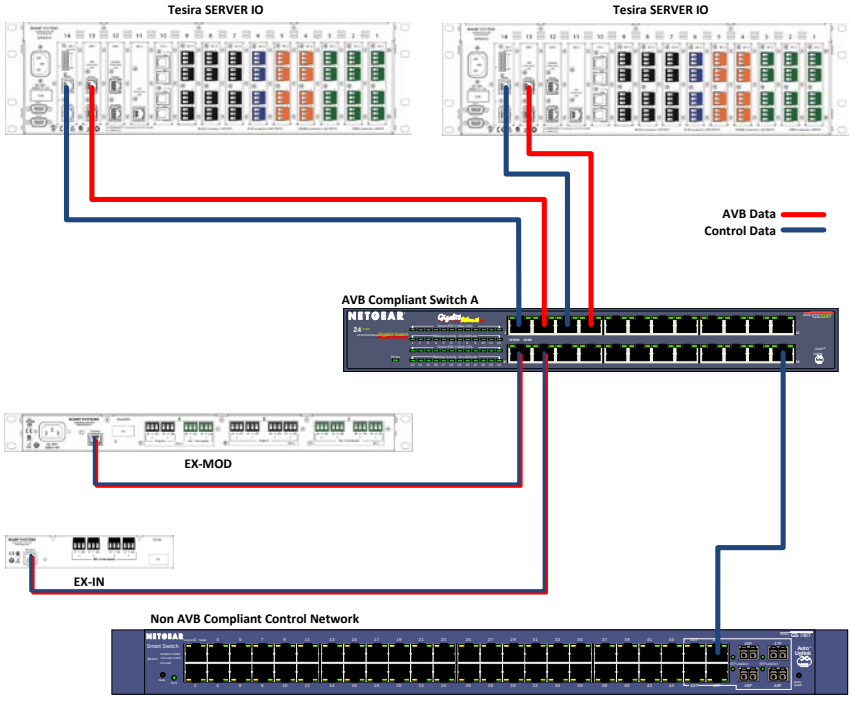
BIAMP Tesira Networking Guide

Filtering AVB protocols from adjoining non-AVB networks.

Introduction:

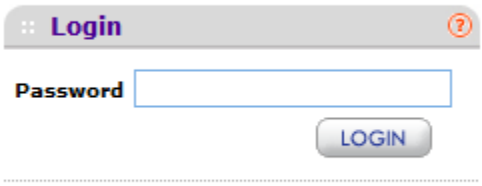
Audio Video Bridging (AVB) is based on a set of IEEE technical standards that enable precise timing and guaranteed bandwidth for audio streams to flow through the network. When AVB networks comprised of AVB compliant switches are connected to legacy networks, some of these protocols can flow to the external network when they are not needed. The Netgear GS724T-AVB switch provided by BIAMP Systems can be configured to filter two of these protocols from an uplink port to another network: MSRP (Multiple Stream Reservation Protocol, or IEEE802.1Qat) and PTPv2 (Precision Time Protocol version 2, or IEEE 802.1AS). If properly configured, these protocols can be eliminated from the non-AVB network with no interference to any AVB streaming within the Tesira network.

Consider the following example where an enterprise control network is linked to a Tesira AVB network. We wish to allow only control (BIAMP proprietary TCP) protocols into the enterprise network, blocking the other multicast traffic associated with AVB audio. Note that in this case the uplink port from the AVB switch to the enterprise control network is port 24.

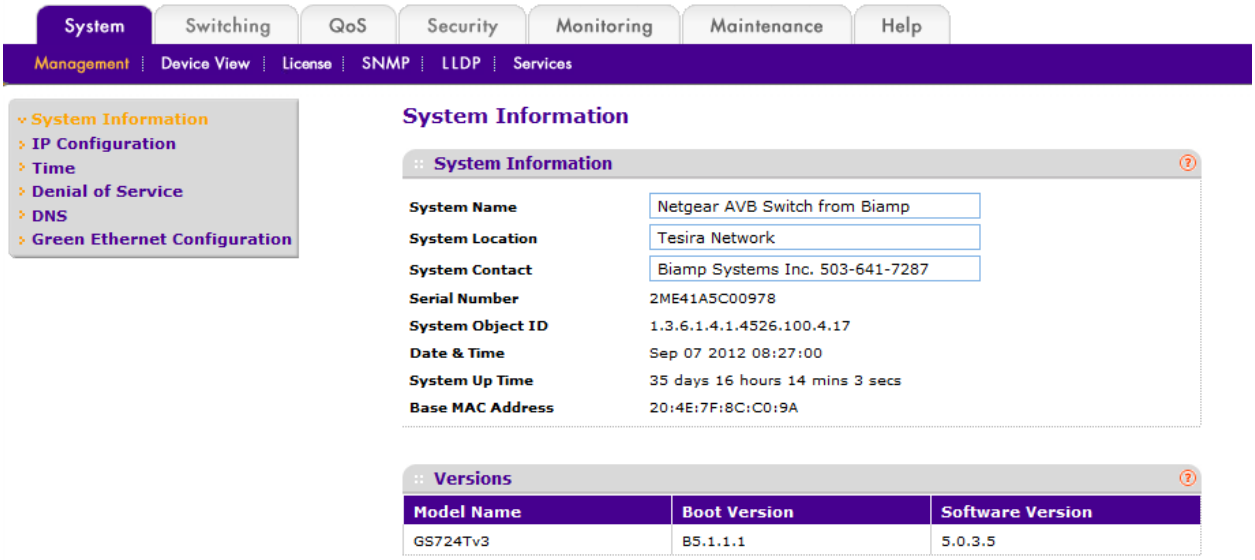


Logging in to The Netgear GS724T-AVB switch management console:

The GS724T-AVB is a stock switch with special licensing that enables core protocols behind the IEEE standards for AVB. Without these protocols enabled, AVB will not propagate through the switch. This license is available only in switches purchased through BIAMP Systems. This switch hosts a web interface for configuration. The switch will take on a DHCP address if a server is present; else, it will take on a default IP address of 192.168.0.239. If DHCP is employed, the Smart Control Center application is used to discover the switch on the network (CDROM included in box with switch). Using either method, entering the IP address into a web browser will reveal the switch management console.



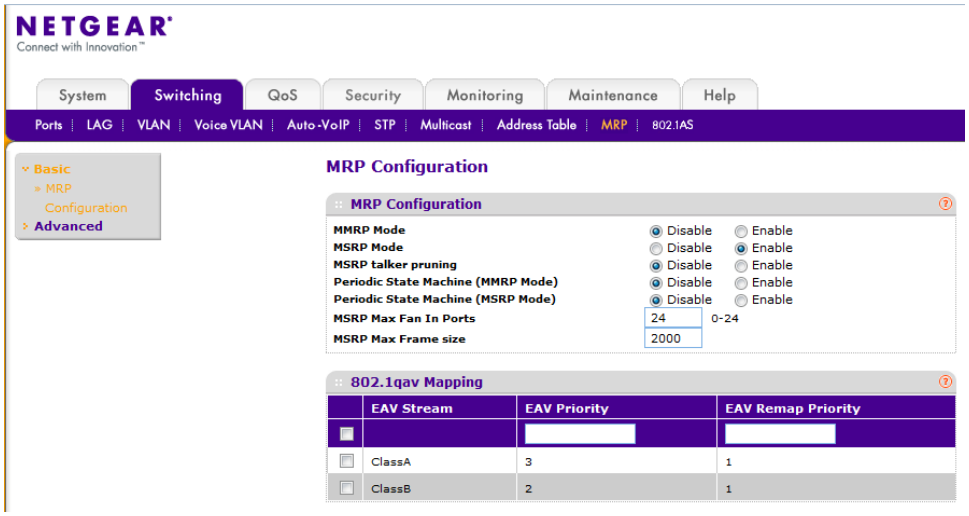
The default password for the unit is 'password' (entered without quotes). Next, the unit will display the system information and the other configuration menus.



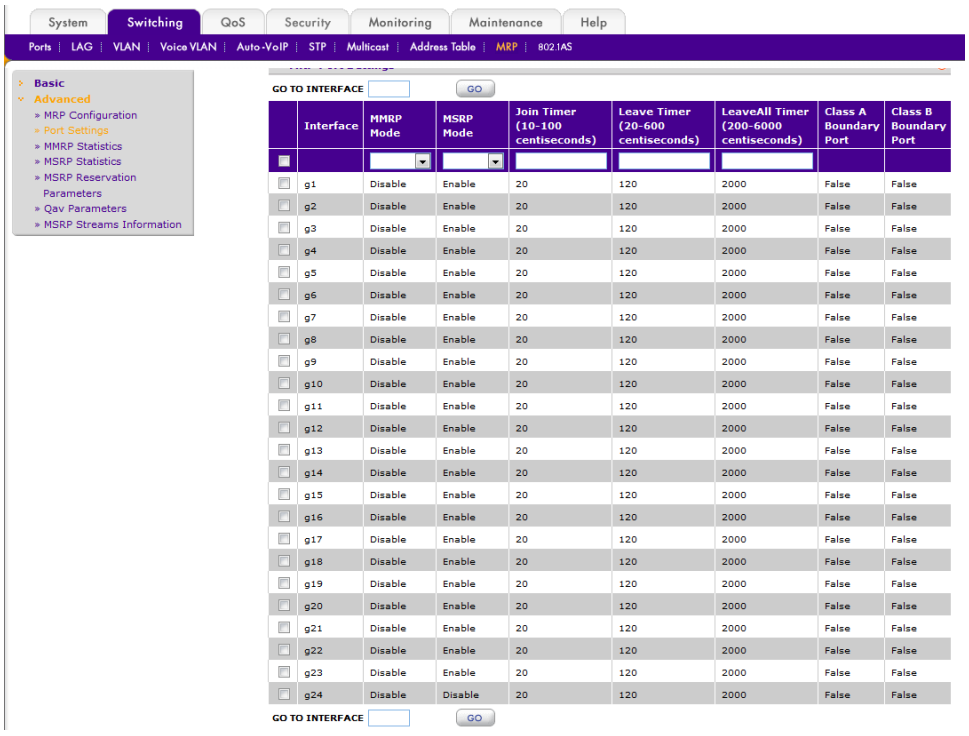
Now the configuration process can begin.

Eliminating MSRP and 802.1AS traffic from the uplink port

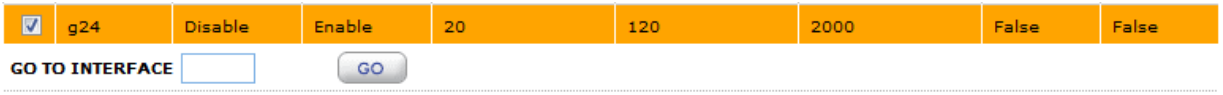
In the network diagram, port 24 of each AVB switch is used for uplink to the central switch. The MSRP and 802.1AS packets should be eliminated from only these ports, as they are necessary to the AVB devices on each Tesira network. The configuration process is identical for both AVB switches. First choose the Switching tab and click on the MRP header in the switch configuration console.



Expand the Advanced options and choose Port Settings



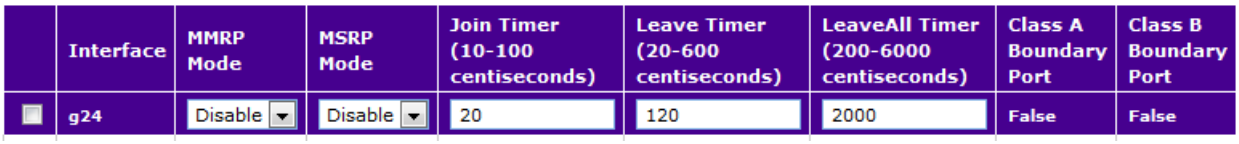
Click the checkbox next to the uplink port (g24 in this case)



☑	g24	Disable	Enable	20	120	2000	False	False

GO TO INTERFACE [ ] GO

Now set the MSRP mode to Disable in the header at the top of the menu

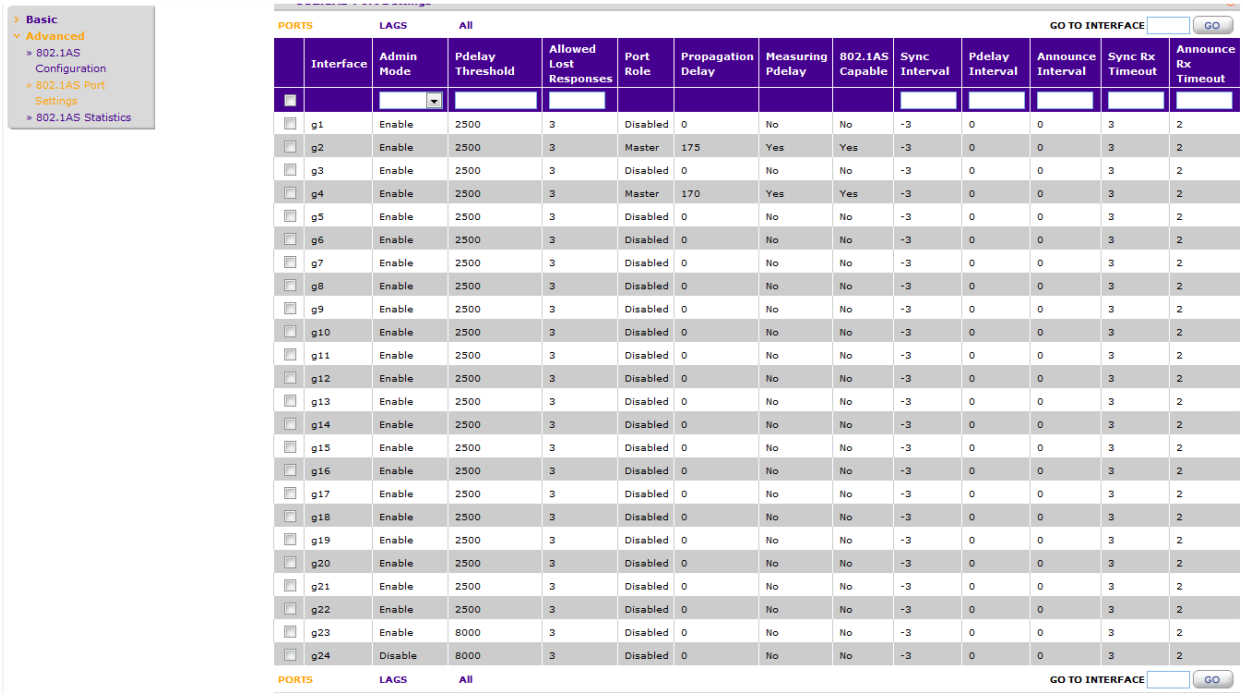


	Interface	MMRP Mode	MSRP Mode	Join Timer (10-100 centiseconds)	Leave Timer (20-600 centiseconds)	LeaveAll Timer (200-6000 centiseconds)	Class A Boundary Port	Class B Boundary Port
☐	g24	Disable	Disable	20	120	2000	False	False

Finally, click Apply in the bottom right corner of the configuration page. The page will refresh as the settings are applied. Check to make sure the configuration is complete.

☐	g24	Disable	Disable	20	120	2000	False	False

Now move to the 802.1AS configuration menu. Expand the Advanced options and select 802.1AS Port Settings.



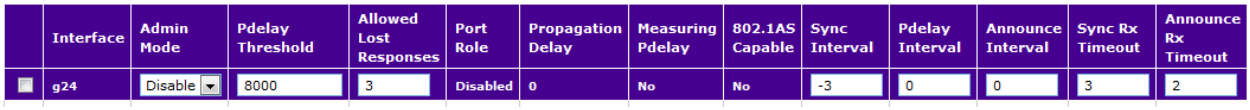
- Basic
- Advanced
  - 802.1AS Configuration
  - 802.1AS Port Settings
  - 802.1AS Statistics

PORTS LAGS All GO TO INTERFACE [ ] GO

	Interface	Admin Mode	Pdelay Threshold	Allowed Lost Responses	Port Role	Propagation Delay	Measuring Pdelay	802.1AS Capable	Sync Interval	Pdelay Interval	Announce Interval	Sync Rx Timeout	Announce Rx Timeout
☐													
☐	g1	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
☐	g2	Enable	2500	3	Master	175	Yes	Yes	-3	0	0	3	2
☐	g3	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
☐	g4	Enable	2500	3	Master	170	Yes	Yes	-3	0	0	3	2
☐	g5	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
☐	g6	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
☐	g7	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
☐	g8	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
☐	g9	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
☐	g10	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
☐	g11	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
☐	g12	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
☐	g13	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
☐	g14	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
☐	g15	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
☐	g16	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
☐	g17	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
☐	g18	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
☐	g19	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
☐	g20	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
☐	g21	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
☐	g22	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
☐	g23	Enable	8000	3	Disabled	0	No	No	-3	0	0	3	2
☐	g24	Disable	8000	3	Disabled	0	No	No	-3	0	0	3	2

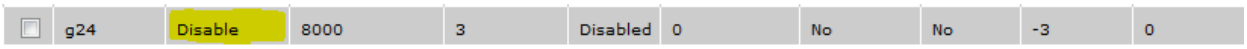
PORTS LAGS All GO TO INTERFACE [ ] GO

Click on the checkbox next to the uplink port (g24 in this case) and set the Admin Mode to Disable in the menu header. Click Apply in the bottom right of the configuration page.



	Interface	Admin Mode	Pdelay Threshold	Allowed Lost Responses	Port Role	Propagation Delay	Measuring Pdelay	802.1AS Capable	Sync Interval	Pdelay Interval	Announce Interval	Sync Rx Timeout	Announce Rx Timeout
☐	g24	Disable	8000	3	Disabled	0	No	No	-3	0	0	3	2

Check the configuration to insure the settings were applied.



☐	g24	Disable	8000	3	Disabled	0	No	No	-3	0

This completes the MSRP/PTPv2 filtering configuration to port 24. These protocols will no longer be seen at the uplink port to the enterprise network, conserving a modest amount of bandwidth.