# Network Switch Set-up Guide

# Luxul

## AMS & XMS Series

when used with a 1Gb RTI VIP distribution system
(single switch system configuration)

Revision: 1.1 - Feb 2021

# Contents

# Introduction

The 1Gb RTI VIP solutions require a 1Gb 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 your network switch to support 1Gb VIP-UHD 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.

# Switch Requirements

The following features need to be enabled on the network switch being used for an RTI VIP-UHD system:

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 (RTI VIP-UHD 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 VIP-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 (VIP-UHD Transmitters, the network switch, and VIP-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 RTI VIP-UHD products are active and where the signal is being distributed to.
- PoE (Power over Ethernet) the RTI VIP-UHD devices are all capable of being powered by PoE. Power Supply Units are available for VIP-UHD devices, however, the products are not sold with these included. PoE can be disbaled on the switch if external PSU's are being used.

# Network Topology for VIP

Our recommendation for the set-up of an RTI VIP-UHD system would be to have the customers business, or home network be kept independent of the VIP-UHD video distribution network. This negates the possibility of data flowing through one network reducing the performance of the other and vice-versa. The VIP-UHD-CTRL 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 VIP-UHD network are sharing a switch/es (not recommended). We would suggest creating a separate VLAN for the VIP-UHD network, ensuring there is a minimum 1Gb of bandwidth allocated to the VLAN. 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 Web GUI Interface

To login into the Luxul network switch the factory default details are:

IP Address: 192.168.0.4

User: admin

Password: admin

In order to connect to the network switch your computer will need to be physically connected to the Luxul switch using an Ethernet network cable. **The computer must also be in the same IP range as the Luxul 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 rear of this guide.**

1) Open your internet browser (Google Chrome, 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

Note: 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 networks switch user manual.

# Maximum Frame Size

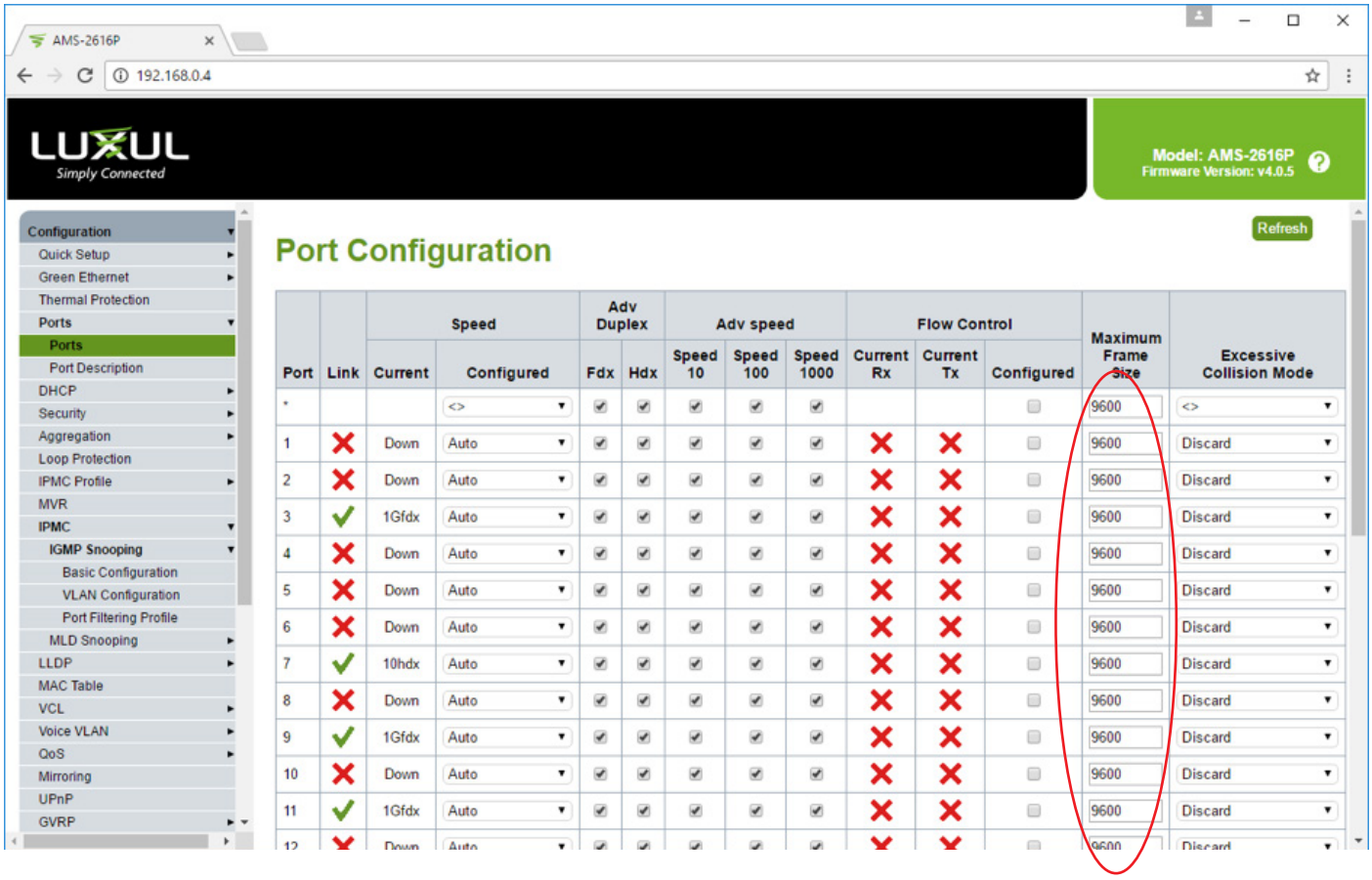
To increase the maximum frame size,

Within the 'Configuration' menu

Select 'Ports'

Select 'Ports'

Ensure 'Maximum Frame Size' is set to 9600 for all ports.




Click 'SAVE' at the bottom of the page to update the setting

# IGMP Snooping

To enable IGMP snooping, there are several steps required to enable this feature:

- IGMP Snooping
- IPMCv4 Flooding
- Fast Leave
- IGMP Querier Status
- IGMP Querier Election

The following pages explain how to update the above settings

# IGMP Snooping

Under 'Configuration' menu

Select 'IPMC'

Select 'IGMP Snooping'

Select 'Basic Configuration'

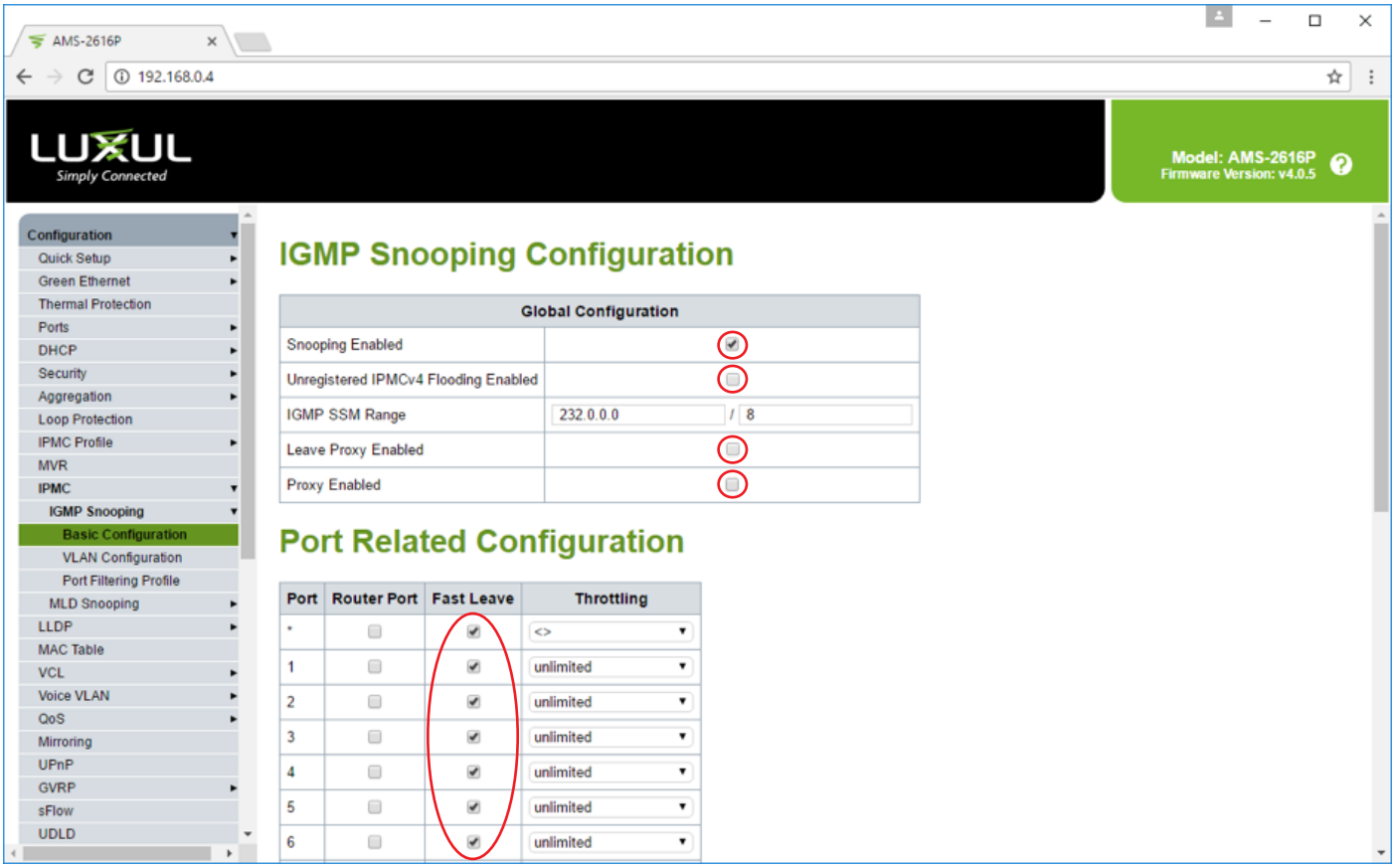
Tick 'Snooping Enabled'

Untick 'Unregistered IPMCv4 Flooding Enabled'

Untick 'Leave Proxy Enabled'

Untick 'Proxy Enabled'

Tick 'Fast Leave' for all ports




Confirm other settings match those as shown in the above image

Click 'SAVE' to update the setting

# IGMP Snooping VLAN Configuration

Under 'Configuration' menu

Select 'IPMC'

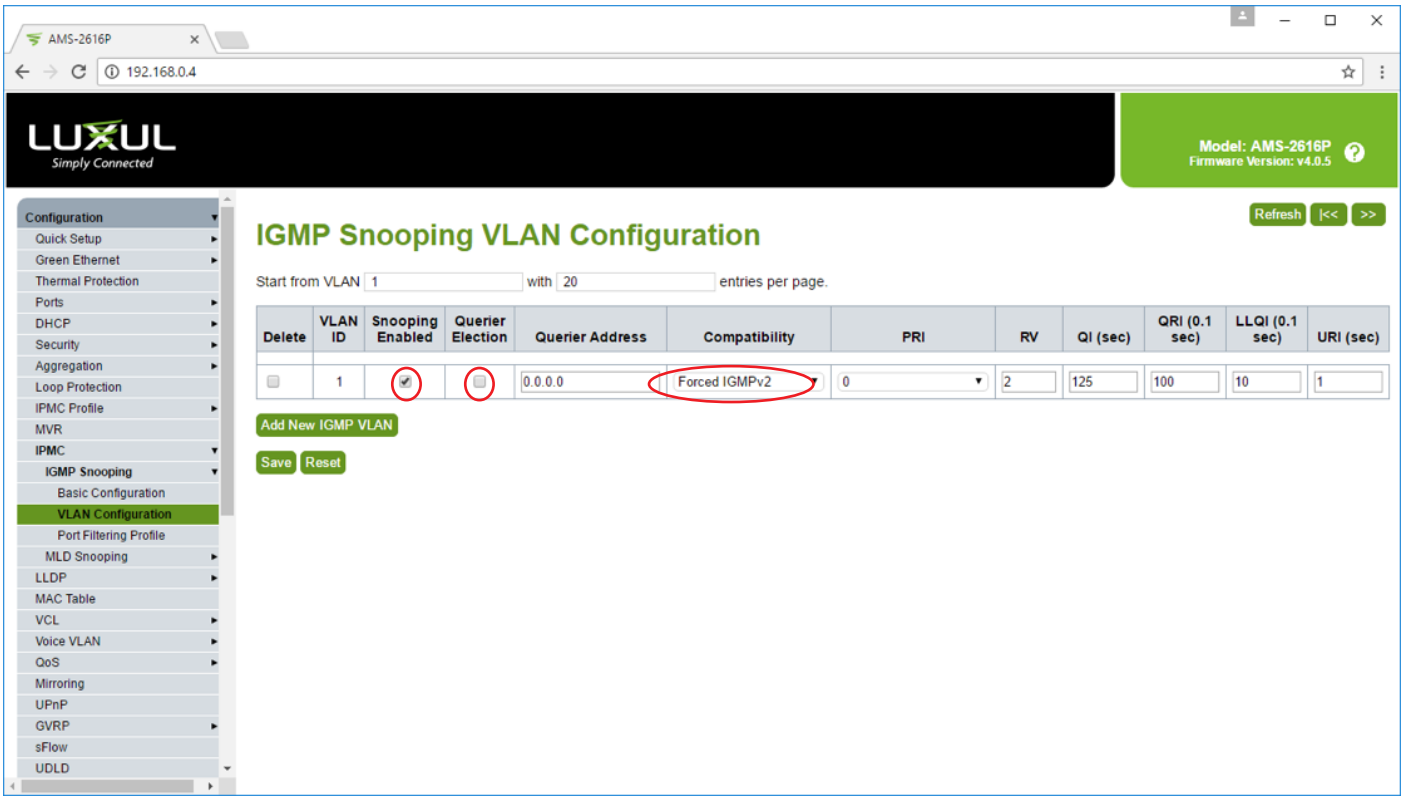
Select 'IGMP Snooping'

Select 'VLAN Configuration'

Tick 'Snooping Enabled'

Untick 'Querier Election'

Change 'Compatibility' to Forced IGMPv2




Confirm other settings match those as shown in the above image

Click 'SAVE' to update the setting

# Turning On/Off PoE

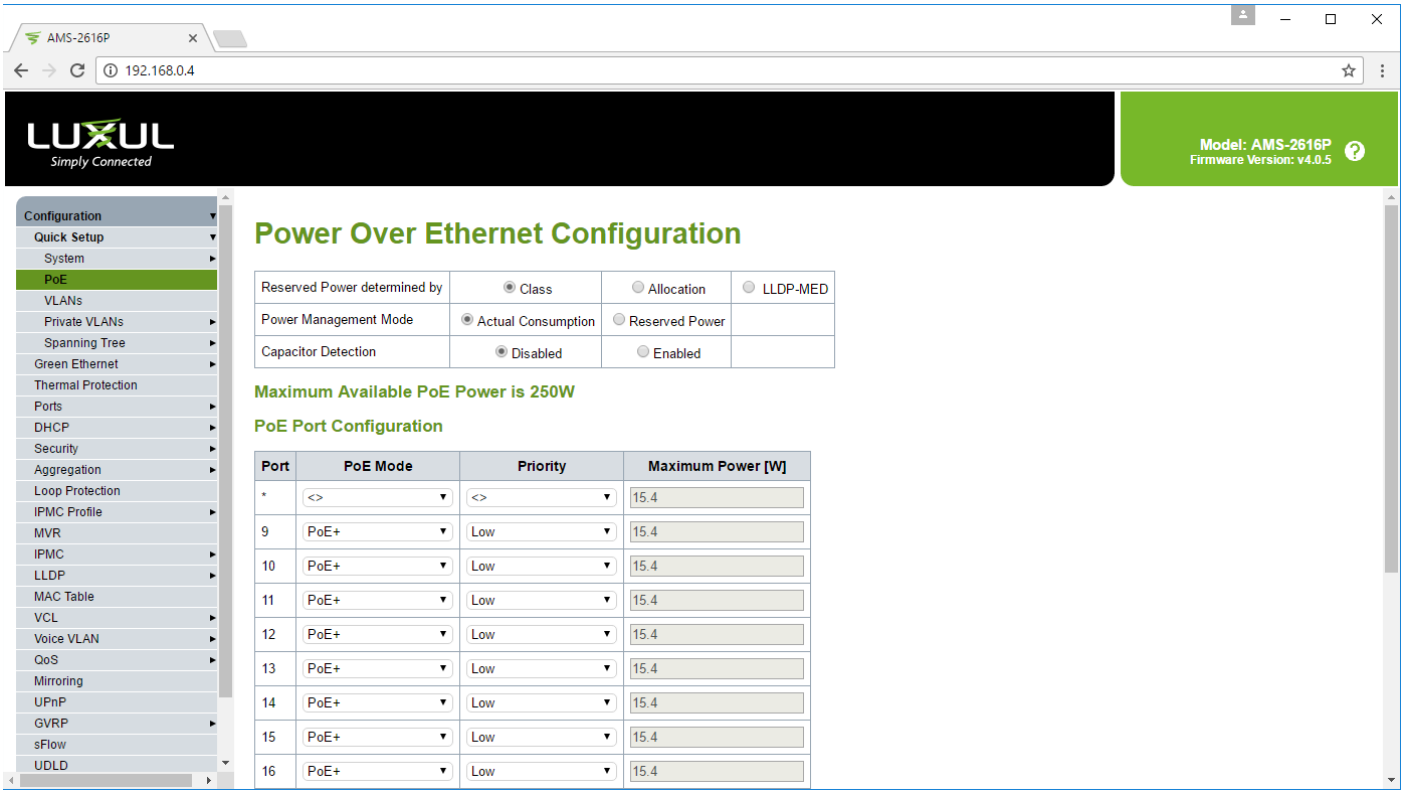
Not all Luxul AMS switches support PoE. Furthermore, not all ports on the PoE switches support PoE. Please ensure your products are connected to the correct port. If you are unsure of the PoE port setting please follow the below instructions.

Under 'Configuration' menu

Select 'Quick Setup'

Select 'PoE'

The following table shows the settings for each RJ45 LAN port on the network switch. Default settings are for PoE Mode to be set to PoE+ (Enabled) so changes should not be required. If PoE Mode is 'Disabled' please follow below instructions.




Click 'SAVE' to update the setting

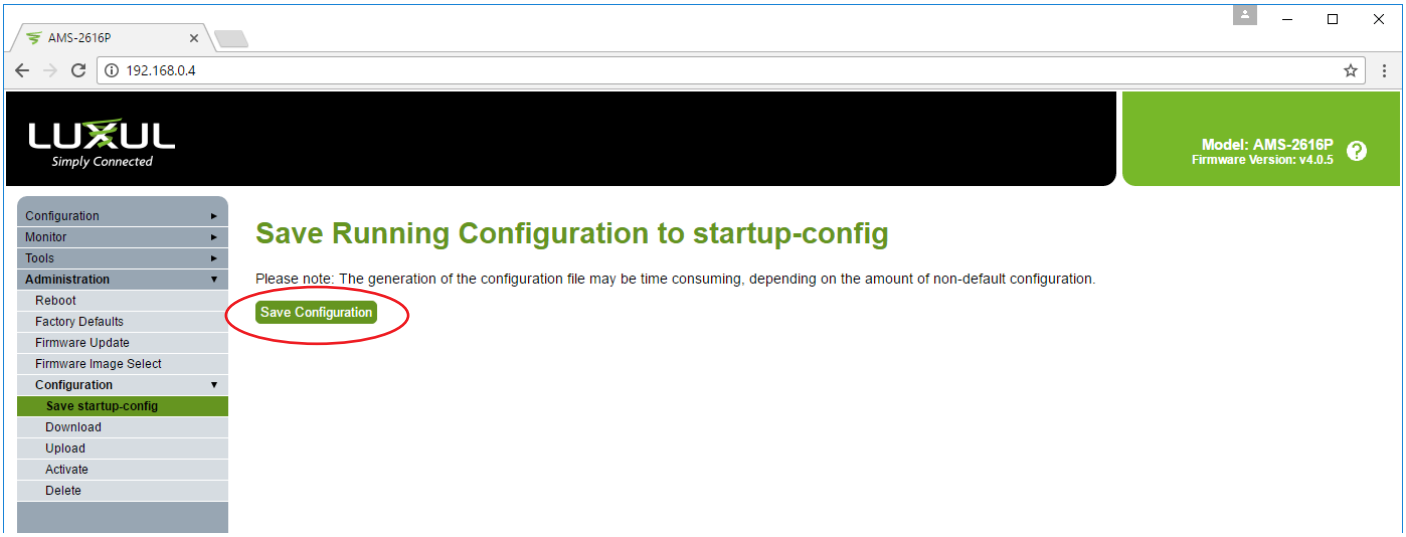
# Apply and Save Settings

All settings that have been previously updated will not be finalised until the configuration is saved and the switch is rebooted. To save the configuration:

Under 'Administration' menu

Select 'Configuration'

Select 'Save Startup-Config'



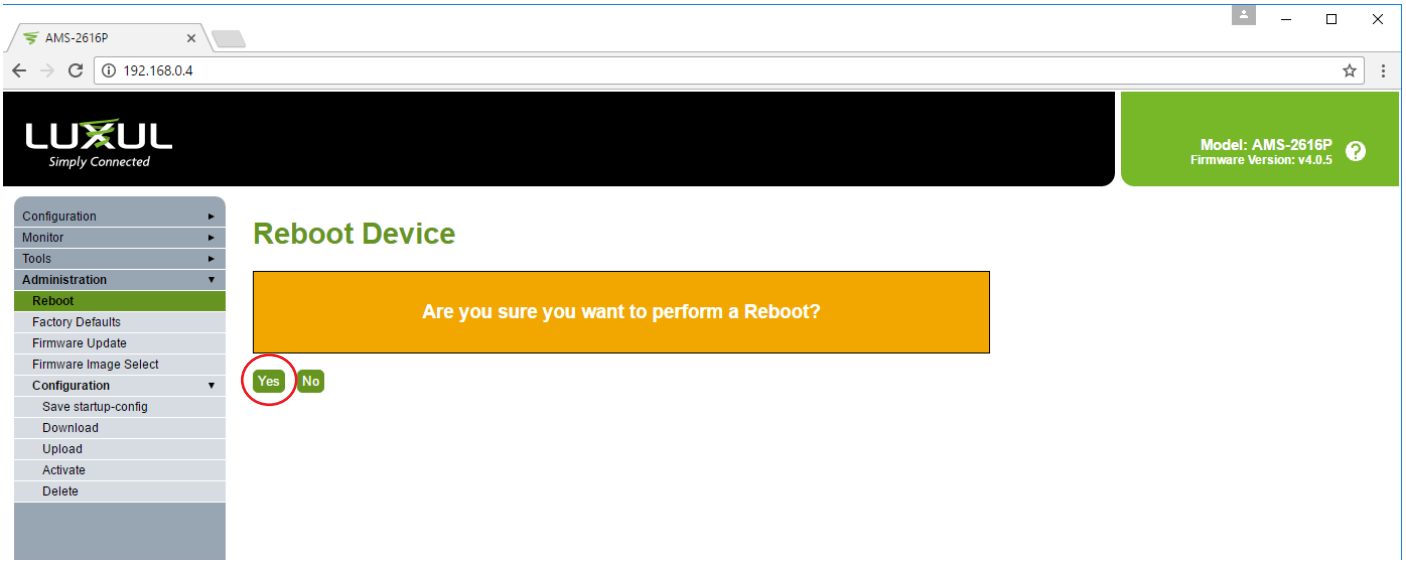

Click 'Save Configuration' to save the settings

It is then recommended to reboot the switch for settings to be applied

To reboot the switch:

Under 'Administration' menu

Select 'Reboot"

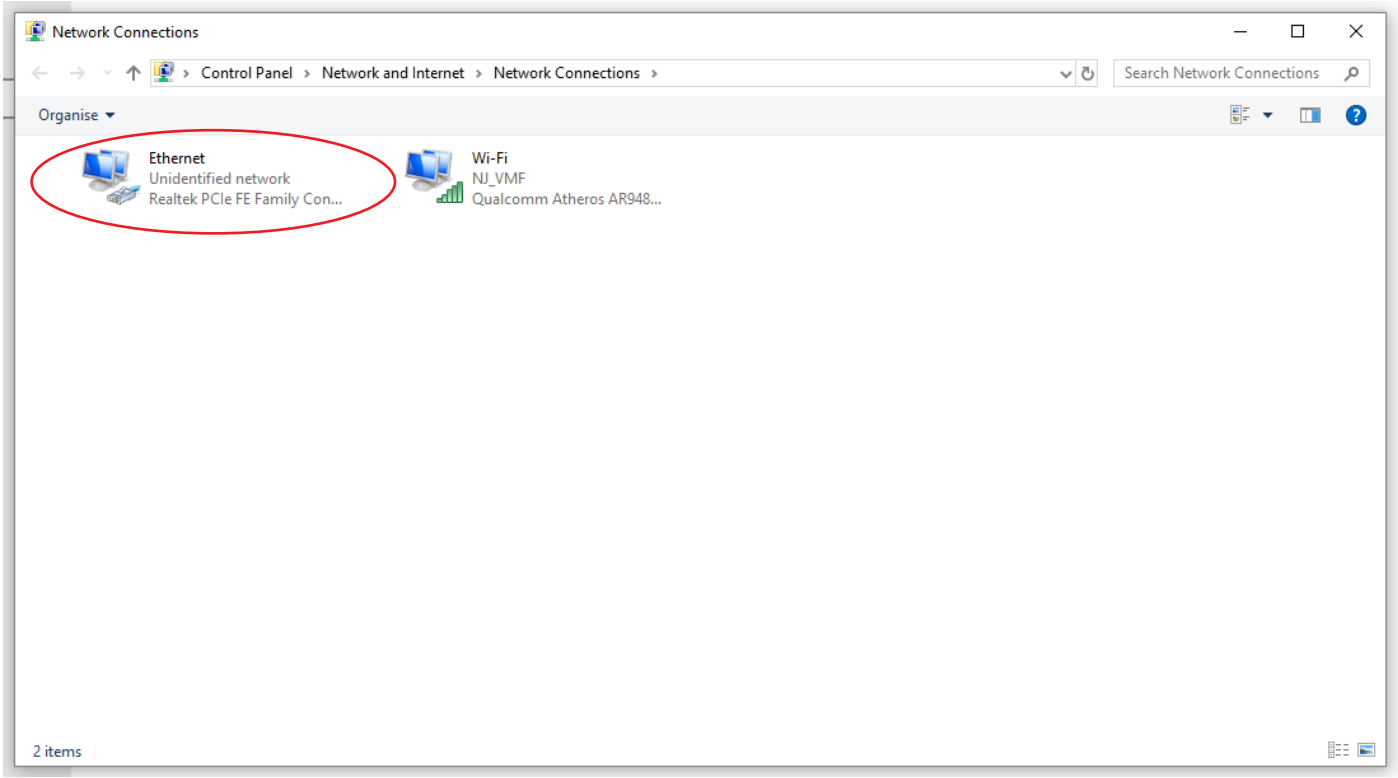



Click 'Yes' to reboot the switch

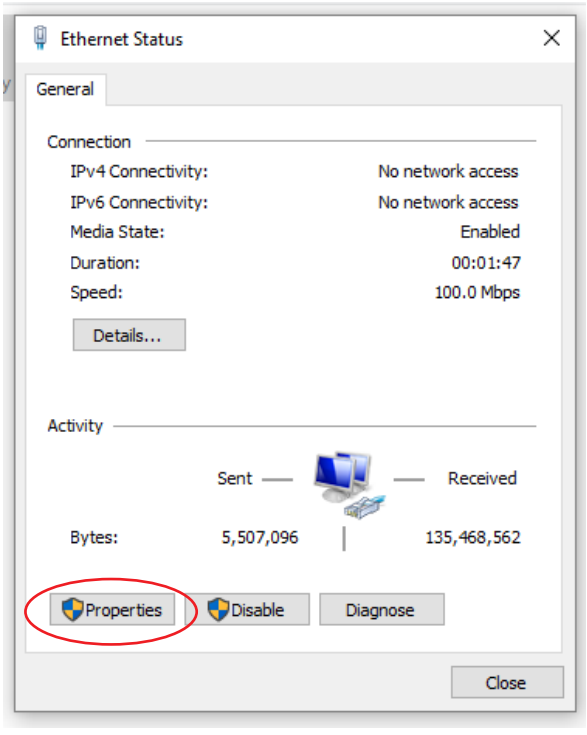
**Please note:** The switch may take several minutes to reboot but will then be ready to use with the RTI VIP-UHD products

# Amending your IP Address in Windows

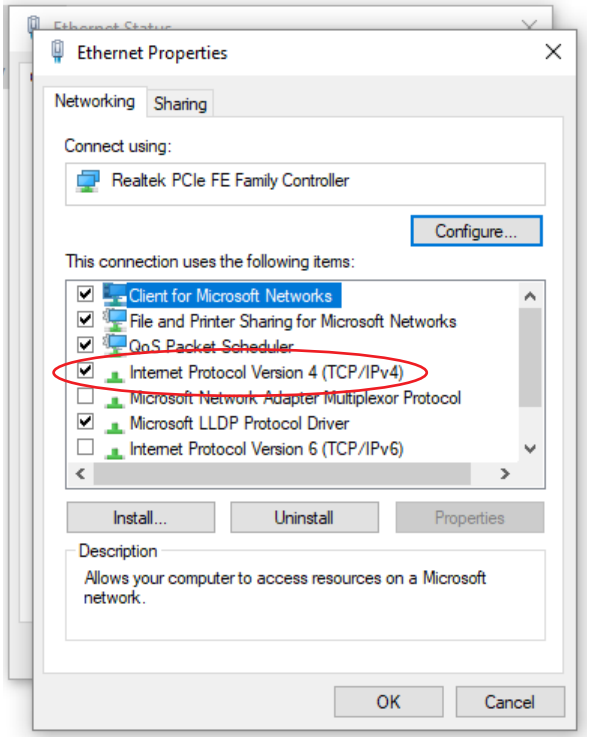
1. Connect the computer to the network switch using an Ethernet cable
2. Navigate to: CONTROL PANEL / NETWORK & INTERNET / NETWORK CONNECTIONS
3. Double click on the Ethernet connection as highlighted below:




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



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



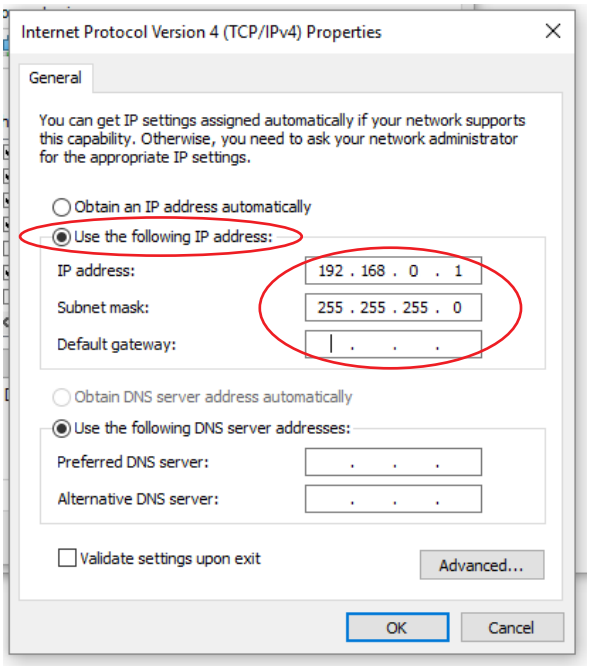

5. In the pop-up window that appears, double-click on the button marked: USE THE FOLLOWING IP ADDRESS

6. Enter the details as below:

IP Address: 192.168.0.1

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

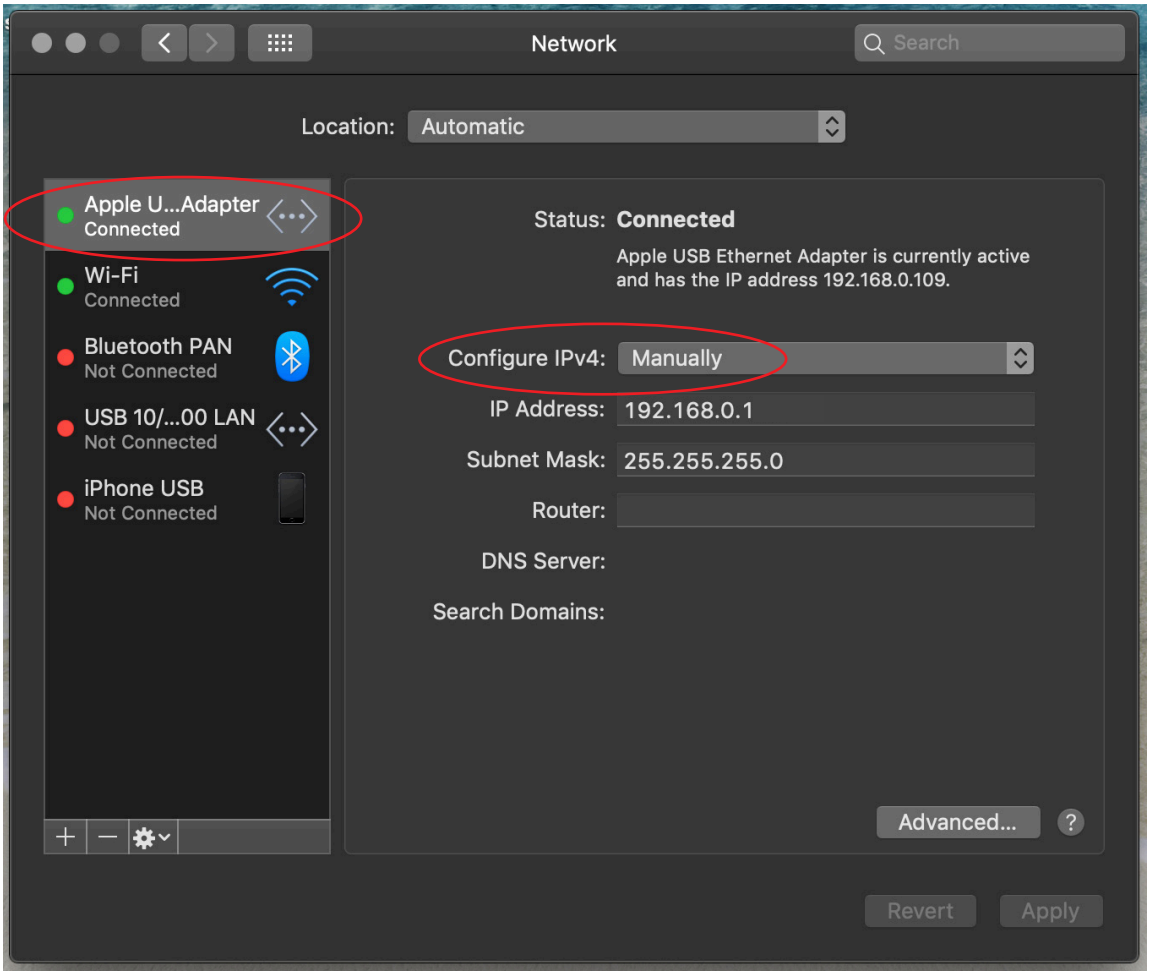
1. Connect the Mac to the network switch using an Ethernet cable
2. Click on the Network Connections icon in the toolbar at the top of the desktop
3. Navigate to: OPEN NETWORK PREFERENCES

4. Find the active Ethernet connection to the network switch on the left-hand menu tree
5. Use the drop-down box marked: CONFIGURE IPv4 and set to: MANUALLY
6. Enter the details as below:

    IP Address: 192.168.0.1

    Subnet mask: 255.255.255.0

    Router: *Leave this field blank*




7. Click: APPLY at the bottom of the page and close.

Your Mac 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.

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