

VIDEO WALL VIDEO PROCESSORS Multiviewers digital signage Extenders control centers Scalers wireless



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HDM-C6MX/WIP-SET

Videowall Matrix IP Extender with Audio, RS232 and CEC control



M-SERIES- HDM-C6MXIP & MWIP CISCO SWITCH CONFIGURATION GUIDE

HDM-C6MX/WIP-SET Compatible switch configuration on Existing Network

What is Multicast Video?

Multicast video manages large number of recipients (Rx) from a replicated transmission which makes a tremendous difference in network load, even in a simple network with a small number of router and switch hops.



Additional features of multicast are beneficial in specific applications such as IP Encoder/Decoders. Multicast transmissions are delivered nearly simultaneously to all members of the recipient group.

What is IGMP?

IGMP is a network layer (Layer 3) protocol used to establish membership in a Multicast group and can register a router to receive specific Multicast traffic. Without IGMP Querying/Snooping, Multicast traffic is treated in the same manner as a Broadcast transmission, which forwards packets to all ports on the network. With IGMP Querying/Snooping, Multicast traffic is only forwarded to ports that are members of that Multicast group. IGMP Snooping generates no additional network traffic, which significantly reduces the Multicast traffic passing through your switch.

CISCO SWITCH CONFIGURATION STEPS

I. Go to Port Management ---> Green Ethernet ---> Properties ---> Uncheck Enable 802.3 Energy Efficient Ethernet EEE(uncheck box to disable).Press Apply once completed.

Getting Started Status and Statistics	Properties	
Administration Port Management	For the functions and/or paramet you may have to configure the co	ters configured on this page to become effective, rresponding port based parameters on Port Settings page.
Port Settings	Energy Detect Mode:	Enable
Link Aggregation Green Ethernet	Short Reach:	Enable
Properties	Port LEDs:	V Enable
Port Settings	Power Savings:	78 %
Smartport	Cumulative Energy Saved	0 Watt Hour
VLAN Management		
Spanning Tree	802 3 Energy Efficient Ethernet (EFE): T Enable
MAC Address Tables	concentrary emotine Enternor	
IP Configuration	Apply Cancel	
Security		
Access Control		
Quality of Service		
SNMP		

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Canada Sales: Avenview, 151 Esna Park Drive, Unit 11 & 12 Markham, Ontario, L3R 3B1 Phone: 1.905.907.0525 Fax: 1.866.387.8764 www.avenview.com 2. Go to Multicast ---> Properties ---> Enable Bridge Multicast Filtering Status (check box to enable). Press Apply once completed.



3. In Multicast > IGMP Snooping---> Enable IGMP Snooping Status (check box to enable). Press Apply once completed. Click the first item IGMP Snooping Table---> then Edit, configure IGMP Snooping VLAN I

✓ Green Ethernet	MD Creening							
Properties	IVIP Shooping							
Port Settings	GMP Snooping Status: 👿	Enable						
 VLAN Management 	Apply							
Spanning Tree	Cancer							
MAC Address Tables IG	MP Snooping Table	10112.0						
Properties	Entry No. VLAN ID	Operational Status	IGMP Version	Auto Learn	Robustness	Query Interval (sec)	Query Max Response Interval (sec)	Query Counter
MAC Group Address	1 1	Enabled	v2	Disabled	2	125	10	2
IP Multicast Group Addr	Copy Settings	Edit						
MLD Snooping								
Multicast Router Port								
Forward All								
Unregistered Multicast IP Configuration								
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3.1 VLAN ID I > IGMP Snooping Status ---> Enable (check box to enable). MRouter Ports Auto Learn---> Disable(uncheck box to disable) Immediate Leave ---> Enable (check box to enable). **IGMP Querier Status---> Enable** (check box to enable). Select Auto > Adminstrative Querier Source IP Address.

- Select IGMPV2> IGMP Querier Version.
- Press Apply once completed.

Then **Close** to close the window.

4. In Multicast > Unregistered Multicast---> Make sure all ports are set to Forwarding (default).

Small Business CISCO SG300-28	3 28-Port	Giga	bit Ma	anag	ged S	witch			-			cisco	Langu	age: <mark>1</mark>	Engli	sh		-	Log	out A	bout Help
Port Settings Smartport VLAN Management Spanning Tree	Unregiste	ered M rface Type	ulticas equals t	t o Por	t 🗸 G	io															
MAC Address Tables Multicast	Port	GE1 GE	2 GE3 GE	4 GE5	GE6 GE	7 GE8 G	E9 GE1	0 GE11	GE12	GE13	GE14	GE15	GE16	GE17	GE18	GE19	GE20	GE21	GE22	GE23	GE24
Properties	Forwarding] 🕘 🔘	0 0	0	0 0	0	0	۲	۲	۲	۲	۲	۲	0	۲	۲	۲	۲	۲	۲	۲
MAC Group Address IP Multicast Group Addr IGMP Snooping MLD Snooping IGMP/MLD IP Multicast Multicast Router Port Forward All Unregistered Multicast > IP Configuration > Security > Access Control > Quality of Service > SINIP	Filtering Port Forwarding Filtering	© © GE25 C) © Car	C C) () 27 GE () () () ()	© © 28)	00) (0)	0	0	O	O	0	0		0	0	0	O		0	01
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5. POE Configuration Setup > Switches that are POE, please ensure to disable POE in the unused ports. Example below demonstartes disabling POE in ports 17-24.

😵 Save cisco Language: English Logout About Help Small Business 111111 SG300-28P 28-Port Gigabit PoE Managed Switch CISCO Getting Started 9 GE9 Enabled 15400 Low 16900 0 Status and Statistics 10 GE10 Enabled 15400 16900 Low 4900 Administration 11 GE11 Enabled Low 15400 16900 4700 12 GE12 Enabled 15400 16900 0 Low Port Settings 13 GE13 Enabled Low 15400 16900 0 Link Aggregation 14 GE14 Enabled 15400 16900 0 Low · PoE 15 GE15 Enabled 15400 16900 0 Low Properties 16 GE16 Enabled Low 15400 16900 0 Green Ethernet ۲ Properties 18 GE18 Enabled 15400 0 Low 16900 Port Settings 19 GE19 Enabled Low 15400 16900 0 Smartport 20 GE20 16900 Enabled Low 15400 0 VLAN Management 21 GE21 Enabled 15400 16900 0 Low Spanning Tree 22 GE22 Enabled Low 15400 16900 0 MAC Address Tables 23 GE23 Enabled Low 15400 16900 6200 Multicast 24 GE24 Enabled Low 15400 16900 4800 IP Configuration Edit... Security Copy Settings.. Access Control Interface: Port GE17 -PoE Administrative Status: Enable Oritical Power Priority Level: High O Low Administrative Power Allocation: 15400 mW (Range: 0 - 15400, Default 15400) Max Power Allocation: 16900 mW 0 mW Power Consumption: Overload Counter: 0 0 Short Counter: Denied Counter: 0 Absent Counter 0 Invalid Signature Counter: 0 Apply Close

Go to Port Management ---> Settings ---> Select GE17---> Click Edit,

- 5.1 POE Administrative Status > Disable (uncheck box to disable).
 - Press **Apply** once completed.
 - Then **Close** to close the window.

5.2 Go to Port Management ---> Settings ---> Select GE17---> Click Copy Settings,

		-				-			The second second	
Small Business							Save Cisco Language: English			нер
cisco SG300-28	SP .	28-P	ort Gi	gabit	PoE Mana	ged Sw	ritch			
Getting Started	*	0	9	GE9	Enabled	Low	15400	16900	0	*
Status and Statistics		0	10	GE10	Enabled	Low	15400	16900	4800	
Administration		0	11	GE11	Enabled	Low	15400	16900	4800	
 Port Management 		0	12	GE12	Enabled	Low	15400	16900	0	
Port Settings		0	13	GE13	Enabled	Low	15400	16900	0	
 Link Aggregation 		0	14	GE14	Enabled	Low	15400	16900	0	
▼ P0E Properties		0	15	GE15	Enabled	Low	15400	16900	0	
Settings		0	16	GE16	Enabled	Low	15400	16900	0	
 Green Ethernet 	=	0		GE17	Disabled		15400	16900		
Properties		0	18	GE18	Disabled	Low	15400	16900	0	
Port Settings		0	19	GE19	Disabled	Low	15400	16900	0	
Smartport		0	20	GE20	Disabled	Low	15400	16900	0	
VLAN Management		0	21	GE21	Disabled	Low	15400	16900	0	
Spanning Tree		0	22	GE22	Disabled	Low	15400	16900	0	
MAC Address Tables		0	23	GE23	Disabled	Low	15400	16900	0	
Mullicast IB Configuration		0	24	GE24	Disabled	Low	15400	16900	0	
 P Configuration Socurity 			Conv Sett	inas	Edit)				
Access Control	÷		oop) oou	ango		J				
© 2010-2012 Cisco Systems, In	IC. All	Rights	Reserved.							
Copy configuration from entry 1	7 (GE	:17)								
to: 18-24 (E	Exam	ple: 1,3	5-10 or: G	E1,GE3-(GE5)					
Apply Close										
14 A										

Copy Configuration from entry 17 (GE17) to> Type 18-24 or GE18 to GE24 to copy the same settings Press Apply once completed.

cisco SG300-28P	28-P	ort Gi	gabit I	PoE Mana	iged Switch				
Getting Started		9	GE9	Enabled	Low	15400	16900	0	1
 Status and Statistics 	0	10	GE10	Enabled	Low	15400	16900	4900	
 Administration 	0	11	GE11	Enabled	Low	15400	16900	4800	
 Port Management 	0	12	GE12	Enabled	Low	15400	16900	0	
Port Settings		13	GE13	Enabled	Low	15400	16900	0	
 Link Aggregation BoE 	0	14	GE14	Enabled	Low	15400	16900	0	
Properties	0	15	GE15	Enabled	Low	15400	16900	0	
Settings	0	16	GE16	Enabled	Low	15400	16900	0	
▼ Green Ethernet	0	17	GE17	Disabled	Low	15400	16900	0	
Properties	0	18	GE18	Disabled	Low	15400	16900	0	
Port Settings	0	19	GE19	Disabled	Low	15400	16900	0	
Smartport	0	20	GE20	Disabled	Low	15400	16900	0	
VLAN Management	0	21	GE21	Disabled	Low	15400	16900	0	
Spanning free MAC Address Tables	0	22	GE22	Disabled	Low	15400	16900	0	E
Multicast	0	23	GE23	Disabled	Low	15400	16900	0	
IP Configuration	0	24	GE24	Disabled	Low	15400	16900	0	
- A configuration		Conv Sotti	nas	Edit	1				

5.3 Go to Administration > File Management--->Copy/Save Configuration

Getting Started Status and Statistics Administration System Settings Console Settings	Copy/Save Config All configurations that the To retain the configuration changes.	guration switch is currently using are in the running configuration file which is volatile and is not retained between reboots between reboots, make sure you copy the running configuration file to the startup configuration file after you have completed all your
Management Interface User Accounts Idle Session Timeout Time Settings Sector 1 or 0	Source File Name:	Running configuration Startup configuration Backup configuration Mirror configuration
 File Management Upgrade/Backup Firm Active Image 	Destination File Name:	Running configuration Statup configuration Backup configuration
Download/Backup Co Configuration Files P Copy/Save Configura DHCP Auto Configura	Sensitive Data:	Exclude Encrypted Plaintext Available sensitive data options are determined by the current user's SSD rules
Reboot Diagnostics Discovery - Bonjour Discovery - LLDP	Save Icon Blinking:	Enabled I Disable Save Icon Blinking

Source File name: Select Running configuration Destination File Name: Select Startup Configuration Press Apply once completed. NOTE: Dont navigate to other screens copy operation will be aborted. Click OK

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GETTING STARTED

Preparations

Before installing the M-Series system, read carefully the instructions below. Use only accessories and cables supplied with the products or purchased as required.

Recomended:

UTP Cables - Belden DataTwist 2400 Cables Exceed the TIA/EIA Requirements for Category 6 Installations and Provide for Transmission Speeds Up to 2.4 Gb/s.

Network Switches							
Small Solutions							
CISCO CATALYST 296	0 SWITCHES	CISCO SG300 FAMILY SWITCHES					
WS-C2960-24TC-L	24-port 100Mbps Ethernet switch	SG300-28	28-port 1000Mbps Ethernet switch				
WS-C2960S-24PS-L	24-port 1000Mbps PoE Ethernet switch	SG300-28P	28-port 1000Mbps PoE Ethernet switch				
Medium Solutions							
CISCO CATALYST 296	50 SWITCHES	CISCO SG500 FAMILY SWITCHES					
WS-C2960X-24PSQ-L	24-port 1000Mbps PoE	SG500-28P	28-port 1000Mbps Ethernet switch				
WS-C2960X-48FPS-L	48-port 1000Mbps Ethernet switch	SG500-48P	48-port 1000Mbps PoE Ethernet switch				
Large Solutions							
CISCO CATALYST 296	0 SWITCHES	CISCO SG50	0 FAMILY SWITCHES				
WS-C2960X-48FPS-L	48-port 1000Mbps Ethernet switch	SG500-52P	52-port 1000Mbps Ethernet switch				

HUAWEI SWITCHES

S5700-48TP-PWR-SI 48-port 1000Mbps Ethernet switch

Displays

For the installer or site designer to have a smooth CEC control feature, it is recommended to use the following tested manufacturers:

SAMSUNG

40" - UA40JU6400JXXZ, UA40HU5920J - 46" - UA46C7000WF, UN46D6500VF

SHARP

40" - LCD-40 LX440A

SONY

24" - KDL-24EX520 - 32" - KLV-32EX400 40" - KDL-40RM10 - 55" - BKD-55X9000A

RS232 Data

The M-series devices support ASCii commands as well as Hex commands to control external devices for simple automation control. This is supported by connecting wires to the phoneix connector at the rear panel of the TX and RX. Sending commands from the MIP control box WEB interface or 3rd Party control systems over Telnet.

The M-series setup with CTRLPRO-MIP control box can also receive feedback DEVICE INFO when requested from 3rd Party control system. Example: *Volume level, Online and Offline status.*

Audio Out

The M-series devices support Audio out via phoenix port or 3.5mm headphone jack on the rear panel of the TX and RX. This function is the key for systems with an external audio distribution system so the installer can easily extend the audio from the TX without audio delay/lipsync issues. Having this supported on the RX users can setup an audio matrix system without connecting to a monitor or send audio to an external amplifier at the display side.

NOTE: All of the above have been tested and approved by Avenview, by implementing all features within a test solution we would like to enforce following all the documentaion given would result in a successful solution. We cannot guarantee bandwidth and stability of the system outside our recommended guidelines.

CONFIGURING A L2 MANAGED SWITCH

Preparations

When installing the UTP cables, ensure it is provisioned by the TIA-569 standard with respect to cable run in pathways, space and construction practices in support of telecommunication media and equipment within buildings.

CTRLPRO-MIP IP controller's LANI (AV) port is connected to a switch and LAN2(C) port is connected to the same switch as well to allow PC software control. If using iPad control or 3rd Party control systems connect the LAN2(C) port to the network router.

Configuring a Switch,

Proceed to perform different operations based on your actual manufacture and model network switch.

- 1. If the switch is supplied with Avenview devices then it has been configured correctly and passed our QC.
- 2. Disable green or energy-saving feature.
- 3. Enable Multicast forwarding or filtering.
- 4. Enable IGMP Snooping.
- 5. Adminstration source IP address- Auto.
- 6. Enable IGMP Querier.
- 7. Enable IGMP fast leave.
- 8. Disable dynamic multicast router port.
- 9. Disable forwarding unknown multicast.
- 10. The configuration to all the related settings 1-9 be made in global configuration and VLAN configuration.

Performing Matrix Switching

- I. Power on devices:
 - Power on source devices connected to the HDM-C6MXIP-S
 - Power on display devices connected to HDM-C6MXIP-R
 - Power on CTRLPRO-MIP IP controller,
 - Power on TX or RX or alternatively plug into a POE switch
 - How to calculate POE (See Page 9 on M-Series User Guide)
- 2. Configure your PC's network settings with IP address 169.254.254.65 and subnet mask 255.255.0.0, leave gateway and DNS blank.
- 3. Log in to CTRLPRO-MIP IP controller's web configuration page.
 - a) Enter IP address 192.168.11.243 of IP controller's LAN1(AV) port.
 - b) Enter username (admin by default) and password (admin by default).
- 4. In the web configuration page, choose Scenes > All Devices.
- 5. In Matrix area, the table of TX/RX units will appear with HDM-C6MXIP-S TX units across the top and the HDM-C6MXIP-R RX down the left hand side.

Press the box that links each TX/RX to perform matrix switching.

Configuring Video Wall HDM-C6MWIP UNITS ONLY

- I. On your computer, start M-Series PC Software then click Search button to search for TX and RX.
- 2. Create a scene.
 - a) In Scene area, click Create button.
 - b) In the dialog box, set scene name and size, and then click OK.
- 3. In Devices list, click and drag RX to the scene table to assign RX.
- 4. In Devices list, click and drag TX to the assigned RX positions in the scene table to perform matrix switching.
- 5. In the scene table, select multiple RX and choose Combine from the right-click menu to create a video wall.

Performing App Operations

- I. Connect a wireless router's LAN port to the switch and the LAN2(c) on the CTRLPRO-MIP .
- 2. Configure wireless network settings in iPad.
 - a) Enable WLAN in iPad.
 - b) Connect iPad to your wireless router.
 - c) Click the connected wireless router name.
 - d) Click Static.
 - e) Set IP address as 169.254.1.21, subnet mask 255.255.0.0, but leave router and DNS blank.
- 3. Start CTRLPRO-M Window App or CTRLPRO-M Ipad App
- It will automatically connect to IP controller and show Live preview of the sources

Drag and drop TX on to the RX in the scenes created