **Fortinet_SCEP_client**:

```
(config)> add network scep_client Fortinet_SCEP_client
(config network scep_client Fortinet_SCEP_client
)>
```

4. Enable the SCEP client:

```
(config network scep_client Fortinet_SCEP_client)> enable true
(config network scep_client Fortinet_SCEP_client)>
```

5. Set the url parameter to the fully qualified domain name or IP address of the SCEP server:

```
(config network scep_client Fortinet_SCEP_client)> server url
https://fortinet.example.com
(config network scep_client Fortinet_SCEP_client)>
```

6. Set the challenge password as configured on the SCEP server. This corresponds to the **Default enrollment password** on the Fortinet server.

```
(config network scep_client Fortinet_SCEP_client)> server password
challenge_password
(config network scep_client Fortinet_SCEP_client)>
```

7. Set Distinguished Name attributes. The values entered here must correspond to the DN attributes in the **Enrollment Request** on the Fortinet server.

   a. Set the Domain Component:

```
(config network scep_client Fortinet_SCEP_client)> distinguished_name dc
value
(config network scep_client Fortinet_SCEP_client)>
```

   b. Set the two letter Country Code:

```
(config network scep_client Fortinet_SCEP_client)> distinguished_name c
value
(config network scep_client Fortinet_SCEP_client)>
```

   c. Set the State or Province:

```
(config network scep_client Fortinet_SCEP_client)> distinguished_name st
value
(config network scep_client  Fortinet_SCEP_client)>
```

d. Set the Locality:

```
(config network scep_client Fortinet_SCEP_client)> distinguished_name l
value
(config network scep_client Fortinet_SCEP_client)>
```

e. Set the Organization:

```
(config network scep_client Fortinet_SCEP_client)> distinguished_name o
value
(config network scep_client Fortinet_SCEP_client)>
```

f. Set the Organizational Unit:

```
(config network scep_client Fortinet_SCEP_client)> distinguished_name ou
value
(config network scep_client Fortinet_SCEP_client)>
```

g. Set the Common Name:

```
(config network scep_client Fortinet_SCEP_client)> distinguished_name cn
value
(config network scep_client Fortinet_SCEP_client)>
```

8. Set the number of days that the certificate enrollment can be renewed, prior to the request expiring. This value must match the setting of the **Allow renewal *x* days before the certified is expired** option on the Fortinet server.

```
(config network scep_client Fortinet_SCEP_client)> renewable_time interger
(config network scep_client Fortinet_SCEP_client)>
```

9. (Optional) Set the filename of the Certificate Revocation List (CRL) from the CA.

   The CRL is stored on the AnywhereUSB Plus device in the /etc/config/scep_client/*client_name* directory.

```
(config network scep_client Fortinet_SCEP_client)> crl_name name
(config network scep_client Fortinet_SCEP_client)>
```

10. Save the configuration and apply the change:

```
(config network scep_client Fortinet_SCEP_client)> save
Configuration saved.
>
```

11. Type **exit** to exit the Admin CLI.

    Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

OpenVPN

OpenVPN is an open-source Virtual Private Network (VPN) technology that creates secure point-to-point or site-to-site connections in routed or bridged configurations. OpenVPN uses a custom security protocol that is Secure Socket Layer (SSL) / Transport Layer Security (TLS) for key exchange. It uses standard encryption and authentication algorithms for data privacy and authentication over TCP or UDP.

The OpenVPN server can push the network configuration, such as the topology and IP routes, to OpenVPN clients. This makes OpenVPN simpler to configure as it reduces the chances of a configuration mismatch between the client and server. OpenVPN also supports cipher negotiation between the client and server. This means you can configure the OpenVPN server and clients with a range of different cipher options and the server will negotiate with the client on the cipher to use for the connection.

For more information on OpenVPN, see www.openvpn.net.

OpenVPN modes:

There are two modes for running OpenVPN:

- Routing mode, also known as TUN.
- Bridging mode, also known as TAP.

Routing (TUN) mode

In routing mode, each OpenVPN client is assigned a different IP subnet from the OpenVPN server and other OpenVPN clients. OpenVPN clients use Network Address Translation (NAT) to route traffic from devices connected on its LAN interfaces to the OpenVPN server.

The manner in which the IP subnets are defined depends on the OpenVPN topology in use. The AnywhereUSB Plus device supports two types of OpenVPN topology:

OpenVPN Topology	Subnet definition method
net30	Each OpenVPN client is assigned a **/30** subnet within the IP subnet specified in the OpenVPN server configuration. With net30 topology, pushed routes are used, with the exception of the default route. . Automatic route pushing (exec) is not allowed, because this would not inform the firewall and would be blocked.
subnet	Each OpenVPN client connected to the OpenVPN server is assigned an IP address within the IP subnet specified in the OpenVPN server configuration. For the AnywhereUSB Plus device, pushed routes are not allowed; you will need to manually configure routes on the device.

For more information on OpenVPN topologies, see OpenVPN topology.

Bridging (TAP) mode

In bridging mode, a LAN interface on the OpenVPN server is assigned to OpenVPN. The LAN interfaces of the OpenVPN clients are on the same IP subnet as the OpenVPN server's LAN interface. This means that devices connected to the OpenVPN client's LAN interface are on the same IP subnet as devices.

With TAP mode, the AnywhereUSB Plus device creates the interface and then uses its standard configuration to set up the connection (for example, its standard DHCP server configuration).

Additional OpenVPN information

For more information on OpenVPN, see these resources:

Bridging vs. routing

OpenVPN/Routing

Configure an OpenVPN server

Required configuration items

- Enable the OpenVPN server.

  The OpenVPN server is enabled by default.
- The mode used by the OpenVPN server, either routing (TUN), or bridging (TAP).
- The firewall zone to be used by the OpenVPN server.
- The IP network and subnet mask of the OpenVPN server.
- The server's Certificate authority (CA) certificate, and public, private and Diffie-Hellman (DH) keys.
- An OpenVPN authentication group and an OpenVPN user.
- Determine the method of certificate management:
  - Certificates managed by the server.
  - Certificates created externally and added to the server.
- If certificates are managed created and added to the server, determine the level of authentication:
  - Certificate authentication only.
  - Username and password authentication only.
  - Certificate and username and password authentication.

  If username and password authentication is used, you must create an OpenVPN authentication group and user. See Configure an OpenVPN Authentication Group and User for instructions.
- Certificates and keys:
  - The **CA certificate** (usually in a ca.crt file).
  - The **Public key** (for example, server.crt)
  - The **Private key** (for example, server.key).
  - The **Diffie Hellman key** (usually in dh2048.pem).
- Active recovery configuration. See Configure active recovery for OpenVPN for information about OpenVPN active recovery.

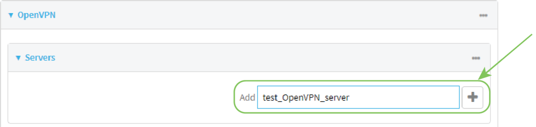
Additional configuration items

- The route metric for the OpenVPN server.
- The range of IP addresses that the OpenVPN server will provide to clients.
- The TCP/UDP port to use. By default, the AnywhereUSB Plus device uses port **1194**.
- Access control list configuration to restrict access to the OpenVPN server through the firewall.
- Additional OpenVPN parameters.

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **VPN** > **OpenVPN** > **Servers**.
4. For **Add**, type a name for the OpenVPN server and click ⊕.

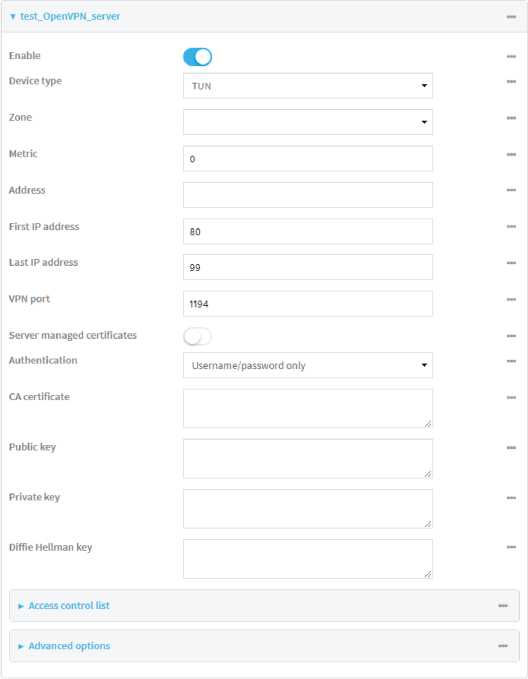
   

   ▾ OpenVPN

   ▾ Servers

   Add test_OpenVPN_server +

   The new OpenVPN server configuration is displayed.

   ▾ test_OpenVPN_server

   Enable ●

   Device type: TUN

   Zone:

   Metric: 0

   Address:

   First IP address: 80

   Last IP address: 99

   VPN port: 1194

   Server managed certificates ○

   Authentication: Username/password only

   CA certificate

   Public key

   Private key

   Diffie Hellman key

   ▸ Access control list

   ▸ Advanced options

   The OpenVPN server is enabled by default. To disable, click **Enable**.
5. For **Device type**, select the mode used by the OpenVPN server, either:
   - **TUN**: Routing mode. See OpenVPN for information about TUN mode.
   - **TAP**: Bridging mode. See OpenVPN for information about TAP mode.
6. For **Zone**, select the firewall zone for the OpenVPN server. For TUN device types, this should be set to **Internal** to treat clients as LAN devices.
7. (Optional) Select the **Metric** for the OpenVPN server. If multiple active routes match a destination, the route with the lowest metric will be used.
8. (Optional) For **Address**, type the IP address and subnet mask of the OpenVPN server. If **Address** is blank, the server will not provide an IP address to the client, which allows the

server to be added to a bridge or an interface. The interface then provides the IP address to the client.

9. (Optional) For **First IP address** and **Last IP address**, set the range of IP addresses that the OpenVPN server will use when providing IP addresses to clients. The default is from **80** to **99**.
10. (Optional) Set the **VPN port** that the OpenVPN server will use. The default is **1194**.
11. For **Server managed certificates**, determine the method of certificate management. If enabled, the server will manage certificates. If not enabled, certificates must be created externally and added to the server.
12. If **Server managed certificates** is not enabled:
    a. Select the **Authentication** type:
       - **Certificate only**: Uses only certificates for client authentication. Each client requires a public and private key.
       - **Username/password only**: Uses a username and password for client authentication. You must create an OpenVPN authentication group and user. See Configure an OpenVPN Authentication Group and User for instructions.
       - **Certificate and username/password**: Uses both certificates and a username and password for client authentication. Each client requires a public and private key, and you must create an OpenVPN authentication group and user. See Configure an OpenVPN Authentication Group and User for instructions.

    b. Paste the contents of the **CA certificate** (usually in a ca.crt file), the **Public key** (for example, server.crt), the **Private key** (for example, server.key), and the **Diffie Hellman key** (usually in dh2048.pem) into their respective fields. The contents will be hidden when the configuration is saved.
13. (Optional) Click to expand **Access control list** to restrict access to the OpenVPN server:
    - To limit access to specified IPv4 addresses and networks:
      a. Click **IPv4 Addresses**.
      b. For **Add Address**, click ♑.
      c. For **Address**, enter the IPv4 address or network that can access the device's service-type. Allowed values are:
         - A single IP address or host name.
         - A network designation in CIDR notation, for example, 192.168.1.0/24.
         - **any**: No limit to IPv4 addresses that can access the service-type.

      d. Click ♑again to list additional IP addresses or networks.
    - To limit access to specified IPv6 addresses and networks:
      a. Click **IPv6 Addresses**.
      b. For **Add Address**, click ♑.
      c. For **Address**, enter the IPv6 address or network that can access the device's service-type. Allowed values are:
         - A single IP address or host name.
         - A network designation in CIDR notation, for example, 2001:db8::/48.
         - **any**: No limit to IPv6 addresses that can access the service-type.

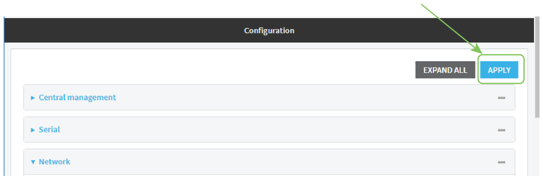
      d. Click ♑again to list additional IP addresses or networks.

- To limit access to hosts connected through a specified interface on the AnywhereUSB Plus device:
    a. Click **Interfaces**.
    b. For **Add Interface**, click ♑.
    c. For **Interface**, select the appropriate interface from the dropdown.
    d. Click ♑again to allow access through additional interfaces.
- To limit access based on firewall zones:
    a. Click **Zones**.
    b. For **Add Zone**, click ♑.
    c. For **Zone**, select the appropriate firewall zone from the dropdown.

       See Firewall configuration for information about firewall zones.
    d. Click ♑again to allow access through additional firewall zones.

14. (Optional) Click to expand **Advanced Options** to manually set additional OpenVPN parameters.
    a. Click **Enable** to enable the use of additional OpenVPN parameters.
    b. Click **Override** if the additional OpenVPN parameters should override default options.
    c. For **OpenVPN parameters**, type the additional OpenVPN parameters.
15. Click **Apply** to save the configuration and apply the change.

    The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. At the config prompt, type:

```
(config)> add vpn openvpn server name
(config vpn openvpn server name)>
```

where *name* is the name of the OpenVPN server.

The OpenVPN server is enabled by default. To disable the server, type:

```
(config vpn openvpn server name)> enable false
(config vpn openvpn server name)>
```

4. Set the mode used by the OpenVPN server:

```
(config vpn openvpn server name)> device_type value
(config vpn openvpn server name)>
```

where *value* is one of:

- **tun**: Routing mode. See OpenVPN for information about TUN mode.
- **tap**: Bridging mode. See OpenVPN for information about TAP mode.

The default is **tun**.

5. Set the firewall zone for the OpenVPN server. For TUN device types, this should be set to **internal** to treat clients as LAN devices.

```
(config vpn openvpn server name)> zone value
(config vpn openvpn server name)>
```

To view a list of available zones:

```
(config vpn openvpn server name)> firewall zone ?

Zone: The zone for the local TUN interface. To treat clients as LAN devices
this would usually be
set to internal.
Format:
  any
  dynamic_routes
  edge
  external
  hotspot
  internal
  ipsec
  loopback
  setup
Current value:

(config vpn openvpn server name)>
```

6. (Optional) Set the route metric for the OpenVPN server. If multiple active routes match a destination, the route with the lowest metric will be used.

```
(config vpn openvpn server name)> metric value
(config vpn openvpn server name)>
```

where *value* is an interger between **0** and **65535**. The default is **0**.

7. (Optional) Set the IP address and subnet mask of the OpenVPN server. If not set, the server will not provide an IP address to the client, which allows the server to be added to a bridge or an interface. The interface then provides the IP address to the client.

```
(config vpn openvpn server name)> address ip_address/netmask
(config vpn openvpn server name)>
```

8. (Optional) Set the range of IP addresses that the OpenVPN server will use when providing IP addresses to clients:
   a. Set the first address in the range limit:

   ```
   (config vpn openvpn server name)> server_first_ip value
   (config vpn openvpn server name)>
   ```

   where *value* is a number between **1** and **255**. The number entered here will represent the first client IP address. For example, if **address** is set to **192.168.1.1/24** and **server_first_ip** is set to **80**, the first client IP address will be 192.168.1.80.

   The default is from **80**.

   b. Set the last address in the range limit:

   ```
   (config vpn openvpn server name)> server_last_ip value
   (config vpn openvpn server name)>
   ```

   where *value* is a number between **1** and **255**. The number entered here will represent the last client IP address. For example, if **address** is set to **192.168.1.1/24** and **server_last_ip** is set to **99**, the last client IP address will be 192.168.1.80.

   The default is from **80**.

9. (Optional) Set the port that the OpenVPN server will use:

   ```
   (config vpn openvpn server name)> port port
   (config vpn openvpn server name)>
   ```

   The default is **1194**.

10. Determine the method of certificate management:
    a. To allow the server to manage certificates:

    ```
    (config vpn openvpn server name)> autogenerate true
    (config vpn openvpn server name)>
    ```

    b. To create certificates externally and add them to the server

    ```
    (config vpn openvpn server name)> autogenerate false
    (config vpn openvpn server name)>
    ```

    The default setting is **false**.

    c. If **autogenerate** is set to false:
       i. Set the authentication type:

       ```
       (config vpn openvpn server name)> authentication value
       (config vpn openvpn server name)>
       ```

       where *value* is one of:

       - **cert**: Uses only certificates for client authentication. Each client requires a public and private key.

    - **passwd**: Uses a username and password for client authentication. You must create an OpenVPN authentication group and user. See Configure an OpenVPN Authentication Group and User for instructions.
    - **cert_passwd**: Uses both certificates and a username and password for client authentication. Each client requires a public and private key, and you must create an OpenVPN authentication group and user. See Configure an OpenVPN Authentication Group and User for instructions.

ii. Paste the contents of the CA certificate (usually in a ca.crt file) into the value of the **cacert** parameter:

```
(config vpn openvpn server name)> cacert value
(config vpn openvpn server name)>
```

iii. Paste the contents of the public key (for example, server.crt) into the value of the **server_cert** parameter:

```
(config vpn openvpn server name)> server_cert value
(config vpn openvpn server name)>
```

iv. Paste the contents of the private key (for example, server.key) into the value of the **server_key** parameter:

```
(config vpn openvpn server name)> server_key value
(config vpn openvpn server name)>
```

v. Paste the contents of the Diffie Hellman key (usually in dh2048.pem) into the value of the **diffie** parameter:

```
(config vpn openvpn server name)> diffie value
(config vpn openvpn server name)>
```

11. (Optional) Set the access control list to restrict access to the OpenVPN server:
    - To limit access to specified IPv4 addresses and networks:

      ```
      (config vpn openvpn server name)> add acl address end value
      (config vpn openvpn server name)>
      ```

      Where *value* can be:

      - A single IP address or host name.
      - A network designation in CIDR notation, for example, 192.168.1.0/24.
      - **any**: No limit to IPv4 addresses that can access the service-type.

      Repeat this step to list additional IP addresses or networks.
    - To limit access to specified IPv6 addresses and networks:

      ```
      (config vpn openvpn server name)> add acl address6 end value
      (config vpn openvpn server name)>
      ```

      Where *value* can be:

- A single IP address or host name.
- A network designation in CIDR notation, for example, 2001:db8::/48.
- **any**: No limit to IPv6 addresses that can access the service-type.

Repeat this step to list additional IP addresses or networks.

- To limit access to hosts connected through a specified interface on the AnywhereUSB Plus device:

```
(config vpn openvpn server name)> add acl interface end value
(config vpn openvpn server name)>
```

Where *value* is an interface defined on your device.

Display a list of available interfaces:

Use **... network interface ?** to display interface information:

```
(config vpn openvpn server name)> ... network interface ?

Interfaces

Additional Configuration
-------------------------------------------
 defaultip               Default IP
 defaultlinklocal        Default Link-local IP
 eth1                    ETH1
 eth2                    ETH2
 loopback                Loopback
 modem                   Modem

(config vpn openvpn server name)>
```

Repeat this step to list additional interfaces.

- To limit access based on firewall zones:

```
(config vpn openvpn server name)> add acl zone end value
```

Where *value* is a firewall zone defined on your device, or the **any** keyword.

Display a list of available firewall zones:

Type **... firewall zone ?** at the config prompt:

```
(config vpn openvpn server name)> ... firewall zone ?

Zones: A list of groups of network interfaces that can be
referred to by packet
filtering rules and access control lists.

 Additional Configuration
 ----------------------------------------------------------
----------------------
  any
  dynamic_routes
  edge
  external
  hotspot
  internal
  ipsec
  loopback
  setup

(config vpn openvpn server name)>
```

Repeat this step to list additional firewall zones.

12. (Optional) Set additional OpenVPN parameters.

    a. Enable the use of additional OpenVPN parameters:

    ```
    (config vpn openvpn server name)> advanced_options enable true
    (config vpn openvpn server name)>
    ```

    b. Configure whether the additional OpenVPN parameters should override default options:

    ```
    (config vpn openvpn server name)> advanced_options override true
    (config vpn openvpn server name)>
    ```

    c. Set the additional OpenVPN parameters:

    ```
    (config vpn openvpn server name)> extra parameters
    (config vpn openvpn server name)>
    ```

13. Save the configuration and apply the change:

    ```
    (config)> save
    Configuration saved.
    >
    ```

14. Type **exit** to exit the Admin CLI.

    Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Configure an OpenVPN Authentication Group and User

If username and password authentication is used for the OpenVPN server, you must create an OpenVPN authentication group and user.

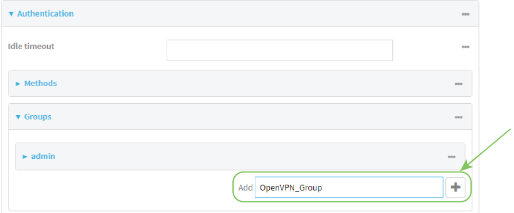
See Configure an OpenVPN server for information about configuring an OpenVPN server to use username and password authentication. See AnywhereUSB Plus user authentication for more information about creating authentication groups and users.

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

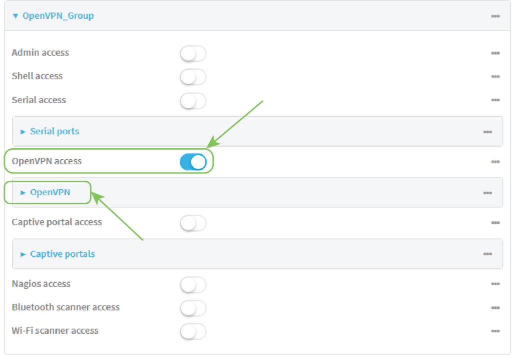
   The **Configuration** window is displayed.
3. Add an OpenVPN authentication group:
   a. Click **Authentication** > **Groups**.

   b. For **Add Group**, type a name for the group (for example, **OpenVPN_Group**) and click +



Add: OpenVPN_Group

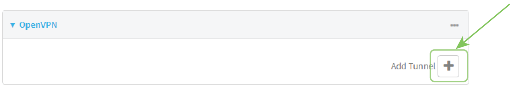
The new authentication group configuration is displayed.



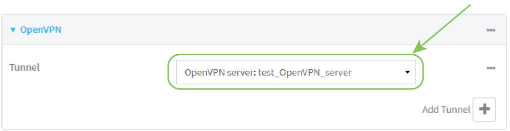
   c. Click **OpenVPN access** to enable OpenVPN access rights for users of this group.

   d. Click to expand the **OpenVPN** node.

   e. Click + to add a tunnel.



f. For **Tunnel**, select an OpenVPN tunnel to which users of this group will have access.



▾ OpenVPN

Tunnel: OpenVPN server: test_OpenVPN_server

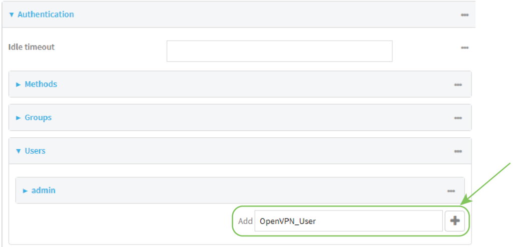
Add Tunnel +

g. Repeat to add additional OpenVPN tunnels.

4. Add an OpenVPN authentication user:

a. Click **Authentication** > **Users**.

b. For **Add**, type a name for the user (for example, **OpenVPN_User**) and click +.



▾ Authentication

Idle timeout

▸ Methods

▸ Groups

▾ Users

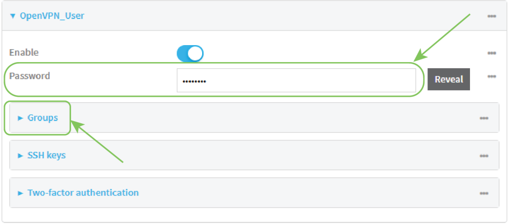
▸ admin

Add OpenVPN_User +

c. Type a password for the user.

This password is used for local authentication of the user. You can also configure the user to use RADIUS or TACACS+ authentication by configuring authentication methods. See User authentication methods for information.

d. Click to expand the **Groups** node.



▾ OpenVPN_User

Enable

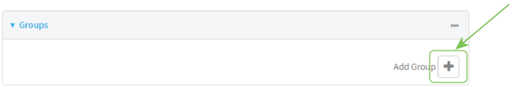
Password: •••••••• Reveal

▸ Groups

▸ SSH keys

▸ Two-factor authentication

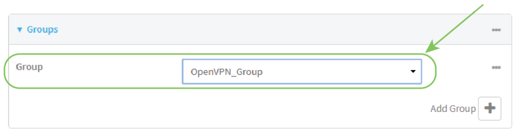
e. Click + to add a group to the user.



▾ Groups

Add Group +

f. Select a **Group** with **OpenVPN access** enabled.



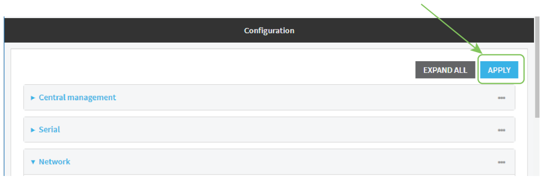
▾ Groups

Group: OpenVPN_Group

Add Group +

5. Click **Apply** to save the configuration and apply the change.

The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Configuration
EXPAND ALL
APPLY
▸ Central management
▸ Serial
▾ Network

Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

2. At the command line, type **config** to enter configuration mode:

   ```
   > config
   (config)>
   ```

3. Use the **add auth group** command to add a new authentication. For example, to add a group named **OpenVPN_Group**:

   ```
   (config)> add auth group OpenVPN_Group
   (config auth group OpenVPN_Group)>
   ```

4. Enable OpenVPN access rights for users of this group:

   ```
   (config auth group OpenVPN_Group)> acl openvpn enable true
   ```

5. Add an OpenVPN tunnel to which users of this group will have access:

   a. Determine available tunnels:

   ```
   (config auth group OpenVPN_Group)> .. .. .. vpn openvpn server ?

   Servers: A list of openvpn servers

    Additional Configuration
    -----------------------------------------------------------------------
   --------
    OpenVPN_server1           OpenVPN server

   (config auth group OpenVPN_Group)>
   ```

   b. Add a tunnel:

   ```
   (config auth group OpenVPN_Group)> add auth group test acl openvpn
   tunnels end /vpn/openvpn/server/OpenVPN_server1
   (config auth group OpenVPN_Group)>
   ```

6. Save the configuration and apply the change:

   ```
   (config)> save
   Configuration saved.
   >
   ```

7. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Configure an OpenVPN client by using an .ovpn file

Required configuration items

- Enable the OpenVPN client.

  The OpenVPN client is enabled by default.
- The firewall zone to be used by the OpenVPN client.

Additional configuration items

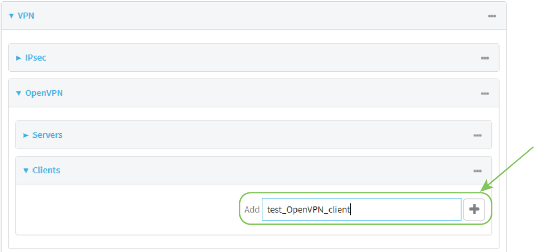
- The route metric for the OpenVPN client.
- The login credentials for the OpenVPN client, if configured on the OpenVPN server.

See Configure active recovery for OpenVPN for information about OpenVPN active recovery.

WebUI

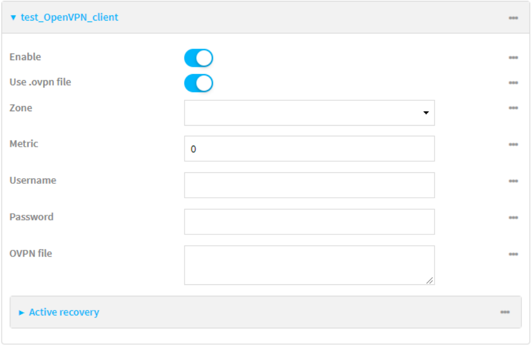
1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **VPN** > **OpenVPN** > **Clients**.
4. For **Add**, type a name for the OpenVPN client and click +



Add test_OpenVPN_client +

   The new OpenVPN client configuration is displayed.


▾ test_OpenVPN_client

Enable: on

Use .ovpn file: on

Zone:

Metric: 0

Username:

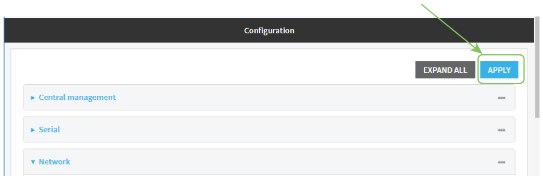
Password:

OVPN file:

5. The OpenVPN client is enabled by default. To disable, click **Enable**.
6. The default behavior is to use an OVPN file for client configuration. To disable this behavior and configure the client manually, click **Use .ovpn file** to disable. If **Use .ovpn file** is disabled, see Configure an OpenVPN client without using an .ovpn file for configuration information.
7. For **Zone**, select the firewall zone for the OpenVPN client.

8. (Optional) Select the **Metric** for the OpenVPN client. If multiple active routes match a destination, the route with the lowest metric will be used.
9. (Optional) For **Username** and **Password**, type the login credentials as configured on the OpenVPN server.
10. For **OVPN file**, paste the content of the client.ovpn file.
11. Click **Apply** to save the configuration and apply the change.

    The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. At the config prompt, type:

```
(config)> add vpn openvpn client name
(config vpn openvpn client name)>
```

   where *name* is the name of the OpenVPN server.

   The OpenVPN client is enabled by default. To disable the client, type:

```
(config vpn openvpn client name)> enable false
(config vpn openvpn client name)>
```

4. Set the firewall zone for the OpenVPN client:

```
(config vpn openvpn client name)> zone value
(config vpn openvpn client name)>
```

   To view a list of available zones:

```
(config vpn openvpn client name)> zone ?

Zone: The zone for the openvpn client interface.
Format:
  any
  dynamic_routes
  edge
  external
  hotspot
  internal
  ipsec
  loopback
  setup
Current value:

(config vpn openvpn client name)>
```

5. (Optional) Set the route metric for the OpenVPN server. If multiple active routes match a destination, the route with the lowest metric will be used.

   ```
   (config vpn openvpn client name)> metric value
   (config vpn openvpn client name)>
   ```

   where *value* is an interger between **0** and **65535**. The default is **0**.

6. (Optional) Set the login credentials as configured on the OpenVPN server:

   ```
   (config vpn openvpn client name)> username value
   (config vpn openvpn client name)> password value
   (config vpn openvpn client name)>
   ```

7. Paste the content of the client.ovpn file into the value of the **config_file** parameter:

   ```
   (config vpn openvpn client name)> config_file value
   (config vpn openvpn client name)>
   ```

8. Save the configuration and apply the change:

   ```
   (config)> save
   Configuration saved.
   >
   ```

9. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Configure an OpenVPN client without using an .ovpn file

Required configuration items

- Enable the OpenVPN client.

  The OpenVPN client is enabled by default.
- The mode used by the OpenVPN server, either routing (TUN), or bridging (TAP).
- The firewall zone to be used by the OpenVPN client.
- The IP address of the OpenVPN server.
- Certificates and keys:

- The **CA certificate** (usually in a ca.crt file).
- The **Public key** (for example, client.crt)
- The **Private key** (for example, client.key).

Additional configuration items

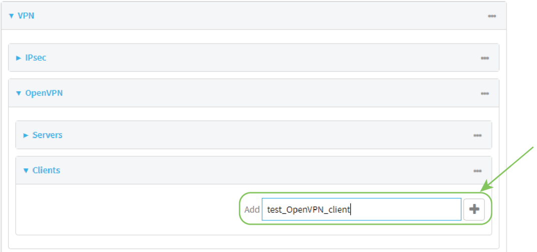
- The route metric for the OpenVPN client.
- The login credentials for the OpenVPN client, if configured on the OpenVPN server.
- Additional OpenVPN parameters.

See Configure active recovery for OpenVPN for information about OpenVPN active recovery.

WebUI

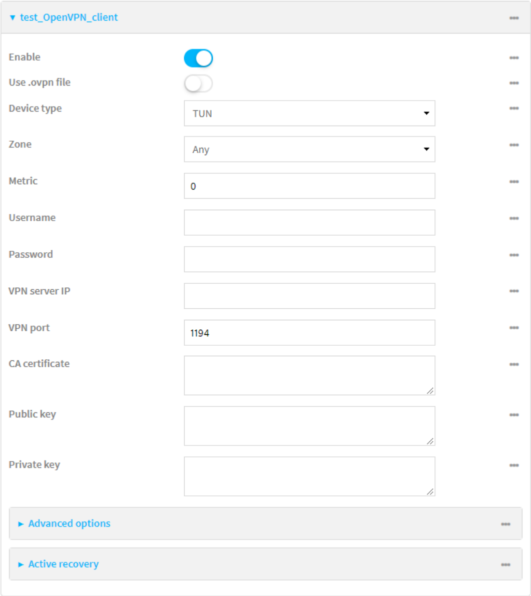
1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **VPN** > **OpenVPN** > **Clients**.
4. For **Add**, type a name for the OpenVPN client and click ♑



test_OpenVPN_client

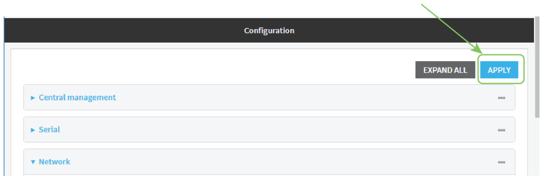
The new OpenVPN client configuration is displayed.



Enable ●
Use .ovpn file ○
Device type TUN
Zone Any
Metric 0
Username
Password
VPN server IP
VPN port 1194
CA certificate
Public key
Private key

5. The OpenVPN client is enabled by default. To disable, click **Enable**.
6. The default behavior is to use an OVPN file for client configuration. To disable this behavior and configure the client manually, click **Use .ovpn file** to disable.
7. For **Device type**, select the mode used by the OpenVPN server, either **TUN** or **TAP**.
8. For **Zone**, select the firewall zone for the OpenVPN client.
9. (Optional) Select the **Metric** for the OpenVPN client. If multiple active routes match a destination, the route with the lowest metric will be used.
10. (Optional) For **Username** and **Password**, type the login credentials as configured on the OpenVPN server.
11. For **VPN server IP**, type the IP address of the OpenVPN server.
12. (Optional) Set the **VPN port** used by the OpenVPN server. The default is **1194**.
13. Paste the contents of the **CA certificate** (usually in a ca.crt file), the **Public key** (for example, client.crt), and the **Private key** (for example, client.key) into their respective fields. The contents will be hidden when the configuration is saved.
14. (Optional) Click to expand **Advanced Options** to manually set additional OpenVPN parameters.
    a. Click **Enable** to enable the use of additional OpenVPN parameters.
    b. Click **Override** if the additional OpenVPN parameters should override default options.
    c. For **OpenVPN parameters**, type the additional OpenVPN parameters. For example, to override the configuration by using a configuration file, enter **--config filename**, for example, **--config /etc/config/openvpn_config**.
15. Click **Apply** to save the configuration and apply the change.

    The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. At the config prompt, type:

```
(config)> add vpn openvpn client name
(config vpn openvpn client name)>
```

where *name* is the name of the OpenVPN server.

The OpenVPN client is enabled by default. To disable the client, type:

```
(config vpn openvpn client name)> enable false
(config vpn openvpn client name)>
```

4. The default behavior is to use an OVPN file for client configuration. To disable this behavior and configure the client manually:

```
(config vpn openvpn client name)> use_file false
(config vpn openvpn client name)>
```

5. Set the mode used by the OpenVPN server:

```
(config vpn openvpn client name)> device_type value
(config vpn openvpn client name)>
```

   where *value* is either **tun** or **tap**. The default is **tun**.

6. Set the firewall zone for the OpenVPN client:

```
(config vpn openvpn client name)> zone value
(config vpn openvpn client name)>
```

   To view a list of available zones:

```
(config vpn openvpn client name)> zone ?

Zone: The zone for the openvpn client interface.
Format:
  any
  dynamic_routes
  edge
  external
  hotspot
  internal
  ipsec
  loopback
  setup
Current value:

(config vpn openvpn client name)>
```

7. (Optional) Set the route metric for the OpenVPN server. If multiple active routes match a destination, the route with the lowest metric will be used.

```
(config vpn openvpn client name)> metric value
(config vpn openvpn client name)>
```

   where *value* is an interger between **0** and **65535**. The default is **0**.

8. (Optional) Set the login credentials as configured on the OpenVPN server:

```
(config vpn openvpn client name)> username value
(config vpn openvpn client name)> password value
(config vpn openvpn client name)>
```

9. Set the IP address of the OpenVPN server:

   ```
   (config vpn openvpn client name)> server ip_address
   (config vpn openvpn client name)>
   ```

10. (Optional) Set the port used by the OpenVPN server:

    ```
    (config vpn openvpn client name)> port port
    (config vpn openvpn client name)>
    ```

    The default is **1194**.

11. Paste the contents of the CA certificate (usually in a ca.crt file) into the value of the **cacert** parameter:

    ```
    (config vpn openvpn client name)> cacert value
    (config vpn openvpn client name)>
    ```

12. Paste the contents of the public key (for example, client.crt) into the value of the **public_cert** parameter:

    ```
    (config vpn openvpn client name)> public_cert value
    (config vpn openvpn client name)>
    ```

13. Paste the contents of the private key (for example, client.key) into the value of the **private_key** parameter:

    ```
    (config vpn openvpn client name)> private_key value
    (config vpn openvpn client name)>
    ```

14. (Optional) Set additional OpenVPN parameters.

    a. Enable the use of additional OpenVPN parameters:

    ```
    (config vpn openvpn client name)> advanced_options enable true
    (config vpn openvpn client name)>
    ```

    b. Configure whether the additional OpenVPN parameters should override default options:

    ```
    (config vpn openvpn client name)> advanced_options override true
    (config vpn openvpn client name)>
    ```

    c. Set the additional OpenVPN parameters:

    ```
    (config vpn openvpn client name)> advanced_options extra parameters
    (config vpn openvpn client name)>
    ```

15. Save the configuration and apply the change:

```
(config)> save
Configuration saved.
>
```

16. Type **exit** to exit the Admin CLI.

    Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Configure active recovery for OpenVPN

You can configure the AnywhereUSB Plus device to regularly probe OpenVPN client connections to determine if the connection has failed and take remedial action.

Required configuration items

- A valid OpenVPN client configuration. See Configure an OpenVPN client by using an .ovpn file or Configure an OpenVPN client without using an .ovpn file for configuration instructions.
- Enable OpenVPN active recovery.
- The behavior of the AnywhereUSB Plus device upon OpenVPN failure: either
  - Restart the OpenVPN interface
  - Reboot the device.

Additional configuration items

- The interval between connectivity tests.
- Whether the interface should be considered to have failed if one of the test targets fails, or all of the test targets fail.
- The number of probe attempts before the OpenVPN connection is considered to have failed.
- The amount of time that the device should wait for a response to a probe attempt before considering it to have failed.

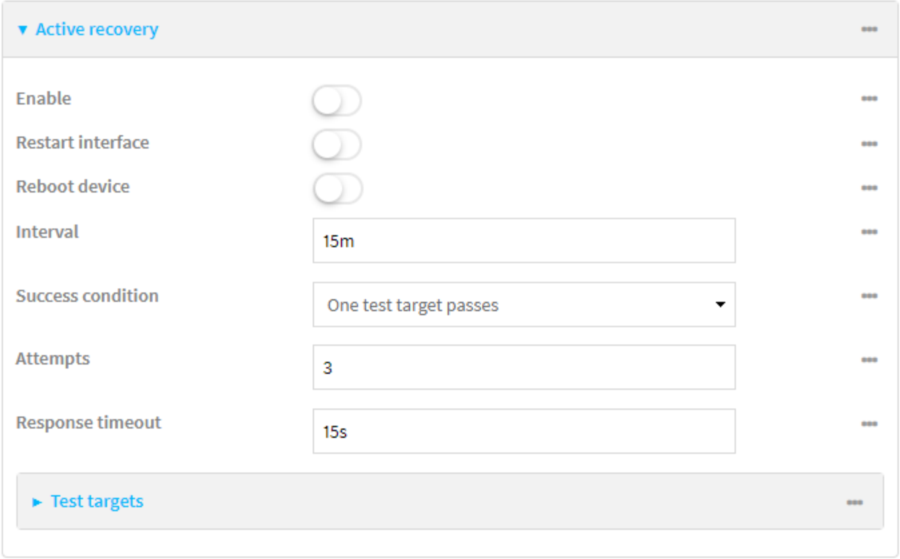
To configure the AnywhereUSB Plus device to regularly probe the OpenVPN connection:

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **VPN** > **OpenVPN** > **Clients**.
4. Create a new OpenVPN client or select an existing one:
   - To create a new OpenVPN client, see Configure an OpenVPN client by using an .ovpn file or Configure an OpenVPN client without using an .ovpn file.
   - To edit an existing OpenVPN client, click to expand the appropriate client.

5. After creating or selecting the OpenVPN client, click **Active recovery**.



▾ Active recovery

Enable ○

Restart interface ○

Reboot device ○

Interval: 15m

Success condition: One test target passes

Attempts: 3

Response timeout: 15s

▸ Test targets

6. **Enable** active recovery.
7. For **Restart interface**, enable to configure the device to restart the interface when its connection is considered to have failed. This is useful for interfaces that may regain connectivity after restarting, such as a cellular modem.
8. For **Reboot device**, enable to instruct the device to reboot when the WAN connection is considered to have failed.
9. Change the **Interval** between connectivity tests.

   Allowed values are any number of weeks, days, hours, minutes, or seconds, and take the format ***number***{**w**|**d**|**h**|**m**|**s**}.

   For example, to set **Interval** to ten minutes, enter **10m** or **600s**.

   The default is 15 minutes.
10. For **Success condition**, determine whether the interface should fail over based on the failure of one of the test targets, or all of the test targets.
11. For **Attempts**, type the number of probe attempts before the WAN is considered to have failed.
12. For **Response timeout**, type the amount of time that the device should wait for a response to a probe attempt before considering it to have failed.

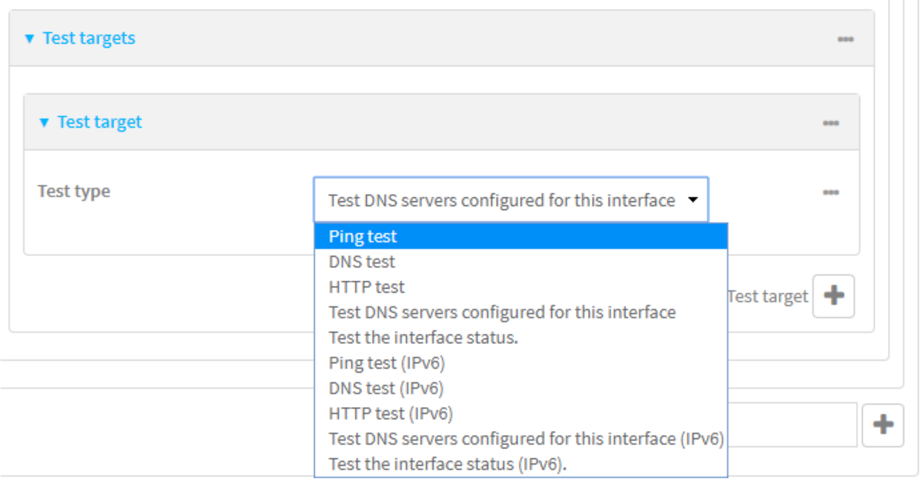
    Allowed values are any number of weeks, days, hours, minutes, or seconds, and take the format ***number***{**w**|**d**|**h**|**m**|**s**}.

    For example, to set **Response timeout** to ten minutes, enter **10m** or **600s**.

    The default is 15 seconds.

13. Add a test target:

    a. Click to expand **Test targets**.


▾ Test targets
▾ Test target
Test type
Test DNS servers configured for this interface
Ping test
DNS test
HTTP test
Test DNS servers configured for this interface
Test the interface status.
Ping test (IPv6)
DNS test (IPv6)
HTTP test (IPv6)
Test DNS servers configured for this interface (IPv6)
Test the interface status (IPv6).
Test target

    b. For **Add Test target**, click ♑

    c. Select the **Test type**:

    - **Ping test** or **Ping test (IPv6)**: Tests connectivity by sending an ICMP echo request to the hostname or IP address specified in **Ping host**. You can also optionally change the number of bytes in the **Ping payload size**.
    - **DNS test** or **DNS test (IPv6)**: Tests connectivity by sending a DNS query to the specified **DNS server**.
    - **HTTP test HTTP test (IPv6)**: Tests connectivity by sending an HTTP or HTTPS GET request to the URL specified in **Web servers**. The URL should take the format of **http[s]://*hostname*/[*path*]**.
    - **Test DNS servers configured for this interface** or **Test DNS servers configured for this interface (IPv6)**: Tests connectivity by sending a DNS query to the DNS servers configured for this interface.
    - **Test the interface status** or **Test the interface status IPv6**: The interface is considered to be down based on:
        - **Down time**: The amount of time that the interface can be down before this test is considered to have failed.

          Allowed values are any number of weeks, days, hours, minutes, or seconds, and take the format ***number***{**w**|**d**|**h**|**m**|**s**}.

          For example, to set **Down time** to ten minutes, enter **10m** or **600s**.

          The default is 60 seconds.
        - **Initial connection time**: The amount of time to wait for an initial connection to the interface before this test is considered to have failed.

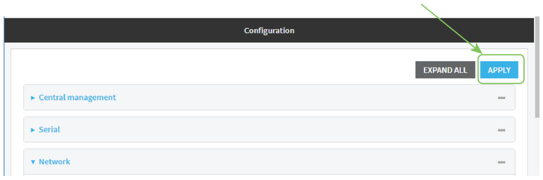
          Allowed values are any number of weeks, days, hours, minutes, or seconds, and take the format ***number***{**w**|**d**|**h**|**m**|**s**}.

          For example, to set **Initial connection time** to ten minutes, enter **10m** or **600s**.

          The default is 60 seconds.

14. Click **Apply** to save the configuration and apply the change.

    The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.

Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Create a new OpenVPN client, or edit an existing one:
   - To create a new OpenVPN client, see Configure an OpenVPN client by using an .ovpn file or Configure an OpenVPN client without using an .ovpn file.
   - To edit an existing OpenVPN client, change to the OpenVPN client's node in the configuration schema. For example, for an OpenVPN client named **openvpn_client1**, change to the **openvpn_client1** node in the configuration schema:

```
(config)> vpn openvpn client openvpn_client1
(config vpn openvpn client openvpn_client1)>
```

4. Enable active recovery:

```
(config vpn openvpn client openvpn_client1)> connection_monitor enable true
(config vpn openvpn client openvpn_client1)>
```

5. To configure the device to restart the interface when its connection is considered to have failed:

```
(config vpn openvpn client openvpn_client1)> connection_monitor restart
true
(config vpn openvpn client openvpn_client1)>
```

   This is useful for interfaces that may regain connectivity after restarting, such as a cellular modem.
6. To configure the device to reboot when the interface is considered to have failed:

```
(config vpn openvpn client openvpn_client1)> connection_monitor reboot
enable
(config vpn openvpn client openvpn_client1)>
```

7. Set the **Interval** between connectivity tests:

   ```
   (config vpn openvpn client openvpn_client1)> connection_monitor interval
   value
   (config vpn openvpn client openvpn_client1)>
   ```

   where *value* is any number of weeks, days, hours, minutes, or seconds, and takes the format ***number***{**w|d|h|m|s**}.

   For example, to set **interval** to ten minutes, enter either **10m** or **600s**:

   ```
   (config vpn openvpn client openvpn_client1)> connection_monitor interval
   600s
   (config vpn openvpn client openvpn_client1)>
   ```

   The default is 15 minutes.
8. Determine whether the interface should fail over based on the failure of one of the test targets, or all of the test targets:

   ```
   (config vpn openvpn client openvpn_client1)> connection_monitor success_
   condition value
   (config vpn openvpn client openvpn_client1)>
   ```

   Where *value* is either **one** or **all**.
9. Set the number of probe attempts before the WAN is considered to have failed:

   ```
   (config vpn openvpn client openvpn_client1)> connection_monitor attempts
   num
   (config vpn openvpn client openvpn_client1)>
   ```

   The default is **3**.
10. Set the amount of time that the device should wait for a response to a probe attempt before considering it to have failed:

    ```
    (config vpn openvpn client openvpn_client1)> connection_monitor timeout
    value
    (config vpn openvpn client openvpn_client1)>
    ```

    where *value* is any number of weeks, days, hours, minutes, or seconds, and takes the format ***number***{**w|d|h|m|s**}.

    For example, to set **timeout** to ten minutes, enter either **10m** or **600s**:

    ```
    (config vpn openvpn client openvpn_client1)> connection_monitor interval
    600s
    (config vpn openvpn client openvpn_client1)>
    ```

    The default is 15 seconds.

11. Configure test targets:

    a. Add a test target:

    ```
    (config vpn openvpn client openvpn_client1)> add connection_monitor
    target end
    (config vpn openvpn client openvpn_client1 connection_monitor target 0)>
    ```

    b. Set the test type:

    ```
    (config vpn openvpn client openvpn_client1 connection_monitor target 0)>
    test value
    (config vpn openvpn client openvpn_client1 connection_monitor target 0)>
    ```

    where *value* is one of:

    - **ping** (IPv4) or **ping6** (IPv6): Tests connectivity by sending an ICMP echo request to a specified hostname or IP address.
        - Specify the hostname or IP address by using **ping_host** or **ping_host6**:

        ```
        (config vpn openvpn client openvpn_client1 connection_monitor
        target 0)> ping_host host
        (config vpn openvpn client openvpn_client1 connection_monitor
        target 0)>
        ```

        - (Optional) Set the size, in bytes, of the ping packet by using **ping_size** or **ping_size6**:

        ```
        (config vpn openvpn client openvpn_client1 connection_monitor
        target 0)> ping_size [num]
        (config vpn openvpn client openvpn_client1 connection_monitor
        target 0)>
        ```

    - **dns** (IPv4) or **dns6** (IPv6): Tests connectivity by sending a DNS query to the specified DNS server.
        - Specify the DNS server. Allowed value is the IP address of the DNS server.

        ```
        (config vpn openvpn client openvpn_client1 connection_monitor
        target 0)> dns_server ip_address
        (config vpn openvpn client openvpn_client1 connection_monitor
        target 0)>
        ```

    - **dns_configured** (IPv4) or **dns_configured6** (IPv6): Tests connectivity by sending a DNS query to the DNS servers configured for this interface.
    - **http** (IPv4) or **http6** (IPv6): Tests connectivity by sending an HTTP or HTTPS GET request to the specified URL.
        - Specify the url. Allowed value uses the format **http[s]://*hostname*/[*path*]**.

        ```
        (config vpn openvpn client openvpn_client1 connection_monitor
        target 0)> http_url url
        (config vpn openvpn client openvpn_client1 connection_monitor
        target 0)>
        ```

- **interface_up** (IPv4) or **interface_up6** (IPv6): : The interface is considered to be down based on the interfaces down time, and the amount of time an initial connection to the interface takes before this test is considered to have failed.
    - (Optional) Set the amount of time that the interface can be down before this test is considered to have failed:

      ```
      (config vpn openvpn client openvpn_client1 connection_monitor
      target 0)> interface_down_time value
      (config vpn openvpn client openvpn_client1 connection_monitor
      target 0)>
      ```

      where *value* is any number of weeks, days, hours, minutes, or seconds, and takes the format ***number***{**w|d|h|m|s**}.

      For example, to set **interface_down_time** to ten minutes, enter either **10m** or **600s**:

      ```
      (config openvpn client openvpn_client1 connection_monitor
      target 0)> interface_down_time 600s
      (config openvpn client openvpn_client1 connection_monitor
      target 0)>
      ```

      The default is 60 seconds.
    - (Optional) Set the amount of time to wait for an initial connection to the interface before this test is considered to have failed:

      ```
      (config vpn openvpn client openvpn_client1 connection_monitor
      target 0)> interface_timeout value
      (config vpn openvpn client openvpn_client1 connection_monitor
      target 0)>
      ```

      where *value* is any number of weeks, days, hours, minutes, or seconds, and takes the format ***number***{**w|d|h|m|s**}.

      For example, to set **interface_timeout** to ten minutes, enter either **10m** or **600s**:

      ```
      (config network interface my_wwan ipv4 connection_monitor
      target 0)> interface_timeout 600s
      (config network interface my_wwan ipv4 connection_monitor
      target 0)>
      ```

      The default is 60 seconds.

12. Save the configuration and apply the change:

    ```
    (config openvpn client openvpn_client1 connection_monitor target 0)> save
    Configuration saved.
    >
    ```

13. Type **exit** to exit the Admin CLI.

    Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Show OpenVPN server status and statistics

You can view status and statistics for OpenVPN servers from either the web interface or the command line:

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, select **Status** > **OpenVPN** > **Servers**.

   The **OpenVPN Servers** page appears.
3. To view configuration details about an OpenVPN server, click the ⚙(configuration) icon in the upper right of the OpenVPN server's status pane.

Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. To display details about all configured OpenVPN servers, type the following at the prompt:

```
> show openvpn server all

 Server           Enable  Type  Zone      Address          Port
 ---------------  ------  ----  --------  ---------------  ----
 OpenVPN_server1  true    tun   internal  192.168.30.1/24  1194
 OpenVPN_server2  false   tun   internal  192.168.40.1/24  1194

>
```

3. To display details about a specific server:

```
> show openvpn server name OpenVPN_server1

 Server                    : OpenVPN_server1
 Enable                    : true
 Type                      : tun
 Zone                      : internal
 Address                   : 192.168.30.1/24
 Port                      : 1194
 Use File                  : true
 Metric                    : 0
 Protocol                  : udp
 First IP                  : 80
 Last IP                   : 99

>
```

4. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Show OpenVPN client status and statistics

You can view status and statistics for OpenVPN clients from either web interface or the command line:

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, select **Status** > **OpenVPN** > **Clients**.

   The **OpenVPN Clients** page appears.
3. To view configuration details about an OpenVPN client, click the ✱(configuration) icon in the upper right of the OpenVPN client's status pane.

Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. To display details about all configured OpenVPN clients, type the following at the prompt:

```
> show openvpn client all

 Client           Enable  Status     Username  Use File  Zone
 ---------------  ------  -------    --------  --------  --------
 OpenVPN_Client1  true    connected            true      internal
 OpenVPN_Client2  true    pending            true      internal

>
```

3. To display details about a specific server:

```
> show openvpn client name OpenVPN_client1
```

4. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Generic Routing Encapsulation (GRE)

Generic Routing Encapsulation (GRE) is an IP packet encapsulation protocol that allow for networks and routes to be advertized from one network device to another. You can use GRE to encapsulate a wide variety of network layer protocols inside virtual point-to-point links over an IP network.

Configuring a GRE tunnel

Configuring a GRE tunnel involves the following items:

Required configuration items

- A GRE loopback endpoint interface.
- GRE tunnel configuration:
  - Enable the GRE tunnel.

    The GRE tunnels are enabled by default.
  - The local endpoint interface.
  - The IP address of the remote device/peer.

Additional configuration items

- A GRE key.
- Enable the device to respond to keepalive packets.

Task One: Create a GRE loopback endpoint interface

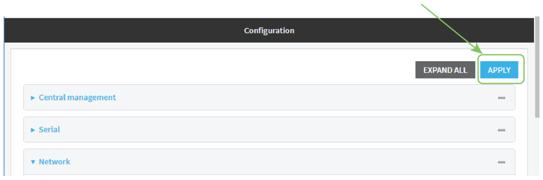
WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **Network** > **Interfaces**.
4. For **Add Interface**, type a name for the GRE loopback endpoint interface and click ♑
5. **Enable** the interface.

   New interfaces are enabled by default. To disable, or to enable if it has been disabled, click **Enable**.
6. For **Interface type**, select **Ethernet**.
7. For **Zone**, select **Internal**.
8. For **Device**, select **Ethernet: Loopback**.
9. Click to expand **IPv4**.
10. For **Address**, enter the IP address and subnet mask of the local GRE endpoint, for example **10.10.1.1/24**.
11. Click **Apply** to save the configuration and apply the change.

The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Add the GRE endpoint interface. For example, to add an interface named **gre_endpoint**:

```
(config)> add network interface gre_interface
(config network interface gre_interface)>
```

4. Set the interface zone to **internal**:

```
(config network interface gre_interface)> zone internal
(config network interface gre_interface)>
```

5. Set the interface device to **loopback**:

```
(config network interface gre_interface)> device /network/device/loopback
(config network interface gre_interface)>
```

6. Set the IP address and subnet mask of the local GRE endpoint. For example, to set the local GRE endpoint's IP address and subnet mask to **10.10.1.1/24:**

```
(config network interface gre_interface)> ipv4 address 10.10.1.1/24
(config network interface gre_interface)>
```

7. Save the configuration and apply the change:

```
(config network interface gre_interface)> save
Configuration saved.
>
```

8. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Task Two: Configure the GRE tunnel

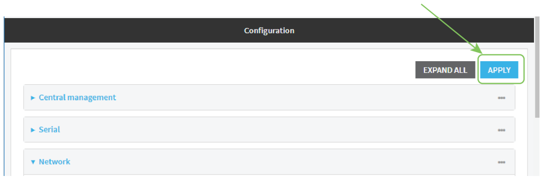
WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

   The **Configuration** window is displayed.
3. Click **VPN** > **IP Tunnels**.
4. For **Add IP tunnel**, type a name for the GRE tunnel and click
5. **Enable** the tunnel.

   New tunnels are enabled by default. To disable, or to enable if it has been disabled, click **Enable**.
6. For **Local endpoint**, select the GRE endpoint interface created in Task One.
7. For **Remote endpoint**, type the IP address of the GRE endpoint on the remote peer.
8. (Optional) For **Key**, enter a key that will be inserted in GRE packets created by this tunnel. It must match the key set by the remote endpoint. Allowed value is an interger between 0 and 4294967295, or an IP address.
9. (Optional) **Enable keepalive reply** to enable the device to reply to Cisco GRE keepalive packets.
10. Click **Apply** to save the configuration and apply the change.

    The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Add the GRE endpoint tunnel. For example, to add a tunnel named **gre_example**:

```
(config)> add vpn iptunnel gre_example
(config vpn iptunnel gre_example)>
```

   GRE tunnels are enabled by default. To disable:

```
(config vpn iptunnel gre_example)> enable false
(config vpn iptunnel gre_example)>
```

4. Set the local endpoint to the GRE endpoint interface created in Task One, for example:

   ```
   (config vpn iptunnel gre_example)> local /network/interface/gre_endpoint
   (config vpn iptunnel gre_example)>
   ```

5. Set the IP address of the GRE endpoint on the remote peer:

   ```
   (config vpn iptunnel gre_example)> remote ip_address
   (config vpn iptunnel gre_example)>
   ```

6. (Optional) Set a key that will be inserted in GRE packets created by this tunnel.

   The key must match the key set by the remote endpoint.

   ```
   (config vpn iptunnel gre_example)> key value
   (config vpn iptunnel gre_example)>
   ```

   where value is an interger between 0 and 4294967295, or an IP address.

7. (Optional) Enable the device to reply to Cisco GRE keepalive packets:

   ```
   (config vpn iptunnel gre_example)> keepalive true
   (config vpn iptunnel gre_example)>
   ```

8. Save the configuration and apply the change:

   ```
   (config vpn iptunnel gre_example)> save
   Configuration saved.
   >
   ```

9. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Show GRE tunnels

To view information about currently configured GRE tunnels:

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **Status** > **IP tunnels**.

   The **IP Tunnels**page appears.
3. To view configuration details about a GRE tunnel, click the ⚙(configuration) icon in the upper right of the tunnel's status pane.

Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Use the **show vpn iptunnel** command:

```
(config)> show vpn iptunnel
gre_tunnel
       enable true
       keepalive false
       no key
       local /network/interface/gre_endpoint
       remote 172.168.1.2
       type gre
(config)>
```

4. Type **cancel** to exit configuration mode:

```
(config)> cancel
>
```

5. Type exit to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Example: GRE tunnel over an IPSec tunnel

The AnywhereUSB Plus device can be configured as an advertised set of routes through an IPSec tunnel. This allows you to leverage the dynamic route advertisement of GRE tunnels through a secured IPSec tunnel.

The example configuration provides instructions for configuring the AnywhereUSB Plus device with a GRE tunnel through IPsec.

AnywhereUSB Plus-1 configuration tasks

1. Create an IPsec tunnel named **ipsec_gre1** with:
   - A pre-shared key.
   - **Remote endpoint** set to the public IP address of the AnywhereUSB Plus-2 device.
   - A policy with:
     - **Local network** set to the IP address and subnet of the local GRE tunnel, **172.30.0.1/32**.
     - **Remote network** set to the IP address and subnet of the remote GRE tunnel, **172.30.0.2/32**.
2. Create an IPsec endpoint interface named **ipsec_endpoint1**:
   a. **Zone** set to **Internal**.
   b. **Device** set to **Ethernet: Loopback**.
   c. IPv4 Address set to the IP address of the local GRE tunnel, **172.30.0.1/32**.
3. Create a GRE tunnel named **gre_tunnel1**:
   a. **Local endpoint** set to the IPsec endpoint interface, **Interface: ipsec_endpoint1**.
   b. Remote endpoint set to the IP address of the GRE tunnel on AnywhereUSB Plus-2, **172.30.0.2**.
4. Create an interface named **gre_interface1** and add it to the GRE tunnel:
   a. **Zone** set to **Internal**.
   b. **Device** set to **IP tunnel: gre_tunnel1**.
   c. IPv4 Address set to a virtual IP address on the GRE tunnel, **172.31.0.1/30**.

AnywhereUSB Plus-2 configuration tasks

1. Create an IPsec tunnel named **ipsec_gre2** with:
   - The same pre-shared key as the **ipsec_gre1** tunnel on AnywhereUSB Plus-1.
   - **Remote endpoint** set to the public IP address of AnywhereUSB Plus-1.
   - A policy with:
     - **Local network** set to the IP address and subnet of the local GRE tunnel, **172.30.0.2/32**.
     - **Remote network** set to the IP address of the remote GRE tunnel, **172.30.0.1/32**.
2. Create an IPsec endpoint interface named **ipsec_endpoint2**:
   a. **Zone** set to **Internal**.
   b. **Device** set to **Ethernet: Loopback**.
   c. IPv4 Address set to the IP address of the local GRE tunnel, **172.30.0.2/32**.

3. Create a GRE tunnel named **gre_tunnel2**:
    a. **Local endpoint** set to the IPsec endpoint interface, **Interface: ipsec_endpoint2**.
    b. Remote endpoint set to the IP address of the GRE tunnel on AnywhereUSB Plus-1, **172.30.0.1**.
4. Create an interface named **gre_interface2** and add it to the GRE tunnel:
    a. **Zone** set to **Internal**.
    b. **Device** set to **IP tunnel: gre_tunnel2**.
    c. IPv4 Address set to a virtual IP address on the GRE tunnel, **172.31.1.1/30**.

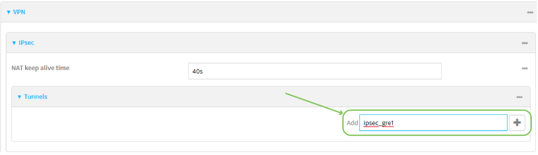
Configuration procedures

Configure the AnywhereUSB Plus-1 device
Task one: Create an IPsec tunnel

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

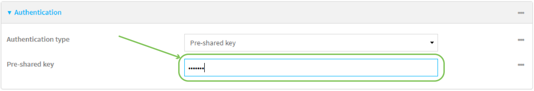
    The **Configuration** window is displayed.
3. Click **VPN** > **IPsec** > **Tunnels**.
4. For **Add IPsec Tunnel**, type **ipsec_gre1** and click ♑



NAT keep alive time 40s

Add ipsec_gre1 ✚

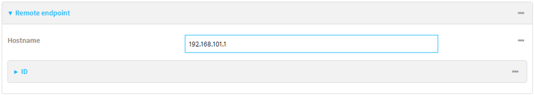
5. Click to expand **Authentication**.
6. For **Pre-shared key**, type **testkey**.



Authentication type Pre-shared key

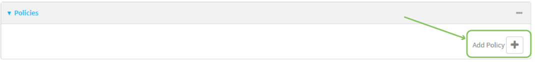
Pre-shared key •••••••

7. Click to expand **Remote endpoint**.
8. For **Hostname**, type public IP address of the AnywhereUSB Plus-2 device.



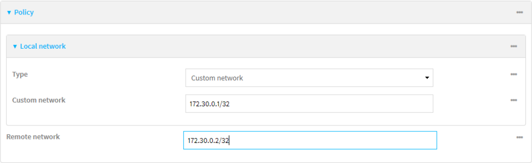
Hostname 192.168.101.1

9. Click to expand **Policies**.
10. For **Add Policy**, click ♑to add a new policy.



11. Click to expand **Local network**.
12. For **Type**, select **Custom network**.

13. For **Address**, type the IP address and subnet of the local GRE tunnel, **172.30.0.1/32**.
14. For **Remote network**, type the IP address and subnet of the remote GRE tunnel, **172.30.0.2/32**.



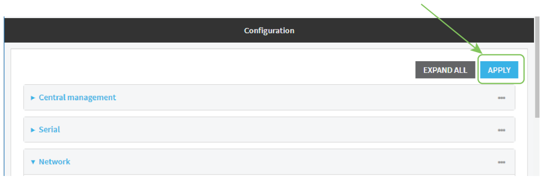
Type: Custom network

Custom network: 172.30.0.1/32

Remote network: 172.30.0.2/32

15. Click **Apply** to save the configuration and apply the change.

    The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.
2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Add an IPsec tunnel named **ipsec_gre1**:

```
(config)> add vpn ipsec tunnel ipsec_gre1
(config vpn ipsec tunnel ipsec_gre1)>
```

4. Set the pre-shared key to **testkey**:

```
(config vpn ipsec tunnel ipsec_gre1)> auth secret testkey
(config vpn ipsec tunnel ipsec_gre1)>
```

5. Set the remote endpoint to public IP address of the AnywhereUSB Plus-2 device:

```
(config vpn ipsec tunnel ipsec_gre1)> remote hostname 192.168.101.1
(config vpn ipsec tunnel ipsec_gre1)>
```

6. Add a policy:

```
(config vpn ipsec tunnel ipsec_gre1)> add policy end
(config vpn ipsec tunnel ipsec_gre1 policy 0)>
```

7. Set the local network policy type to **custom**:

```
(config vpn ipsec tunnel ipsec_gre1 policy 0)> local type custom
(config vpn ipsec tunnel ipsec_gre1 policy 0)>
```

8. Set the local network address to the IP address and subnet of the local GRE tunnel, **172.30.0.1/32**:

```
(config vpn ipsec tunnel ipsec_gre1 policy 0)> local custom 172.30.0.1/32
(config vpn ipsec tunnel ipsec_gre1 policy 0)>
```

9. Set the remote network address to the IP address and subnet of the remote GRE tunnel, **172.30.0.2/32**:

```
(config vpn ipsec tunnel ipsec_gre1 policy 0)> remote network 172.30.0.2/32
(config vpn ipsec tunnel ipsec_gre1 policy 0)>
```

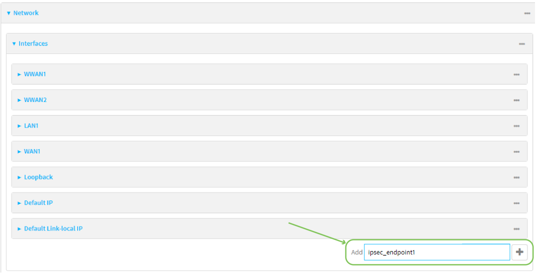
10. Save the configuration and apply the change:

```
(config ipsec tunnel ipsec_gre1 policy 0)> save
Configuration saved.
>
```

Task two: Create an IPsec endpoint interface

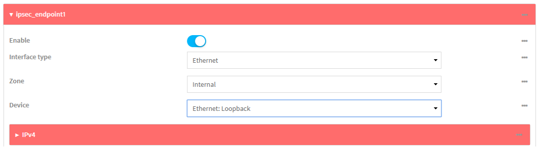
WebUI

1. Click **Network** > **Interface**.
2. For **Add Interface**, type **ipsec_endpoint1** and click ♑.



Add ipsec_endpoint1

3. For **Zone**, select **Internal**.
4. For **Device**, select **Ethernet: loopback**.



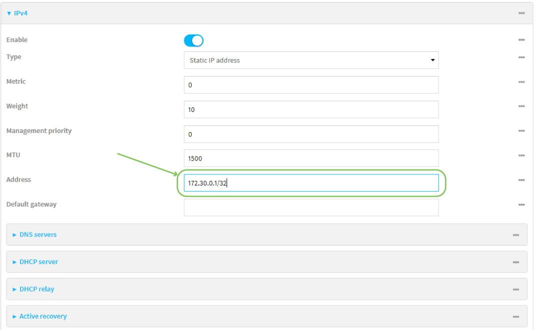
Enable ●

Interface type Ethernet

Zone Internal

Device Ethernet: Loopback

5. Click to expand **IPv4**.
6. For **Address**, type the IP address of the local GRE tunnel, **172.30.0.1/32**.



Enable ●

Type Static IP address

Metric 0

Weight 10

Management priority 0

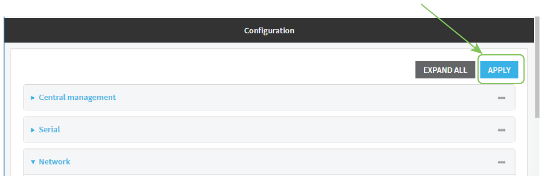
MTU 1500

Address 172.30.0.1/32

Default gateway

7. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

2. Add an interface named **ipsec_endpoint1**:

```
(config)> add network interface ipsec_endpoint1
(config network interface ipsec_endpoint1)>
```

3. Set the zone to **internal**:

```
(config network interface ipsec_endpoint1)> zone internal
(config network interface ipsec_endpoint1)>
```

4. Set the device to **/network/device/loopback**:

```
(config network interface ipsec_endpoint1)> device /network/device/loopback
(config network interface ipsec_endpoint1)>
```

5. Set the IPv4 address to the IP address of the local GRE tunnel, **172.30.0.1/32**:

```
(config network interface ipsec_endpoint1)> ipv4 address 172.30.0.1/32
(config network interface ipsec_endpoint1)>
```

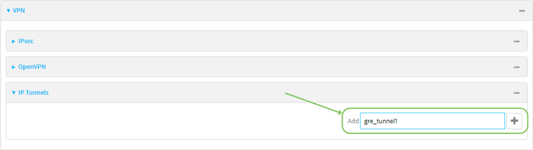
6. Save the configuration and apply the change:

```
(config vpn ipsec tunnel ipsec_endpoint1 policy 0)> save
Configuration saved.
>
```

Task three: Create a GRE tunnel

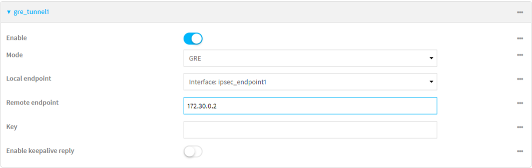
WebUI

1. Click **VPN** > **IP Tunnels**.
2. For **Add IP Tunnel**, type **gre_tunnel1** and click ♑



Add gre_tunnel1

3. For **Local endpoint**, select the IPsec endpoint interface created in Task two (**Interface: ipsec_endpoint1**).
4. For **Remote endpoint**, type the IP address of the GRE tunnel on AnywhereUSB Plus-2, **172.30.0.2**.



▾ gre_tunnel1

Enable

Mode GRE

Local endpoint Interface: ipsec_endpoint1

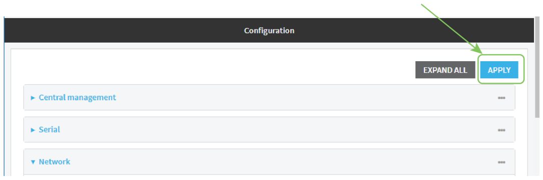
Remote endpoint 172.30.0.2

Key

Enable keepalive reply

5. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

2. Add a GRE tunnel named **gre_tunnel1**:

```
(config)> add vpn iptunnel gre_tunnel1
(config vpn iptunnel gre_tunnel1)>
```

3. Set the local endpoint to the IPsec endpoint interface created in Task two (**/network/interface/ipsec_endpoint1**):

```
(config vpn iptunnel gre_tunnel1)> local /network/interface/ipsec_endpoint1
(config vpn iptunnel gre_tunnel1)>
```

4. Set the remote endpoint to the IP address of the GRE tunnel on AnywhereUSB Plus-2, **172.30.0.2**:

```
(config vpn iptunnel gre_tunnel1)> remote 172.30.0.2
(config vpn iptunnel gre_tunnel1)>
```

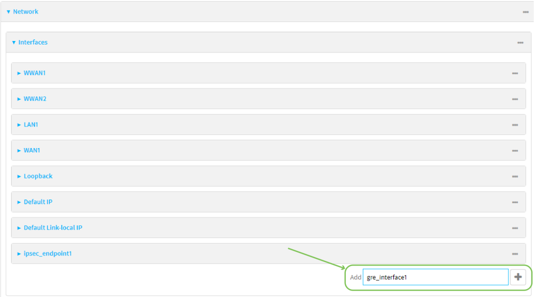
5. Save the configuration and apply the change:

```
(config vpn iptunnel gre_tunnel1)> save
Configuration saved.
>
```

Task four: Create an interface for the GRE tunnel device

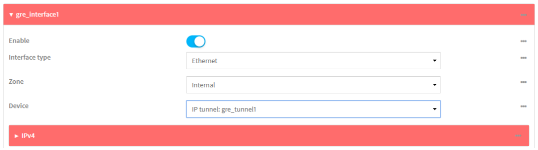
WebUI

1. Click **Network** > **Interfaces**.
2. For **Add Interface**, type **gre_interface1** and click +



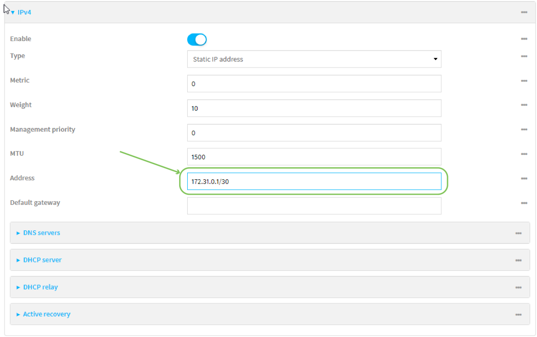
Add: gre_interface1

3. For **Zone**, select **Internal**.
4. For **Device**, select the GRE tunnel created in Task three (**IP tunnel: gre_tunnel1**).



Enable: on
Interface type: Ethernet
Zone: Internal
Device: IP tunnel: gre_tunnel1

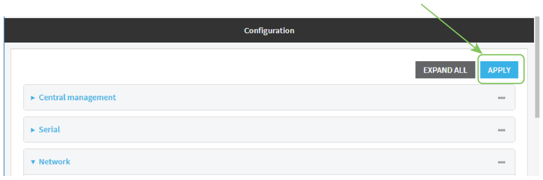
5. Click to expand **IPv4**.
6. For **Address**, type **172.31.0.1/30** for a virtual IP address on the GRE tunnel.



Enable: on
Type: Static IP address
Metric: 0
Weight: 10
Management priority: 0
MTU: 1500
Address: 172.31.0.1/30
Default gateway:

7. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

2. Add an interface named **gre_interface1**:

```
(config)> add network interface gre_interface1
(config network interface gre_interface1)>
```

3. Set the zone to **internal**:

```
(config network interface gre_interface1)> zone internal
(config network interface gre_interface1)>
```

4. Set the device to the GRE tunnel created in Task three (**/vpn/iptunnel/gre_tunnel1**):

```
(config network interface gre_interface1)> device /vpn/iptunnel/gre_tunnel1
(config network interface gre_interface1)>
```

5. Set **172.31.0.1/30** as the virtual IP address on the GRE tunnel:

```
(config network interface gre_interface1)> ipv4 address 172.31.0.1/30
(config network interface gre_interface1)>
```

6. Save the configuration and apply the change:

```
(config network interface gre_interface1)> save
Configuration saved.
>
```

7. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

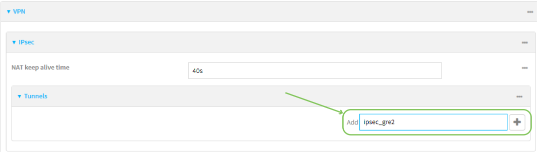
Configure the AnywhereUSB Plus-2 device

Task one: Create an IPsec tunnel

WebUI

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. On the menu, click **System** > **Device Configuration**.

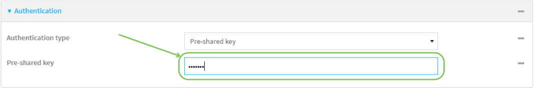
   The **Configuration** window is displayed.
3. Click **VPN** > **IPsec** > **Tunnels**.
4. For **Add IPsec Tunnel**, type **ipsec_gre2** and click ♑



NAT keep alive time 40s

Add ipsec_gre2

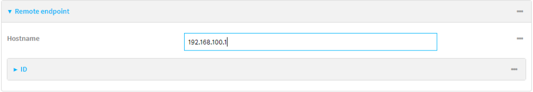
5. Click to expand **Authentication**.
6. For **Pre-shared key**, type the same pre-shared key that was configured for the AnywhereUSB Plus-1 (**testkey**).



Authentication type: Pre-shared key

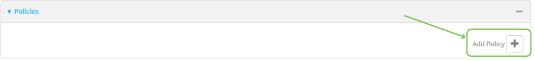
Pre-shared key: ••••••••

7. Click to expand **Remote endpoint**.
8. For **Hostname**, type public IP address of the AnywhereUSB Plus-1 device.

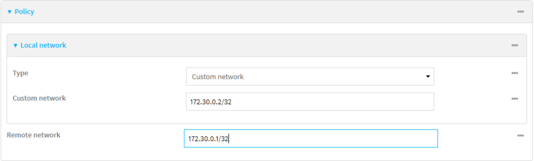


Hostname: 192.168.100.1

9. Click to expand **Policies**.
10. For **Add Policy**, click + to add a new policy.



11. Click to expand **Local network**.
12. For **Type**, select **Custom network**.
13. For **Address**, type the IP address and subnet of the local GRE tunnel, **172.30.0.2/32**.
14. For **Remote network**, type the IP address and subnet of the remote GRE tunnel, **172.30.0.1/32**.



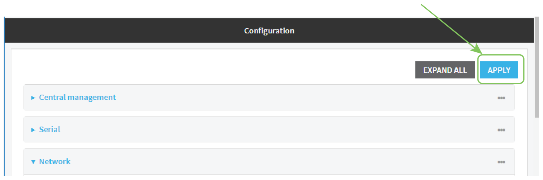
Type: Custom network

Custom network: 172.30.0.2/32

Remote network: 172.30.0.1/32

15. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

2. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

3. Add an IPsec tunnel named **ipsec_gre2**:

```
(config)> add vpn ipsec tunnel ipsec_gre2
(config vpn ipsec tunnel ipsec_gre2)>
```

4. Set the pre-shared key to the same pre-shared key that was configured for the AnywhereUSB Plus-1 (**testkey**):

```
(config vpn ipsec tunnel ipsec_gre2)> auth secret testkey
(config vpn ipsec tunnel ipsec_gre2)>
```

5. Set the remote endpoint to public IP address of the AnywhereUSB Plus-1 device:

```
(config vpn ipsec tunnel ipsec_gre2)> remote hostname 192.168.100.1
(config vpn ipsec tunnel ipsec_gre2)>
```

6. Add a policy:

```
(config vpn ipsec tunnel ipsec_gre2)> add policy end
(config vpn ipsec tunnel ipsec_gre2 policy 0)>
```

7. Set the local network policy type to **custom**:

```
(config vpn ipsec tunnel ipsec_gre2 policy 0)> local type custom
(config vpn ipsec tunnel ipsec_gre2 policy 0)>
```

8. Set the local network address to the IP address and subnet of the local GRE tunnel, **172.30.0.2/32**:

```
(config vpn ipsec tunnel ipsec_gre2 policy 0)> local custom 172.30.0.2/32
(config vpn ipsec tunnel ipsec_gre2 policy 0)>
```

9. Set the remote network address to the IP address and subnet of the remote GRE tunnel, **172.30.0.1/32**:

```
(config vpn ipsec tunnel ipsec_gre2 policy 0)> remote network 172.30.0.1/32
(config vpn ipsec tunnel ipsec_gre2 policy 0)>
```

10. Save the configuration and apply the change:

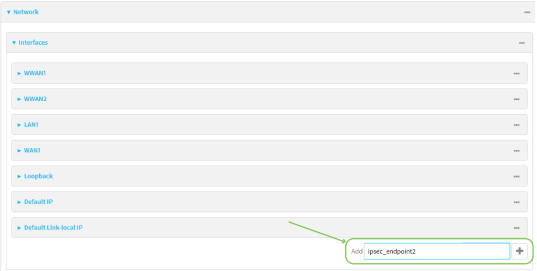
```
(config vpn ipsec tunnel ipsec_gre2 policy 0)> save
Configuration saved.
>
```

Task two: Create an IPsec endpoint interface

WebUI

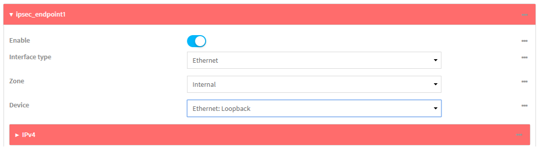
1. Click **Network** > **Interfaces**.

2. For **Add Interface**, type **ipsec_endpoint2** and click ♑



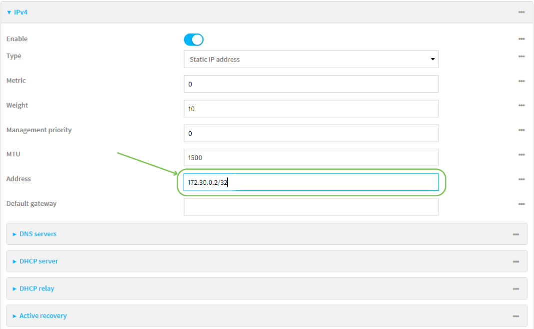
Add: ipsec_endpoint2

3. For **Zone**, select **Internal**.
4. For **Device**, select **Ethernet: loopback**.



Enable: ●
Interface type: Ethernet
Zone: Internal
Device: Ethernet: Loopback

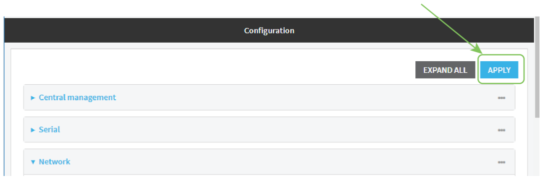
5. Click to expand **IPv4**.
6. For **Address**, type the IP address of the local GRE tunnel, **172.30.0.2/32**.



Enable: ●
Type: Static IP address
Metric: 0
Weight: 10
Management priority: 0
MTU: 1500
Address: 172.30.0.2/32
Default gateway:

7. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

2. Add an interface named **ipsec_endpoint2**:

```
(config)> add network interface ipsec_endpoint2
(config network interface ipsec_endpoint2)>
```

3. Set the zone to **internal**:

```
(config network interface ipsec_endpoint2)> zone internal
(config network interface ipsec_endpoint2)>
```

4. Set the device to **/network/device/loopback**:

```
(config network interface ipsec_endpoint2)> device /network/device/loopback
(config network interface ipsec_endpoint2)>
```

5. Set the IPv4 address to the IP address of the local GRE tunnel, **172.30.0.2/32**:

```
(config network interface ipsec_endpoint2)> ipv4 address 172.30.0.2/32
(config network interface ipsec_endpoint2)>
```

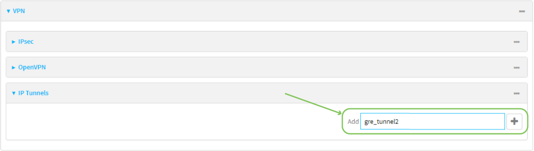
6. Save the configuration and apply the change:

```
(config vpn ipsec tunnel ipsec_endpoint2)> save
Configuration saved.
>
```

Task three: Create a GRE tunnel

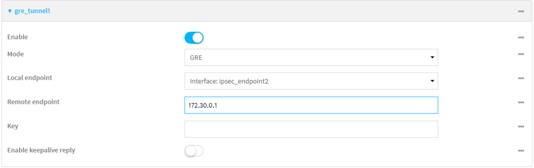
WebUI

1. Click **VPN** > **IP Tunnels**.
2. For **Add IP Tunnel**, type **gre_tunnel2** and click ♑



Add gre_tunnel2

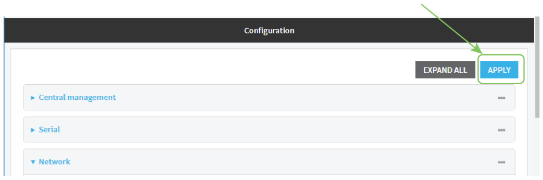
3. For **Local endpoint**, select the IPsec endpoint interface created in Task two (**Interface: ipsec_endpoint2**).
4. For **Remote endpoint**, type the IP address of the GRE tunnel on AnywhereUSB Plus-1, **172.30.0.1**.



Enable ●
Mode GRE
Local endpoint Interface: ipsec_endpoint2
Remote endpoint 172.30.0.1
Key
Enable keepalive reply ○

5. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

2. Add a GRE tunnel named **gre_tunnel2**:

```
(config)> add vpn iptunnel gre_tunnel2
(config vpn iptunnel gre_tunnel2)>
```

3. Set the local endpoint to the IPsec endpoint interface created in Task two (**/network/interface/ipsec_endpoint2**):

```
(config vpn iptunnel gre_tunnel2)> local /network/interface/ipsec_endpoint2
(config vpn iptunnel gre_tunnel2)>
```

4. Set the remote endpoint to the IP address of the GRE tunnel on AnywhereUSB Plus-1, **172.30.0.1**:

```
(config vpn iptunnel gre_tunnel2)> remote 172.30.0.1
(config vpn iptunnel gre_tunnel2)>
```

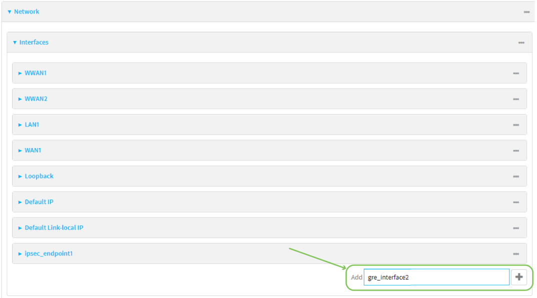
5. Save the configuration and apply the change:

```
(config vpn iptunnel gre_tunnel2)> save
Configuration saved.
>
```

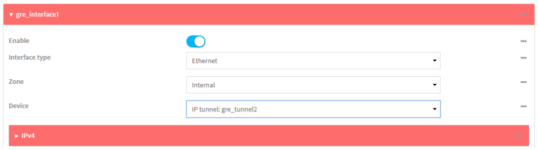
Task four: Create an interface for the GRE tunnel device

WebUI

1. Click **Network** > **Interfaces**.
2. For **Add Interface**, type **gre_interface2** and click ♑



3. For **Zone**, select **Internal**.
4. For **Device**, select the GRE tunnel created in Task three (**IP tunnel: gre_tunnel2**).



▾ gre_interface1

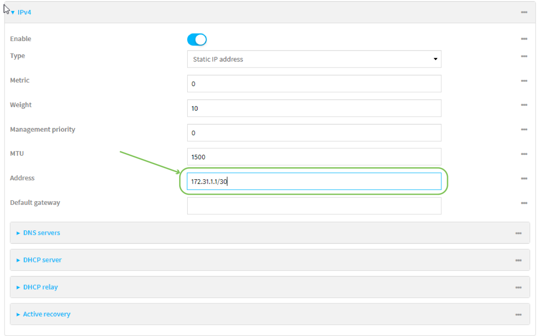
Enable

Interface type: Ethernet

Zone: Internal

Device: IP tunnel: gre_tunnel2

5. Click to expand **IPv4**.
6. For **Address**, type **172.31.1.1/30** for a virtual IP address on the GRE tunnel.



▾ IPv4

Enable

Type: Static IP address

Metric: 0

Weight: 10

Management priority: 0

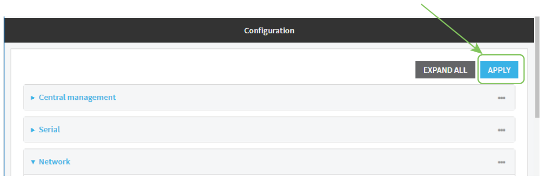
MTU: 1500

Address: 172.31.1.1/30

Default gateway

7. Click **Apply** to save the configuration and apply the change.

   The **Apply** button is located at the top of the WebUI page. You may need to scroll to the top of the page to locate it.



Command line

1. At the command line, type **config** to enter configuration mode:

```
> config
(config)>
```

2. Add an interface named **gre_interface2**:

```
(config)> add network interface gre_interface2
(config network interface gre_interface2)>
```

3. Set the zone to **internal**:

```
(config network interface gre_interface2)> zone internal
(config network interface gre_interface2)>
```

4. Set the device to the GRE tunnel created in Task three (**/vpn/iptunnel/gre_tunnel2**):

   ```
   (config network interface gre_interface2)> device /vpn/iptunnel/gre_tunnel2
   (config network interface gre_interface2)>
   ```

5. Set **172.31.0.1/30** as the virtual IP address on the GRE tunnel:

   ```
   (config network interface gre_interface2)> ipv4 address 172.31.1.1/30
   (config network interface gre_interface2)>
   ```

6. Save the configuration and apply the change:

   ```
   (config network interface gre_interface2)> save
   Configuration saved.
   >
   ```

7. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Command line interface

This chapter contains the following topics:

Access the command line interface

You can access the AnywhereUSB Plus command line interface using an SSH connection or a serial connection. You can use an open-source terminal software, such as PuTTY or TeraTerm, to access the device through one of these mechanisms.

You can also access the command line interface in the WebUI by using the **Terminal**, or the Digi Remote Manager by using the **Console**.

To access the command line, your device must be configured to allow access, and you must log in as a user who has been configured for the appropriate access. For further information about configuring access to these services, see:

- WebUI: Configure the web administration service
- SSH: Configure SSH access

Log in to the command line interface

Command line

1. Connect to the AnywhereUSB Plus device by using a serial connection, SSH, or the **Terminal** in the WebUI or the **Console** in the Digi Remote Manager. See Access the command line interface for more information.
    - For serial connections, the default configuration is:
        - **115200** baud rate
        - **8** data bits
        - **no** parity
        - **1** stop bit
        - **no** flow control
    - For SSH connections, enter the device's default IP address.
2. At the login prompt, enter the username and password of a user with Admin access:

```
login: admin
Password: **********
```

   The default username is **admin**. The default unique password for your device is printed on the device label.

3. Depending on the device configuration, you may be presented with another menu, for example:

```
Access selection menu:

      a: Admin CLI
      1: Serial: port1       (9600,8,1,none,none)
      2: Serial: port2       (9600,8,1,none,none)
      q: Quit

Select access or quit [admin] :
```

   Type **a** or **admin** to access the AnywhereUSB Plus command line.

You will now be connected to the Admin CLI:

```
Connecting now, 'exit' to disconnect from Admin CLI ...

>
```

See Command line interface for detailed instructions on using the command line interface.

Exit the command line interface

Command line

1. At the command prompt, type **exit**.

```
> exit
```

2. Depending on the device configuration, you may be presented with another menu, for example:

```
Access selection menu:

       a: Admin CLI
       1: Serial: port1        (9600,8,1,none,none)
       2: Serial: port2        (9600,8,1,none,none)
       q: Quit

Select access or quit [admin] :
```

Type **q** or **quit** to exit.

Execute a command from the web interface

1. Log into the AnywhereUSB Plus WebUI as a user with Admin access.
2. At the main menu, click **Terminal**. The device console appears.

```
AnywhereUSB Plus login:
```

3. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

   The Admin CLI prompt appears.

```
>
```

Display help for commands and parameters

The help command

When executed from the root command prompt, **help** displays information about autocomplete operations, how to move the cursor on the AnywhereUSB Plus command line, and other keyboard shortcuts:

```
> help

 Commands
 -------------------------------------------------------------------------------
 ?             Show commands help
 <Tab>         Tab completion, displays all valid commands to complete command,
               if only one command is possible, it is used
 <Space>       Like tab except shortest prefix is used if command is valid
 <Enter>       Enter an input. If quoting then a new line is created instead. If
               the input is invalid then characters will be deleted until a
               prefix for a valid command is found.
 Ctrl + A      Move cursor to start of line
 Ctrl + E      Move cursor to end of line
 Ctrl + W      Delete word under cursor until start of line or [\',", ,\,/,.]
 Ctrl + R      If the current input is invalid then characters will be deleted
               until a prefix for a valid command is found.
 Ctrl + left   Jump cursor left until start of line or [\',", ,\,/,.]
 Ctrl + right  Jump cursor right until start of line or [\',", ,\,/,.]

>
```

The question mark (?) command

When executed from the root command prompt, **?** displays available commands:

```
> ?

 Commands
 -------------------------------------------------------------------------------
 config      View and modify the configuration
 exit        Exit the CLI
 cp          Copy a file or directory.
 help        Show CLI editing and navigation commands.
 ls          List a directory.
 mkdir       Create a directory.
 modem       Modem commands.
 more        View a file.
 mv          Move a file or directory.
 ping        Ping a host.
 reboot      Reboot the system.
 rm          Remove a file or directory.
 scp         Copy a file or directory over SSH.
 show        Show instance statistics.
 system      System commands.
 traceroute  Print the route packets trace to network host.
 update      Update firmware.
```

```
>
```

Display help for individual commands

When included with a command name, both **?** and **help** provide further information about the command. For example:

1. To display further information about the **show** command, type either **show ?** or **show help**:

```
> show ?

 Commands
 --------------------------------------------------------------------------
 arp          Show ARP tables.cloudShow drm statistics.
 cloud        Show drm statistics
 config       Show config deltas.
 dhcp-lease   Show DHCP leases.
 event        Show event list
 ipsec        Show IPsec statistics.
 log          Show syslog.
 manufacture  Show manufacturer information.
 modem        Show modem statistics.
 network      Show network interface statistics.
 openvpn      Show OpenVPN statistics.
 route        Show IP routing information.
 serial       Show serial statistics.
 system       Show system statistics.
 version      Show firmware version.

 > show
```

Use the Tab key or the space bar to display abbreviated help

When executed from the root command prompt, pressing the **Tab** key or the space bar displays an abbreviated list of available commands:

Similar behavior is available with any command name:

```
> config network interface <space>
..               ...              defaultip        defaultlinklocal lan
loopback
> config network interface
```

Auto-complete commands and parameters

When entering a command and parameter, press the **Tab** key to cause the command line interface to auto-complete as much of the command and parameter as possible. Typing the space bar has similar behavior. If multiple commands are available that will match the entered text, auto-complete is not performed and the available commands are displayed instead.

Auto-complete applies to these command elements only :

- Command names. For example, typing **net<Tab>** auto-completes the command as **network**.
- Parameter names. For example:
  - **ping *hostname* int<Tab>** auto-completes the parameter as **interface**.
  - **system b<Tab>** auto-completes the parameter as **backup**.
- Parameter values, where the value is one of an enumeration or an on|off type; for example:

  ```
  (config)> serial port1 enable t<Tab>
  ```

  auto-completes to

  ```
  (config)> serial port1 enable true
  ```

Auto-complete does not function for:

- Parameter values that are string types.
- Integer values.
- File names.
- Select parameters passed to commands that perform an action.

Available commands

The following commands are available from the Admin CLI prompt:

Command	Description
config	Used to view and modify the configuration. See Device configuration using the command line interface for more information about using the **config** command.
exit	Exits the CLI.
cp	Copies a file or directory.
help	Displays: - CLI editing and navigation commands, when executed from the root of the Admin CLI prompt. - Available commands, syntax diagram, and parameter information, when executed in conjunction with another command. See Display help for commands and parameters for information about the **help** command.
ls	Lists the contents of a directory.
mkdir	Creates a directory.
modem	Executes modem commands.
more	Displays the contents of a file.
mv	Moves a file or directory.
ping	Pings a remote host using Internet Control Message Protocol (ICMP) Echo Request messages.
reboot	Reboots the AnywhereUSB Plus device.
rm	Removes a file.
scp	Uses the secure copy protocol (SCP) to transfer files between the AnywhereUSB Plus device and a remote host. See Use the scp command for information about using the **scp** command.
show	Displays information about the device and the device's configuration. See Display status and statistics using the show command for more information about the show command.
system	Issues commands related to system functionality.
traceroute	Sends and tracks route packets to a destination host.
update	Updates the device firmware.

Note For commands that operate on the AnywhereUSB Plus's file system, such as the **cp**, **ls**, and **mkdir** commands, see File system for information about the file system, including how to copy, move and delete files and directories.

Use the scp command

The **scp** command uses Secure Copy Protocol (SCP) to transfer files between the AnywhereUSB Plus device and a remote host.

Required configuration items

- The hostname or IP address of the remote host.
- The username and password of the user on the remote host.
- Whether the file is being copied to the AnywhereUSB Plus device from a remote host, or to the remote host from the AnywhereUSB Plus device.
    - If the file is being copied to the AnywhereUSB Plus device from a remote host:
        - The path and filename of the file on the remote host that will be copied to the AnywhereUSB Plus device.
        - The location on the AnywhereUSB Plus device where the file will be copied.
    - If the file is being copied to a remote host from the AnywhereUSB Plus device:
        - The path and filename of the file on the AnywhereUSB Plus device that will be copied to the remote host.
        - The location on the remote host where the file will be copied.

Copy a file from a remote host to the AnywhereUSB Plus device

To copy a file from a remote host to the AnywhereUSB Plus device, use the scp command as follows:

```
> scp host hostname-or-ip user username remote remote-path local local-path to
local
```

where:

- *hostname-or-ip* is the hostname or ip address of the remote host.
- *username* is the name of the user on the remote host.
- *remote-path* is the path and filename of the file on the remote host that will be copied to the AnywhereUSB Plus device.
- *local-path* is the location on the AnywhereUSB Plus device where the copied file will be placed.

For example:

To copy firmware from a remote host with an IP address of 192.168.4.1 to the /etc/config directory on the AnywhereUSB Plus device, issue the following command:

```
> scp host 192.168.4.1 user admin remote /home/admin/bin/AnywhereUSB Plus-
19.11.72.17.bin local /etc/config/ to local
admin@192.168.4.1's password: adminpwd
AnywhereUSB Plus-19.11.72.17.bin                       100%    36MB    11.1MB/s        00:03
>
```

Transfer a file from the AnywhereUSB Plus device to a remote host

To copy a file from the AnywhereUSB Plus device to a remote host, use the scp command as follows:

```
> scp host hostname-or-ip user username remote remote-path local local-path to
remote
```

where:

- *hostname-or-ip* is the hostname or ip address of the remote host.
- *username* is the name of the user on the remote host.
- *remote-path* is the location on the remote host where the file will be copied.
- *local-path* is the path and filename on the AnywhereUSB Plus device.

For example:

To copy a support report from the AnywhereUSB Plus device to a remote host at the IP address of 192.168.4.1:

1. Use the **system support-report** command to generate the report:

```
> system support-report /etc/config/
Saving support report to /etc/config/support-report-0040D0133536-19-11-11-
13.22.15.bin
Support report saved.
>
```

2. Use the **scp** command to transfer the report to a remote host:

```
> scp host 192.168.4.1 user admin remote /home/admin/temp/ local
/etc/config/support-report-00:40:D0:13:35:36-19-11-11-13.22.15.bin to
remote
admin@192.168.4.1's password: adminpwd
support-report-0040D0133536-19-11-11-13.22.15.bin
>
```

Display status and statistics using the show command

The AnywhereUSB Plus **show** command display status and statistics for various features.

For example:

show config

The show config command displays all the configuration settings for the device that have been changed from the default settings. This is a particularly useful when troubleshooting the device.

```
> show config

auth tacacs+ service "login"
auth user admin password
"$2a$05$WlJQhquI7BgsytkpobKhaeLPtWraGANBcrlEaJX/wJv63JENW/HOu"
add auth user test
add auth user test group end "admin"
add auth user test group end "serial"
auth user test password
```

```
"$2a$05$RdGYz1sLKbWrqe6cZjlsd.otg03JZR6n9939XV6EYWUSP0tMAzO5W"
network interface lan ipv4 type "dhcp"
network interface lan zone "external"
network interface modem modem apn 0 apn "10569.mcs"
network interface modem modem apn_lock "true"
schema version "445"

>
```

show system

The show system command displays system information and statistics for the device, including CPU usage.

```
> show system

Model                    : Digi AnywhereUSB Plus
Serial Number            : AnywhereUSB Plus-000068
Hostname                 : TAnywhereUSB Plus
MAC                      : 00:40:D0:13:35:36

Hardware Version         : 50001947-01 1P
Firmware Version         : 19.11.72.17
Bootloader Version       : 1

Current Time             : Mon, 11 November 2019 21:14:12
CPU                      : 2.7
Uptime                   : 23 hours, 30 minutes, 21 seconds (84621s)
Temperature              : 38C

Description              : Digi AnywhereUSB Plus
Contact                  : username

>
```

show network

The show network command displays status and statistics for network interfaces.

```
> show network

 Interface         Proto  Status   Address
 ----------------  -----  -------  -------------------------------
 defaultip         IPv4   up       192.168.210.1/24
 defaultlinklocal  IPv4   up       169.254.100.100/16
 lan              IPv4   up       192.168.2.1
 lan              IPv6   up       0:0:0:0:0:ffff:c0a8:301
 loopback          IPv4   up       127.0.0.1/8
 wan              IPv4   up       192.168.3.1/24
 wan              IPv6   up       fd00:2704::240:ffff:fe80:120/64

>
```

Device configuration using the command line interface

The **config** command allows for device configuration from the command line. All configuration tasks that can be performed by using the WebUI can also be performed by using the **config** command.

There are two ways to invoke the **config** command from the CLI:

- Execute the **config** command and parameters at the root prompt. See Execute configuration commands at the root Admin CLI prompt for more information.
- Enter configuration mode by executing the **config** command without any parameters. See Configuration mode for more information.

Execute configuration commands at the root Admin CLI prompt

You can execute the **config** command at the root Admin CLI prompt with any appropriate parameters. When the **config** command is used in this way, changes to the device's configuration are automatically saved when the command is executed.

For example, to disable the SSH service from the root prompt, enter the following command:

```
> config service ssh enable false
>
```

The AnywhereUSB Plus device's ssh service is now disabled.

Note When the **config** command is executed at the root prompt, certain configuration actions that are available in configuration mode cannot be performed. This includes validating configuration changes, canceling and reverting configuration changes, and performing actions on elements in lists. See Configuration mode for information about using configuration mode.

Display help for the config command from the root Admin CLI prompt

Display additional configuration commands, as well as available parameters and values, by entering the question mark (?) character after the **config** command.

1. For example:

   ```
   > config ?
   ```

   Will display the following help information:

   ```
   > config ?

   Additional Configuration
   ---------------------------------------------------------------------------
   application                Custom scripts
   auth                       Authentication
   cloud                      Central management
   firewall                   Firewall
   monitoring                 Monitoring
   network                    Network
   serial                     Serial
   service                    Services
   system                     System
   vpn                        VPN
   ```

```
Run "config" with no arguments to enter the configuration editing mode.

> config
```

2. You can then display help for the additional configuration commands. For example, to display help for the **config service** command:

```
> config service ?
Services

Additional Configuration
--------------------------------------------------------------------------
dns                       DNS
mdns                      Service Discovery (mDNS)
multicast                 Multicast
ntp                       NTP
remote_control            Remote control
snmp                      SNMP
ssh                       SSH
web_admin                 Web administration

> config service
```

3. Next, display help for the **config service ssh** command:

```
> config service ssh ?

SSH: An SSH server for managing the device.

Parameters                Current Value
--------------------------------------------------------------------------
enable                    true           Enable
key                       [private]      Private key
port                      22             Port

Additional Configuration
--------------------------------------------------------------------------
acl                       Access control list
mdns

> config service ssh
```

4. Lastly, display the allowed values and other information for the **enable** parameter:

```
> config service ssh enable ?

Enable: Enable the service.
Format: true, false, yes, no, 1, 0
Default value: true
Current value: true

> config service ssh enable
```

Configuration mode

Configuration mode allows you to perform multiple configuration tasks and validate the changes prior to saving them. You can cancel all changes without saving them at any time. Configuration changes do not take effect until the configuration is saved.

Enable configuration mode

To enable configuration mode, at the root prompt, enter the **config** command without any parameters:

```
> config
(config)>
```

When the command line is in configuration mode, the prompt will change to include **(config)**, to indicate that you are currently in configuration mode.

Enter configuration commands in configuration mode

There are two ways to enter configuration commands while in configuration mode:

- Enter the full command string from the config prompt.

  For example, to disable the ssh service by entering the full command string at the config prompt:

  ```
  (config)> service ssh enable false
  (config)>
  ```

- Execute commands by moving through the configuration schema.

  For example, to disable the ssh service by moving through the configuration and then executing the **enable false** command:

  1. At the **config** prompt, enter **service** to move to the **service** node:

     ```
     (config)> service
     (config service)>
     ```

  2. Enter **ssh** to move to the **ssh** node:

     ```
     (config service)> ssh
     (config service ssh)>
     ```

  3. Enter **enable false** to disable the **ssh** service:

     ```
     (config service ssh)> enable false
     (config service ssh)>
     ```

  See Move within the configuration schema for more information about moving within the configuration.

Save changes and exit configuration mode

To save changes that you have made to the configuration while in configuration mode, use **save**. The save command automatically validates the configuration changes; the configuration will not be saved if it is not valid. Note that you can also validate configuration changes at any time while in configuration mode by using the **validate** command.

```
(config)> save
Configuration saved.
>
```

After using **save** to save changes to the configuration, you will automatically exit configuration mode. To return to configuration mode, type **config** again.

Exit configuration mode without saving changes

You can discard any unsaved configuration changes and exit configuration mode by using the **cancel** command:

```
(config)> cancel
>
```

After using **cancel** to discard unsaved changes to the configuration, you will automatically exit configuration mode.

Configuration actions

In configuration mode, configuration actions are available to perform tasks related to saving or canceling the configuration changes, and to manage items and elements in lists. The commands can be listed by entering a question mark (**?**) at the **config** prompt.

The following actions are available:

Configuration actions	Description
cancel	Discards unsaved configuration changes and exits configuration mode.
save	Saves configuration changes and exits configuration mode.
validate	Validates configuration changes.
revert	Reverts the configuration to default settings. See The revert command for more information.
show	Displays configuration settings.
add	Adds a named element, or an element in a list. See Manage elements in lists for information about using the **add** command with lists.
del	Deletes a named element, or an element in a list. See Manage elements in lists for information about using the **del** command with lists.
move	Moves elements in a list. See Manage elements in lists for information about using the **move** command with lists.

Display command line help in configuration mode

Display additional configuration commands, as well as available parameters and values, by entering the question mark (?) character at the **config** prompt. For example:

1. Enter **?** at the **config** prompt:

```
(config)> ?
```

This will display the following help information:

```
(config)> ?

 Additional Configuration
 ---------------------------------------------------------------------------
 application                Custom scripts
 auth                       Authentication
 cloud                      Central management
 firewall                   Firewall
 monitoring                 Monitoring
 network                    Network
 serial                     Serial
 service                    Services
 system                     System
 vpn                        VPN

(config)>
```

2. You can then display help for the additional configuration commands. For example, to display help for the **config service** command, use one of the following methods:
   - At the **config** prompt, enter **service ?**:

   ```
   (config)> service ?
   ```

   - At the **config** prompt:
     a. Enter **service** to move to the **service** node:

     ```
     (config)> service
     (config service)>
     ```

     b. Enter **?** to display help for the **service** node:

     ```
     (config service)> ?
     ```

Either of these methods will display the following information:

```
config> service ?

Services

 Additional Configuration
 ---------------------------------------------------------------------------
 dns                        DNS
```

```
  mdns                        Service Discovery (mDNS)
  multicast                   Multicast
  ntp                         NTP
  remote_control              Remote control
  snmp                        SNMP
  ssh                         SSH

  web_admin                   Web administration

(config)> service
```

3. Next, to display help for the **service ssh** command, use one of the following methods:
   - At the **config** prompt, enter **service ssh ?**:

     ```
     (config)> service ssh ?
     ```

   - At the **config** prompt:
     a. Enter **service** to move to the **service** node:

        ```
        (config)> service
        (config service)>
        ```

     b. Enter **ssh** to move to the **ssh** node:

        ```
        (config service)> ssh
        (config service ssh)>
        ```

     c. Enter **?** to display help for the **ssh** node:

        ```
        (config service ssh)> ?
        ```

   Either of these methods will display the following information:

```
(config)> service ssh ?

SSH: An SSH server for managing the device.

  Parameters                  Current Value
  --------------------------------------------------------------------------
  enable                      true           Enable
  key                         [private]      Private key
  port                        22             Port

  Additional Configuration
  --------------------------------------------------------------------------
  acl                         Access control list
  mdns

(config)> service ssh
```

4. Lastly, to display allowed values and other information for the **enable** parameter, use one of the following methods:

- At the **config** prompt, enter **service ssh enable ?**:

  ```
  (config)> service ssh enable ?
  ```

- At the **config** prompt:
  a. Enter **service** to move to the **service** node:

     ```
     (config)> service
     (config service)>
     ```

  b. Enter **ssh** to move to the **ssh** node:

     ```
     (config service)> ssh
     (config service ssh)>
     ```

  c. Enter **enable ?** to display help for the **enable** parameter:

     ```
     (config service ssh)> enable ?
     (config service ssh)>
     ```

Either of these methods will display the following information:

```
(config)> service ssh enable ?

 Enable: Enable the service.
 Format: true, false, yes, no, 1, 0
 Default value: true
 Current value: true

(config)> service ssh enable
```

Move within the configuration schema

You can perform configuration tasks at the CLI by moving within the configuration.

- Move forward one node in the configuration by entering the name of an Additional Configuration option:
  1. At the **config** prompt, type **service** to move to the **service** node:

     ```
     (config)> service
     (config service)>
     ```

  2. Type **ssh** to move to the **ssh** node:

     ```
     (config service)> ssh
     (config service ssh)>
     ```

  3. Type **acl** to move to the **acl** node:

     ```
     (config service ssh)> acl
     (config service ssh acl)>
     ```

4. Type **zone** to move to the **zone** node:

   ```
   (config service ssh acl)> zone
   (config service ssh acl zone)>
   ```

You can also enter multiple nodes at once to move multiple steps in the configuration:

```
(config)> service ssh acl zone
(config service ssh acl zone)>
```

- Move backward one node in the configuration by entering two periods (**..**):

  ```
  (config service ssh acl zone)> ..
  (config service ssh acl)>
  ```

  You can also move back multiples nodes in the configuration by typing multiple sets of two periods:

  ```
  (config service ssh acl zone)> .. .. ..
  (config service)>
  ```

- Move to the root of the config prompt from anywhere within the configuration by entering three periods (**...**):

  ```
  (config service ssh acl zone)> ...
  (config)>
  ```

Manage elements in lists

While in configuration mode, you can use the **add**, **del**, and **move** action commands to manage elements in a list. When working with lists, these actions require an index number to identify the list item that will be acted on.

Add elements to a list

When used with parameters that contains lists of elements, the **add** command is used to add an element to the list.

For example, to add an authentication method:

1. Display current authentication method by using the **show** command:

   ```
   (config)> show auth method
   0 local
   (config)>
   ```

2. Add an authentication method by using the **add *index_item*** command. For example:
   - To add the TACACS+ authentication method to the beginning of the list, use the index number **0**:

     ```
     (config)> add auth method 0 tacacs+
     (config)> show auth method
     0 tacacs+
     ```

```
1 local
(config)>
```

- To add the TACACS+ authentication method to the end of the list, use the **end** keyword:

```
(config)> add auth method end tacacs+
(config)> show auth method
0 local
1 tacacs+
(config)>
```

The end keyword

As demonstrated above, the **end** keyword is used to add an element to the end of a list. Additionally, the **end** keyword is used to add an element to a list that does not have any elements.

For example, to add an authentication group to a user that has just been created:

1. Use the **show** command to verify that the user is not currently a member of any groups:

```
(config)> show auth user new-user group
(config)>
```

2. Use the **end** keyword to add the admin group to the user's configuration:

```
(config)> add auth user new-user group end admin
(config)>
```

3. Use the **show** command again to verify that the admin group has been added to the user's configuration:

```
(config)> show auth user new-user group
0 admin
(config)>
```

Delete elements from a list

When used with parameters that contains lists of elements, the **del** command is used to delete an element in the list.

For example, to delete an authentication method:

1. Use the **show** command to display current authentication method configuration:

```
(config)> show auth method
0 local
1 tacacs+
2 radius
(config)>
```

2. Delete one of the authentication methods by using the **del *index_number*** command. For example:

   a. To delete the local authentication method, use the index number **0**:

```
(config)> del auth method 0
(config)>
```

b. Use the **show** command to verify that the local authentication method was removed:

```
(config)> show auth method
0 tacacs+
1 radius
(config)>
```

Move elements within a list

Use the **move** command to reorder elements in a list.

For example, to reorder the authentication methods:

1. Use the **show** command to display current authentication method configuration:

```
(config)> show auth method
0 local
1 tacacs+
2 radius
(config)>
```

2. To configure the device to use TACACS+ authentication first to authenticate a user, use the **move** ***index_number_1 index_number_2*** command:

```
(config)> move auth method 1 0
(config)>
```

3. Use the **show** command again to verify the change:

```
(config)> show auth method
0 tacacs+
1 local
2 radius
(config)>
```

The revert command

The **revert** command is used to revert changes to the AnywhereUSB Plus device's configuration and restore default configuration settings. The behavior of the revert command varies depending on where in the configuration hierarchy the command is executed, and whether the optional **path** parameter is used. After executing the revert command, you must save the configuration changes by using the **save** command. You can also discard the configuration changes by using the **cancel** command.

CAUTION! The **revert** command reverts all changes to the default configuration, not only unsaved changes.

Revert all configuration changes to default settings

To discard all configuration changes and revert to default settings, use the **revert** command at the config prompt without the optional **path** parameter:

1. At the config prompt, enter **revert**:

   ```
   (config)> revert
   (config)>
   ```

2. Set the password for the admin user prior to saving the changes:

   ```
   (config)> auth user admin password pwd
   (config)>
   ```

3. Save the configuration and apply the change:

   ```
   (config)> save
   Configuration saved.
   >
   ```

4. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Revert a subset of configuration changes to the default settings

There are two methods to revert a subset of configuration changes to the default settings.

- Enter the **revert** command with the **path** parameter. For example, to revert all changes to the authentication methods configuration:
  1. Enter the **revert** command with the **path** set to **auth method**:

     ```
     (config)> revert auth method
     (config)>
     ```

  2. Save the configuration and apply the change:

     ```
     (config)> save
     Configuration saved.
     >
     ```

  3. Type **exit** to exit the Admin CLI.

     Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.
- Move to the location in the configuration and enter the **revert** command without the **path** parameter. For example:
  1. Change to the auth method node:

     ```
     (config)> auth method
     (config auth method)>
     ```

  2. Enter the **revert** command:

     ```
     (config auth method)> revert
     (config auth method)>
     ```

3. Save the configuration and apply the change:

   ```
   (config)> save
   Configuration saved.
   >
   ```

4. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

- You can also use a combination of both of these methods:
  1. Change to the **auth** node:

     ```
     (config)> auth
     (config auth)>
     ```

  2. Enter the **revert** command with the **path** set to **method**:

     ```
     (config auth)> revert method
     (config auth)>
     ```

  3. Save the configuration and apply the change:

     ```
     (config)> save
     Configuration saved.
     >
     ```

  4. Type **exit** to exit the Admin CLI.

     Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Enter strings in configuration commands

For string parameters, if the string value contains a space, the value must be enclosed in quotation marks. For example, to assign a descriptive name for the device using the **system** command, enter:

```
(config)> system description "Digi AnywhereUSB Plus"
```

Example: Create a new user by using the command line

In this example, you will use the AnywhereUSB Plus command line to create a new user, provide a password for the user, and assign the user to authentication groups.

1. Log into the AnywhereUSB Plus command line as a user with Admin access.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **admin** to access the Admin CLI.

2. At the command line, type **config** to enter configuration mode:

   ```
   > config
   (config)>
   ```

3. At the config prompt, create a new user with the username **user1**:
   - Method one: Create a user at the root of the config prompt:

     ```
     (config)> add auth user user1
     (config auth user user1)>
     ```

   - Method two: Create a user by moving through the configuration:
     a. At the config prompt, enter **auth** to move to the **auth** node:

        ```
        (config)> auth
        (config auth)>
        ```

     b. Enter **user** to move to the **user** node:

        ```
        (config auth)> user
        (config auth user)>
        ```

     c. Create a new user with the username **user1**:

        ```
        (config auth user)> add user1
        (config auth user user1)>
        ```

4. Configure a password for the user:

   ```
   (config auth user user1)> password pwd1
   (config auth user user1)>
   ```

5. List available authentication groups:

   ```
   (config auth user user1)> show .. .. group

   admin
       acl
           admin
               enable true
           nagios
               enable false
           openvpn
               enable false
               no tunnels
           portal
               enable false
               no portals
           serial
               enable false
               no ports
           shell
               enable false

   serial
       acl
           admin
   ```

```
            enable true
        nagios
            enable false
        openvpn
            enable false
            no tunnels
        portal
            enable false
            no portals
        serial
            enable true
                ports
                    0 port1
        shell
            enable false
(config auth user user1)>
```

6. Add the user to the admin group:

```
(config auth user user1)> add group end admin
(config auth user user1)>
```

7. Save the configuration and apply the change:

```
(config auth user user1)> save
Configuration saved.
>
```

8. Type **exit** to exit the Admin CLI.

   Depending on your device configuration, you may be presented with an **Access selection menu**. Type **quit** to disconnect from the device.

Command line reference

analyzer

Analyzer commands.

analyzer clear name STRING

Clears the traffic captured by the analyzer.

Parameters

name

Name of the capture filter to use.

Ref: /network/analyzer

Type: string

analyzer save name STRING PATH

Saves the current captured traffic to a file.

Parameters

name

Name of the capture filter to use.

Ref: /network/analyzer

Type: string

References

The file path to save the captured traffic to.

Type: string

analyzer start name STRING

Start a capture session of packets on this devices interfaces.

Parameters

name

Name of the capture filter to use.

Ref: /network/analyzer

Type: string

analyzer stop name STRING

Stops the traffic capture session.

Parameters

name

Name of the capture filter to use.

Ref: /network/analyzer

Type: string

cp

cp commands.

[force] SOURCE DESTINATION

Copy a file or directory.

Parameters

force

Do not ask to overwrite the destination file if it exists.
Syntax: {*True*|*False*}
Type: boolean

source

The source file or directory to copy.
Type: string

destination

The destination path to copy the source file or directory to.
Type: string

help

Show CLI editing and navigation commands.

Parameters

None

ls

ls [show-hidden] PATH

List a directory.

Parameters

show-hidden

Show hidden files and directories. Hidden filenames begin with '.'.

Syntax: {*True*|*False*}

Type: boolean

References

List files and directories under this path.

Type: string

mkdir

mkdir PATH

Create a directory. Parent directories are created as needed.

Parameters

References

The directory path to create.

Type: string

modem

Modem commands.

modem at [imei STRING] [name STRING] CMD

Send an AT command to the modem and display the response.

Parameters

imei

The IMEI of the modem to execute this CLI command on.

Optional: True

Type: string

name

The configured name of the modem to execute this CLI command on.

Optional: True

Ref: /network/modem

Type: string

cmd

The AT command string.

Type: string

modem at-interactive [imei STRING] [name STRING]

Start an AT command session on the modem's AT serial port.

Parameters

imei

The IMEI of the modem to execute this CLI command on.

Optional: True

Type: string

name

The configured name of the modem to execute this CLI command on.

Optional: True

Ref: /network/modem

Type: string

modem pin

PIN commands.

pin change [imei *STRING*] [name *STRING*] OLD-PIN NEW-PIN

Change the SIM's PIN code. Warning: Attempting to use an incorrect PIN code may PUK lock the SIM.

Parameters

imei

The IMEI of the modem to execute this CLI command on.

Optional: True

Type: string

name

The configured name of the modem to execute this CLI command on.

Optional: True

Ref: /network/modem

Type: string

old-pin

The SIM's PIN code.

Type: string

new-pin

The PIN code to change to.

Type: string

pin disable [imei *STRING*] [name *STRING*] PIN

Disable the PIN lock on the SIM card that is active in the modem. Warning: Attempting to use an incorrect PIN code may PUK lock the SIM.

Parameters

imei

The IMEI of the modem to execute this CLI command on.

Optional: True

Type: string

name

The configured name of the modem to execute this CLI command on.

Optional: True

Ref: /network/modem

Type: string

pin

The SIM's PIN code.

Type: string

pin enable [imei *STRING*] [name *STRING*] PIN

Enable the PIN lock on the SIM card that is active in the modem. The SIM card will need to be unlocked before each use. Warning: Attempting to use an incorrect PIN code may PUK lock the SIM.

Parameters

imei

The IMEI of the modem to execute this CLI command on.

Optional: True

Type: string

name

The configured name of the modem to execute this CLI command on.

Optional: True

Ref: /network/modem

Type: string

pin

The SIM's PIN code.

Type: string

pin status [imei *STRING*] [name *STRING*]

Print the PIN lock status and the number of PIN enable/disable/unlock attempts remaining. The SIM will be PUK locked when there are no remaining retries

Parameters

imei

The IMEI of the modem to execute this CLI command on.

Optional: True

Type: string

name

The configured name of the modem to execute this CLI command on.

Optional: True

Ref: /network/modem

Type: string

pin unlock [imei *STRING*] [name *STRING*] PIN

Temporarily unlock the SIM card with a PIN code. Set the PIN field in the modem interface's configuration to unlock the SIM card automatically before use. Warning: Attempting to use an incorrect PIN code may PUK lock the SIM.

Parameters

imei

The IMEI of the modem to execute this CLI command on.

Optional: True

Type: string

name
The configured name of the modem to execute this CLI command on.
Optional: True
Ref: /network/modem
Type: string

pin
The SIM's PIN code.
Type: string

modem puk

PUK commands.

puk status [imei *STRING*] [name *STRING*]
Print the PUK status and the number of PUK unlock attempts remaining.

Parameters

imei
The IMEI of the modem to execute this CLI command on.
Optional: True
Type: string

name
The configured name of the modem to execute this CLI command on.
Optional: True
Ref: /network/modem
Type: string

puk unlock [imei *STRING*] [name *STRING*] PUK NEW-PIN
Unlock the SIM with a PUK code from the SIM provider.

Parameters

imei
The IMEI of the modem to execute this CLI command on.
Optional: True
Type: string

name
The configured name of the modem to execute this CLI command on.
Optional: True
Ref: /network/modem
Type: string

puk

The SIM's PUK code.

Type: string

new-pin

The PIN code to change to.

Type: string

modem reset [imei STRING] [name STRING]

Reset the modem hardware (reboot it). This can be useful if the modem has stopped responding to the network or is behaving inconsistently.

Parameters

imei

The IMEI of the modem to execute this CLI command on.

Optional: True

Type: string

name

The configured name of the modem to execute this CLI command on.

Optional: True

Ref: /network/modem

Type: string

modem sim-slot [imei STRING] [name STRING] SLOT

Show or change the modem's active SIM slot. This applies only to modems with multiple SIM slots.

Parameters

imei

The IMEI of the modem to execute this CLI command on.

Optional: True

Type: string

name

The configured name of the modem to execute this CLI command on.

Optional: True

Ref: /network/modem

Type: string

slot

The SIM slot to change to.

Syntax: *(1|2|show)*

Type: string

more

more PATH

View a file.

Parameters

References

The file to view.

Type: string

mv

Move a file or directory.

mv [force] SOURCE DESTINATION

Parameters

force

Do not ask to overwrite the destination file if it exists.

Syntax: {*True*|*False*}

Type: boolean

source

The source file or directory to move.

Type: string

destination

The destination path to move the source file or directory to.

Type: string

ping

Ping a host using ICMP echo.

ping [ipv6] [countINTEGER] [interfaceSTRING] [sizeINTEGER] HOST

Parameters

count

The number of ICMP ping requests to send before terminating.

Default: 100

Minimum: 1

Syntax: {*Integer*}

Type: integer

interface

The network interface to send ping packets from when the host is reachable over a default route. If not specified, the system's primary default route will be used.

Optional: True

Ref: /network/interface

Type: string

ipv6

Use the host's IPv6 address if a hostname is given as the 'host' argument.

Syntax: {*True*|*False*}

Type: boolean

size

The number of bytes sent in the ICMP ping request.

Default: 56

Minimum: 0

Syntax: {*Integer*}

Type: integer

host

The name or address of the remote host to send ICMP ping requests to.

Syntax: {*hostname*|*IPv4_address*|*IPv6_address*}

Type: string

reboot

Reboot the system.

Parameters

None

rm

Remove a file or directory.

rm [force] PATH

Parameters

force

Force the file to be removed without asking.

Syntax: {*True*|*False*}

Type: boolean

References

The path to remove.

Type: string

scp

Copy a file or directory over SSH.

scp hostSTRINGlocalSTRING [portINTEGER] remoteSTRINGtoSTRINGuserSTRING

Parameters

host

The name or address of the remote host.

Syntax: {*hostname*|*IPv4_address*|*IPv6_address*}

Type: string

local

The file to copy to or from on the local device.

Type: string

port

The SSH port to use to connect to the remote host.

Default: 22

Maximum: 65535

Minimum: 1

Syntax: {*Integer*}

Type: integer

remote

The file to copy to or from on the remote host.

Type: string

to

Copy the file from the local device to the remote host, or from the remote host to the local device.

Syntax: *(remote*|*local)*

Type: string

user

The username to use when connecting to the remote host.

Type: string

show

Show instance status statistics.

show analyzer name STRING

Show packets from a specified analyzer capture.

Parameters

name
Name of the capture filter to use.
Ref: /network/analyzer
Type: string

show arp [ipv4|ipv6|verbose]

Show ARP tables, if no IP version is specifed IPv4 IPV6 will be displayed.

Parameters

ipv4
Display IPv4 routes. If no IP version is specifed IPv4 IPV6 will be displayed
Syntax: {*True*|*False*}
Type: boolean

ipv6
Display IPv6 routes. If no IP version is specifed IPv4 IPV6 will be displayed
Syntax: {*True*|*False*}
Type: boolean

verbose
Display more information (less concise, more detail).
Syntax: {*True*|*False*}
Type: boolean

show cloud

Show drm status statistics.

Parameters

None

show config

Show changes made to default configuration.

Parameters

None

show dhcp-lease [all|verbose]

Show DHCP leases.

Parameters

all

Show all leases (active and inactive (not in etc/config/dhcp.*lease)).
Syntax: {*True*|*False*}
Type: boolean

verbose

Display more information (less concise, more detail).
Syntax: {*True*|*False*}
Type: boolean

show event [number INTEGER] [table STRING]

Show event list (high level).

Parameters

number

Number of lines to retrieve from log.
Default: 20
Minimum: 1
Syntax: {*Integer*}
Type: integer

table

Type of event log to be displayed (status, error, info).
Optional: True
Syntax: *(status|error|info)*
Type: string

show hotspot [ip STRING] [name STRING]

Show hotspot statistics.

Parameters

ip

IP address of a specific client, to limit the status display to only this client.
Optional: True
Syntax: *IPv4_address*
Type: string

name

The configured instance name of the hotspot.

Optional: True

Ref: /network/hotspot

Type: string

show ipsec [all] [tunnel STRING]

Show IPsec status statistics.

Parameters

all

Display all tunnel including disabled tunnel.

Syntax: {*True*|*False*}

Type: boolean

tunnel

Display more details and config data for a specific IPsec tunnel.

Optional: True

Ref: /vpn/ipsec/tunnel

Type: string

show location

Show location information.

Parameters

None

show log [filter STRING] [number INTEGER]

Show system log (low level).

Parameters

filter

Filters for type of log message displayed (critical, warning, info, debug). Note, filters from the number of messages retrieved not the whole log (this can be very time consuming). If you require more messages of the filtered type, increase the number of messages retrieved using 'number'.

Optional: True

Syntax: *(critical|warning|debug|info)*

Type: string

number

Number of lines to retrieve from log.

Default: 20

Minimum: 1

Syntax: {*Integer*}

Type: integer

show manufacture [verbose]

Show manufacturer information.

Parameters

verbose

Display more information (less concise, more detail).

Syntax: {*True*|*False*}

Type: boolean

show modem [verbose] [imei STRING] [name STRING]

Show modem status and statistics.

Parameters

imei

The IMEI of the modem to execute this CLI command on.

Optional: True

Type: string

name

The configured name of the modem to execute this CLI command on.

Optional: True

Ref: /network/modem

Type: string

verbose

Display more information (less concise, more detail).

Syntax: {*True*|*False*}

Type: boolean

show network [all|verbose] [interface STRING]

Show network interface status and statistics.

Parameters

all

Display all interfaces including disabled interfaces.

Syntax: {*True*|*False*}

Type: boolean

interface

Display more details and config data for a specific network interface.

Optional: True

Ref: /network/interface

Type: string

verbose

Display more information (less concise, more detail).

Syntax: {*True*|*False*}

Type: boolean

show openvpn

Show OpenVPN status and statistics.

openvpn client [*all*] [name *STRING*]

Show OpenVPN client status statistics.

Parameters

all

Display all clients including disabled clients.

Syntax: {*True*|*False*}

Type: boolean

name

Display more details and config data for a specific OpenVPN client.

Optional: True

Ref: /vpn/openvpn/client

Type: string

openvpn server [*all*] [name *STRING*]

Show OpenVPN server status and statistics.

Parameters

all

Display all servers including disabled servers.

Syntax: {*True*|*False*}

Type: boolean

name

Display more details and config data for a specific OpenVPN server.

Optional: True

Ref: /vpn/openvpn/server

Type: string

show route [ipv4|ipv6|verbose]

Show IP routing information.

Parameters

ipv4
Display IPv4 routes.
Syntax: {*True*|*False*}
Type: boolean

ipv6
Display IPv6 routes.
Syntax: {*True*|*False*}
Type: boolean

verbose
Display more information (less concise, more detail).
Syntax: {*True*|*False*}
Type: boolean

show serial PORT

Show serial status and statistics.

Parameters

port
Display more details and config data for a specific serial port.
Optional: True
Ref: /serial
Type: string

show system [verbose]

Show system status and statistics.

Parameters

verbose
Display more information (disk usage, etc)
Syntax: {*True*|*False*}
Type: boolean

show usb

Show USB information.

Parameters
None

show version [verbose]

Show firmware version.

Parameters

verbose
Display more information (build date)
Syntax: {*True*|*False*}
Type: boolean

show web-filter

Show web filter status and statistics.

Parameters
None

show wifi

Show Wi-Fi status and statistics.

wifi ap [*all*] [name *STRING*]
Display details for Wi-Fi access points.

Parameters

all
Display all Wi-Fi access points including disabled Wi-Fi access points.
Syntax: {*True*|*False*}
Type: boolean

name
Display more details for a specific Wi-Fi access point.
Optional: True
Ref: /network/wifi/ap
Type: string

wifi client [*all*] [name *STRING*]
Display details for Wi-Fi client mode connections.

Parameters

all
Display all Wi-Fi clients including disabled Wi-Fi client mode connections.
Syntax: {*True*|*False*}
Type: boolean

name
Display more details for a specific Wi-Fi client mode connection.
Optional: True
Ref: /network/wifi/client

Type: string

system

System commands.

system backup [passphrase STRING] type STRING PATH

Save the device's configuration to a file. Archives are full backups including generated SSH keys and dynamic DHCP lease information. Command backups are a list of CLI commands required to build the device's configuration.

Parameters

passphrase

Encrypt the archive with a passphrase.

Depend: *1/type = archive*

Optional: True

Type: string

type

The type of backup file to create. Archives are full backups including generated SSH keys and dynamic DHCP lease information. CLI configuration backups are a list of CLI commands used to build the device's configuration.

Default: archive

Syntax: *(cli-config|archive)*

Type: string

References

The file path to save the backup to.

Type: string

system factory-erase

Erase the device to restore to factory defaults. All configuration and automatically generated keys will be erased.

Parameters

system restore [passphrase STRING] PATH

Restore the device's configuration from a backup archive or CLI commands file.

Parameters

passphrase

Decrypt the archive with a passphrase.

Optional: True

Type: string

References

The path to the backup file.

Type: string

system support-report PATH

Save a support report to a file and include with support requests.

Parameters

References

The file path to save the support report to.

Type: string

traceroute

Print the route packets trace to network host.

traceroute [bypass|debug|dontfragment|icmp|ipchecksums|nomap|verbose] [first_ttlINTEGER] [gatewaySTRING] [interfaceSTRING] [max_ttlINTEGER] [nqueriesINTEGER] [packetlenINTEGER] [pausemsecsINTEGER] [portINTEGER] [src_addrSTRING] [tosINTEGER] [waittimeINTEGER] HOST

Parameters

bypass

Bypass the normal routing tables and send directly to a host on an attached network.

Syntax: {*True*|*False*}

Type: boolean

debug

Enable socket level debugging.

Syntax: {*True*|*False*}

Type: boolean

dontfragment

Do not fragment probe packets.

Syntax: {*True*|*False*}

Type: boolean

first_ttl

Specifies with what TTL to start.

Default: 1

Minimum: 1

Syntax: {*Integer*}

Type: integer

gateway

Tells traceroute to add an IP source routing option to the outgoing packet that tells the network to route the packet through the specified gateway

Optional: True

Syntax: {*IPv4_address*|*IPv6_address*}

Type: string

icmp

Use ICMP ECHO for probes.

Syntax: {*True*|*False*}

Type: boolean

interface

Specifies the interface through which traceroute should send packets. By default, the interface is selected according to the routing table.

Optional: True

Ref: /network/interface

Type: string

ipchecksums

Calculate ip checksums.

Syntax: {*True*|*False*}

Type: boolean

max_ttl

Specifies the maximum number of hops (max time-to-live value) traceroute will probe.

Default: 30

Minimum: 1

Syntax: {*Integer*}

Type: integer

nomap

Do not try to map IP addresses to host names when displaying them.

Syntax: {*True*|*False*}

Type: boolean

nqueries

Sets the number of probe packets per hop. A value of -1 indicated

Default: 3

Minimum: 1

Syntax: {*Integer*}

Type: integer

packetlen

Total size of the probing packet. Default 60 bytes for IPv4 and 80 for Ipv6. A value of -1 specifies that the default value will be used.

Default: -1

Minimum: -1

Syntax: {*Integer*}

Type: integer

pausemsecs

Minimal time interval between probes

Default: 0

Minimum: 0

Syntax: {*Integer*}

Type: integer

port

Specifies the destination port base traceroute will use (the destination port number will be incremented by each probe). A value of -1 specifies that no specific port will be used.

Default: -1

Minimum: -1

Syntax: {*Integer*}

Type: integer

src_addr

Chooses an alternative source address. Note that you must select the address of one of the interfaces. By default, the address of the outgoing interface is used.

Optional: True

Syntax: {*IPv4_address*|*IPv6_address*}

Type: string

tos

For IPv4, set the Type of Service (TOS) and Precedence value. Useful values are 16 (low delay) and 8 (high throughput). Note that in order to use some TOS precedence values, you have to be super user. For IPv6, set the Traffic Control value. A value of -1 specifies that no value will be used.

Default: -1

Minimum: -1

Syntax: {*Integer*}

Type: integer

verbose

Verbose output.

Syntax: {*True*|*False*}

Type: boolean

waittime

Determines how long to wait for a response to a probe.

Default: 5

Minimum: 1

Syntax: {*Integer*}

Type: integer

host

The host that we wish to trace the route packets for.

Syntax: {*hostname*|*IPv4_address*|*IPv6_address*}

Type: string

update

Update firmware.

update firmware file STRING

Update device firmware

Parameters

file

Firmware filename and path.

Type: string

config service anywhereusb enable

config service anywhereusb enable true|false

Allow remote access to USB devices connected to this server. The default **TCP Port** value is 18574.

config service anywhereusb port

config service anywhereusb port {1-65535}

Specify the port number that is used to access the Hub. The default value is 18574. If you change the port number you must also change the corresponding port number.

config service anywhereusb groups

Assign a name to each group and specify the ports in each group. When a client connects to a group in the **AnywhereUSB Manager**, the user has access to all of the ports in the group.

You can change the name for a group in the **Group Description** field. By default, a group is named "Group" appended by a consecutive number, such as Group 1, Group 2, and so on. This name displays in the **Group Name** field in the Group Status pane.

For each group, you can specify ports. Each port can only be assigned to one group. Any unassigned ports are selected in the **Unassigned** row that displays beneath the list of groups.

You can also do this in the web UI. See Create groups and assign ports to the group.

Syntax

```
config service anywhereusb groups [option]
```

Options

group{01-24} *"description"*

Enter a name for the group. You must have double quotes around the name if the name has spaces.

group{01-24} ports {0-23} {1-24}

Specify group number to change and add a single port to this group.

Examples

Specify a group name to group 2

```
config service anywhereusb groups group01 "Group 2 name"
```

Replace a port in a group

In group 3, replace the existing port at index 7 with port 8.

```
config service anywhereusb groups group03 ports 7 8
```

Add a new port to a group

Add port 2 to group 1.

```
> config
(config)> add service anywhereusb groups group01 ports end 2
(config)> save
```

Delete a port from a group

Delete port 3 from group 1.

```
> config
(config)> del service anywhereusb groups group01 ports 3
(config)> save
```

config service anywhereusb clients

Add a client ID to the client list. When a computer searches for Hubs, any computer with a client ID on the client list can connect to the Hub. You can also add client IDs in the web UI. See Manually add a client ID.

Syntax

```
config service anywhereusb clients [option]
```

Options

0-23

Specify the client index.

"*id*"]

Specify the client ID for the computer.

"*string*"

Specify a descriptive name for the computer.

groups {0-23} {group01-24}

Specify the groups this client ID can access.

Examples

```
config service anywhereusb clients 0 groups 0 group02
```

config service anywhereusb autoreg

Automatically register or reject computers that have not previously connected to the Hub. See Automatically register unknown clients for more information.

Syntax

```
config service anywhereusb autoreg [option]
```

enable {true|false}

Determine whether unknown clients should be registered.

groups {0-23} {group01-24}

Specify the group numbers to which an unknown client is allowed access.

Examples

Enable autoregistration for the Hub.

```
config service anywhereusb autoreg enable true
```

Allow access to an unknown client to group 1.

```
config service anywhereusb autoreg groups 0 group01
```

Configure the AnywhereUSB Manager from the command line

You can configure and control the **AnywhereUSB Manager** from the command line.

Prerequisites

- **Service**: If you run the **AnywhereUSB Manager** as a service, you need to be an Administrator.
- **Stand-alone**: If you run the **AnywhereUSB Manager** as a stand-alone, you need to be the same user that was logged in during the installation process or an Administrator. If you are not an Administrator, and you try to configure the **AnywhereUSB Manager** from a command line with the "Run as Administrator" option selected, the commands will fail.

autoconnect clear all

Purpose

Disables the auto connect feature for all Hubs, groups, and devices. When complete no asterisks or plus signs display next to Hub, group, or device names.

Syntax

```
>awusbmanager autoconnect clear all
```

Examples

Run the list command to verify the current state of the auto-connect feature for the Hubs, groups, and devices. In this example, Group 1 has auto connect enabled, and the device in Group 1 has inherited the auto connect feature.

```
AnywhereUSB Manager, below are the available devices:

AW02-000001 (AW02-000001.local.:18574)
   Group 2 (AW02-000001.2)
*  Group 1 (AW02-000001.1) (In-use by you)
+       U3 Cruzer Micro (AW02-000001.1101)

* means Autoconnect enabled, + means Autoconnect inherited
Auto-Find: enabled
Autoconnect All: disabled
AnywhereUSB Manager not running as a service
```

Run the `autoconnect clear all` command.

```
>awusbmanager autoconnect clear all
```

Run the list command again to verify that the auto connect feature has been disabled. No asterisks or plus signs should display.

```
AnywhereUSB Manager, below are the available devices:

AW02-000001 (AW02-000001.local.:18574)
   Group 2 (AW02-000001.2)
   Group 1 (AW02-000001.1) (In-use by you)
        U3 Cruzer Micro (AW02-000001.1101)

* means Autoconnect enabled, + means Autoconnect inherited
Auto-Find: enabled
Autoconnect All: disabled
AnywhereUSB Manager not running as a service
```

autoconnect clear group

Purpose

Disable the auto connect feature for a specified group.

When you disable auto connect for a group, an asterisk no longer displays next to the group name. In addition, any devices in the group no longer inherit the auto connect feature, and the plus sign no longer displays next to the device names.

Note For more information about auto connect, see Configure auto connect.

Syntax

```
>awusbmanager autoconnect clear group,<address>
```

The [*address*] is the address of the group for which you want to disable the auto connect feature.

Examples

Run the list command to verify the current state of the auto-connect feature for a group and to determine the address for a group. In this example, Group 1 has the auto connect feature enabled, so an asterisk displays next to the group name.

The [*address*] for a group is the name of the Hub appended by the number of the group. In this example, the auto connect feature will be disabled for Group 1, so the group name is highlighted below.

```
AnywhereUSB Manager, below are the available devices:

AW02-000001 (AW02-000001.local.:18574)
   Group 2 (AW02-000001.2)
*  Group 1 (AW02-000001.1) (In-use by you)
+       U3 Cruzer Micro (AW02-000001.1101) (In-use by you)

* means Autoconnect enabled, + means Autoconnect inherited
Auto-Find: enabled
Autoconnect All: disabled
AnywhereUSB Manager not running as a service
```

Run the `autoconnect clear group` command.

```
>awusbmanager autoconnect clear group,AW02-000001.1
```

Run the list command again to verify that the auto connect feature has been disabled. In this example, the auto connect feature has been disabled for Group 1, so an asterisk no longer displays next to the group name. In addition, the plus sign no longer displays next to the devices in Group 1.

Note If you were connected to the group and the devices in the group, you will still be connected. If you want do disconnect from them, you can use the `disconnect group` command.

```
AnywhereUSB Manager, below are the available devices:
```

```
AW02-000001 (AW02-000001.local.:18574)
   Group 2 (AW02-000001.2)
   Group 1 (AW02-000001.1) (In-use by you)
        U3 Cruzer Micro (AW02-000001.1101) (In-use by you)

* means Autoconnect enabled, + means Autoconnect inherited
Auto-Find: enabled
Autoconnect All: disabled
AnywhereUSB Manager not running as a service
```

autoconnect group

Purpose

Enable the auto connect feature for a specified group. This feature ensures that when you start the **AnywhereUSB Manager** as a stand-alone or when it starts at Windows startup if installed as a service, you are automatically connected to all of the groups to which you are allowed access that have auto connect enabled.

When you enable auto connect for a group, an asterisk displays next to the group name. In addition, any devices in the group inherit the auto connect feature, and will also be automatically connected. A plus sign displays next to the devices when the auto connect feature is inherited.

You can disable the auto connect feature for the group if needed.

Note For more information about auto connect, see Configure auto connect.

Syntax

```
>awusbmanager autoconnect group,<address>
```

The [*address*] is the address of the group for which you want to enable the auto connect feature.

Examples

Run the list command to verify the current state of the auto-connect feature for a group and to determine the address for a group. In this example, Group 2 has the auto connect feature enabled, so an asterisk displays next to the group name. The auto connect feature is not enabled for Group 1, so an asterisk does not display.

The [*address*] for a group is the name of the Hub appended by the number of the group. In this example, the auto connect feature will be enabled for Group 1, so the group name is highlighted below.

```
AnywhereUSB Manager, below are the available devices:

AW02-000001 (AW02-000001.local.:18574)
*  Group 2 (AW02-000001.2) (In-use by you)
   Group 1 (AW02-000001.1) (In-use by you)
       U3 Cruzer Micro (AW02-000001.1101)

* means Autoconnect enabled, + means Autoconnect inherited
Auto-Find: enabled
Autoconnect All: disabled
AnywhereUSB Manager not running as a service
```

Run the the `autoconnect group` command.

```
>awusbmanager autoconnect group,AW02-000001.1
```

Run the list command again to verify that the auto connect feature has been enabled. An asterisk displays next to the group name. A plus sign displays next to the names of the devices in the group to show that the auto connect feature is inherited from the group.

```
AnywhereUSB Manager, below are the available devices:

AW02-000001 (AW02-000001.local.:18574)
*  Group 2 (AW02-000001.2) (In-use by you)
*  Group 1 (AW02-000001.1) (In-use by you)
+      U3 Cruzer Micro (AW02-000001.1101(  (In-use by you)

* means Autoconnect enabled, + means Autoconnect inherited
Auto-Find: enabled
Autoconnect All: disabled
AnywhereUSB Manager not running as a service
```

autofind

Purpose

Enables and disables the autofind feature. When enabled, all Hubs connected to the network when **AnywhereUSB Manager** launches are automatically found. This command works as a toggle, or you can can specify "on" or "off." Before you used the command, you should verify the status of the autofind feature.

The status of the autofind feature is displayed when you run the list command.

Note For information about this feature in the **AnywhereUSB Manager**, see Autofind Hubs when the AnywhereUSB Manager launches.

Syntax

```
>awusbmanager autofind[,on|,off]
```

- **on**: Enables the autofind feature. When enabled, all Hubs connected to the network when **AnywhereUSB Manager** launches are automatically found. This option is not required.
- **off**: Disables the autofind feature. When disabled, Hubs are not automatically found when **AnywhereUSB Manager** launches. In this case, you must manually add the Hubs to which you want to connect to the known Hubs list. This option is not required.

Examples

Run the list command to verify the status of the autofind feature. In this example, the autofind feature is enabled.

```
AnywhereUSB Manager, below are the available devices:

AW02-000001 (AW02-000001.local.:18574)
   Group 2 (AW02-000001.2) (In-use by you)
   Group 1 (AW02-000001.1) (In-use by you)
       U3 Cruzer Micro (AW02-000001.1101)

* means Autoconnect enabled, + means Autoconnect inherited
Auto-Find: enabled
Autoconnect All: disabled
AnywhereUSB Manager not running as a service
```

Run the autofind command to disable the feature. You can specify the "off" option, but it is not required.

```
>awusbmanager autofind,off
```

Run the list command again.

```
AnywhereUSB Manager, below are the available devices:

AW02-000001 (AW02-000001.local.:18574)
   Group 2 (AW02-000001.2) (In-use by you)
   Group 1 (AW02-000001.1) (In-use by you)
       U3 Cruzer Micro (AW02-000001.1101)

* means Autoconnect enabled, + means Autoconnect inherited
Auto-Find: disabled
Autoconnect All: disabled
AnywhereUSB Manager not running as a service
```

You can run the autofind command again to enable the feature. You can specify the "on" option, but it is not required.

```
>awusbmanager autofind
```

Run the list command again to verify.

```
AnywhereUSB Manager, below are the available devices:

AW02-000001 (AW02-000001.local.:18574)
   Group 2 (AW02-000001.2) (In-use by you)
   Group 1 (AW02-000001.1) (In-use by you)
       U3 Cruzer Micro (AW02-000001.1101)

* means Autoconnect enabled, + means Autoconnect inherited
Auto-Find: enabled
Autoconnect All: disabled
AnywhereUSB Manager not running as a service
```

connect device

Purpose

Connect to a USB device in a group to which you have access. You cannot connect to a device in a group that is already in use.

You must be connected to the group before you can connect to a device in that group. If the device requires a password, you must enter the password when using the `connect device` command.

Syntax

```
>awusbmanager connect device,<address>[,password]
```

The <*address*> is the address of the device to which you want to connect.

The <*password*> is the password for the device. The password is optional.

Examples

If you have connected to a group, and then disconnect from a device in that group, you no longer have access to the device. You can reconnect to that device.

Run the list command to make sure you are connected to the group that the device you want to connect to is in. In this example, the device is in Group 1, so you should be connected to Group 1.

You will need the address for device to which you want to connect.

```
AnywhereUSB Manager, below are the available devices:

AW02-000001 (AW02-000001.local.:18574)
   Group 2 (AW02-000001.2) (In-use by you)
   Group 1 (AW02-000001.1) (In-use by you)
       U3 Cruzer Micro (AW02-000001.1101)

* means Autoconnect enabled, + means Autoconnect inherited
Auto-Find: enabled
Autoconnect All: disabled
AnywhereUSB Manager not running as a service
```

Run the `connect device` command. If required to access the device, include the device password.

```
>awusbmanager connect device,AW02-000001.1101
```

Run the list command again to verify that the device is connected.

```
AnywhereUSB Manager, below are the available devices:

AW02-000001 (AW02-000001.local.:18574)
   Group 2 (AW02-000001.2) (In-use by you)
   Group 1 (AW02-000001.1) (In-use by you)
       U3 Cruzer Micro (AW02-000001.1101) (In-use by you)

* means Autoconnect enabled, + means Autoconnect inherited
Auto-Find: enabled
```

```
Autoconnect All: disabled
AnywhereUSB Manager not running as a service
```

connect group

Purpose

You can connect to a group so that you have access to the ports in the group. Once you have connected to a group, no one else can connect to that group. You cannot connect to a group that is already is use.

When you connect to a group, you are automatically connected to all of the ports in the group to which you are allowed access.

Syntax

```
>awusbmanager connect group,<address>
```

The [*address*] is the address of the group to which you want to connect.

Examples

Run the list command to determine the address for the group to which you want to connect. In this example, you will connect to Group 1.

```
AnywhereUSB Manager, below are the available devices:

AW02-000001 (AW02-000001.local.:18574)
   Group 2 (AW02-000001.2) (In-use by you)
   Group 1 (AW02-000001.1)
       U3 Cruzer Micro (AW02-000001.1101)

* means Autoconnect enabled, + means Autoconnect inherited
Auto-Find: enabled
Autoconnect All: disabled
AnywhereUSB Manager not running as a service
```

Run the `connect group` command.

```
>awusbmanager connect group,AW02-000001.1
```

Run the list command again to verify that you are connected to the group and to all of the ports in the group to which you are allowed access.

```
AnywhereUSB Manager, below are the available devices:

AW02-000001 (AW02-000001.local.:18574)
   Group 2 (AW02-000001.2) (In-use by you)
   Group 1 (AW02-000001.1) (In-use by you)
       U3 Cruzer Micro (AW02-000001.1101) (In-use by you)

* means Autoconnect enabled, + means Autoconnect inherited
Auto-Find: enabled
Autoconnect All: disabled
AnywhereUSB Manager not running as a service
```

device info

Purpose

Displays information about a device. For more information, see AnywhereUSB Manager Device Status pane.

Syntax

```
>awusbmanager device info,<address>
```

The [*address*] is the address of the device for which you want to display information. The address is required.

Examples

Run the list command to determine the device's address.

```
AnywhereUSB Manager, below are the available devices:

AW02-000001 (AW02-000001.local.:18574)
*  Group 2 (AW02-000001.2) (In-use by you)
*  Group 1 (AW02-000001.1) (In-use by you)
+      U3 Cruzer Micro "USB stick 1" (AW02-000001.1101)  (In-use by you)

* means Autoconnect enabled, + means Autoconnect inherited
Auto-Find: enabled
Autoconnect All: disabled
AnywhereUSB Manager not running as a service
```

Run the `device info` command.

```
>awusbmanager device info,AW02-000001.1101
```

Information about the device displays.

```
ADDRESS: AW02-000001.1101
LOCALNAME: USB stick 1
VENDOR: SanDisk
VENDOR ID: 0x0781
PRODUCT: U3 Cruzer Micro
PRODUCT ID: 0x5406
SERIAL: 0770000F0000000C
AUTOCONNECT: inherited
IN USE BY: YOU
```

device name

Purpose

Change or assign the local name of a device.

Syntax

```
>awusbmanager device name,<address>,<new name>
```

The <*device name*> is the device's address.

The <*new name*> is the new local name for the device.

Examples

Run the list command to determine the device's address.

```
AnywhereUSB Manager, below are the available devices:

AW02-000001 "Hub 1" (AW02-000001.local.:18574)
   Group 2 (AW02-000001.2) (In-use by you)
   Group 1 (AW02-000001.1) (In-use by you)
       U3 Cruzer Micro (AW02-000001.1101)

* means Autoconnect enabled, + means Autoconnect inherited
Auto-Find: enabled
Autoconnect All: disabled
AnywhereUSB Manager not running as a service
```

Run the `device name` command.

```
>awusbmanager device name,AW02-000001.1101,USB Stick
```

Run the list command again to verify the name change.

```
AnywhereUSB Manager, below are the available devices:

AW02-000001 "Hub 1" (AW02-000001.local.:18574)
   Group 2 (AW02-000001.2) (In-use by you)
   Group 1 (AW02-000001.1) (In-use by you)
       U3 Cruzer Micro "USB Stick" (AW02-000001.1101)

* means Autoconnect enabled, + means Autoconnect inherited
Auto-Find: enabled
Autoconnect All: disabled
AnywhereUSB Manager not running as a service
```

disconnect device

Purpose

Disconnect from a USB device to which you no longer need access. You will remain connected to the group that the device is in. Other users cannot connect the USB device, since you still own the group that the USB device is in.

Note If you have auto connect enabled for the group, you can disconnect from a USB device in the group, but note that for a stand-alone, the device will be reconnected the next time you stop and then start the **AnywhereUSB Manager**. If you are running the **AnywhereUSB Manager** as a service, the device remains disconnected until you reboot the PC or restart the service.

Syntax

```
>awusbmanager disconnect device,<address>
```

The <*address*> is the address of the device from which you want to disconnect.

Examples

Run the list command to view the address for device from which you want to disconnect.

```
AnywhereUSB Manager, below are the available devices:

AW02-000001 (AW02-000001.local.:18574)
   Group 2 (AW02-000001.2) (In-use by you)
   Group 1 (AW02-000001.1) (In-use by you)
       U3 Cruzer Micro (AW02-000001.1101) (In-use by you)

* means Autoconnect enabled, + means Autoconnect inherited
Auto-Find: enabled
Autoconnect All: disabled
AnywhereUSB Manager not running as a service
```

Run the `disconnect device` command.

```
>awusbmanager disconnect device,AW02-000001.1101
```

Run the list command again to verify that the device is disconnected.

```
AnywhereUSB Manager, below are the available devices:

AW02-000001 (AW02-000001.local.:18574)
   Group 2 (AW02-000001.2) (In-use by you)
   Group 1 (AW02-000001.1) (In-use by you)
       U3 Cruzer Micro (AW02-000001.1101)

* means Autoconnect enabled, + means Autoconnect inherited
Auto-Find: enabled
Autoconnect All: disabled
AnywhereUSB Manager not running as a service
```

disconnect group

Purpose

You can disconnect from a group that has ports you no longer need access to. You are disconnected from all USB devices and ports in that group. Any other user can then connect to that group.

Note If the group has auto connect enabled, and you want to disconnect from the group, note that when you disconnect from the group you will be automatically reconnected. Before you disconnect, make sure that auto connect is disabled for the group.

Syntax

```
>awusbmanager disconnect group, [address]
```

The [*address*] is the address of the group from which you want to disconnect.

Examples

Run the list command to determine the address for the group to which you want to connect.

Make sure that auto connect is disabled for the group. When it is disabled, an asterisk does not display next to the group name. If you need to disable auto connect for the group, see autoconnect clear group.

```
AnywhereUSB Manager, below are the available devices:

AW02-000001 (AW02-000001.local.:18574)
   Group 2 (AW02-000001.2) (In-use by you)
   Group 1 (AW02-000001.1) (In-use by you)
       U3 Cruzer Micro (AW02-000001.1101) (In-use by you)

* means Autoconnect enabled, + means Autoconnect inherited
Auto-Find: enabled
Autoconnect All: disabled
AnywhereUSB Manager not running as a service
```

Run the `disconnect group` command.

```
>awusbmanager disconnect group,AW02-000001.1
```

Run the list command again to verify that the group is disconnected.

```
AnywhereUSB Manager, below are the available devices:

AW02-000001 (AW02-000001.local.:18574)
   Group 2 (AW02-000001.2) (In-use by you)
   Group 1 (AW02-000001.1)
       U3 Cruzer Micro (AW02-000001.1101)

* means Autoconnect enabled, + means Autoconnect inherited
Auto-Find: enabled
```

```
Autoconnect All: disabled
AnywhereUSB Manager not running as a service
```

exit

Purpose

Shuts down the service. If the **AnywhereUS Manager** is open, it is shut down as well.

Syntax

```
>awusbmanager exit
```

group info

Purpose

Displays information about a group. For more information, see AnywhereUSB Manager Group Status pane.

Syntax

```
>awusbmanager group info,[address]
```

The [*address*] is the address of the group for which you want to display information. The address is required.

Examples

Run the list command to determine the group's address.

```
AnywhereUSB Manager, below are the available devices:

AW02-000001 "HUB-000001" (AW02-000001.local.:18574)
*  Group 2 "Admin group" (AW02-000001.2) (In-use by you)
   Group 1 (AW02-000001.1) (In-use by you)
       U3 Cruzer Micro (AW02-000001.1101)

* means Autoconnect enabled, + means Autoconnect inherited
Auto-Find: enabled
Autoconnect All: disabled
AnywhereUSB Manager not running as a service
```

Run the `group info` command.

```
>awusbmanager group info,AW02-000001.2
```

Information about the group displays.

```
ADDRESS: AW02-000001.2
LOCALNAME: Admin group
GROUP: 2
NAME: Group 2
PORTS: 2
AUTOCONNECT: enabled
IN USE BY: YOU
```

group name

Purpose

Change or assign the local name of the group.

Syntax

```
>awusbmanager group name,<address,<new name>
```

The <*group name*> is the group's address.

The <*new name*> is the new local name for the group.

Examples

Run the list command to determine the group's address.

```
AnywhereUSB Manager, below are the available devices:

AW02-000001 "Hub 1" (AW02-000001.local.:18574)
   Group 2 (AW02-000001.2) (In-use by you)
   Group 1 (AW02-000001.1) (In-use by you)
       U3 Cruzer Micro (AW02-000001.1101)

* means Autoconnect enabled, + means Autoconnect inherited
Auto-Find: enabled
Autoconnect All: disabled
AnywhereUSB Manager not running as a service
```

Run the `group name` command.

```
>awusbmanager group name,AW02-000001.2,New Group
```

Run the list command again to verify the name change.

```
AnywhereUSB Manager, below are the available devices:

AW02-000001 "Hub 1" (AW02-000001.local.:18574)
   Group 2 "New Group" (AW02-000001.2) (In-use by you)
   Group 1 (AW02-000001.1) (In-use by you)
       U3 Cruzer Micro (AW02-000001.1101)

* means Autoconnect enabled, + means Autoconnect inherited
Auto-Find: enabled
Autoconnect All: disabled
AnywhereUSB Manager not running as a service
```

hidden hub add

Purpose

Hide a Hub by adding it to the hidden Hubs list.

Note For information on hiding Hubs in the AnywhereUSB Manager, see Hide an individual Hub and Hide all unauthorized Hubs.

Syntax

```
>awusbmanager hidden hub add,<address>[:port]
```

The [*address*] is the address of the Hub that you want to hide

The <*port*> is the TCP port number for the Hub you want to hide. This is required if the TCP port number is not the default (18574).

Examples

Run the `hidden hub add` command to add a Hub to the hidden Hub list.

- Use the default port of 18574:

```
>awusbmanager hidden hub add,10.10.10.34
```

- Change the TCP port number:

```
>awusbmanager hidden hub add,10.10.10.56:5600
```

You can then run the `hidden hub list` command to verify that the Hubs were added to the list of hidden Hubs.

```
10.10.10.34:18574
10.10.10.56:5600
```

hidden hub list

Purpose

Displays a list of Hubs that have been added to the hidden Hubs list.

- You can choose to hide Hubs that currently display in the **AnywhereUSB Manager**, such as an unauthorized Hub (which displays with a red X next to the Hub name), or a Hub which users shouldn't access.
- You can also choose to hide Hubs that don't currently display in the **AnywhereUSB Manager**, but the client ID may have access in the future, such as a Hub on another network.

Note For information on hiding Hubs in the **AnywhereUSB Manager**, see Hide an individual Hub and Hide all unauthorized Hubs.

Syntax

```
>awusbmanager hidden hub list
```

Examples

Run the `hidden hub list` command.

```
>awusbmanager hidden hub list
```

A list of hidden Hubs is returned.

```
10.10.10.50:18574
10.10.10.21:18574
```

hidden hub remove

Purpose

Remove a Hub from the hidden Hubs list.

Syntax

```
>awusbmanager hidden hub remove,<address>[:port]
```

The <*address*> is the address of the hub that you want to remove from the hidden Hub list. This is required.

The <*port*> is the TCP port number for the Hub you want to remove. This is required if the TCP port number is not the default (18574).

Examples

Run the `hidden hub list` command to verify the address and port number of the Hub that you want to remove.

```
10.10.10.21:18574
10.10.10.34:18574
10.10.10.56:5600
```

Run the `hidden hub remove` command.

- If the TCP port number is the default, entering the port number in the command is optional.

```
>awusbmanager hidden hub remove,10.10.10.34
```

- If the TCP port number is not the default, entering the port number in the command is required.

```
>awusbmanager hidden hub remove,10.10.10.56:5600
```

Run the `hidden hub list` command again to verify that the specified Hubs have been removed.

```
10.10.10.21:18574
```

hidden hub remove all

Purpose

Remove all the Hubs in the hidden Hubs list.

Syntax

```
>awusbmanager hidden hub remove all
```

Examples

Run the `hidden hub list` command to view the list of hidden Hubs.

```
10.10.10.12:18574
10.10.10.14:18574
10.10.10.15:5600
```

Run the `hidden hub remove all` command.

```
>awusbmanager hidden hub remove all
```

Run the `hidden hub list` command again to verify that the Hubs have been removed.

help

Purpose

Displays a list of the CLI commands for the **AnywhereUSB Manager**.

Syntax

```
>awusbmanager help
```

hub info

Purpose

Displays information about the Hubs. For more information, see AnywhereUSB Manager Hub Status pane.

Syntax

```
>awusbmanager hub info,<hub name>
```

The <*hub name*> is the address of the Hub for which you want to display information. The address is required.

Examples

Run the list command to determine Hub's address.

```
AnywhereUSB Manager, below are the available devices:

AW02-000001 "HUB-000001" (AW02-000001.local.:18574)
   Group 2 (AW02-000001.2) (In-use by you)
   Group 1 (AW02-000001.1) (In-use by you)
       U3 Cruzer Micro (AW02-000001.1101)

* means Autoconnect enabled, + means Autoconnect inherited
Auto-Find: enabled
Autoconnect All: disabled
AnywhereUSB Manager not running as a service
```

Run the `hub info` command.

```
>awusbmanager hub info,AW02-000001
```

Information about the Hub displays.

```
NAME: AW02-000001
LOCALNAME: HUB-000001
MODEL: AnywhereUSB 2 Plus
VERSION: 3.0.0.54 awusb dby-3.0.0.54 01/03/2019 16:44:25 CST 20190103224522
STATE: Active (secure)
ADDRESS: AW02-000001.local. (SSL Subject:/C=US/ST=Minnesota/O=Digi International
Inc/CN=unknown ,Issuer:/C=US/ST=Minnesota/O=Digi International Inc/CN=unknown)
(10.10.74.xxx)
PORT: 18574
CONNECTED FOR: 22115 sec
CONNECTION ID: 1
INTERFACE: eth0
SERIAL NUMBER: AW02-000001
AUTOCONNECT: disabled
```

hub name

Purpose

Change or assign the local name of the Hub.

Syntax

```
>awusbmanager hub name,<address[:port]>,<new name>
```

The <*address*> is the Hub's address.

The <*port*> is the TCP port number for the Hub you want to rename. This is required if the TCP port number is not the default (18574).

The <*new name*> is the new local name for the Hub.

Examples

Run the list command to determine the Hub's address.

```
AnywhereUSB Manager, below are the available devices:

AW02-000001 (AW02-000001.local.:18574)
   Group 2 (AW02-000001.2) (In-use by you)
   Group 1 (AW02-000001.1) (In-use by you)
       U3 Cruzer Micro (AW02-000001.1101)

* means Autoconnect enabled, + means Autoconnect inherited
Auto-Find: enabled
Autoconnect All: disabled
AnywhereUSB Manager not running as a service
```

Run the `hub name` command.

```
>awusbmanager hub name,AW02-000001,Hub 1
```

Run the list command again to verify the local name.

```
AnywhereUSB Manager, below are the available devices:

AW02-000001 "Hub 1" (AW02-000001.local.:18574)
   Group 2 (AW02-000001.2) (In-use by you)
   Group 1 (AW02-000001.1) (In-use by you)
       U3 Cruzer Micro (AW02-000001.1101)

* means Autoconnect enabled, + means Autoconnect inherited
Auto-Find: enabled
Autoconnect All: disabled
AnywhereUSB Manager not running as a service
```

known hub add

Purpose

Add a Hub to the known Hubs list. The Hubs in this list can be on the same network as your computer, or on a different network. If you add Hubs to the known Hubs list that are on the same network as our computer AND the autofind feature is enabled, duplicate entries display in the Hubs list.

Note For information about using this feature in the **AnywhereUSB Manager**, see Manage the list of known Hubs.

Syntax

```
>awusbmanager known hub add,<address>[:port]
```

The <*address*> is the address of the Hub or a Hub hostname that can be resolved by your network nameservers. This is required.

The <*port*> is the TCP port number, which is 18574 by default. You can change the TCP port number if needed.

Examples

Add a known Hub

Run the `known hub add` command to add a Hub to the known Hub list.

- Use and address and the default port of 18574:

```
>awusbmanager known hub add,10.10.56.12
```

- Use a hostname and change the TCP port number:

```
>awusbmanager known hub add,awusb1.work.com:9999
```

- Change the TCP port number:

```
>awusbmanager known hub add,10.10.56.14:5600
```

You can then run the `known hub list` command to verify that the Hub was added to the list.

```
10.10.10.56:18574
awusb1.work.com:9999
10.10.56.14:5600
```

known hub list

Purpose

Displays a list of Hubs that have been added to the known Hubs list.

Note For more information about known Hubs, see Manage the list of known Hubs.

Syntax

```
>awusbmanager known hub list
```

Examples

Run the `known hub list` command.

```
>awusbmanager known hub list
```

A list of known Hubs is returned.

```
10.10.10.50:18574
10.10.10.12:18574
```

known hub remove

Purpose

Remove a Hub from the known Hubs list.

Note For information about using this feature in the **AnywhereUSB Manager**, see Manage the list of known Hubs.

Syntax

```
>awusbmanager known hub remove,<address>[:port]
```

The <*address*> is the address of the hub that you want to remove from the known Hub list. This is required.

The <*port*> is the TCP port number for the Hub you want to remove. This is required if the TCP port number is not the default (18574).

Examples

Run the `known hub list` command to verify the address and port number of the Hub that you want to remove.

```
10.10.01.12:18574
10.10.01.14:18574
10.10.01.15:5600
```

Run the `known hub remove` command.

- If the TCP port number is the default, entering the port number in the command is optional.

```
>awusbmanager known hub remove,10.10.01.14
```

- If the TCP port number is not the default, entering the port number in the command is required.

```
>awusbmanager known hub remove,10.10.01.15:5600
```

Run the `known hub list` command again to verify that the Hubs have been removed.

```
10.10.01.12:18574
```

known hub remove all

Purpose

Remove all the Hubs in the known Hubs list.

Syntax

```
>awusbmanager known hub remove all
```

Examples

Run the `known hub list` command to view the list of known Hubs.

```
10.10.01.12:18574
10.10.01.14:18574
10.10.01.15:5600
```

Run the `known hub remove all` command.

```
>awusbmanager known hub remove all
```

Run the `known hub list` command again to verify that the Hubs have been removed.

list

Purpose

Displays a list of Hubs, groups, and devices on the network as well as any Hubs the **AnywhereUSB Manager** knows about.

Note This information is similar to what displays in the **AnywhereUSB Manager**. See AnywhereUSB Manager window.

If a group has auto connect enabled, an asterisk displays next to the group name.

Additional information about features displays at the bottom of the list:

- Status of the auto-find feature: enabled or disabled.
- Status of the **auto connect all** feature: enabled or disabled.
- Specifies whether the **AnywhereUSB Manager** is running as a service.

Syntax

```
>awusbmanager list
```

Examples

This example shows one Hub: AW02-000001. On the Hub, Group 1 has the auto connect feature enabled, as specified by the asterisk next to the group name.

```
AnywhereUSB Manager, below are the available devices:

AW02-000001 "Hub 1" (AW02-000001.local.:18574)
   Group 2 (AW02-000001.2) (In-use by you)
   Group 1 (AW02-000001.1) (In-use by you)
       U3 Cruzer Micro (AW02-000001.1101)

* means Autoconnect enabled, + means Autoconnect inherited
Auto-Find: enabled
Autoconnect All: disabled
AnywhereUSB Manager not running as a service
```

list full

Purpose

Displays a list of all Hubs, groups, and devices on the network and includes all information about each Hub, group, or device. This command displays the same information retrieved by running these commands: list, hub info, group info, and device info.

If a group has auto connect enabled, an asterisk displays next to the group name.

Additional information about features displays at the bottom of the list:

- Status of the auto-find feature: enabled or disabled.
- Status of the **auto connect all** feature: enabled or disabled.
- Specifies whether the **AnywhereUSB Manager** is running as a service.

Syntax

```
>awusbmanager list full
```

Examples

Run the `list full` command.

```
>awusbmanager list full
```

The example below shows the Hub on the network, and the groups and devices on that Hub. Information about the Hub, group, and device is also returned.

```
AnywhereUSB Manager, below are the available devices:

AW08-D00001 (10.10.12.12:18574)
  NAME: AW08-D00001
  MODEL: AnywhereUSB 8 Plus
  VERSION: 3.0.1.2 awusb
  STATE: Active (secure)
  ADDRESS: 10.10.12.12
  PORT: 18574
  CONNECTED FOR: 14 sec
  CONNECTION ID: 3
  INTERFACE: eth0
  SERIAL NUMBER: AW08-D00001
  AUTOCONNECT: disabled

   Group  2 (AW08-D00001.2)
     ADDRESS: AW08-D00001.2
     GROUP: 2
     NAME: Group  2
     PORTS: 5 6 7 8
     AUTOCONNECT: disabled
     IN USE BY: NO ONE

      Cruzer (AW08-D00001.1906)
        ADDRESS: AW08-D00001.1906
        VENDOR: SanDisk
        VENDOR ID: 0x0781
        PRODUCT: Cruzer
        PRODUCT ID: 0x5530
        SERIAL: 20040000920A1C707B00
        AUTOCONNECT: disabled
        IN USE BY: NO ONE


*  Group  1 (AW08-D00001.1) (In-use by you)
     ADDRESS: AW08-D00001.1
     GROUP: 1
     NAME: Group  1
     PORTS: 1 2 3 4
     AUTOCONNECT: enabled
     IN USE BY: YOU

+     USB DISK 3.0 (AW08-D00001.1803) (In-use by you)
        ADDRESS: AW08-D00010.1803
        VENDOR:
        VENDOR ID: 0x13fe
        PRODUCT: USB DISK 3.0
        PRODUCT ID: 0x6300
        SERIAL: 070A00376967E000
        AUTOCONNECT: inherited
        IN USE BY: YOU

* means Autoconnect enabled, + means Autoconnect inherited
Autofind: disabled
Autoconnect All: disabled
AnywhereUSB Manager is running as a service
```

Deployment

This process describes how to re-deploy a Hub.

Note If you want to deploy a new Hub, see Get started.

1. If you are re-deploying a Hub, remove the Hub from the network.
2. Make a connection between the Hub and each computer that should be allowed to connect to the Hub.
    a. Connect the hardware using an Ethernet LAN connection.
    b. Verify initial connection.

Security

Security-related features in AnywhereUSB include:

- Unique password for each Hub. See Change the Hub password.
- Configurable network service port numbers.
- Secure access and authentication to the web UI and CLI.
- One password, one permission level.
- Selectively enable and disable network services such as mDNS, HTTP/HTTPS, and SSH.
- Encrypted access to AnywhereUSB® Plus traffic: Access to the USB-over-IP traffic is encrypted and authenticated by default. This cannot be disabled.

Client ID

The client ID is a unique identifier assigned to a user account the first time a user logs in to a computer and opens the **AnywhereUSB Manager**. During this process, the **AnywhereUSB Manager** creates a secure identity certificate that is associated with the client ID. This certificate is used to validate your user account with the Hub.

After a user has created a client ID for their user account, the computer is able to connect to the Hubs that recognize that client ID.

Create a client ID during initial launch of the AnywhereUSB Manager

The **AnywhereUSB Manager** can be initially opened by a user in one of the following ways:

- **Installation**: When the AnywhereUSB Hub software is installed, the **Launch AnywhereUSB Manager** option is selected by default. When the installation completes, the client ID confirmation dialog appears. The user enters a client ID, and then the **AnywhereUSB Manager** is automatically opened.

  Note If the user deselects the **Launch AnywhereUSB Manager** option, the **AnywhereUSB Manager** does not automatically open after the installation process completes. In this case, the client ID dialog does not display.

- **New user logs in**: After the AnywhereUSB Hub software is installed, any user can log into that computer and open the **AnywhereUSB Manager**. The first time a user opens the **AnywhereUSB Manager**, the client ID dialog appears. The user must enter a client ID before the **AnywhereUSB Manager** will open.

After the initial launch of the **AnywhereUSB Manager**, the next time the user logs in, the computer is able to connect to the Hubs that recognize that client ID.

Multiple user accounts with the same client ID

In some cases, multiple computers may inadvertently use the same client ID. When this occurs and computers with the same client ID attempt to connect with the same Hub, the first computer to associate itself with the Hub will be able to connect to the Hub. Subsequent computers will not be able to connect that Hub.

If you discover that multiple computers are assigned the same client ID, see AnywhereUSB Manager client ID is not unique for help solving this issue.

Troubleshooting

The following information provides troubleshooting steps for the most common issues. To find information on other issues, visit our Knowledge Base at knowledge.digi.com.

AnywhereUSB Manager client ID is not unique

When you install the **AnywhereUSB Manager**, you must assign a client ID to your computer, which must be unique.

Note See Client ID for more information about how the client ID is used by your computer and the Hub to create a connection.

In some cases, multiple computers may inadvertently be used by the same client ID. When this occurs, and computers with the same client ID attempt to connect with the same Hub, the first computer to associate itself with the Hub will be able to connect to the Hub. Subsequent computers will not be able to connect to that Hub.

You can fix this issue by changing the client ID of your computer to a unique client ID. See Change the client ID.

No remote Hubs found

When the host computer is unable to discover any AnywhereUSB devices on the network, no Hubs are displayed in the **AnywhereUSB Manager**.

Firewall software blocks the port used for Hub discovery

When firewall software blocks the port used for Hub discovery, try the following:

- For firewall software, either disable it or add an exception for the port (UDP port 5353).
- Check for a link light on the Ethernet port. If the link light is not lit, connect all of the Hubs to switches using network cables.
- Verify that the **Autofind Hubs** option is selected in the **Preferences** dialog in the **AnywhereUSB Manager**. Start the Manager and choose **File > Preferences** to open the dialog.
- Connect the Hub directly to the host computer.
- Some anti-virus software might block the connection. You can either temporarily disable it or add an exception for the **AnywhereUSB Manager** executable.
- If the Hub is across a switch or router that does not forward Bonjour traffic, the **AnywhereUSB Manager** will not be able to discover the Hub. In this case, add the Hub to the known Hubs list. See Manage the list of known Hubs.
- The firewall or router may block access to the AnywhereUSB port, which by default is TCP port 18574. If the Hub can be discovered but the connection fails (the state of the connection is "Unable to connect"), you may need to reopen the AnywhereUSB port.

Hide a group in the AnywhereUSB Manager

Any group that has ports assigned to it displays in the **AnywhereUSB Manager**, even if no USB devices are connected to a port. If you don't want groups with unused ports to display in the **AnywhereUSB Manager**, you can reassign all of the ports in a group to a different group. Once the group does not have any ports assigned to it, that group will not display.

1. Open the web UI from your selected Hub.
2. Click **AnywhereUSB** from the **Configuration** section. The **AnywhereUSB Configuration** page appears.

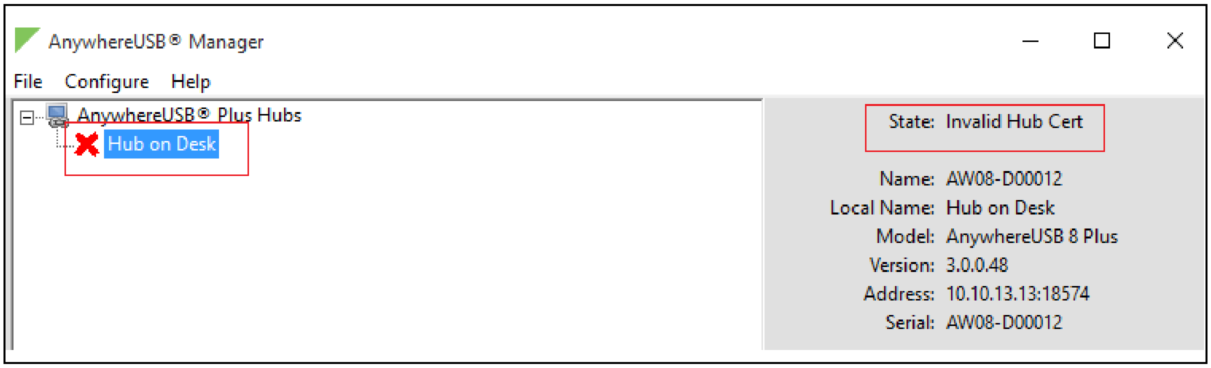
3. Locate the group that has the unused ports.
4. Reassign each port in the group to a different group, or to the **Unassigned** row.
5. When done, click **Apply** to save the changes.
6. Return to the **AnywhereUSB Manager**. The group no longer appears.

Invalid Hub certificate

In some situations, the Hub certificate may become invalid. If this occurs, you can remove the Hub from the Manage Hub Credentials list. The **AnywhereUSB Manager** forgets the Hub certificate and, if the **Auto-register Hub Cert** option is selected in the **Preferences** dialog, gets a new one on the next connection attempt.

If the **Auto-register Hub Cert** option in the **Preferences** dialog is not selected, you can manually add the Hub to the Manage Hub Credentials list. After it is added, the **AnywhereUSB Manager** gets a new certificate for the Hub on the next connection attempt.

Note The Hub must be on a secure network before you manually add the Hub to the Manage Hub Credentials list or if you remove the certificate and a new one is automatically assigned over the network.



State: Invalid Hub Cert

Name: AW08-D00012
Local Name: Hub on Desk
Model: AnywhereUSB 8 Plus
Version: 3.0.0.48
Address: 10.10.13.13:18574
Serial: AW08-D00012

Services turned off and locked out of the Hub

If you turn off services, be aware that if you turn off all of the services and the web UI, you will be locked out of the Hub and unable to access it.

If this happens, follow the process below to reconnect to the Hub.

1. Remove the Hub from the deployed network.
2. Press the RESET button on the Hub to restore the factory defaults.
3. Connect the hardware using an Ethernet LAN connection.
4. Verify initial connection.
5. Configure the Hub settings.
6. Reconnect the Hubs to the existing **AnywhereUSB Managers**.

Microsoft Windows restrictions

Microsoft Remote Desktop

Some devices (such as a web camera), and some input devices (such as a USB keyboard or a mouse), are blocked and may not display when Microsoft Remote Desktop is connected to a laptop or a virtual machine.

For example, laptop A is connected to an AnywhereUSB Hub on the network, and a web camera is connected to a port on the Hub. Laptop A is able to see the video feed from the camera.

A user on laptop B can use Microsoft Remote Desktop to gain access to laptop A. In this situation, the video feed for both laptop A and laptop B is restricted by Windows and neither user can view the video feed from the web camera.

Hubs and virtual machines

Hubs may not function properly when attached to a Guest OS on a virtual machine.

To resolve this issue, ensure that the extensions for the virtual machine have been installed on the Guest OS.

Allow remote access to USB devices

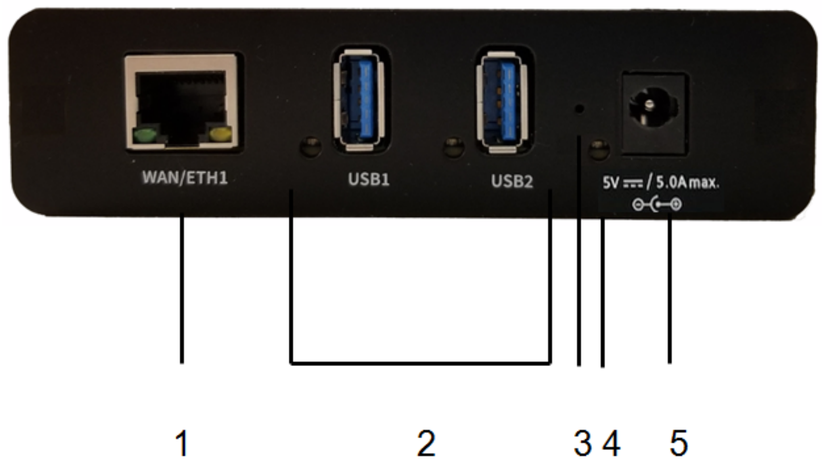
You can configure the Hub to allow remote access to USB devices connected to this server. You must specify the port number that is used to access the Hub.

1. Open the web UI.
2. Select **System** > **Configuration** > **AnywhereUSB Configuration**. The **AnywhereUSB Configuration** page appears.
3. Select **Enable**.
4. Enter the port number in the **Port** field. The default **TCP Port** value is 18574. If you change the port number on this page, you must also change the corresponding port number on your computer.
5. Click **Apply** to apply and save the changes.

Hardware

The physical dimensions, environmental, and power requirements of the AnywhereUSB Hub can be found in the AnywhereUSB Plus datasheet.

AnywhereUSB 2 Plus: Front panel



Item	Name	Description
1	Ethernet connector	Connect the STP Cat 7 Ethernet cable.
2	USB LEDs and ports	The USB port supports 1.1, 2.0, and 3.1 USB devices. The LED illuminates as follows, based on the speed of the USB device: ■ 1.1 (Full speed): Yellow ■ 2.0 (High speed): Green ■ 3.1 (Super speed): Blue
3	Reset button	Use this button to reset the AnywhereUSB Hub configuration to factory defaults. See Reset the device to factory defaults.
4	(Power) LED	The LED is solid blue when the device is powered on. This LED is also used for the Find Me feature. When this feature is activated, the LED blinks green and then orange.
5	Power connector	Connect the power supply: 5 Volt DC center positive. The Hub draws 5 Amp maximum when both USB ports are drawing 1.8 Amps each.

Attach a DIN rail clip (AnywhereUSB Plus 2-port ONLY)

Note You can attach a DIN rail clip only to a AnywhereUSB Plus 2-port device.

Before you begin

- You must purchase a DIN rail mounting kit: Digi PN 7000682.

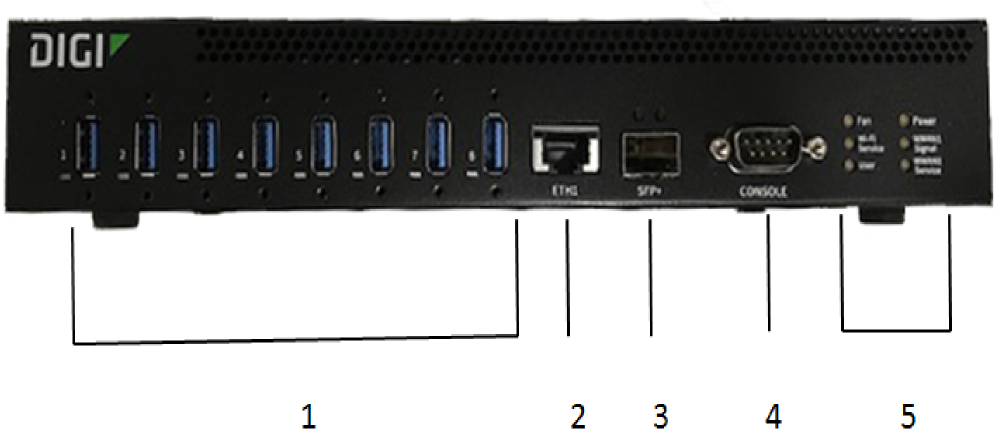
  Note Some kits may not have the required screws included. If this occurs, you will need to separately purchase two screws of the following type: 4-40 x .250 Flat head, Phillips head, zinc-plated screws.

- You will need an appropriate Phillips-head screwdriver.

Attach the DIN rail clip to the device

1. Remove required items from DIN rail mounting kit:
   - DIN rail clip
   - Two 4-40 x .250 Flat head, zinc-plated screws.
2. Place the DIN rail clip on the rear panel of the device. Make sure the screw holes are aligned.
3. In each hole, use a Phillips-head screw driver to screw in a 4-40 x .250 Flat head, zinc-plated screw.
4. Tighten the screws as needed to securely fasten the DIN rail clip to the device.
5. Use the DIN rail clip to mount the device to a rail.

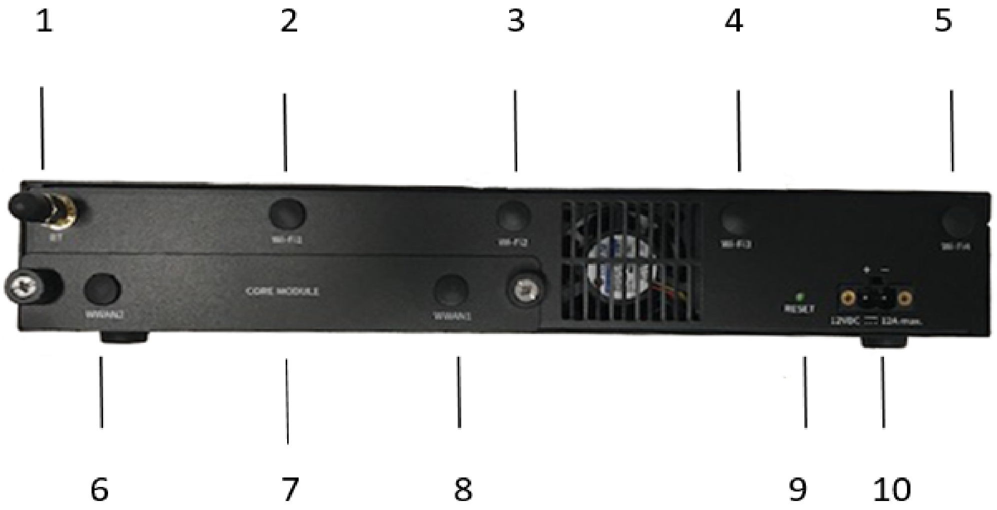
AnywhereUSB 8 Plus: Front panel



Item	Name	Description
1	USB ports and LEDs	The USB ports support 1.1, 2.0, and 3.1 USB devices. The LED illuminates as follows, based on the speed of the USB device: ■ 1.1 (Full speed): Yellow ■ 2.0 (High speed): Green ■ 3.1 (Super speed): Blue
2	ETH1	Connect a Cat 7 STP Ethernet cable. See Connect the hardware. **Note** Digi recommends that you use either the Ethernet cable or the SFP+ module. If both the Ethernet cable and the SFP+ module are connected, the SFP+ module will have priority.
3	SFP+	Connect an SFP transceiver module for fiber connection, such as Finisar Network FTLX8574D3BCL SFP+.
4	DB9 console	Used to access a console using the RS232 DTE interface.
5	Fan	The LED shows the status of the fan:
		🟩 **Solid green** Fan is running within normal range of use

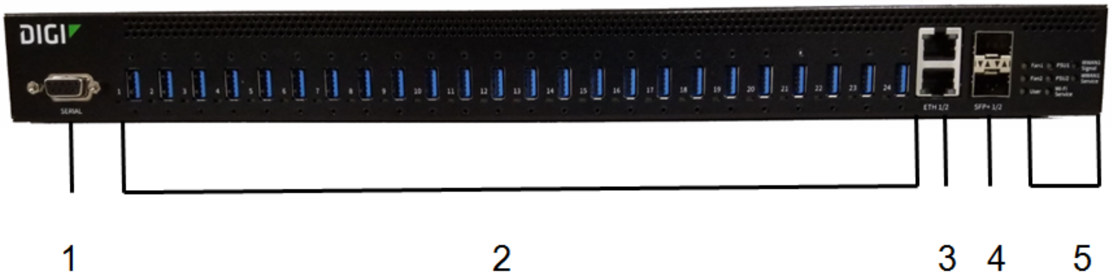
Item	Name	Description	
		🟥	**Solid red** Fan slows down or the Hub is overheating
5	Wi-Fi Service	Reserved for future use.	
5	User	LED used for the Find Me feature. When this feature is activated, the LED blinks orange and then green.	
5	Power	🟦	**Solid blue** The Hub is powered on.
5	WWAN1 Signal	🟥	**Solid red** Very poor signal (-113 dBm to -99 dBm)
		🟧	**Solid orange** Poor signal (-98 dBm to -87 dBm)
		🟨	**Solid yellow** Fair signal (-86 dBm to -76 dBm)
		🟩	**Solid light green** Good signal (-75 dBm to -64 dBm)
		🟩	**Solid green** Excellent signal. (-63 dBm to -51 dBm)
5	WWAN1 Service		**Off** No cellular service
		🟨⬜	**Flashing yellow** Cellular connection coming up
		🟨	**Solid yellow** Connected to 2G or 3G
		🟩	**Solid green** Connected to 4G

AnywhereUSB 8 Plus: Back panel



Item	Name	Description
1	BT	Reserved for future use.
2	Wi-Fi1	Reserved for future use.
3	Wi-Fi2	Reserved for future use.
4	Wi-Fi3	Reserved for future use.
5	Wi-Fi4	Reserved for future use.
6	WWAN2	Attach a cellular module antenna.
7	CORE module	Insert a CORE module component.
8	WWAN1	Attach a cellular module antenna.
9	Reset button	Use this button to reset the AnywhereUSB Hub configuration to factory defaults. See Reset the device to factory defaults.
10	Power connector	Connect the power supply. See Connect the hardware.

AnywhereUSB 24 Plus: Front Panel

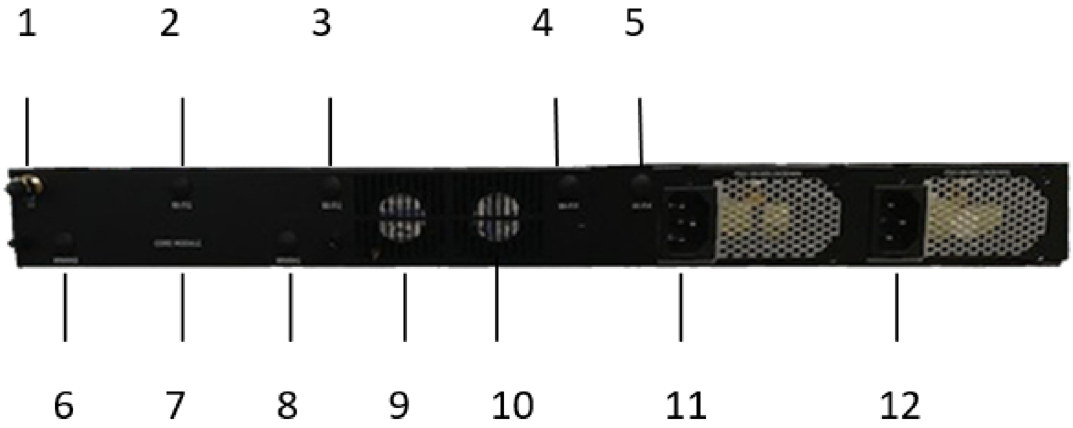


Item	Name		Description
1	DB9 Console	Used to access a console using the RS232 DTE interface.	
2	USB port LEDs	The USB ports support 1.1, 2.0, and 3.1 USB devices. The LED illuminates as follows, based on the speed of the USB device: ■ 1.1 (Full speed): Yellow ■ 2.0 (High speed): Green ■ 3.1 (Super speed): Blue	
3	ETH 1/2	Connect a Cat 7 STP Ethernet cable. ETH1 is the primary network interface. See Connect the hardware using an Ethernet LAN connection. ETH2 is the secondary network interface. This is optional and used for redundancy. **Note** Digi recommends that you use either the Ethernet cable or the SFP+ module. If both the Ethernet cable and the SFP+ module are connected, the SFP+ module will have priority.	
4	SFP+ 1/2	Connect an SFP transceiver module for fiber connection, such as Finisar Network FTLX8574D3BCL SFP+. The second SFP+ module is optional and used for redundancy.	
5	Fan1	The LED shows the status of Fan 1:	
		🟩	**Solid green** The fan is running within normal range of use.
		🟥	**Solid red** The fan slows down or the Hub is overheating.

Item	Name		Description
5	Fan2	The LED shows the status of Fan 2:	
		🟩	**Solid green** The fan is running within normal range of use.
		🟥	**Solid red** The fan slows down or the Hub is overheating.
5	User	LED used for the Find Me feature. When this feature is activated, the LED blinks orange and then green.	
5	PSU1	🟦	**Solid blue** The Hub is powered on.
		🟥	**Solid red** The Hub is not powered or the supply has failed.
5	PSU2	🟦	**Solid blue** The Hub is powered on.
		🟥	**Solid red** The Hub is not powered or the supply has failed.
5	Wi-Fi Service		Reserved for future use.
5	WWAN1 Signal	🟥	**Solid red** Very poor signal (-113 dBm to -99 dBm)
		🟧	**Solid orange** Poor signal (-98 dBm to -87 dBm)
		🟨	**Solid yellow** Fair signal (-86 dBm to -76 dBm)
		🟩	**Solid light green** Good signal (-75 dBm to -64 dBm)
		🟩	**Solid green** Excellent signal. (-63 dBm to -51 dBm)

Item	Name		Description
5	WWAN1 Service		**Off** No cellular service
		🟨⬜	**Flashing yellow** Cellular connection coming up
		🟨	**Solid yellow** Connected to 2G or 3G
		🟩	**Solid green** Connected to 4G

AnywhereUSB 24 Plus: Back panel



Item	Name	Description
1	BT	Reserved for future use.
2	Wi-Fi1	Reserved for future use.
3	Wi-Fi2	Reserved for future use.
4	Wi-Fi3	Reserved for future use.
5	Wi-Fi4	Reserved for future use.
6	WWAN2	Attach a cellular module antenna.
7	CORE module	Insert a CORE module component.
8	WWAN1	Attach a cellular module antenna.
9	Fan 1	Primary fan.
10	Fan 2	Secondary fan.
11	Power connector	Connect the power supply. See Connect the hardware.
12	Power connector	Connect the second (optional) power supply. This is used for redundancy.
	Reset button	The reset button is on the side of the Hub. Press this button to reset the AnywhereUSB Hub configuration to factory defaults. See Reset the device to factory defaults.

Regulatory and safety information

Safety warnings

Review the following safety warnings for AnywhereUSB Hub.

WARNING! Notice the following safety warnings:

- Risk of explosion if battery is replaced by incorrect battery type. Dispose of used batteries according to the instructions.
- This equipment is not suitable for use in locations where children are likely to be present.
- This is equipment is suitable for installation in Information Technology Rooms in accordance with Article 645 of the National Electrical Code and NFPA 75.
- Use certified and rated Laser Class I Optical Transceiver product.
- Ensure that the power cord is connected to a socket-outlet with earthing connection.
- Never open the equipment. For safety reasons, the equipment should be opened only by skilled person.

WARNING! Risk of electric shock.

WARNING! Disconnect all energy sources.

AVERTISSEMENT! Notice the following safety warnings:

- Risque d'explosion si la batterie est remplacée par un type de pile incorrect. Jeter les piles usées selon les instructions.
- Cet équipement ne convient pas pour une utilisation dans des endroits où des enfants sont susceptibles d'être présents.
- Convient pour l'installation dans les salles informatiques conformément à l'article 645 du code national de l'électricité et à la norme NFPA 75.
- Utilisez un produit émetteur-récepteur optique laser de classe I certifié et évalué.
- Veillez à connecter le cordon d'alimentation à une prise de courant avec mise à la terre.
- Ne jamais ouvrir l'équipement. Pour des raisons de sécurité, l'équipement ne doit être ouvert que par du personnel qualifié.

AVERTISSEMENT! Attention! Danger de choc.

AVERTISSEMENT! Déconnecter toutes les source d'énergie.