

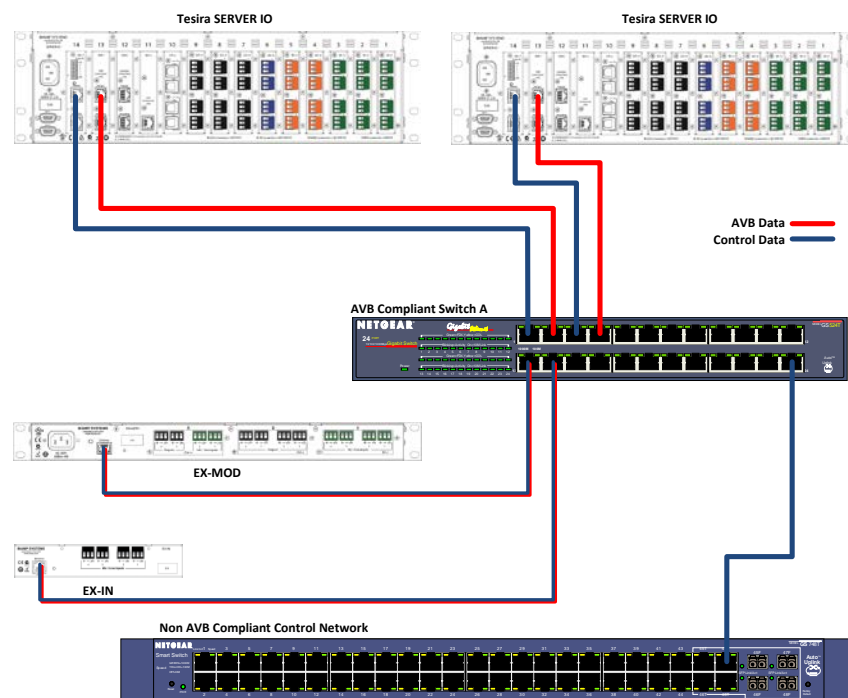
BIAMP Tesira Networking Guide

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.

:: Login ?
 Password
 LOGIN

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

System | Switching | QoS | Security | Monitoring | Maintenance | Help
 Management | Device View | License | SNMP | LLDP | Services

> System Information
 > IP Configuration
 > Time
 > Denial of Service
 > DNS
 > Green Ethernet Configuration

System Information

:: System Information ?

System Name	Netgear AVB Switch from Biamp
System Location	Tesira Network
System Contact	Biamp Systems Inc. 503-641-7287
Serial Number	2ME41A5C00978
System Object ID	1.3.6.1.4.1.4526.100.4.17
Date & Time	Sep 07 2012 08:27:00
System Up Time	35 days 16 hours 14 mins 3 secs
Base MAC Address	20:4E:7F:8C:C0:9A

Versions

Model Name	Boot Version	Software Version
GS724Tv3	B5.1.1.1	5.0.3.5

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.

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System | **Switching** | QoS | Security | Monitoring | Maintenance | Help

Ports | LAG | VLAN | Voice VLAN | Auto-VoIP | STP | Multicast | Address Table | **MRP** | 802.1AS

Basic
» MRP
» Configuration
» Advanced

MRP Configuration

MRP Configuration

MMRP Mode: ☒ Disable ☐ Enable
 MSRP Mode: ☐ Disable ☒ Enable
 MSRP talker pruning: ☒ Disable ☐ Enable
 Periodic State Machine (MMRP Mode): ☒ Disable ☐ Enable
 Periodic State Machine (MSRP Mode): ☒ Disable ☐ Enable
 MSRP Max Fan In Ports: 24 (0-24)
 MSRP Max Frame size: 2000

802.1Qav Mapping

	EAV Stream	EAV Priority	EAV Remap Priority
<input type="checkbox"/>			
<input type="checkbox"/>	ClassA	3	1
<input type="checkbox"/>	ClassB	2	1

Expand the Advanced options and choose Port Settings

System | **Switching** | QoS | Security | Monitoring | Maintenance | Help

Ports | LAG | VLAN | Voice VLAN | Auto-VoIP | STP | Multicast | Address Table | **MRP** | 802.1AS

Basic
» Advanced
» MRP Configuration
» Port Settings
» MMRP Statistics
» MSRP Statistics
» MSRP Reservation Parameters
» Qav Parameters
» MSRP Streams Information

GO TO INTERFACE: GO

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
<input type="checkbox"/> g1	Disable	Enable	20	120	2000	False	False
<input type="checkbox"/> g2	Disable	Enable	20	120	2000	False	False
<input type="checkbox"/> g3	Disable	Enable	20	120	2000	False	False
<input type="checkbox"/> g4	Disable	Enable	20	120	2000	False	False
<input type="checkbox"/> g5	Disable	Enable	20	120	2000	False	False
<input type="checkbox"/> g6	Disable	Enable	20	120	2000	False	False
<input type="checkbox"/> g7	Disable	Enable	20	120	2000	False	False
<input type="checkbox"/> g8	Disable	Enable	20	120	2000	False	False
<input type="checkbox"/> g9	Disable	Enable	20	120	2000	False	False
<input type="checkbox"/> g10	Disable	Enable	20	120	2000	False	False
<input type="checkbox"/> g11	Disable	Enable	20	120	2000	False	False
<input type="checkbox"/> g12	Disable	Enable	20	120	2000	False	False
<input type="checkbox"/> g13	Disable	Enable	20	120	2000	False	False
<input type="checkbox"/> g14	Disable	Enable	20	120	2000	False	False
<input type="checkbox"/> g15	Disable	Enable	20	120	2000	False	False
<input type="checkbox"/> g16	Disable	Enable	20	120	2000	False	False
<input type="checkbox"/> g17	Disable	Enable	20	120	2000	False	False
<input type="checkbox"/> g18	Disable	Enable	20	120	2000	False	False
<input type="checkbox"/> g19	Disable	Enable	20	120	2000	False	False
<input type="checkbox"/> g20	Disable	Enable	20	120	2000	False	False
<input type="checkbox"/> g21	Disable	Enable	20	120	2000	False	False
<input type="checkbox"/> g22	Disable	Enable	20	120	2000	False	False
<input type="checkbox"/> g23	Disable	Enable	20	120	2000	False	False
<input type="checkbox"/> g24	Disable	Disable	20	120	2000	False	False

GO TO INTERFACE: GO

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

<input checked="" type="checkbox"/>	g24	Disable	Enable	20	120	2000	False	False
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GO TO INTERFACE

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
<input checked="" type="checkbox"/>	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.

<input checked="" type="checkbox"/>	g24	Disable	Disable	20	120	2000	False	False
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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

	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
<input checked="" type="checkbox"/>	g1	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
<input type="checkbox"/>	g2	Enable	2500	3	Master	175	Yes	Yes	-3	0	0	3	2
<input type="checkbox"/>	g3	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
<input type="checkbox"/>	g4	Enable	2500	3	Master	170	Yes	Yes	-3	0	0	3	2
<input type="checkbox"/>	g5	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
<input type="checkbox"/>	g6	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
<input type="checkbox"/>	g7	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
<input type="checkbox"/>	g8	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
<input type="checkbox"/>	g9	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
<input type="checkbox"/>	g10	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
<input type="checkbox"/>	g11	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
<input type="checkbox"/>	g12	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
<input type="checkbox"/>	g13	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
<input type="checkbox"/>	g14	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
<input type="checkbox"/>	g15	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
<input type="checkbox"/>	g16	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
<input type="checkbox"/>	g17	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
<input type="checkbox"/>	g18	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
<input type="checkbox"/>	g19	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
<input type="checkbox"/>	g20	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
<input type="checkbox"/>	g21	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
<input type="checkbox"/>	g22	Enable	2500	3	Disabled	0	No	No	-3	0	0	3	2
<input type="checkbox"/>	g23	Enable	8000	3	Disabled	0	No	No	-3	0	0	3	2
<input checked="" type="checkbox"/>	g24	Disable	8000	3	Disabled	0	No	No	-3	0	0	3	2

PORTS LAGS All

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
<input checked="" type="checkbox"/>	g24	Disable	8000	3	Disabled	0	No	No	-3	0	0	3	2

Check the configuration to insure the settings were applied.

<input type="checkbox"/>	g24	Disable	8000	3	Disabled	0	No	No	-3	0
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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.