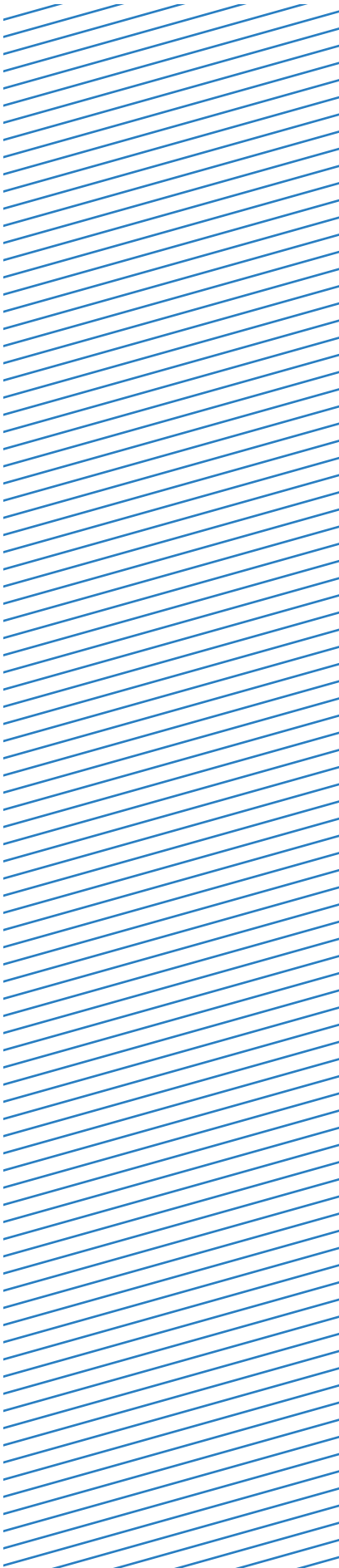# BLUSTREAM
MULTICAST

Network Switch Set-up Guides

ZyXEL
GS1920 Series

when used in a 1Gb Blustream Multicast system, in a single switch configuration system

Contents

Introduction

The 1Gb Blustream Multicast 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 Blustream Multicast 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 a Blustream Multicast 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 (Blustream Multicast 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 Multicast 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 disbaled on the switch if external PSU's are being used.

Network Topology for Multicast

Our recommendation for the set-up of a Blustream Multicast system would be to have the customers business, or home network be kept independent of the Blustream Multicast video distribution network. This negates the possibility of data flowing through one network reducing the performance of the other and vice-versa. The Blustream Control Module 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 Multicast network are sharing a switch/es (not recommended). We would suggest creating a separate VLAN for the Multicast 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 switch Web GUI Interface

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

IP Address: 192.168.1.1

User: admin

Password: 1 2 3 4

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

Please 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 network switch user manual.

IGMP Snooping

Within the 'Advanced Application' menu

Select 'Multicast' in the sub-menu on the left hand side of the screen

Select 'IPv4 Multicast Status' at the top fo the screen

Check the box for: 'IGMP Snooping: Active', and 'IGMP Snooping: Querier' at the top

Ensure the rest of the settings are as per the screen shot below:

Click 'Save' to update the setting.

Please note: It is important to 'Save' at each point a configuration change is made to the switch. Navigating away from a page before saving will result in the setting not being applied.

IGMP Snooping - Immediate Leave

ZyXEL switches give the ability for Immediate Leave and/or Fast Leave. For the Blustream Multicast systerm to perform at it's optium, 'Immediate Leave' is required.

Check the 'All' button directly under the 'Immed. Leave' header to highlight all ports:

Confirm other settings match those as shown in the above image

Click 'Save' in the top right hand corner of the web-GUI to update the setting

PoE

Within 'Basic Setting' menu

Select 'PoE Set-Up'

Select 'PoE Mode: Consumption'

Click 'Apply' at the bottom of the screen

Click 'Save' in the top right hand corner of the web GUI.

We would recommend re-booting the switch before connecting any Multicast units.

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 conneciton as highlighted below:
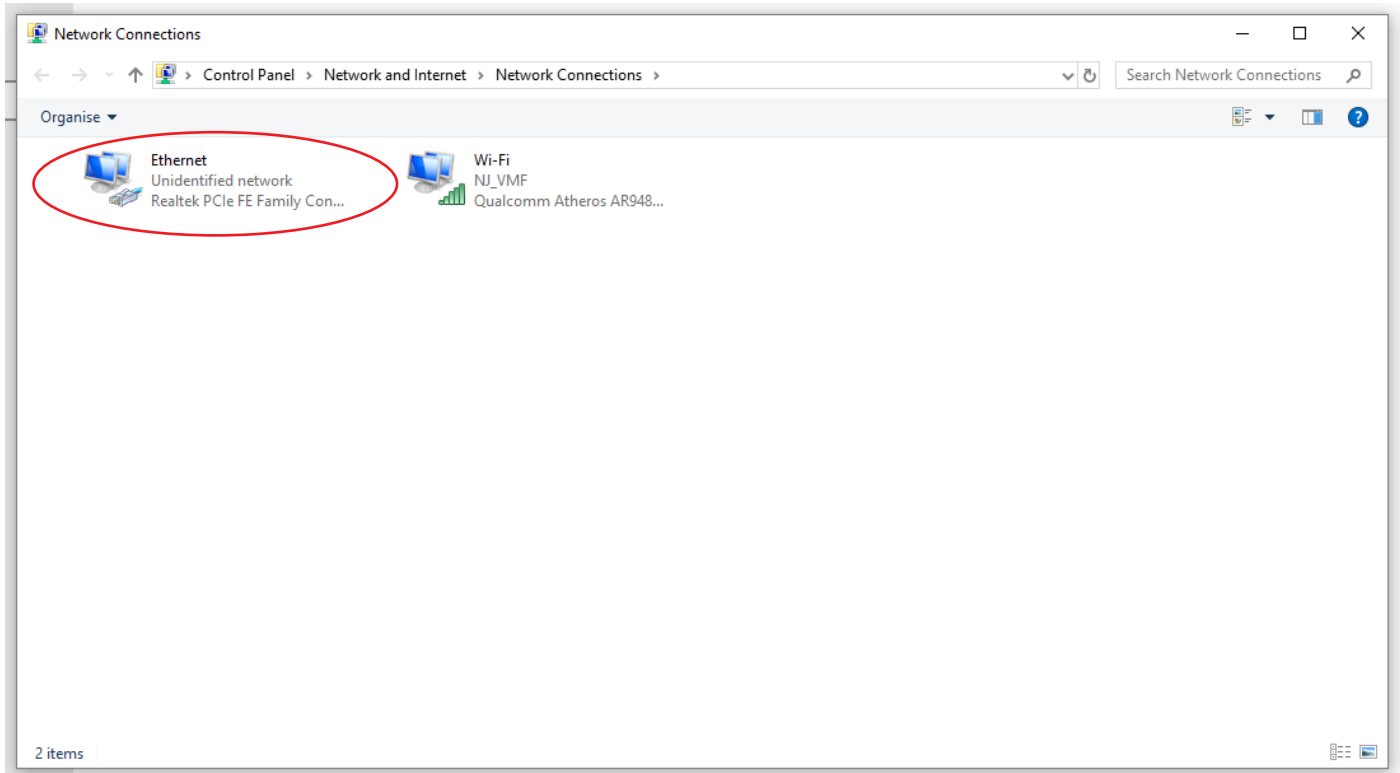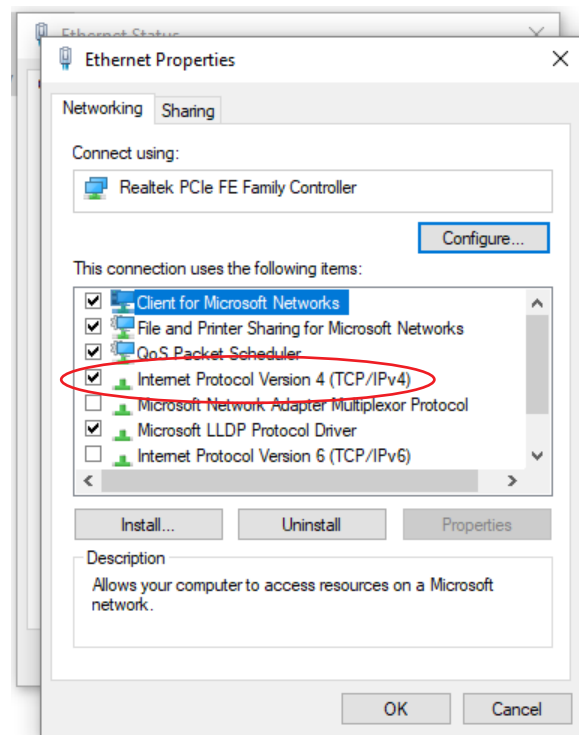

4. In the pop-up window that appears, click on: **PROPERTIES**
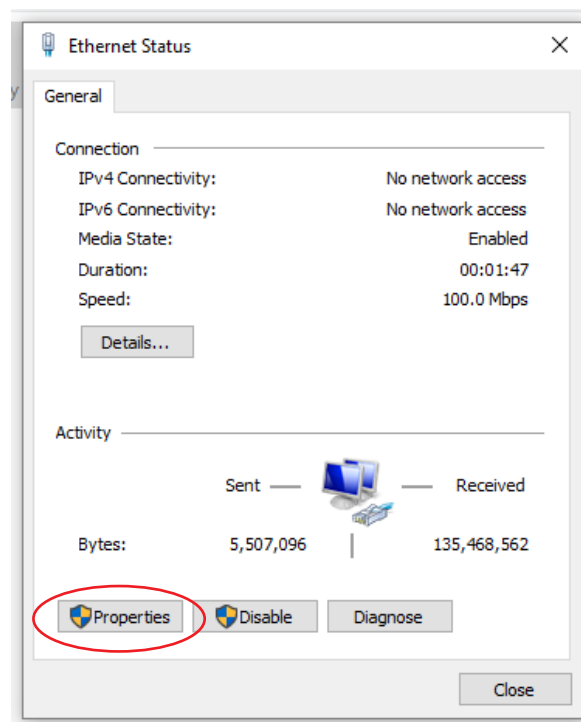
5. In the pop-up window that appears, double-click on: **INTERNET PROTOCOL VERSION 4 (TCP/IPv4)**
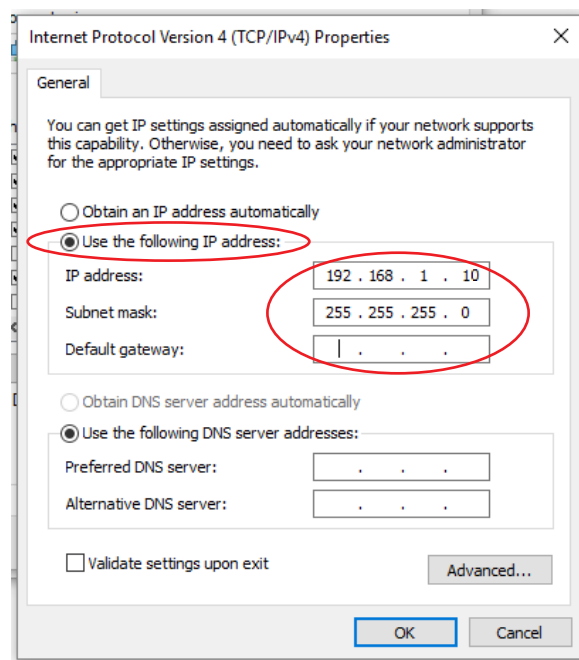
5. In the pop-up window that appears, double-click on the button marked: **USE THE FOLLOWING IP ADDRESS**

6. Enter the details as below:

      IP Address: **192.168.1.10**

      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
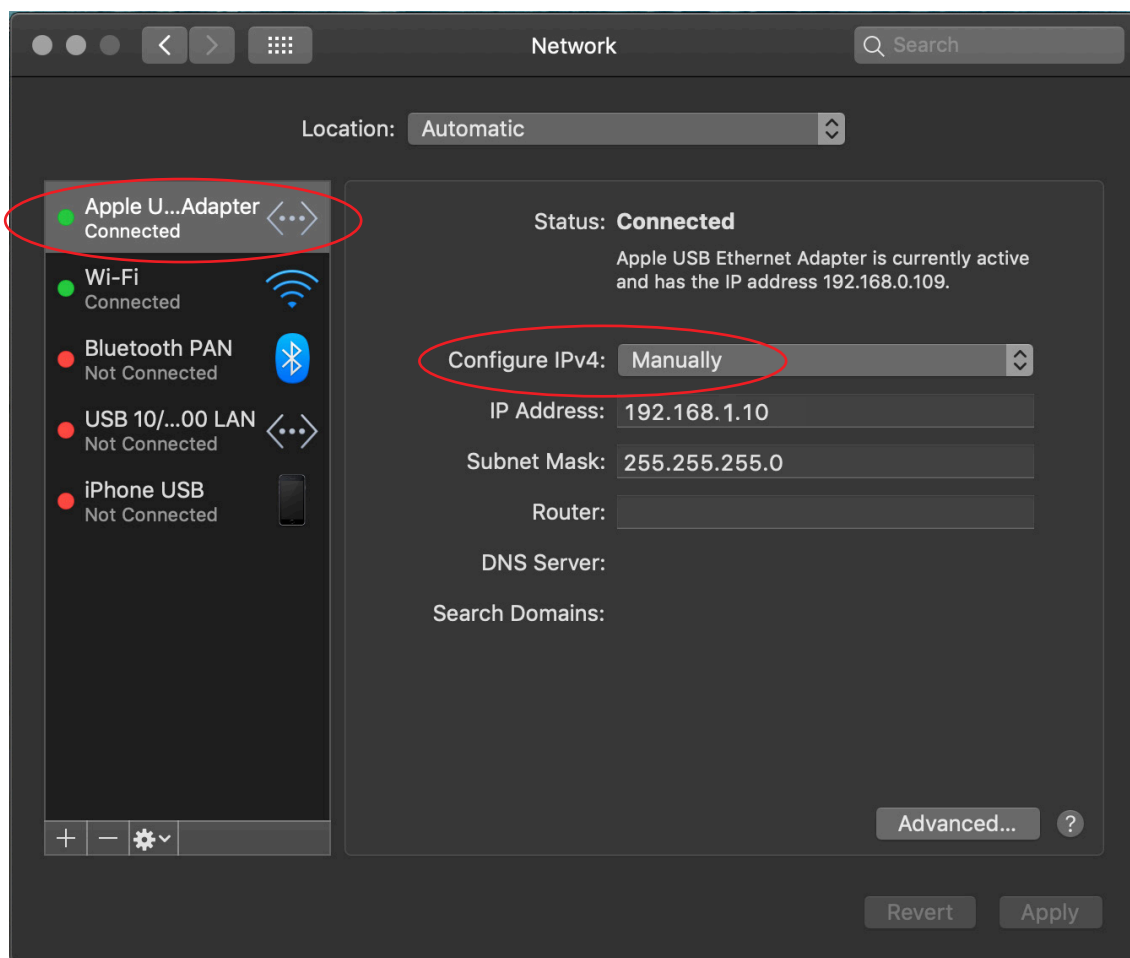3. Navigate to: **OPEN NETWORK PREFERENCES**

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: **192.168.1.10**

        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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