

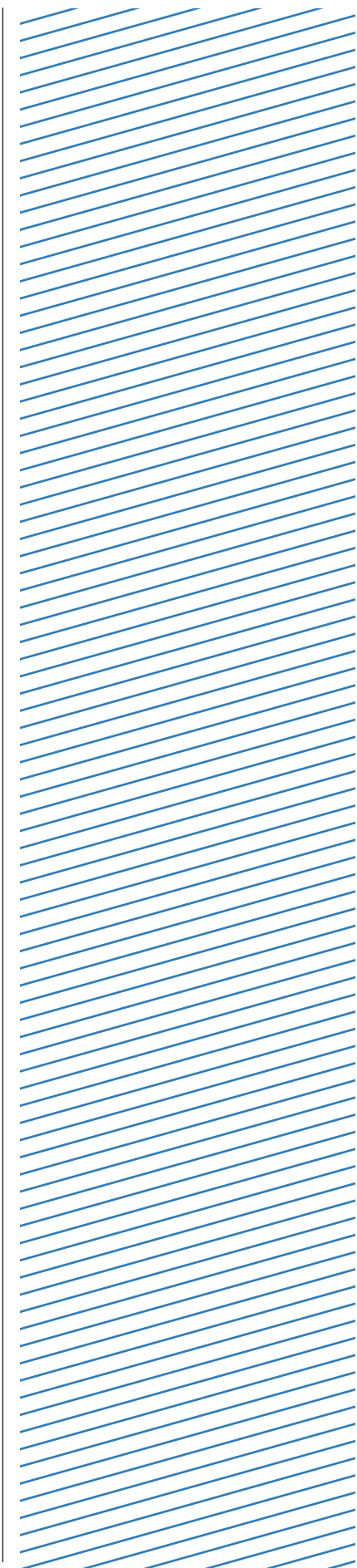


# Network Switch Set-up Guides

## Netgear

### AV Line Switches

when used in a Blustream Video over IP system, in a single switch configuration system



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# Introduction

Blustream Video over IP solutions require a managed network switch in order for HDMI distribution to be achieved reliably, and without any loss of performance.

The following guide is a step-by-step instruction on how to connect and configure the Netgear AV Line network switch to support Blustream video over IP products.

Please ensure each step is followed, and checked at each stage. Before exiting the set-up, it is advisable to reboot the switch, log-in, and double check all settings. Failure to set up the switch correctly will likely result in the system not working as intended.

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## Switch Requirements

The following features need to be enabled on the network switch:

1. Multicast
2. Jumbo Frames / Jumbo Packets / MTU
3. IGMP Management / Snooping
4. PoE (where being utilised)

### Feature explanation:

- **Multicast** (one-to-many or many-to-many distribution) is a group communication where information is addressed to a group of network devices simultaneously (Blustream video over IP products).
- **Jumbo Frames / Jumbo Packets / MTU** are Ethernet frames with more than 1,500 bytes of payload. Conventionally, jumbo frames can carry up to 9,216 bytes of payload and must be activated in order to send large packets of data for HDMI distribution. Without this enabled, the ability for the IP\*\*\*UHD-TX units to transmit the HDMI data will not be achievable.
- **IGMP Management & IGMP Snooping** is the process of listening to Internet Group Management Protocol (IGMP) network traffic. The feature allows a network switch to listen in on the IGMP conversation between hosts, routers & receivers (IP\*\*\*UHD Transmitters, the network switch, and IP\*\*\*UHD Receivers). By listening to this flow of traffic the switch maintains a map of which links need which IP multicast streams i.e. which Blustream video over IP products are active and where the signal is being distributed to.
- **PoE** (Power over Ethernet) the Blustream IP\*\*\*UHD and ACM devices are all capable of being powered by PoE. Power Supply Units are available for Blustream IP\*\*\*UHD and ACM devices, however, the products are not sold with these included. PoE can be disabled on the switch if external PSU's are being used.

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## Network Topology for Multicast

Our recommendation for the set-up of a Blustream video over IP system would be to have the customers business, or home network be kept independent of the video distribution network. This negates the possibility of data flowing through one network reducing the performance of the other and vice-versa. The Blustream Advanced Control Module (ACM) will act as a "bridge" between the two networks allowing for control data to be seamlessly transmitted between the two networks.

Where the the business / home network and video over IP network are sharing a switch/es (not recommended). We would suggest creating a separate VLAN for the video over IP network. A networking professional should be consulted when designing this type of system to ensure the networks can co-exist on the same infrastructure.

## Connecting to the switch Web GUI Interface

To login into the Netgear network switch connect to the OOB (out of band) port, the factory default details are:

IP Address: 192.168.0.239  
 User: admin  
 Password: password

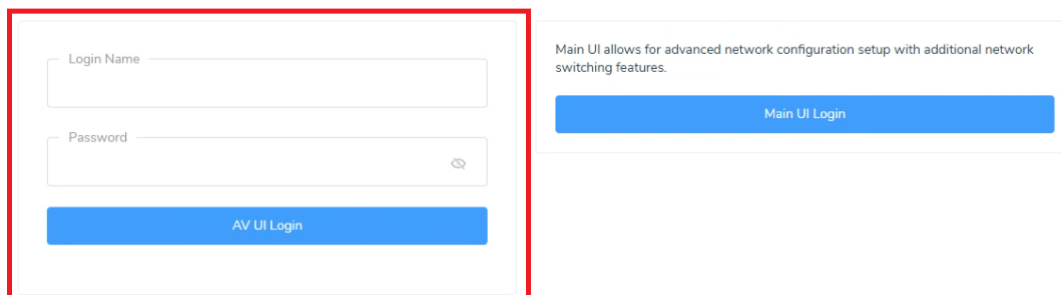
In order to connect to the network switch your computer will need to be physically connected to the Netgear switch using an Ethernet network cable to the OOB port. **The computer must also be in the same IP range as the Netgear switch default IP address. If you are unsure how to update your computer IP range follow the ‘Changing your computer IP address’ instructions at the end of this guide.**

- 1) Open your internet browser (Google Chrome, Safari, Mozilla, Internet Explorer etc)
- 2) Type the network switch default IP address into the web browser bar
- 3) Enter the default user name and password

If the switch is not using the factory default settings you will need to know these login details or have to factory reset the unit. For details how to factory reset the network switch please refer to the network switch user manual.

**Please note:** network switch manufacturers regularly update firmware on their switches. There may be differences in the layout and representation of the screenshots of the switch GUI within this guide as firmwares are updated.

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All of the configuration will be carried out within the AV UI, so login using the “AV UI Login” option by entering the username and password.

On first login to a new, or factory reset unit, the password will need to be changed from the default (the username can be changed, but this is not mandatory). Please make a note of the new password - failure to do so will result in the switch having to be factory reset to access settings if the password is forgotten.

## Firmware update

Before configuring the Netgear AV Line switch, it should be updated to the latest firmware. The minimum firmware version required is 12.0.19.6.

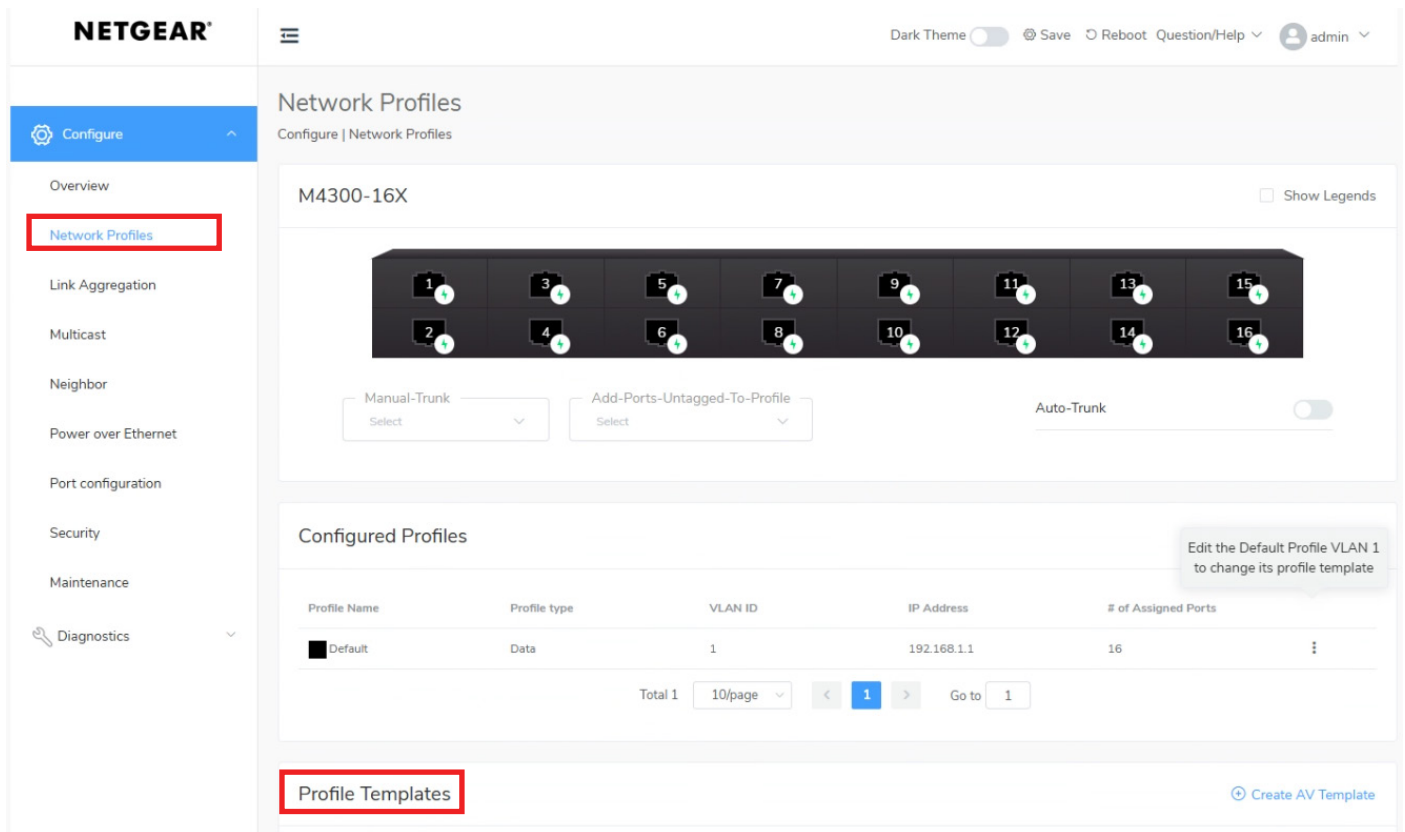
The latest firmware files can be downloaded from the Netgear website on the relevant product support page.

To update the firmware, go to the “Maintenance” page, select “Browse File”, choose the firmware file and click “Upload”. This will update the firmware on the switch and once completed it will reboot.

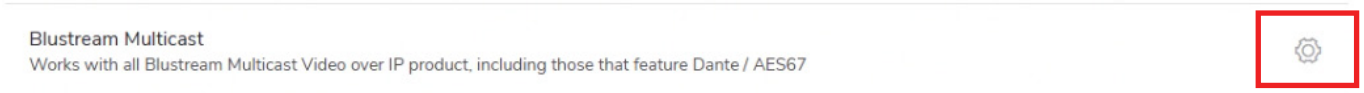
The screenshot displays the Netgear web interface for a switch. The left sidebar contains navigation options: Overview, Network Profiles, Link Aggregation, Multicast, Neighbor, Power over Ethernet, Port configuration, Security, Maintenance (highlighted with a red box), and Diagnostics. The main content area is titled "Maintenance" and includes a "Firmware Update" section. In this section, version 12.0.19.6 is selected and marked as "Active", while 12.0.8.7 is unselected. A "Browse File" input field with an upload icon and an "Upload" button are highlighted with a red box. Below this is a "Configuration Management" section with two sub-sections: "Download" (with a "Download configuration" button) and "Restore" (with a "Browse File" input field and an "Upload" button).

## Select Blustream Network Profile

The Blustream network profile is available on the Netgear switch which will configure all of the network options required automatically. To select and apply the profile, go to the “Network Profiles” page, scroll down to “Profile Templates” and to the “Blustream Multicast” profile.



Now select the settings icon against the “Blustream Multicast” profile.



Now press the “Untag All” button or individually select each port by clicking it once to select the ports to be part of the Blustream Multicast video VLAN. Each port that is part of the Blustream video network VLAN will be shown with a green tick icon.

Enter a VLAN ID, this can be any unused ID, in this example we use “100”.

Now click “Apply”.

The screenshot shows the 'Profile Configure' window for 'Blustream Multicast'. At the top, there is a grid of 16 ports (1-16) with green checkmarks indicating they are selected. A 'Tag all' button is highlighted with a red box. Below the grid, the 'Profile Settings' section includes a 'VLAN ID' field with '100' entered, also highlighted with a red box. Other settings include 'Profile Name' (Blustream Multicast), 'Profile Template' (Blustream Multicast), 'Color' (#2F7EC2), and 'PTP-TC' (checked). The 'Edit VLAN Routing / DHCP Server' section is currently disabled. At the bottom, 'Cancel' and 'Apply' buttons are visible, with 'Apply' highlighted by a red box.

## Save Settings and Reboot

When the popup window closes and the settings have been applied, the ports will now be highlighted in blue and the “Blustream Multicast” VLAN will be shown under the “Configured Profiles” section.

The switch is now fully configured and ready for use with a Blustream video over IP system, save the settings by clicking “Save” at the top of the page and reboot the switch.

The screenshot shows the Netgear configuration interface for an M4300-16X switch. At the top right, the 'Save' and 'Reboot' buttons are highlighted with a red box. The main area displays the 'Network Profiles' section for the M4300-16X, showing a port configuration diagram with 16 ports numbered 1 through 16, all highlighted in blue. Below the diagram are dropdown menus for 'Manual-Trunk' and 'Add-Ports-Untagged-To-Profile', and an 'Auto-Trunk' toggle switch. The 'Configured Profiles' section contains a table with the following data:

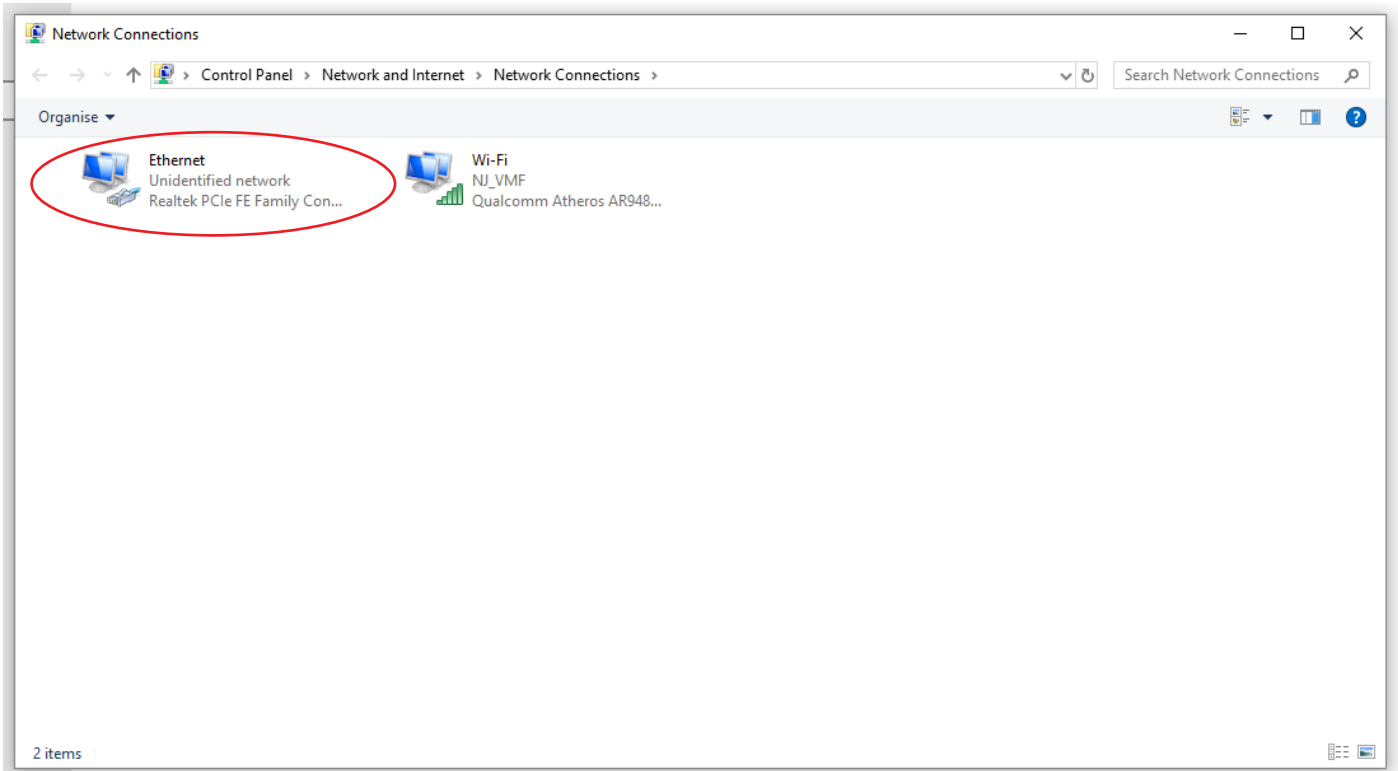
Profile Name	Profile type	VLAN ID	IP Address	# of Assigned Ports
Default	Data	1	192.168.1.1	N/A
Blustream Multicast	Blustream Multicast	100	N/A	16

At the bottom of the table, there is a pagination control showing 'Total 2', '10/page', and 'Go to 1'. A tooltip on the right side of the table says 'Edit the Default Profile VLAN 1 to change its profile template'.

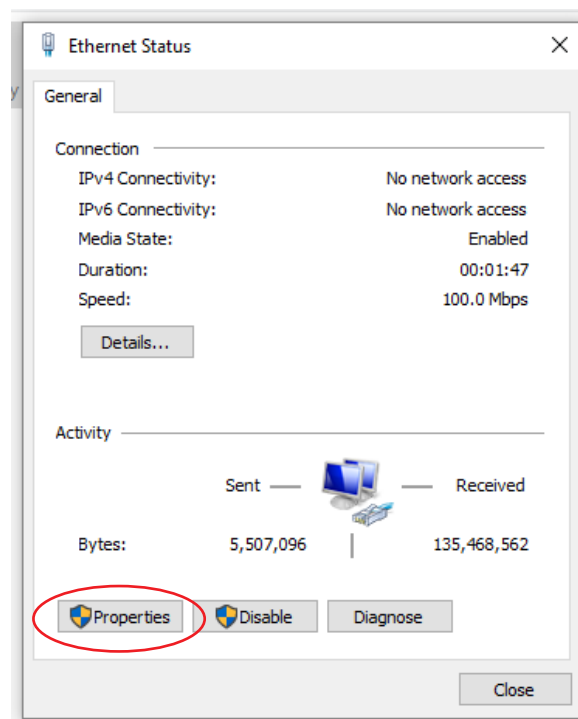


## Amending your IP Address in Windows

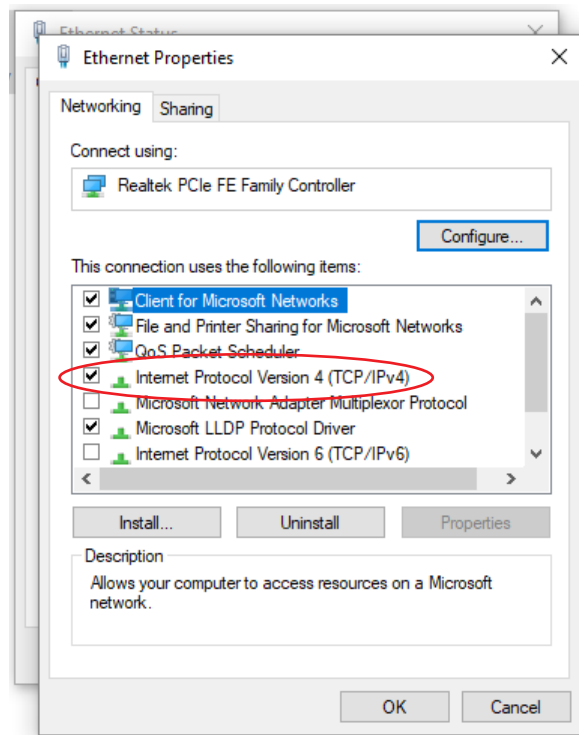
1. Connect the computer to the network switch using an Ethernet cable
2. Navigate to: **CONTROL PANEL / NETWORK & INTERNET / NETWORK CONNECTIONS**
3. Double click on the Ethernet connection as highlighted below:



4. In the pop-up window that appears, click on: **PROPERTIES**



5. In the pop-up window that appears, double-click on: **INTERNET PROTOCOL VERSION 4 (TCP/IPv4)**



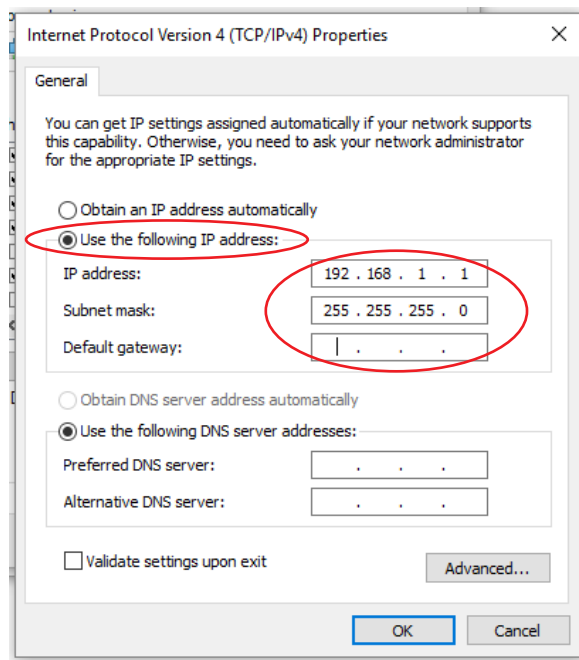
5. In the pop-up window that appears, double-click on the radial button marked: **USE THE FOLLOWING IP ADDRESS**

6. Enter the details as below:

IP Address: **[choose an address inline with the switch default IP address]**

Subnet mask: **255.255.255.0**

Default gateway: *Leave this field blank*

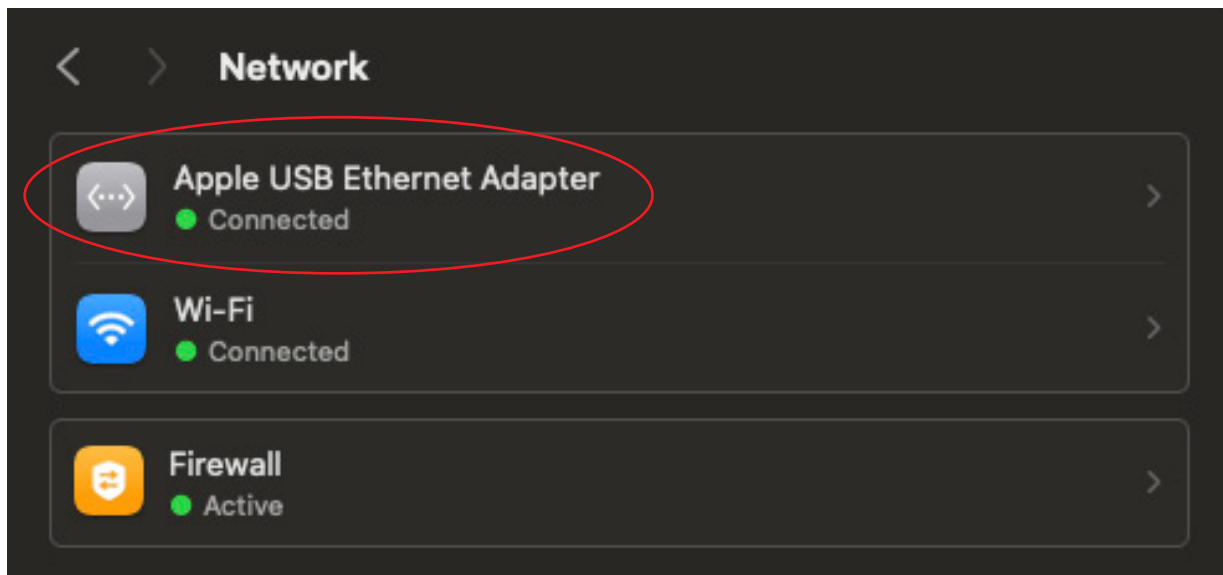


7. Click: **OK / OK / CLOSE**

Your Windows PC will now be working in the IP range as set above and you will now be able to communicate with the equipment working within the same IP range.

## Amending your IP Address in Mac OS

1. Connect the Mac to the network switch using an Ethernet cable
2. Click on the Settings app
3. Click on 'Network' in the left hand file tree
4. Select the hardwired network adaptor / port connected to the switch

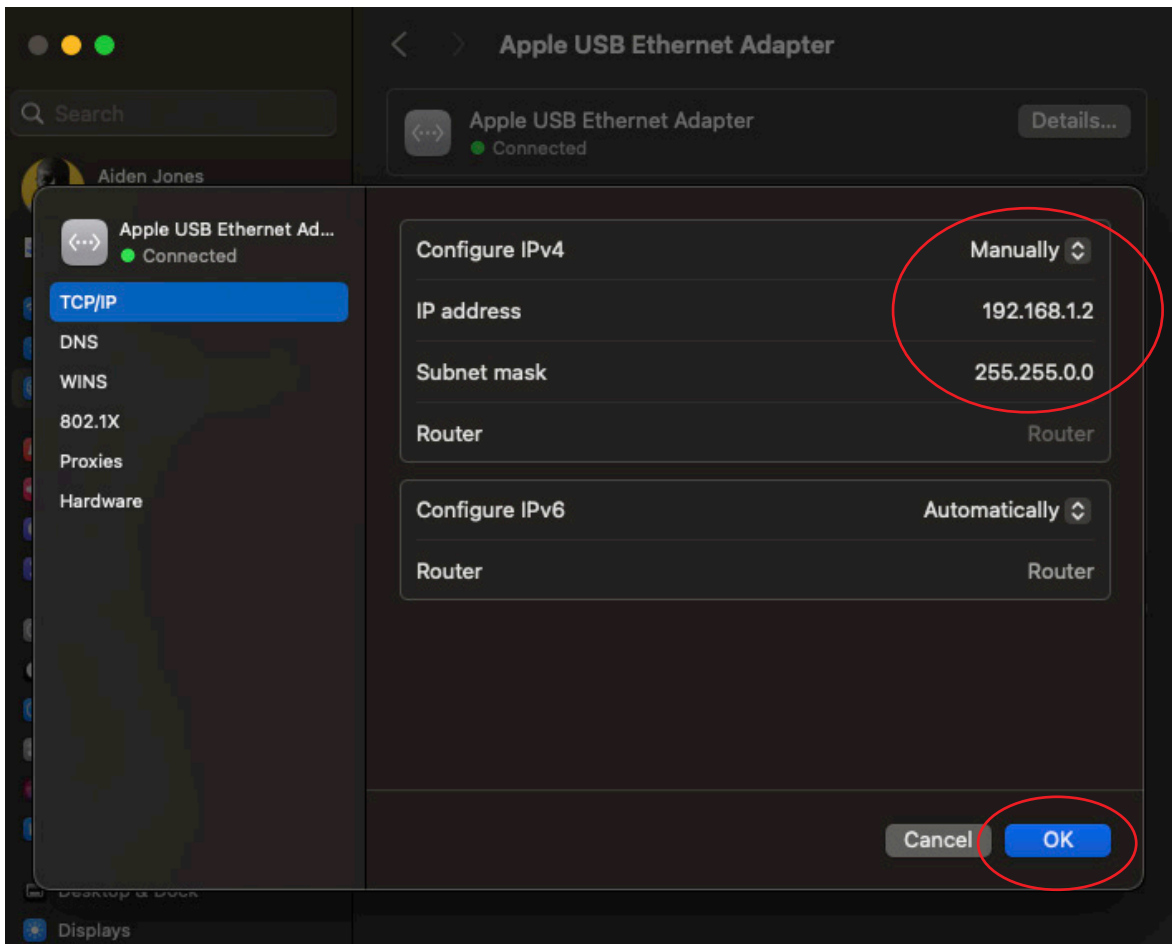


4. Click the 'Details' button
5. Select TCP/IP from the left hand file tree
6. Use the drop down box for 'Configure IPv4' to select 'Manually'
7. Enter the details as below:

IP Address: **[choose an address inline with the switch default IP address]**

Subnet mask: **255.255.0.0**

Router: *Leave this field blank*



8. Click: **OK** at the bottom of the page and close.

Your Mac will now be working in the IP range as set above and will now be able to communicate with the switch working within the same IP range.



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