# **NETGEAR**<sup>®</sup>

# Switch Configuration for IP Surveillance

# **Application Notes**





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#### CONCEPTS

Video surveillance based on digital IP technology is revolutionizing the physical security industry. The network is a crucial element in any surveillance installation because it enables all the other surveillance functions – transmitting video streams so they can be viewed and stored, and carrying power to the cameras themselves using Power over Ethernet (PoE).

An IP surveillance system always includes one or more of the following components:

- IP cameras
- · Video servers to record, aggregate, process, and broadcast video streams
- Clients (monitoring stations), which are typically PCs equipped with dedicated surveillance software to enable real-time viewing and review of stored video
- Network Attached Storage (NAS) devices to store the video
- Switches with the appropriate feature set and bandwidth capacity to manage network traffic required for the entire surveillance network to function properly
- CAT5E or better cabling, for adequate performance

Operation involves transmission (streaming) of video information from the cameras to a video server, where it is aggregated, processed, stored, and distributed to the monitoring stations and storage devices. Factors such as transmission modes and video compression modes can have a significant effect on bandwidth requirements, storage requirements and cost.

#### **Transmission Modes**

There are two basic transmission modes: unicast and multicast. Most cameras can be set to transmit in either mode.

**Unicast mode** is a direct, one-to-one means of transmitting a video stream, such as from a camera to a video server, or from a video server to a client. For example, if a video server needs to transmit to four clients, it must send the same transmission four times. In a system with dozens of camera streams and numerous clients, unicasting can easily overwhelm the bandwidth capacity of the network switches.

**Multicast mode** is a one-to-many mode where servers "publish" a video stream and clients "subscribe." In multicast mode, video streams, identified by an IP address, are broadcast across the network, and any client on that network has the potential to access them. Access to any given stream is controlled by the Internet group management Protocol (IGMP). Under this protocol, clients are divided into groups based on which streams they are authorized to access. The following switch components are required to manage this process:

- An IGMP Querier that generates query messages to determine which clients belong to various groups
- An IGMP Snooper that listens to the various ports on the client hardware to determine which ports are interested in the stream – and then sends data only to those ports. In networks that have been upgraded to the IPv6 standard, the IGMP Querier is replaced by a multicast listener discovery (MLD) Querier and an MLD Snooper.

Most IP surveillance networks combine these unicast and multicast modes, using unicast to transmit from the cameras to the video server, and multicast to transmit to the clients.



#### **Video Compression**

All video data captured by the camera is compressed prior to transmission, and the mathematical algorithm used for this has important effects on both the end user and the network itself. The compression algorithm can affect image quality, latency, bandwidth requirements, and storage requirements. The most popular video compression standards (with dates of introduction) are MJPEG (mid–1990s), MPEG4 (1998), AND H.264 (2003). In addition, some major IP camera vendors use proprietary standards.

#### HOW TO USE THIS DOCUMENT

The *Networking Solutions for IP Surveillance Solution Guide* provides technical guidance and details about reference designs for installations with 20, 200 and 1000 cameras. Use the Solution Guide to plan your solution architecture and determine the needed equipment.

This Application Note is a companion document to the Solution Guide. After you have planned and have the equipment for your network, use this guide to configure your video surveillance solution. Example configurations are provided for 20-camera, 200-camera, and 1000-camera deployments.

#### **REFERENCE CONFIGURATIONS AND ASSUMPTIONS**

The following figures show reference configurations for 20-camera, 200-camera, and 1000-camera solutions.



Figure 1. Sample Solution – 20 Cameras

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Figure 2. Sample Solution – 200 Cameras







48 cameras per switch

Figure 3. Sample Solution – 1000 Cameras



#### **CONFIGURATION FOR THE 20-CAMERA SOLUTION**

You can use the CLI or Web GUI for configuration.

#### Assumptions for the 20-Camera Solution

- A DHCP server has already been configured for the VLAN 100 subnet.
- You are able to configure VLAN interfaces if necessary (steps to configure the interfaces are not included).
- The video server is configured to broadcast UDP mulitcast packets @ 224.1.2.3 over port 2000.
- There is only one multicast source.
- The surveillance network is a dedicated, isolated network architecture with a single uplink to the the customer's enterprise network.
- Client protection will be managed by security measures local to the client viewing station.

#### **Global Configuration Notes**

- Be sure to save your configuration using the write memory CLI command. Alternatively, choose Maintenance > Save Config in the GUI. Select the box, and click APPLY.
- · You can configure the default IGMP querier in the global configuration as the default for all VLANs

#### Sample Configuration Values

The following values are used in the sample configuration:

- Primary VLAN: 100
- Camera VLAN: 101
- Client VLAN: 102
- Querier IP address: 192.168.1.2
- Port in promiscous mode: 48
- Camera ports: 1-20
- Client ports: 25-36

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#### CLI Configuration Steps: 20-Camera Solution

These steps provide an example CLI configuration for the 20-camera solution. To use the Web GUI for configuration, see Web GUI Configuration Steps: 20-Camera Solution on page 10.

1. Create VLANs in the database for the single switch (Switch1), as shown in Figure 1. Private VLANs (PVLANs) are used as secondary VLANs to logically segment the different endpoints. Secondary VLANs inherit most network configuration settings from the associated primary VLAN.

```
(Switch1) #vlan database
(Switch1) (Vlan)#vlan 100
(Switch1) (Vlan)#vlan name 100 PrimaryVlan
(Switch1) (Vlan)#vlan 101
(Switch1) (Vlan)#vlan name 101 CameraVlan
(Switch1) (Vlan)#vlan 102
(Switch1) (Vlan)#vlan name 102 ClientVlan
(Switch1) (Vlan)#exit
```

2. After configuring the VLAN 100 subnet on its interface, set the private VLAN designation to each VLAN and associate the secondary VLANs to the primary VLAN.

(Switch1)	#configure		
(Switch1)	(Config) #vlan	101	
(Switch1)	(Config) (Vlan	101)#private-vlan	isolated
(Switch1)	(Config) (Vlan	101)#exit	
(Switch1)	(Config) #vlan	102	
(Switch1)	(Config) (Vlan	102)#private-vlan	community
(Switch1)	(Config) (Vlan	102)#exit	
(Switch1)	(Config) #vlan	100	
(Switch1)	(Config) (Vlan	100)#private-vlan	primary
(Switch1)	(Config) (Vlan	100)#private-vlan	association 101-102
(Switch1)	(Config) (Vlan	100)#exit	

3. Configure the querier for primary Vlan 100 and enable the fast-leave feature for clients subscribing to the multicast source content.

(Switch1) #vlan database (Switch1) (Vlan)#set igmp 100 (Switch1) (Vlan)#set igmp querier 100 address 192.168.1.2 (Switch1) (Vlan)#set igmp fast-leave 100 (Switch1) (Vlan)#end



4. For IGMP snooping to work with VLANs, enable the capability globally.

```
(Switch1) #configure
(Switch1) (Config)#set igmp interfacemode
(Switch1) (Config)#end
```

5. Configure the video server port as a promiscuous port to allow all private VLANs to speak to it.

```
(Switch1) #configure
```

```
(Switch1) (Config) #interface 0/48
```

- (Switch1) (Interface 0/48) #switchport mode private-vlan promiscuous
- (Switch1) (Interface 0/48) #switchport private-vlan mapping 100 101-102
- (Switch1) (Interface 0/48) #no shut
- (Switch1) (Interface 0/48) #end
- 6. Configure camera ports on the isolated VLAN.

```
(Switch1) #configure
```

- (Switch1) (Config) #interface 0/1-0/20
- (Switch1) (Interface 0/1-0/20) #vlan participation exclude 1
- (Switch1) (Interface 0/1-0/20) #vlan participation include 100-101
- (Switch1) (Interface 0/1-0/20) #vlan pvid 101
- (Switch1) (Interface 0/1-0/20) #no shut
- (Switch1) (Interface 0/1-0/20) #end
- 7. Configure client ports on the community VLAN.

```
(Switch1) #configure
```

- (Switch1) (Config) #interface 0/25-0/36
- (Switch1) (Interface 0/25-0/36) #vlan participation exclude 1
- (Switch1) (Interface 0/25-0/36) #vlan participation include 100,102
- (Switch1) (Interface 0/25-0/36) #vlan pvid 102
- (Switch1) (Interface 0/25-0/36) #no shut
- (Switch1) (Interface 0/25-0/36) #end

#### Web GUI Configuration Steps: 20-Camera Solution

These steps provide an example Web GUI configuration for the 20-camera solution. To use the CLI for configuration, see CLI Configuration Steps: 20-Camera Solution on page 8.

1. Create VLANs in the database for the single switch (Switch1), as shown in Figure 1. Private VLANs (PVLANs) are used as secondary VLANs to logically segment the different endpoints. Secondary VLANs inherit most network configuration settings from the associated primary VLAN. In this scenario, VLAN 100 is the primary Vlan, VLAN 101 is the isolated VLAN for the cameras, and VLAN 102 is the community VLAN for clients.

Choose **Switching > VLAN > Advanced > VLAN Configuration**. Enter each VLAN ID and name, and click **ADD** to add the VLAN.

NETGEAR Connect with Innovation						M4100-50-POE ProSate 48-port FastEthernet 12- Intelligent Edge PoE Managed Switch
System Switching	Routing	QoS Secu	urity Monitoring	Maintenance Help	Index	LOGOUT
VLAN   Auto-VolP   STP	Multicast	MVR Address Tabl	e Ports LAG			
	VI AN Conf	iguration				
Basic     Advanced	VLAN COM	iguration				
» VLAN	Reset				0	
Configuration > VLAN Membership	Reset Configu	ration				
» VLAN Status	Internal V	/LAN Configuration			(?)	
» Port PVID	Internal VLA	N Allocation Base	4093			
» MAC Based VLAN	Internal VLAN	N Allocation Policy	Ascending ()	Descending		
» Protocol Based						
VLAN Group Configuration	UNDER VLAN Cor	nfiguration			0	
» Protocol Based	VLAN ID	VLAN Name	VLAN Type	Make Static		
VLAN Group Membership	102	ClientVlan		Disable 💌		
» IP Subnet Based	1	default	Default	Disable		
VLAN	2	Auto VoIP	AUTO VoIP	Disable		
<ul> <li>Port DVLAN</li> <li>Configuration</li> </ul>	100	PrimaryVlan	Static	Disable		
» Voice VLAN	101	Cameravian	Static	Disable		
Configuration » GARP Switch						
Configuration						
» GARP Port						
Configuration						
						ADD DELETE CANCEL APPLY



2. Choose **Security > Traffic Control > Private VLAN > Private VLAN Type Configuration**. Assign the appropriate VLAN type to each VLAN ID. Click **APPLY** after each entry.

NETGEAR Connect with Innovation			M4100-50-POE ProSofe 48-port Fastishernel L2+ Intelligent Edge PoE Managed Switch
System Switchin	ng Routing QoS Security	Monitoring Maintenance Help Index	LOGOUT
Management Security A	access   Port Authentication   Traffic Control   C	ontrol   ACL	
<ul> <li>MAC Filter</li> <li>Port Security</li> <li>Private Group</li> <li>Protected Port</li> <li>Protected Port</li> <li>Private Vlan</li> <li>Private Vlan</li> <li>Private Vlan</li> <li>Association</li> <li>Configuration</li> <li>Private Vlan Port</li> <li>Mode</li> <li>Configuration</li> <li>Private Vlan Host</li> <li>Interface</li> <li>Configuration</li> <li>Private Vlan</li> </ul>	Private VLAN Type Configuration	on ③	
> Storm Control			
			CANCEL



3. Choose **Security > Traffic Control > Private Vlan > Private Vlan Association Configuration**. Set VLAN 100 as the primary VLAN and 101-102 as the secondary VLANs. Click **APPLY**.

NETGEAR Connect with Innovation "			M4100-50-POE ProSafe 48-port FastEthernet 12+ Intelligent Edge PoE Managed Switch
System Switching	Routing QoS Security	Monitoring Maintenance Help Index	LOGOUT
Management Security Ac	cess   Port Authentication   Traffic Control   Co	ntrol   ACL	
Managament Security   Ad > MAC Filter > Port Security > Private Group > Private Vlan > Private Vlan > Private Vlan - Private Vlan Configuration > Private Vlan Port Mode Configuration > Private Vlan Port Mode Configuration > Private Vlan Port Mode Configuration > Private Vlan Promiscuous Interface Configuration > Storm Control	eess   Port Authenticotion   Troffic Control   Co Private VLAN Association Config Private VLAN Association Primary VLAN Secondary VLAN(s) 100 101-102	Image: Second	
			DELETE CANCEL APPLY
<b>b</b>			



4. Choose **Switching > Multicast > IGMP Snooping > IGMP Vlan Configuration**. Enable Admin Mode and Fast-Leave Admin Mode on VLAN 100, and click **ADD**.

NETGEAR Connect with Innovation								M4100-50 ProSafe 48-port FastElik Intelligent Edge PoE Manage	I-POE ernet L2+ ed Switch
System Switching	Routing	QoS	Security	Monitoring	Maintenance	Help	Index		SOUT
VLAN   Auto-VolP   STP	Multicast A	MVR Addre	ess Table Ports	LAG					
<ul> <li>MFDB</li> <li>IGMP Snooping</li> <li>Configuration</li> </ul>	IGMP VLAN	N Configura N Configurati	ntion ion				0		
» Interface     Configuration     » IGMP VLAN     Configuration     » Multicast Router	VLAN ID	Admin Mode	Fast Leave Admin Mode	Group Membership Interval	Maximum Response Time	Multicast Route Expiry Time	er		
Configuration	100	Enable	Enable	260	10	0			
<ul> <li>Configuration</li> <li>Multicast Router</li> <li>VLAN</li> <li>Configuration</li> <li>Querier</li> <li>Configuration</li> <li>Querier VLAN</li> <li>Configuration</li> <li>A MLD Snooping</li> </ul>									
								ADD DELETE CANCEL APP	LY



5. Choose **Switching > Multicast > IGMP Snooping > Configuration**. Enable Admin Mode to enable IGMP snooping globally and verify that VLAN 100 is listed as under "VLAN IDs Enabled for IGMP Snooping." Click **APPLY**.

NETGEAR Connect with Innovation				M4100-50-POE ProSafe 48-port FastEthernet L2+ Intelligent Edge PoE Managed Switch
System Switching	Routing QoS Security M	Nonitoring Maintenance Help	Index	LOGOUT
VLAN   Auto-VolP   STP	Multicast   MVR   Address Table   Ports	LAG		
MFDB     Gonfiguration     Interface     Configuration     Interface     IGMP VLAN     Configuration	IGMP Snooping Configuration IGMP Snooping Configuration Admin Mode Multicast Control Frame Count Validate IGMP IP header	<ul> <li>Disable @ Enable</li> <li>0</li> <li>Disable @ Enable</li> </ul>	0	
<ul> <li>Multicast Router Configuration</li> <li>Multicast Router</li> <li>VI AN</li> </ul>	Interfaces Enabled for IGMP Snooping ULAN IDs Enabled for IGMP Snooping	(	0	
Configuration > Querier Configuration > Querier VLAN Configuration > MLD Snooping				
				REFRESH CANCEL APPLY



6. Choose Switching > Multicast > IGMP Snooping > Querier VLAN Configuration. Set the querier address of 192.168.1.2 for VLAN 100, and click ADD.

NETGEAR Connect with Innovation "											M4100- ProSafe 48-port Fa: Intelligent Edge PoE Ma	-50-POE stEthernet L2+ naged Switch
System Switching	Routing	QoS	Security /	Monitoring	Maintenance	e He	lp In	dex			l	LOGOUT
VLAN Auto-VolP STP	Multicast A	AVR Address	s Table   Ports	LAG								
> MFDB	IGMP Snoo	ping Querie	r VLAN Confi	guration								
<ul> <li>* IGMP Snooping</li> <li>* Configuration</li> </ul>	: IGMP Snooping Querier VLAN Configuration											
<ul> <li>Interface</li> <li>Configuration</li> <li>IGMP VLAN</li> <li>Configuration</li> </ul>	VLAN ID	Querier Election Participate Mode	Querier VLAN Address	Operational State	Operational Version	Last Querier Address	Last Querier Version	Operational Max Response Time				
» Multicast Router Configuration	100		192.168.1.2									
» Multicast Router VLAN												
Configuration » Querier												
Configuration » Querier VLAN												
<ul> <li>MLD Snooping</li> </ul>												
										ADD	ELETE CANCEL	APPLY



 Choose Security > Traffic Control > Private Vlan > Private Vlan Promiscuous Interface Configuration. Configure source port 0/48 as a promiscuous port with primary VLAN 100 and secondary VLAN 101-102. Click APPLY.

NETGE Connect with Innova	AR'								
System	Switching		Routing	QoS	Security	Monitoring	Maintenance	Help	Index
Management S	ecurity Acces	ss	Port Authentico	ition Traffic	Control Contro	ACL			
		Driv	vate VI Al	N Promise	uous Interfa	ce Configu	ation		
MAC Filter Port Securit Private Grou	/ IP		Private VLA	N Promiscu	ous Interface C	onfiguration	ation		0
Protected Po	ort	1	LAGS All		Go	To Interface	GO		
<ul> <li>Private vian</li> <li>Private Vlan</li> </ul>	Туре		Interface	Promiscuo	us Primary VLA	N Promiscuo	us Secondary VLAN	s) Operati	ional VLAN(s)
Configuratio	n			(2 to 4093	)	Range[2-4	093]	_	
» Private Vlan Association			0/48	100		101-102			
Configuratio	n		0/1	0					
» Private Vlan	Port		0/2	0					
Mode			0/3	0					
» Private Vlan	Host		0/5	0					
Interface			0/6	0					
Configuratio	n		0/7	0					
			0/8	0					
			0/9	0					
Configuratio	n		0/10	0					
Storm Contr	DI		0/11	0					
			0/12	0					
			0/13	0					
			0/14	0					
			0/15	0					
			0/16	0					
			0/17	0					
			0/18	0					
			0/19	0					
			0/20	0					
			0/21	0					
			0/22	0					
			0/23	0					
			0/24	0					
			0/25	0					
			0/27	0					
			0/28	0					
			0/29	0					
		_	0/20						



8. Choose **Switching > VLAN > Advanced > VLAN Membership**. For each of the VLANs, add the appropriate ports as untagged. Click **APPLY**.



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system Switching	Routi	ng QoS	Security	Monitoring	Mainten	ance	lelp Index	
AN Auto-VolP STP	Multicast	MVR Address	Table   Pa	orts i LAG				
asic	Port PV	ID Configuratio	n					
dvanced	PVID	Configuration					0	
Configuration	1.1400		<b>C</b> .	T- T-4		2		
/LAN Membership	1 LAGS	All	G	o to internace				
/LAN Status	Inte	Configured	Current	Acceptable	Configured	Ingress	Port Priority	
ort PVID		PVID	PVID	Types	Filtering	Filtering		
onfiguration		101						
rotocol Based	- 0/1	1	1	Admit All	Dicable	Disable	0	
LAN Group		1	1	Admit All	Disable	Disable	0	
Configuration	0/2	-		Admit All	Disable	Disable		
rotocol Based	0/3	-		Admit All	Disable	Disable		
LAN Group Iembership	0/4	1	1	Admit All	Disable	Disable	0	
P Subnet Based	0/5	1	1	Admit All	Disable	Disable		
LAN		1	1	Admit All	Disable	Disable		
ort DVLAN		1	1	Admit All	Disable	Disable	0	
onfiguration	V 0/0	1	1	Admit All	Disable	Disable		
onfiguration	V 0/9		1	Admit All	Disable	Disable	0	
ARP Switch			1	Admit All	Disable	Disable	0	
onfiguration	0/11		1	Admit All	Disable	Disable	0	
ARP Port	0/12		1	Admit All	Disable	Disable	0	
onnguration	0/13		1	Admit All	Disable	Disable	0	
	0/14	-	1	Admit All	Disable	Disable	-	
	0/15		1	Admit All	Disable	Disable		
	0/16		1	Admit All	Disable	Disable		
	0/17	1	1	Admit All	Disable	Disable		
	0/18		1	Admit All	Disable	Disable		
	0/19	, 1	1	Admit All	Disable	Disable	-	
	0/20	1	1	Admit All	Disable	Disable		
	0/21	1	1	Admit All	Disable	Disable	0	
	0/22	2 1	1	Admit All	Disable	Disable	0	
	0/23	3 1	1	Admit All	Disable	Disable	0	
	0/24	1	1	Admit All	Disable	Disable	0	
	0/25	5 1	1	Admit All	Disable	Disable	0	
	0/26	5 1	1	Admit All	Disable	Disable	0	
	0/27	7 1	1	Admit All	Disable	Disable	0	
	0/28	3 1	1	Admit All	Disable	Disable	0	

9. Choose **Switching > VLAN > Advanced > Port PVID Configuration**. Assign the PVID to camera and client ports accordingly. Click **APPLY**.

#### **CONFIGURATION FOR THE 200-CAMERA SOLUTION**

You can use the CLI or Web GUI for configuration. Refer to Figure 2.

#### Assumptions for the 200-Camera Solution

- A pre-existing DHCP server will be used to dynamically assign IPs to cameras and clients.
- Routing protocols and proper default routes are in place for existing and new subnets (in this case,192.168.1.0/24 for VLAN 100 and 192.168.2.0/24 for VLAN 200).
- The video servers are configured to broadcast UDP multicast packets @ 224.1.2.3-224.1.2.7 over port 2000.
- There only five multicast sources.
- Best practices are used to design and implement switch stacking and redundancy/failover.

### **Global Configuration Notes**

- Be sure to save your configuration using the write memory CLI command. Alternatively, choose Maintenance > Save Config in the GUI. Select the box, and click APPLY.
- You can configure a maximum of 256 multicast sources with the MVR feature.

#### Sample Configuration Values

The following values are used in the sample configuration:

- Primary VLAN (private): 100
- Camera VLAN (private): 101
- Client VLAN: 200
- Querier IP address: 192.168.1.2
- MVR addresses: 224.1.2.3 224.1.2.7
- · Camera switch uplink port: 49
- Camera ports: 1-40



#### CLI Configuration Steps: 200-Camera Solution

These steps provide an example CLI configuration for the 200-camera solution. For the Web GUI configuration, see Web GUI Configuration Steps: 200-Camera Solution on page 23.

- 1. Configure VLANs 100 and 101 as private VLANs, and configure VLAN 200 on all switches in the surveillance network.
  - (Switch1) #vlan database
  - (Switch1) (Vlan)#vlan 100 (Switch1) (Vlan)#vlan name 100 PrimaryVlan (Switch1) (Vlan)#vlan 101 (Switch1) (Vlan)#vlan name 101 CameraVlan (Switch1) (Vlan)#vlan 200 (Switch1) (Vlan)#vlan name 200 ClientVlan (Switch1) (Vlan)#exit (Switch1) #configure (Switch1) #configure (Switch1) (Config)#vlan 101 (Switch1) (Config)(Vlan 101)#private-vlan isolated (Switch1) (Config)(Vlan 101)#exit (Switch1) (Config)(Vlan 100)#private-vlan primary (Switch1) (Config)(Vlan 100)#private-vlan association 101 (Switch1) (Config)(Vlan 100)#private-vlan association 101
- 2. Configure the IGMP querier for primary VLAN 100 and enable the fast-leave feature for clients who subscribe to the multicast source content.
  - (Switch1) #vlan database (Switch1) (Vlan)#set igmp 100 (Switch1) (Vlan)#set igmp querier 100 address 192.168.1.2 (Switch1) (Vlan)#set igmp fast-leave 100 (Switch1) (Vlan)#end
- 3. For IGMP snooping to work with VLANs, enable the capability globally.

```
(Switch1) #configure
(Switch1) (Config)#set igmp interfacemode
(Switch1) (Config)#end
```

4. Configure MVR over VLAN 100 and set the MVR address with a contiguous count of sources

```
(M5300-GF3-1) #configure
(M5300-GF3-1) (Config)#mvr
(M5300-GF3-1) (Config)#mvr vlan 100
(M5300-GF3-1) (Config)#mvr group 224.1.2.3 5
(M5300-GF3-1) (Config)#end
```



5. When configuring uplinks between the media server switches (M5300–28GF3) and the client switches (M5300– 52G3), it is necessary to configure the uplink as an MVR source. The MVR source port automatically adds all globally configured MVR groups.

```
(M5300-28G3) #configure
(M5300-28G3) (Config)#interface 1/0/26
(M5300-28G3) (Interface 1/0/26)#vlan participation exclude 1
(M5300-28G3) (Interface 1/0/26)#vlan participation include 100
(M5300-28G3) (Interface 1/0/26)#mvr
(M5300-28G3) (Interface 1/0/26)#mvr type source
(M5300-28G3) (Interface 1/0/26)#vlan participation include 101,200
(M5300-28G3) (Interface 1/0/26)#vlan tagging 100-101,200
(M5300-28G3) (Interface 1/0/26)#exit
```

6. On the other side of the uplink, configure the port as an MVR receiver. Take special note how to add each multicast source as an MVR group on the receiver ports.

```
(M5300-GF3-1) #configure
(M5300-GF3-1) (Config) #interface 1/0/25
(M5300-GF3-1) (Interface 1/0/25) #vlan participation exclude 1
(M5300-GF3-1) (Interface 1/0/25) #vlan participation include 100
(M5300-GF3-1) (Interface 1/0/25) #mvr type receiver
(M5300-GF3-1) (Interface 1/0/25) #mvr type receiver
(M5300-GF3-1) (Interface 1/0/25) #mvr vlan 100 group 224.1.2.3
(M5300-GF3-1) (Interface 1/0/25) #mvr vlan 100 group 224.1.2.4
(M5300-GF3-1) (Interface 1/0/25) #mvr vlan 100 group 224.1.2.5
(M5300-GF3-1) (Interface 1/0/25) #mvr vlan 100 group 224.1.2.6
(M5300-GF3-1) (Interface 1/0/25) #mvr vlan 100 group 224.1.2.7
(M5300-GF3-1) (Interface 1/0/25) #mvr vlan 100 group 224.1.2.7
(M5300-GF3-1) (Interface 1/0/25) #vlan participation include 101,200
(M5300-GF3-1) (Interface 1/0/25) #vlan tagging 100-101,200
(M5300-GF3-1) (Interface 1/0/25) #exit
```

7. Configure the camera switch (M4100-50G-POE) uplinks. This configuration is simpler, as the uplinks do not include any MVR commands and the same configuration is used on the media server switch (M5300-28GF3) as well.

```
(M4100-POE-1) #configure
(M4100-POE-1) (Config)#interface 0/49
(M4100-POE-1) (Interface 0/49)#vlan participation exclude 1
(M4100-POE-1) (Interface 0/49)#vlan participation include 100-101
(M4100-POE-1) (Interface 0/49)#vlan tagging 100-101
(M4100-POE-1) (Interface 0/49)#exit
```



8. Configure each camera port on the camera switches.

```
(M4100-POE-1) #configure
(M4100-POE-1) (Config)#interface 0/1-0/40
(M4100-POE-1) (Interface 0/1-0/40)#switchport mode private-vlan host
(M4100-POE-1) (Interface 0/1-0/40)#switchport private-vlan host-association
100 101
(M4100-POE-1) (Interface 0/1-0/40)#exit
```

9. On the video server switches, configure ports as promiscuous MVR sources.

```
(M5300-GF3-1) (Config)#interface 1/0/24
(M5300-GF3-1) (Interface 1/0/24)#switchport mode private-vlan promiscuous
(M5300-GF3-1) (Interface 1/0/24)#switchport private-vlan mapping 100 101
(M5300-GF3-1) (Interface 1/0/24)#mvr
(M5300-GF3-1) (Interface 1/0/24)#mvr type source
(M5300-GF3-1) (Interface 1/0/24)#exit
```

10. On the client switches, configure the ports as MVR receivers. Multicast sources as MVR groups must be explicitly listed on the port to be able to subscribe to the stream.

```
(M5300-28G3) #configure
(M5300-28G3) (Config) #interface 1/0/1
(M5300-28G3) (Interface 1/0/1) #vlan pvid 200
(M5300-28G3) (Interface 1/0/1) #vlan participation exclude 1
(M5300-28G3) (Interface 1/0/1) #vlan participation include 200
(M5300-28G3) (Interface 1/0/1) #mvr
(M5300-28G3) (Interface 1/0/1) #mvr type receiver
(M5300-28G3) (Interface 1/0/1) #mvr vlan 100 group 224.1.2.3
(M5300-28G3) (Interface 1/0/1) #mvr vlan 100 group 224.1.2.4
(M5300-28G3) (Interface 1/0/1) #mvr vlan 100 group 224.1.2.5
(M5300-28G3) (Interface 1/0/1) #mvr vlan 100 group 224.1.2.6
(M5300-28G3) (Interface 1/0/1) #mvr vlan 100 group 224.1.2.7
(M5300-28G3) (Interface 1/0/1) #mvr vlan 100 group 224.1.2.7
```

#### Web GUI Configuration Steps: 200-Camera Solution

These steps provide an example Web GUI configuration for the 200-camera solution. To use the CLI for configuration, see CLI Configuration Steps: 200-Camera Solution on page 20.

 VLAN 100 will be the primary VLAN, with secondary VLAN 101 for camera (isolated) and VLAN 200 for client (community). Choose Switching > VLAN > Advanced > VLAN Configuration. Enter each VLAN ID, its name, and click ADD to add the VLAN to the configuration.

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nect with Inr	novation "									
System	Switching		Routing	QoS	Security	Monitoring	Maintenance	Help	Ind	ex
	Auto-VolP   iSCSI	ST		ast MVR	Address Tob	le   Ports   LAG	mannenança	ritinp		
					, , , , , , , , , , , , , , , , , , , ,					
ic		VL/	AN Confi	guration						
	d		Reset					0	1	
	ation	Re	set Configur	ation						
/LAN Me /LAN St	ambership	_								
Port PVI	D	11	Internal VI	LAN Configur	ation			U	4	
Configur	ation	Int	ernal VLAN	Allocation Base	e	4093	@ D			
Protocol	Based	Int	ernal VLAN	Allocation Polic	C <b>Y</b>	Ascending	<ul> <li>Descending</li> </ul>			
/LAN Gr	oup		VLAN Conf	iguration				0	8	
Protocol	Based		VLAN ID	VLAN Name		VLAN Type	Make Stati	c	1	
VLAN Gr	oup						Disable -			
IP Subne	ship et Based		1	default		Default	Disable		1	
VLAN			2	Auto VoIP		AUTO VoIP	Disable			
Port DVL	LAN		10	mgmt		Static	Disable			
Voice VL	AN		100	PrimaryVlan		Static	Disable			
Configur	ation		101	CameraVlan		Static	Disable			
BARP SV	witch		200	ClientVlan		Static	Disable		L	
» GARP Po	ation									
Configur	ation									



2. Choose **Security > Traffic Control > Private VLAN > Private VLAN Type Configuration**. Assign the appropriate VLAN type to each VLAN ID. Click **APPLY** after each entry. By default, unconfigured VLANs are community VLANs.

<b>NETGEAR</b> Connect with Innovation "		M5300-28GF3 ProSole 24-port 13 Stockable fiber GE Switch with 13 Routing
System Switching	Routing QoS Security Monitoring Maintenance Help Index	LOGOUT
Management Security   Acc	ess   Port Authentication   Traffic Control   Control   ACL	
MAC Filter     Port Security     Private Group     Private Group     Private Group     Private Vian     Association     Configuration     Private Vian     Association     Configuration     Private Vian     Association     Configuration     Private Vian     Private Vian	Private VLAN Type Configuration          Private VLAN Type Configuration         VLAN 10         Private VLAN Type         1         Unconfigured         10         100         Private VLAN Type         11         Unconfigured         120         131         140         140         150         160         160         170         180         190	
		CANCEL



3. Choose Security > Traffic Control > Private Vlan > Private Vlan Association Configuration. Set VLAN 100 as the primary VLAN and 101-102 as the secondary VLANs. Click APPLY.

NETGEAR Connect with Innovation			M4100-50-POE ProSafe 48-port FostEthernet L2+ Intelligent Edge PoE Managed Switch
System Switching	Routing QoS Security	Monitorina Maintenance Help Index	
Management Security Access	s   Port Authentication   Traffic Control   Con	Itrol ACL	
System     Switching       Management Security     Access       > MAC Filter     Port Security       > Protected Fort     Private Group       > Private Vlan     Private Vlan       > Storm Configuration     Private Vlan	Routing     Gob     Security       s     Port Authentication     Traffic Control     Con       Private VLAN Association     Primary VLAN Association       Primary VLAN     Secondary VLAN(s)       Image: 100     101-102	Monitoring Maintenance Heip Index Index ACL Uration Teolated VLAN Community VLAN(s) 101 102	



4. Choose Switching > Multicast > IGMP Snooping > IGMP Vlan Configuration. Enable Admin Mode and Fast-Leave Admin Mode on VLAN 100, and click ADD.

NETGEAR Connect with Innovation "								M4100-50-POE ProSofe 48-port FastEthernet L2+ Intelligent Edge PoE Managed Switch
System Switching	Routing	QoS	Security	Monitoring	Maintenance	Help Ind	ex	LOGOUT
VLAN Auto-VoIP STP	Multicast	MVR Addre	ss Table   Ports	LAG				
* MFDB	IGMP VLA	N Configura	tion					
<ul> <li>IGMP Snooping</li> <li>Configuration</li> </ul>	IGMP VLA	N Configuration	DN			0		
<ul> <li>» Interface</li> <li>Configuration</li> <li>» IGMP VLAN</li> <li>Configuration</li> </ul>	VLAN ID	Admin Mode	Fast Leave Admin Mode	Group Membership Interval	Maximum Response Time	Multicast Router Expiry Time		
» Multicast Router Configuration			-					
» Multicast Router	100	Enable	Enable	260	10	0		
Configuration								
Configuration								
Configuration								
* MLD Shooping								
								ADD DELETE CANCEL APPLY



5. Choose **Switching > Multicast > IGMP Snooping > Configuration**. Enable Admin Mode to enable IGMP snooping globally and verify that VLAN 100 is listed as under "VLAN IDs Enabled for IGMP Snooping." Click **APPLY**.

NETGEAR Connect with Innovation		M4100-50-POE ProSafe 48-port FastEthernet L2+ Intelligent Edge PoE Managed Switch
System Switchin	ng Routing QoS Security Monitoring Maintenance Help Index	
VLAN   Auto-VoIP   S	TP   Multicast   MVR   Address Table   Ports   LAG	
<ul> <li>&gt; MFDB</li> <li>&gt; IGMP Snooping</li> <li>&gt; Configuration</li> <li>&gt; Interface</li> <li>Configuration</li> <li>&gt; IGMP VLAN</li> <li>Configuration</li> <li>&gt; Multicast Router</li> <li>Configuration</li> <li>&gt; Multicast Router</li> <li>VLAN</li> <li>Configuration</li> <li>&gt; Querier</li> <li>Configuration</li> <li>&gt; Querier VLAN</li> <li>Configuration</li> <li>&gt; Multi Configuration</li> <li>&gt; Multi Configuration</li> <li>&gt; MLD Snooping</li> </ul>	IGMP Snooping Configuration  IGMP Snooping Configuration  Idmin Mode  Idmin Mode  Ubiable  Disable  Disable Disable Disable Disable Disable Disable Disable Disable Disable Disable Disable Disable Disable Disable Disable Disable Disable D	
		REFRESH CANCEL APPLY



6. Choose **Switching > Multicast > IGMP Snooping > Querier VLAN Configuration.** Set the querier address of 192.168.1.254 for VLAN 100, and click **ADD**.

NETGEAR Connect with Innovation"										M.53( ProS Stackable fiber GE Switch	00-28GF3 afe 24-port L3 with L3 Routing
System Switchin	ng Routing	QoS	Security I	Monitoring	Maintenance	He	lp In	dex			LOGOUT
VLAN   Auto-VolP   iS	CSI   STP   Multic	ost   MVR	Address Toble	Ports   LAG							
	IGMP Spor	ning Querie	r VI AN Confi	ouration							
MFDB     'IGMP Snooping	TOMP SHOE	ping Querie		guration							
<ul> <li>Configuration</li> <li>Interface</li> </ul>	IGMP Sho	Ouerier	VLAN Configura	tion				Operational			
Configuration > IGMP VLAN Configuration	VLAN ID	Election Participate Mode	Querier VLAN Address	Operational State	Operational Version	Last Querier Address	Last Querier Version	Max Response Time			
<ul> <li>Multicast Router</li> <li>Configuration</li> </ul>											
» Multicast Router	100	Disable	192.168.1.254	Disable	2						
VLAN Configuration											
<ul> <li>Querier</li> <li>Configuration</li> </ul>											
* Querier VLAN											
> MLD Snooping											
									ADD		APPLY



7. Choose **Switching > MVR > Advanced > MVR Configuration**. Enable MVR Running and set VLAN 100 as MVR Multicast VLAN. Click A**PPLY.** 

NETGEAR Connect with Innovation			M 5300-28GF3 ProSofe 24-port 13 Stockable Riter OE Switch with L3 Routing
System Switching	Routing QoS Security	Monitoring Maintenance Help Ind	ex Locout
Basic     Advanced     MVR Configuration	MVR Configuration		
<ul> <li>MVR Group</li> <li>Configuration</li> <li>MVR Interface</li> <li>Configuration</li> <li>MVR Group</li> </ul>	MVR Running MVR Multicast Vlan MVR Max Multicast Groups MVR Current Multicast Groups	100 (1 to 4094) 256 5	
Membership > MVR Statistics	MVR Global query response time MVR Mode	S (1 to 100) compatible dynamic	

8. Choose **Switching > MVR > Advanced > MVR Group Configuration**. Enter the group IP addresses (multicast addresses) 224.1.2.3 – 224.1.2.7, and click **ADD**.

NETGEAR Connect with Innovation"			M.5300-28GF3 ProSale 24-port 13 Stockable fiber GE Switch with L3 Routing
System Switching	Routing QoS Security Monitoring	Maintenance Help Index	LOGOUT
VLAN   Auto-VolP   iSCSI	STP   Multicost   MVR   Address Toble   Ports   LA	3	
> Basic	MVR Group Configuration		4
» MVR Configuration	MVR Group Configuration	۲	
<ul> <li>MVR Group</li> <li>Configuration</li> </ul>	MVR Group IP 5	itatus Members Count	
» MVR Interface			
Configuration	224.1.2.3	CTIVE 1/0/24(s), 1/0/25(s)	
Membership	224.1.2.4	CTIVE 1/0/24(s), 1/0/25(s)	
» MVR Statistics	224.1.2.6	CTIVE 1/0/24(s), 1/0/25(s)	
	224.1.2.7	CTIVE 1/0/24(s), 1/0/25(s)	
			ADD DELETE CANCEL



9. Choose Switching > MVR > Advanced > MVR Interface Configuration. Configure source ports (all video servers ports) and receiver ports (all client ports) with immediate leave on non-camera switches. Also remember that downstream uplink ports must be set as receiver ports and upstream uplink ports must be set as source ports.

act with Innovation"					ProSaf Stackable fiber GE Switch wi
System Switchin	ng Routing Qa	oS Security Mon	itoring Maintenan	ce Help Index	
AN   Auto-VolP   iS	CSI   STP   Multicast	MVR   Address Table   Po	rts   LAG		
asic	MVR Interface C	configuration			
MVR Configuration	MVR Interface Co	onfiguration		•	
MVR Group	1 All	Go To Interfac	ce GO		
Configuration	Interface	Admin Mode Typ	e Immediate L	eave Status	
MVR Interface					
MVR Group	1/0/1	Disable non	e Disable	INACTIVE/IoVLAN	
Membership	1/0/2	Disable non	e Disable	INACTIVE/INVEN	
MVR Statistics	1/0/3	Disable none	e Disable	INACTIVE/InVLAN	
	1/0/4	Disable none	e Disable	INACTIVE/InVLAN	
	1/0/5	Disable none	e Disable	INACTIVE/InVLAN	
	1/0/6	Disable none	e Disable	INACTIVE/InVLAN	
	1/0/7	Disable none	e Disable	INACTIVE/InVLAN	
	1/0/8	Disable none	e Disable	INACTIVE/InVLAN	
	1/0/9	Disable none	e Disable	INACTIVE/InVLAN	
	1/0/10	Disable none	e Disable	INACTIVE/InVLAN	
	1/0/11	Disable none	e Disable	INACTIVE/InVLAN	
	1/0/12	Disable none	e Disable	INACTIVE/InVLAN	
	1/0/13	Disable none	e Disable	INACTIVE/InVLAN	
	1/0/14	Disable none	e Disable	INACTIVE/InVLAN	
	1/0/15	Disable none	e Disable	INACTIVE/InVLAN	
	1/0/16	Disable none	e Disable	INACTIVE/InVLAN	
	1/0/17	Disable none	e Disable	INACTIVE/InVLAN	
	1/0/18	Disable none	e Disable	INACTIVE/InVLAN	
	1/0/19	Disable none	e Disable	INACTIVE/InVLAN	
	1/0/20	Disable none	e Disable	INACTIVE/InVLAN	
	1/0/21	Disable none	e Disable	ACTIVE/InVLAN	
	1/0/22	Disable none	e Disable	INACTIVE/InVLAN	
	1/0/23	Enable rece	siver Enable	INACTIVE/InVLAN	
	1/0/24	Enable sour	rce Disable	INACTIVE/InVLAN	
	1/0/25	Enable rece	iver Disable	ACTIVE/InVLAN	
	1/0/26	Enable rece	iver Disable	INACTIVE/InVLAN	
	1/0/27	Disable none	e Disable	INACTIVE/NotInVLAN	
	1/0/28	Disable none	e Disable	INACTIVE/NotInVLAN	
	1 All	Go To Interfac	ce GO		



10. To configure video server and camera ports, choose **Security > Traffic Control > Private Vlan > Private Vlan Port Mode Configuration**. Select corresponding camera ports and select Host from the Port Vlan Mode drop-down menu. Click **APPLY** to commit changes. Use the appropriate options for any video server ports, and click **APPLY**.

ProSafe Stackable fiber GE Switch wit				t with Innovation"
( v	Help Index	QoS Security Monitoring	Routing	stem Switching
		ation   Traffic Control   ACL	Port Authentic	nogement Security   Access
		Port Mode Configuration	Private Vlan	C Filter Pi
	•	n Port Mode Configuration	Private Vla	vate Group
		Go To Interface	1 LAGS All	tected Port 1
		Port Vlan Mode	Interface	vate Vlan
		-		configuration
		Host	1/0/1	rivate Vlan
		Host	1/0/2	ssociation
		Host	1/0/3	onfiguration
		Host	1/0/4	ode
		Host	1/0/5	onfiguration
		General	1/0/5	ivate Vlan Host
		General	1/0/7	terface
		General	1/0/8	vate Vian
		General	1/0/9	miscuous
		General	1/0/10	erface
		General	1/0/11	nfiguration
		General	1/0/12	rm Control
		General	1/0/13	
		General	1/0/14	17
		General	1/0/15	1
		General	1/0/16	1
		General	1/0/17	
		General	1/0/19	
		General	1/0/19	
		General	1/0/20	1
		General	1/0/21	
		General	1/0/22	1
		General	1/0/23	1
		Promiscuous	1/0/24	17
		General	1/0/25	1
		General	1/0/26	17
		General	1/0/27	1
		General	1/0/28	1
		Go To Interface	1 LACS ALL	



11. To associate VLANs with camera ports, choose **Security > Traffic Control > Private Vlan > Private Vlan Host Interface Configuration**. Select the camera interfaces and set Host Primary VLAN to 100 and Host Secondary VLAN to 101. Click **APPLY**.

S Security	Monitorina Mai	ntenance Help Inde	
Traffic Control   Co	netrol   ACL		
ost Interface Co	onfiguration		
st Interface Config	uration	0	
Go To	Interface	GO	
t Primary VLAN to 4093)	Host Secondary VLAN (2 to 4093)	Operational VLAN(s)	
	101	100-101	
	101	100-101	
	101	100-101	
	101	100-101	
	101	100-101	
	0		
	0		
	0		
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	0		
	0		
	0		
	0		
	0		
	0	100-101	
	0		
	0		



12. To associate VLANs with video server ports, choose **Security > Traffic Control > Private Vlan > Private Vlan Promiscuous Interface Configuration**. Select the video server interfaces and set Promiscuous Primary VLAN to 100 and Promiscuous Secondary VLAN to 101. Click **APPLY**.

with Innovation **					Pro Stackable fiber GE Switc	oSafe ch with
em Switchin	Routing	QoS Security	Monitoring Maintenance	Help Index		
igement Security   /	ccess   Port Autho	entication   Traffic Control   Control	ACL			
Filter	Private V	LAN Promiscuous Interfa	ce Configuration			
Security	Drivate	VI AN Promiscuous Interface C	onfiguration	۵		
ate Group	· · · · · ·			v		
te Vlan	1 LAGS A	ui Go	To Interface GO			
ate Vlan Type	Interf	ace (2 to 4093)	Range[2-4093]	Operational VLAN(s)		
riguration rate Vlan						
ociation	1/0/1	0		100-101		
figuration	1/0/2	0		100-101		
ate Vlan Port	1/0/3	0		100-101		
figuration	1/0/4	0		100-101		
ate Vlan Host	1/0/5	0		100-101		
rface	1/0/5	0		100 101		
figuration	1/0/7	0				
ate Vian	1/0/9	0				
rface	1/0/8	0				
figuration	1/0/9	0				
n Control	1/0/10	0				
	1/0/11	0				
	1/0/12	0				
	1/0/13	0				
	1/0/14	0				
	1/0/15	0				
	1/0/16	0				
	1/0/17	0				
	1/0/18	0				
	1/0/19	0				
	1/0/20	0				
	1/0/21	0				
	1/0/22	0				
	1/0/23	0				
	1/0/24	100	101	100-101		
	1/0/25	0				
	1/0/26	0				
	1/0/27					
	1/0/28					



13. Choose **Switching > VLAN > Advanced > VLAN Membership**. Select the VLAN ID to configure from the dropdown menu. Because all camera and video server ports are configured, it is necessary only to configure client ports and uplink ports. Expand the port list for each unit displayed. Select T (tagged) for VLANs 100, 101, and 200 on uplink ports. Select U (untagged) for VLAN 200 on client ports. For added security, you can select Remove All for Group Operation for the default VLAN 1 to help prevent unwanted traffic if the default VLAN is not also your management Vlan.

the second state	Bautian	Orf Security	Haribarian Haisbarran Hala balar	ſ
N Auto-VolP is	CSI   STP   Mult	GoS Security	Monitoring Maintenance Help Index	
ic	VLAN Mer	nbership		
AN	VLAN Me	embership	۲	
onfiguration	VLAN 1D	100 💌	Group Operation Untag All	
AN Status	VLAN Name	PrimaryVlan	UNTAGGED PORT MEMBERS	
ort PVID	VLAN Type	Static	TAGGED PORT MEMBERS	
AC Based VLAN	Port 1 2	3 4 5 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20 21 22 23 24	
otocol Based			T	
an Group onfiguration	25 26 T	27 28		
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Subnet Based				
AN				
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ARP Port				
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stem Switching	Ro	outing	QoS	Security	Monitoring	Mainten	ance	Help Index	
N Auto-VolP iSC	SI STP	Multicas		Address To	able   Ports   LA	G			
		1							
sic	Port	PVID Co	onfiguratio	n					
vanced	PV	/ID Config	uration					Ô	
LAN				6.	To Tabada a				
LAN Membership	1 1.4	AGS AII		60	To Interface		0		
LAN Status ort PVID		Interface	Configured PVID	Current PVID	Acceptable Frame	Configured Ingress Filtering	Current Ingress	Port Priority	
onfiguration	_				Types	rittering	rittering		
AC Based VLAN									
AN Group		1/0/1	1	0	Admit All	Disable	Enable	0	
onfiguration		1/0/2	1	0	Admit All	Disable	Enable	0	
otocol Based		1/0/3	1	0	Admit All	Disable	Enable	0	
AN Group		1/0/4	1	0	Admit All	Disable	Enable	0	
Subnet Based		1/0/5	1	0	Admit All	Disable	Enable	0	
AN		1/0/6	1	1	Admit All	Disable	Disable	0	
ort DVLAN		1/0/7	1	1	Admit All	Disable	Disable	0	
onfiguration		1/0/8	1	1	Admit All	Disable	Disable	0	
bice VLAN	E 1	1/0/9	1	1	Admit All	Disable	Disable	0	
ARP Switch		1/0/10	1	1	Admit All	Disable	Disable	0	
onfiguration	E :	1/0/11	1	1	Admit All	Disable	Disable	0	
ARP Port		1/0/12	1	1	Admit All	Disable	Disable	0	
onfiguration		1/0/13	1	1	Admit All	Disable	Disable	0	
		1/0/14	1	1	Admit All	Disable	Disable	0	
	E 1	1/0/15	1	1	Admit All	Disable	Disable	0	
	E 1	1/0/16	1	1	Admit All	Disable	Disable	0	
	E 1	1/0/17	1	1	Admit All	Disable	Disable	0	
		1/0/18	1	1	Admit All	Disable	Disable	0	
	E :	1/0/19	1	1	Admit All	Disable	Disable	0	
		1/0/20	1	1	Admit All	Disable	Disable	0	
	E :	1/0/21	1	1	Admit All	Disable	Disable	0	
		1/0/22	1	1	Admit All	Disable	Disable	0	
	E 1	1/0/23	200	200	Admit All	Disable	Disable	0	
		1/0/24	100	0	Admit All	Disable	Enable	0	
		1/0/25	1	1	Admit All	Disable	Disable	0	
		1/0/26	1	1	Admit All	Disable	Disable	0	
		1/0/27	1	0	Admit All	Disable	Disable	0	
	(m)	10100			4.4	minute in the	minute.		

14. For client ports, choose **Switching > VLAN > Advanced > Port PVID Configuration**. Select the client ports and enter VLAN 200 as Configured PVID. Click **APPLY**.



15. To give clients access to MVR streams, choose **Switching > MVR > MVR Group Membership**. For each group IP address, select the ports to allow to subscribe to the stream. Click **APPLY** after selecting ports for each IP address.

NETGEAR Connect with Innovation"	e.									Stackab	M5300-28GF3 ProSafe 24-port L e fiber GE Switch with L3 Routin
System Swi	itching	Routing	QoS	Security	Monitoring	Maintenance	Help	Index			LOGOUT
VLAN   Auto-VolP	iSCSI	STP   Multic	ast   MVR	Address To	ble   Ports   LAG						
<ul> <li>&gt; Basic</li> <li>&gt; Advanced</li> <li>&gt; MVR Configuration</li> <li>&gt; MVR Group</li> <li>Configuration</li> <li>&gt; MVR Interface</li> <li>Configuration</li> </ul>		MVR Group Membership									la l
		In MVR Group Membership									
		Group IP		224.1.2.4							
		Port 1 2 3	456	7 8 9 10	11 12 13 14 1	5 16 17 18 19 20	21 22 23	24			
		25 26 2	7 28	$\checkmark$ $\checkmark$ $\checkmark$ $\checkmark$	$\checkmark$ $\checkmark$ $\checkmark$ $\checkmark$		$\checkmark$ $\checkmark$ $\checkmark$	$\checkmark$			
» MVR Statistics		V V V	/ 🗸								
											I
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## **CONFIGURATION FOR THE 1000-CAMERA SOLUTION**

You can use the CLI or Web GUI for configuration. The configuration involves the following switches:

- XSM7224S
- M5300-52G3
- M5300-52G-POE+

## Assumptions for the 1000-Camera Solution

- Layer 3 licenses have been installed on XSM7224S and M5300–52G–POE+ switches, as they are natively Layer 2 switches. No additional license is needed for the M5300–52G3 switches because they are native Layer 3 switches.
- An existing DHCP server will be used to dynamically assign IP addresses to cameras and clients.
- Video servers are configured to broadcast UDP multicast packets using 224.1.1.0/24 addresses.
- Best practices are used to design and implement switch stacking and redundancy/failover.

## **Global Configuration Notes**

- Be sure to save your configuration using the write memory CLI command. Alternatively, choose Maintenance > Save Config in the GUI. Select the box, and click APPLY.
- Each router ID must be unique to each stack.
- For each M5300-52G-POE+ stack, the subnet and VLAN ID for the camera VLAN will be unique since Layer-2 spanning-tree protocol (STP) is not being used and will allow for easier network segmenting.
- While the OSPF area feature was set to a single area in this sample configuration, it is possible to create smaller network areas for access control granularity. Refer to the included documentation and support.netgear.com for more information.
- ACLs can be used to further limit network access, including multicast subnets. You can limit camera communication to only video servers, restrict multicast streams to certain users, or apply ACLs for other reason appropriate for your deployment. Refer to the included documentation and support.netgear.com for more information.



## Sample Configuration Values

The following values are used in the sample configuration:

#### Switch – XSM7224S

- Video VLAN: 100
- Video VLAN subnet: 192.168.1.0/24
- Mulicast sources: 224.1.2.0/24
- Video server interfaces: 1/0/1-1/0/24
- Uplink port IP addresses for M5300-52G-POE+ stacks: 172.160.x.1
- Uplink port IP addresses for M5300-52G3 stacks: 172.80.x.1

#### Switch - M5300-52G3

- Client VLAN: 200
- Client VLAN subnet: 192.168.4.0/24
- Client interfaces: 1/0/1-1/0/24
- Uplink port IP addresses for XSM7224S stack: 172.80.x.2
- Multicast source: 224.1.1.0/24

### Switch – M5300-52G-POE+

- Camera VLAN: 101
- Camera VLAN subnet: 192.168.8.0/24
- Camera interfaces: 1/0/1-1/0/24
- Uplink port IP addresses for XSM7224S stack: 172.80.x.2



## CLI Configuration Steps: 1000-Camera Solution

These steps provide an example CLI configuration for the 1000-camera solution. For the Web GUI configuration, see Web GUI Configuration Steps: 1000-Camera Solution on page 44.

### Switch – XSM7224S

1. Configure the OSPF interface on the switch, Assign a unique router ID for the distributed networks to recognize this switch and elect to distribute any connected networks to the neighboring switches.

(XSM7224S)	(Config) #router ospf
(XSM7224S)	(Config-router) #router-id 0.0.0.1
(XSM7224S)	(Config-router) #redistribute connected
(XSM7224S)	(Config-router) #exit

2. Configure multicast settings. Start by enabling multicast routing, IGMP, and PIM sparse mode globally.

(XSM7224S) (Config)#ip igmp (XSM7224S) (Config)#ip multicast (XSM7224S) (Config)#ip pim sparse (XSM7224S) (Config)#exit

3. Configure video VLAN 100 with subnet 192.168.1.0/24 and enable routing on it. Make sure to enable PIM and IGMP on the interface and configure the correct OSPF area.

(XSM7224S)	#vlan database
(XSM7224S)	(Vlan)#vlan 100
(XSM7224S)	(Vlan)#vlan routing 100
(XSM7224S)	(Vlan) #exit
(XSM7224S)	#configure
(XSM7224S)	(Config)#interface vlan 100
(XSM7224S)	(Interface-vlan 100)#routing
(XSM7224S)	(Interface-vlan 100)#ip address 192.168.1.1 255.255.255.0
(XSM7224S)	(Interface-vlan 100)#ip pim
(XSM7224S)	(Interface-vlan 100)#ip igmp
(XSM7224S)	(Interface-vlan 100)#ip ospf area 0.0.0.0
(XSM7224S)	(Interface-vlan 100)#exit

4. Configure VLAN 100 to be the default interface for multicast sources (224.1.2.0/24).

(XSM7224S) (Config)#ip pim rp-candidate interface vlan 100 224.1.2.0
255.255.255.0
(XSM7224S) (Config)#ip pim bsr-candidate interface vlan 100 30 3



5. Configure the video server ports and place them on VLAN 100. Use the port range function (interface 1/0/1- 1/0/24) to configure a series of ports. Make sure to enable PIM and IGMP on the interfaces.

```
(XSM7224S) (Config)#interface 1/0/22
(XSM7224S) (Interface 1/0/22)#vlan participation exclude 1
(XSM7224S) (Interface 1/0/22)#vlan participation include 100
(XSM7224S) (Interface 1/0/22)#vlan pvid 100
(XSM7224S) (Interface 1/0/22)#ip pim
(XSM7224S) (Interface 1/0/22)#ip igmp
(XSM7224S) (Interface 1/0/22)#ip ospf area 0.0.0.0
(XSM7224S) (Interface 1/0/22)#exit
```

6. Configure the uplink ports to the M5300-52G-POE+ stacks using 172.160.x.1 addresses for the uplinks. For each uplink, increment the third segment of the IP address accordingly. For example, the first uplink has an IP address of 172.160.1.1, the second uplink has an IP address of 172.160.2.1, and so on.

```
(XSM7224S) (Config)#interface 1/0/24
(XSM7224S) (Interface 1/0/24)#routing
(XSM7224S) (Interface 1/0/24)#ip address 172.160.1.1 255.255.255.0
(XSM7224S) (Interface 1/0/24)#ip igmp
(XSM7224S) (Interface 1/0/24)#ip pim
(XSM7224S) (Interface 1/0/24)#ip ospf area 0.0.0.0
(XSM7224S) (Interface 1/0/24)#exit
```

7. Configure the uplink ports to the M5300-52G3 stacks using 172.80.x.1 addresses. For each uplink, increment the third segment of the IP address accordingly. For example, the first uplink has an IP address of 172.80.1.1, the second uplink has an IP address of 172.80.2.1, and so on.

(XSM7224S)	(Config)#int	erface 1/0/1
(XSM7224S)	(Interface	1/0/1)#routing
(XSM7224S)	(Interface	1/0/1)#ip address 172.80.1.1 255.255.255.0
(XSM7224S)	(Interface	1/0/1)#ip igmp
(XSM7224S)	(Interface	1/0/1)#ip pim
(XSM7224S)	(Interface	1/0/1)#ip ospf area 0.0.0.0
(XSM7224S)	(Interface	1/0/1)#exit



### Switch - M5300-52G3

1. Configure the OSPF interface on the switch. Assign a unique router ID for the distributed networks to recognize this switch and elect to distribute any connected networks to the neighboring switches.

(M5300-52G3) (Config) #router ospf (M5300-52G3) (Config-router) #router-id 0.0.0.2 (M5300-52G3) (Config-router) #redistribute connected (M5300-52G3) (Config-router) #exit

2. Enable multicast routing, IGMP, and PIM sparse mode globally.

(M5300-52G3) (Config)#ip igmp (M5300-52G3) (Config)#ip multicast (M5300-52G3) (Config)#ip pim sparse (M5300-52G3) (Config)#exit

3. Configure client VLAN 200 with subnet 192.168.4.0/24. Enable PIM on the interface and configure the correct OSPF area.

```
(M5300-52G3) #vlan database
(M5300-52G3) (Vlan)#vlan 200
(M5300-52G3) (Vlan)#vlan routing 200
(M5300-52G3) (Vlan)#exit
(M5300-52G3) #configure
(M5300-52G3) (Config)#interface vlan 200
(M5300-52G3) (Interface-vlan 200)#routing
(M5300-52G3) (Interface-vlan 200)#ip address 192.168.4.1 255.255.255.0
(M5300-52G3) (Interface-vlan 200)#ip pim
(M5300-52G3) (Interface-vlan 200)#ip igmp
(M5300-52G3) (Interface-vlan 200)#ip ospf area 0.0.0.0
(M5300-52G3) (Interface-vlan 200)#exit
```

4. Configure client ports and place them on VLAN 200. Use the port range function (interface 1/0/1-1/0/24) to configure a series of ports. Make sure to enable PIM and IGMP on the ports.

```
(M5300-52G3) (Config)#interface 1/0/22
(M5300-52G3) (Interface 1/0/22)#vlan participation exclude 1
(M5300-52G3) (Interface 1/0/22)#vlan participation include 200
(M5300-52G3) (Interface 1/0/22)#vlan pvid 200
(M5300-52G3) (Interface 1/0/22)#ip pim
(M5300-52G3) (Interface 1/0/22)#ip igmp
(M5300-52G3) (Interface 1/0/22)#ip ospf area 0.0.0.0
(M5300-52G3) (Interface 1/0/22)#exit
```



5. Configure the uplink port to XSM7224S stack using 172.80.x.2 addresses for the uplinks (the next available address in the subnet that was configured on the XSM7224S side of the link). For each uplink, increment the third segment of the IP address accordingly. For example, the first uplink has an IP address of 172.80.1.2, the second uplink has an IP address of 172.80.2.2, and so on.

```
(M5300-52G3) (Config) #interface 1/0/49
(M5300-52G3) (Interface 1/0/49) #routing
(M5300-52G3) (Interface 1/0/49) #ip address 172.80.1.2 255.255.255.0
(M5300-52G3) (Interface 1/0/49) #ip igmp
(M5300-52G3) (Interface 1/0/49) #ip pim
(M5300-52G3) (Interface 1/0/49) #ip ospf area 0.0.0.0
(M5300-52G3) (Interface 1/0/49) #exit
```

6. Configure uplink port to be the default interface for multicast sources (224.1.1.0/24).

```
(M5300-52G3) (Config)#ip pim rp-candidate interface 1/0/49 224.1.1.0 255.255.255.0
```

### Switch – M5300-52G-POE+

1. Configure the OSPF interface on the switch. Assign a unique router ID for the distributed networks to recognize this switch and elect to distribute any connected networks to the neighboring switches.

(M5300-52G-POE)	(Config)#router ospf
(M5300-52G-POE)	(Config-router) #router-id 0.0.0.3
(M5300-52G-POE)	(Config-router) #redistribute connected
(M5300-52G-POE)	(Config-router)#exit

2. Configure camera VLAN 101 with subnet 192.168.8.0/22 and enable routing on its interface. Make sure to configure the correct OSPF area. Remember that the camera VLAN ID and subnet are unique to each M5300-52G-POE+ stack.

```
(M5300-52G-POE) #vlan database
(M5300-52G-POE) (Vlan)#vlan 101
(M5300-52G-POE) (Vlan)#vlan routing 101
(M5300-52G-POE) (Vlan)#exit
(M5300-52G-POE) #configure
(M5300-52G-POE) (Config)#interface vlan 101
(M5300-52G-POE) (Interface-vlan 101)#routing
(M5300-52G-POE) (Interface-vlan 101)#ip address 192.168.8.0 255.255.252.0
(M5300-52G-POE) (Interface-vlan 101)#ip ospf area 0.0.0.0
```

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3. Configure camera ports and place them on VLAN 101. Use the port range function (interface 1/0/1-1/0/24) to configure a series of ports.

```
(M5300-52G-POE) (Config)#interface 1/0/1
(M5300-52G-POE) (Interface 1/0/1)#vlan participation exclude 1
(M5300-52G-POE) (Interface 1/0/1)#vlan participation include 101
(M5300-52G-POE) (Interface 1/0/1)#vlan pvid 101
(M5300-52G-POE) (Interface 1/0/1)#ip ospf area 0.0.0.0
(M5300-52G-POE) (Interface 1/0/1)#exit
```

4. Configure the uplink port to the XSM7224S stack using 172.80.x.2 addresses for the uplinks (the next available address in the subnet that was configured on the XSM7224S side of link). For each uplink, increment the third segment of the IP address accordingly. For example, the first uplink has an IP address of 172.160.1.2, the second uplink has an IP address of 172.160.2.2, and so on.

(M5300-52G-POE)	(Config)#interface 1/0/49
(M5300-52G-POE)	(Interface 1/0/49) #routing
(M5300-52G-POE)	(Interface 1/0/49)#ip address 172.160.1.2 255.255.255.0
(M5300-52G-POE)	(Interface 1/0/49)#ip ospf area 0.0.0.0
(M5300-52G-POE)	(Interface 1/0/49)#exit



# Web GUI Configuration Steps: 1000-Camera Solution

These steps provide an example CLI configuration for the 1000-camera solution. For the Web GUI configuration, see CLI Configuration Steps: 1000-Camera Solution on page 39.

### Switch – XSM7224S

1. Choose **Switching > VLAN > Advanced > VLAN Configuration**. Specify **100** for the video server VLAN ID, its name, and click **ADD** to add the VLAN to the configuration.

NETGEAR' Connect with Innovation"					XSM7224S 24-Port 10G SFP+ Ports Managed L2+ Stackable Switch
System Switching	Routing QoS Securi	ty Monitoring	Maintenance Help In	dex	LOGOUT
VLAN   STP   Multicost	Address Table   Ports   LAG   PFC	,			
* Basic	VLAN Configuration				
Configuration	Reset		۲		
> Advanced	Reset Configuration	12			
	Internal VLAN				
	Internal VLAN Allocation Base	4093			
	Internal VLAN Allocation Policy	Ascending ()	Descending		
	VLAN Configuration		U		
	VLAN ID VLAN Name	VLAN Type	Make Static		
	III 1 default	Default	Disable -		
	200 ClientVlan	Static	Disable		
				ADD	DELETE CANCEL APPLY



2. Choose **Switching > VLAN > Advanced > Vlan Membership**. Select Vlan 100 from the VLAN ID drop-down menu. For all ports that will have video servers connected to them, untag the VLAN on the port by clicking associated box, and cycle through options until you get to U. Click **APPLY** after all ports have been configured on the VLAN.

NETGEAR Connect with Innovation"				XSM7224S 24-Port 10G SFP+ Ports Managed L2+ Stackable Switch
System Switching	Routing	QoS Secu	rity Monitoring Maintenance Help Index	LOOOUT
VLAN   STP   Multicost   A	ddress Toble   F	orts   LAG   PFC		
> Basic	VLAN Memi	pership		ň.
+ VLAN	VLAN Mem	bership	0	
Configuration	VLAN ID	100 💌	Group Operation United All	
» VLAN Status	VLAN Name	ServerVlan	UNTAQUED PORT MEMBERS	
<ul> <li>Port PVID</li> <li>Configuration</li> </ul>	VLAN Type	Static	TAGGED PORT MEMBERS	
» MAC Based VLAN	Port 1 2 3	45678	9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	
» IP Subnet Based VLAN				
+ Port DVLAN	LAG			
Configuration > Protocol Based				
VLAN Group				
<ul> <li>Protocol Based</li> </ul>				
VLAN Group				
Voice VLAN				
Configuration				
Configuration				
GARP Port				
Configuration				
				CANCEL APRY



3. Choose **Switching > VLAN > Advanced > Port PVID Configuration**. For all the ports configured for video servers, select the associated box and enter 100 for the Configured PVID. When finished, click **APPLY**.

,		Kouting	QoS	Security	Monitoring	Mainten	ance	Help Index	
IAN   STP   Multicost	Addre	ss Table   Pr	whi LAG	PEC	0				
sic	Por	t PVID C	onfiguratio	n					
fvanced		PVID Confid	uration					0	
VLAN			Jurution						
VLAN Membership	1	LAGS AII		Ge	To Interface				
VLAN Status		Interface	Configured	Current	Frame	Configured	Ingress	Port Priority	
Port PVID			PVID	PVID	Types	Filtering	Filtering		
MAC Based VLAN					-				
P Subnet Based	1	1/0/1	1	1	Admit All	Disable	Disable	0	
LAN		1/0/2	1	1	Admit All	Disable	Disable	0	
Configuration		1/0/3	1	1	Admit All	Disable	Disable	0	
Protocol Based		1/0/4	1	1	Admit All	Disable	Disable	0	
/LAN Group		1/0/5	1	1	Admit All	Disable	Disable	0	
Configuration		1/0/6	1	1	Admit All	Disable	Disable	0	
rotocol Based		1/0/7	1	1	Admit All	Disable	Disable	0	
Iembership		1/0/8	1	1	Admit All	Disable	Disable	0	
oice VLAN	10	1/0/9	1	1	Admit All	Disable	Disable	0	
onfiguration		1/0/10	1	1	Admit All	Disable	Disable	0	
ARP Switch		1/0/11	1	1	Admit All	Disable	Disable	0	
ARP Port		1/0/12	1	1	Admit All	Disable	Disable	0	
onfiguration		1/0/13	1	1	Admit All	Disable	Disable	0	
		1/0/14	1	1	Admit All	Disable	Disable	0	
		1/0/15	1	1	Admit All	Disable	Disable	0	
		1/0/16	1	1	Admit All	Disable	Disable	0	
		1/0/17	1	1	Admit All	Disable	Disable	0	
		1/0/18	1	1	Admit All	Disable	Disable	0	
		1/0/19	1	1	Admit All	Disable	Disable	0	
		1/0/20	1	1	Admit All	Disable	Disable	0	
		1/0/21	1	1	Admit All	Disable	Disable	0	
		1/0/22	100	100	Admit All	Disable	Disable	0	
		1/0/23	1	1	Admit All	Disable	Disable	0	
		1/0/24	1	1	Admit All	Disable	Disable	0	
	1	LAGS All		Ge	To Interface	G	0		



4. Configure the VLAN 100 interface for the subnet (192.168.1.0/24) and enable VLAN routing. Choose **Routing** > **VLAN** > **VLAN Routing**. Select the VLAN ID and assign IP address 192.168.1.1 with subnet mask 255.255.255.0. Click **ADD**.

NETGEAR Connect with Innovation		XSM7224S 24-Port 10G SFP+ Ports Managed L2+ Stackable Switch
System Switching	Routing QoS Security Monitoring Maintenance Help Index	LOGOUT
Routing Table   IP   IPv6	VLAN   ARP   RIP   OSPF   OSPFv3   Router Discovery   VRRP   Multicost   IPv6 Multicost	
> VLAN Routing	VLAN Routing Configuration	
v VLAN Routing	··· VLAN Routing Configuration	
	VLAN ID Port MAC Address IP Address Subnet Mask	
	100 0/4/1 00:8E:F2:59:67:36 192.168.1.1 255.255.255.0	
		ADD DELETE CANCEL



5. Choose **Routing > IP > Basic > IP Configuration**. Enable Routing Mode and click **APPLY**.

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System	Switchi	ng	Routing	QoS	Security	Monitoring	M	aintenance	Help	ſ
Routing Table	IP   IP	v6	VLAN   ARP	RIP   OSP	F   OSPFv3	Router Discovery	VRRP	Multicost	IPv6 Multicast	
*Basic			IP Configur	ation						
<ul> <li>IP Configura</li> <li>Statistics</li> </ul>	tion		IP Configu	ration					(	D
Advanced			Default Time to	o Live		64				٦.
			Routing Mode			Enable	Disable			
			ICMP Echo Rep	lies		💿 Enable 🔘	Disable			
			ICMP Redirects			💮 Enable 🖲	Disable			
			ICMP Rate Limi	it Interval		1000		(0 to 2	147483647 ms)	
			ICMP Rate Limi	it Burst Size		100		(1 to 2	00)	
			Maximum Next	Hops		4				
			Maximum Rout	es		6112				
			Select to config	gure Global De	efault Gateway					
			Global Default	Gateway		0.0.0.0				

6. Choose Routing > IP > Advanced > IP Interface Configuration. Assign the IP address for each interface that will act as an uplink to each M5300-52G3 and M5300-52G-POE+ stack. For each M5300-52G3 uplink, use consecutive 172.80.x.1/24 subnets. For each M5300-52G-POE+ uplink, use consecutive 172.160.x.1/24 subnets. For each interface, set IP Address Configuration Method to Manual and enter the IP address and subnet mask. Enable Routing Mode and Admin Mode. Click APPLY after configuring each interface.

A				e	Y	V						
System Switchin	9	Routing	QoS	Security	Monitoring	Mainten	ance Help	Index			e	0000
Routing Table   IP   IPv6	I VU	AN   AR	P   RIP   OSPF	OSPFv3	Router Discovery	VRRP   Multi	cast   IPv6 Multicast					
Basic	IP	Interfa	ace Configura	tion								
Advanced		ID Intor	face Configuratio									
IP Configuration		IF Inter	race configuration									
IP Interface	1	VLANS	All									
Configuration Secondary IP		Port	Description	VLAN ID	IP Address Configuration Method	IP Address	Subnet Mask	Routing Mode	Administrative Mode	Link Speed Data Rate	OSPF Admin Mode	Fo Ne Dia
		<u> </u>			-							F
		1/0/1			Manual	172.160.1.1	255.255.255.0	Enable	Enable	10G Full	Disable	Die
	-	1/0/2			None	0.0.0.0	0.0.00	Disable	Enable	Unknown	Disable	Di
		1/0/3			None	0.0.0.0	0.0.00	Disable	Enable	Unknown	Disable	Di
		1/0/4			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable	Di
		1/0/5			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable	Di
		1/0/6			None	0.0.00	0.0.0.0	Disable	Enable	Unknown	Disable	Di
		1/0/7			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable	Di
		1/0/8			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable	Dis
		1/0/9			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable	Die
		1/0/10			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable	Dis
		1/0/11			None	0.0.00	0.0.0.0	Disable	Enable	Unknown	Disable	Di
		1/0/12			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable	Di
		1/0/13			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable	Di
		1/0/14			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable	Di
		1/0/15			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable	Dis
		1/0/16			None	0.0.00	0.0.0.0	Disable	Enable	Unknown	Disable	Dis
		1/0/17			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable	Die
		1/0/18			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable	Dis
		1/0/19			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable	Di
		1/0/20			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable	Dis
		1/0/21			None	0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable	Dis
		1/0/22			None	0.0.0	0.0.00	Disable	Enable	Unknown	Disable	Dis
		1/0/23			None	0.0.0.0	0.0.0.0	Disable	Enable	1000 Mbps	Disable	Dis
		1/0/24			None	0.0.0.0	0.0.0.0	Disable	Enable	10G Full	Disable	Dis
	1	VLANS	All									



7. Choose Routing > Multicast > Global Configuration. Enable Admin Mode and click APPLY.

<b>NETGEAR</b> Connect with Innovation"										XSM7224S 24-Port 10G SFP+ Ports lanaged L2+ Stackable Switch
System Swite	ching	Routing	QoS	Security	Monitoring	Maintenance	Help	Index		LOGOUT
Routing Table   IP	IPv6	VLAN   ARP	RIP   OSPF	OSPFv3	Router Discovery	VRRP   Multicost	IPv6 Multicast			
> Mroute Table ~ Global Configuration		Global Conf Global Con	iguration				۲			
<ul> <li>Interface</li> <li>Configuration</li> <li>DVMRP</li> <li>IGMP</li> <li>PIM</li> <li>Static Routes</li> </ul>		Admin Mode Protocol State Table Maximum Protocol Table Entry Cos	n Entry Count		<ul> <li>Disable</li> <li>Operational</li> <li>2048</li> <li>No Protocol</li> <li>0</li> </ul>	Enable I Enabled				
Configuration > Admin Boundary Configuration										

8. Choose Routing > Multicast > IGMP > Global Configuration. Enable Admin Mode and click APPLY.

ETGEAR						XSM7224 24-Port 10G SFP+ Po Managed L2+ Stackable Swi
System Switching	Routing	QoS Secu	rity Monitoring	Maintenance	Help Index	LOGOUT
Routing Table   IP   IPv6	VLAN   ARP	RIP   OSPF   OSP	Fv3   Router Discovery	VRRP   Multicost	IPvő Multicast	
Mroute Table	IGMP Globa	al Configuration				
Global Configuration	IGMP Glob	al Configuration			۲	
nterface	Admin Mode		Oisable	Enable		
VMRP						
Global						
Configuration Bouting Interface						
Configuration						
Statistics						
IGMP Groups IGMP Membership						
Proxy Interface						
Proxy Interface						
Statistics Proxy Membership						
IM tatic Routes						
onfiguration						
onfiguration						

9. Choose **Routing > Multicast > IGMP > Routing Interface Configuration**. Click **All** above the column headings to list physical and VLAN interfaces. Select all entries by clicking the checkbox in the column header. Click **APPLY**.

			Index	Help	enonce	Maint	Monitoring	Security	QoS	Routing		Switching	System
				Multicast	ulticast   IPv6	VRRP   N	Router Discovery	OSPFv3   1	RIP   OSPF	N   ARP	1 114	IP   IPv6	outing Table
							ration	ce Configu	ng Interfa	4P Routi	IG	•	Aroute Table
•	۲						0	Configuratio	ing Interface	IGMP Routi			Global Configuratio
				60		o To Interfac							Interface
et	Last	Last			Overs	o ro internat						n	Configuration
mber	Member	Member	Startup	Startup	Max	Query			Admin				OVMRP
ery	Query	Query	Count	Interval	Response	Interval	Robustness	version	Mode	Interface			GMP Global
unt	Count	Interval			Time						_	n	Configuration
												face	
	2	10	2	31	100	125	2	V3	Enable	1/0/1		darea	Configuration
	2	10	2	31	100	125	2	V3	Enable	1/0/2		nace	Statistics
	2	10	2	31	100	125	2	V3	Enable	1/0/3	<b>1</b>		IGMP Group
	2	10	2	31	100	125	2	V3	Enable	1/0/4		ership	IGMP Membr
	2	10	2	31	100	125	2	V3	Enable	1/0/5	<b>1</b>	ace	Proxy Interfa
	2	10	2	31	100	125	2	V3	Enable	1/0/6			Provy Interf
	2	10	2	31	100	125	2	V3	Enable	1/0/7			Statistics
	2	10	2	31	100	125	2	V3	Enable	1/0/8		ership	Proxy Memb
	2	10	2	31	100	125	2	V3	Enable	1/0/9	<b>1</b>		MIN
	2	10	2	31	100	125	2	V3	Enable	1/0/10		1	Static Routes
	2	10	2	31	100	125	2	V3	Enable	1/0/11	<b>1</b>	lary	Admin Bound
	2	10	2	31	100	125	2	V3	Enable	1/0/12		n	Configuration
	2	10	2	31	100	125	2	V3	Enable	1/0/13			
	2	10	2	31	100	125	2	V3	Enable	1/0/14			
	2	10	2	31	100	125	2	V3	Enable	1/0/15			
	2	10	2	31	100	125	2	V3	Enable	1/0/16			
	2	10	2	31	100	125	2	V3	Enable	1/0/17			
	2	10	2	31	100	125	2	V3	Enable	1/0/18			
	2	10	2	31	100	125	2	V3	Enable	1/0/19			
	2	10	2	31	100	125	2	V3	Enable	1/0/20			
	2	10	2	31	100	125	2	V3	Enable	1/0/21			
	2	10	2	31	100	125	2	V3	Enable	1/0/22			
	2	10	2	31	100	125	2	V3	Enable	1/0/23			
	2	10	2	31	100	125	2	V3	Enable	1/0/24			
	2	10	2	31	100	125	2	V3	Enable	vlan 100			
				GO	.e	o To Interfac	G			VLANS All	1		



10. Choose **Routing > Multicast > PIM > Global Configuration**. Set PIM Protocol Type to PIM-SM for sparse mode and enable Admin Mode. Click **APPLY**.

ETGEAR sci with Innovation			XSM722 24-Port 10G SFP+ Managed L2+ Stackable S
Switching	Routing QoS Secur	rity Monitoring Maintenance Help Index	
outing Table   IP   IPv6	VLAN   ARP   RIP   OSPF   OSPI	Fv3   Router Discovery   VRRP   Multicast   IPv6 Multicast	
route Table	PIM Global Configuration		
lobal	PIM Global Configuration	0	
terface	PIM Protocol Type	O PIM-DM @ PIM-SM	
onfiguration /MRP	Admin Mode	O Disable @ Enable	
IMP	Data Threshold Rate(Kbps)	0 (0 to 2000)	
M	Register Threshold Rate(Kbps)	0 (0 to 2000)	
Configuration			
SSM Configuration			
Configuration			
PIM Neighbor			
Candidate RP			
3SR Candidate			
Configuration			
Static RP Configuration			
atic Routes			
onfiguration dmin Boundary			
onfiguration			



11. Choose **Routing > Multicast > PIM > Candidate RP Configuration**. Select VLAN 100 as the PIM interface and assign 224.1.2.0/24 as the group address/mask. Adjust the multicast address range as needed. Click **ADD**.

NETGEAR Connect with Innovation"			XSM7224S 24-Port 106 5/P + Ports Managed L2+ Stackable Switch
System Switching	g Routing QoS	Security Monitoring Maintenance Help Index	LOGOUT
Koving lable   Ir   Irvo	PIM Candidate PD (	Configuration	
<ul> <li>&gt; Mroute Table</li> <li>&gt; Global</li> </ul>	PIM Canudate RP V	ion ()	
Configuration > Interface	Interface	vlan 100 💌	
Configuration DVMRP	DIM Candidate PD Co	neflouration (1)	
> IGMP > PIM	Group Address	Group Mask	
<ul> <li>Global</li> <li>Configuration</li> </ul>			
SSM Configuration	224.1.2.0	255.255.255.0	
Configuration			
<ul> <li>PIM Neighbor</li> <li>Candidate RP</li> </ul>			
Configuration > BSR Candidate			
Configuration > Static RP			
Configuration			
Configuration			
Configuration			
			ADD DELETE CANCEL



12. Choose **Routing > Multicast > PIM > BSR Candidate Configuration**. Select VLAN 100 as the interface, and set Hash Mask Length to 30 and Priority to 3. Click **APPLY**.

NETGEAR' Conned with Innevation"	XSM7224S 24-Port 10G SFP+ Ports Managed L2+ Stackable Switch
System Switching Routing QoS Security Monitoring Maintenance Help Index	LOGOUT
Kouting Table   IP   IPv6   YLAN   AKP   KIP   OSPF   OSPF 3   Kouter Discovery   YKRP   Multicost   IPv6 Multicost	100 C
Eventury Table       IP       IP-0       VAN       AP       IP       OSF4-2       Roder Discovery       VERP       Authorst       Pot-Mulcicat         •       Include       Configuration       Diversition       Total SR Candidate Configuration       Interface       Inte	
	DELETE REFRESH APPLY



13. Choose **Routing > Multicast > PIM > Interface Configuration**. Click **All** above the column headings to list physical and VLAN interfaces. Select all entries by clicking the checkbox in the column header. Click **APPLY**.

ning Table   IP   IPv6 oute Table	I VLA	N   ARP	RIP   OSPE	00000 0 0 0							
route Table	_			OSPTV3   Kouter	Discovery   V	RRP   Multicost   IPv6	Multicast				
Iroute Table	DIM	1 Interfa	co Configur	ation							
lohal	- 10	1 Interna	ce connigui	auon							
Configuration	- F	PIM Interfa	ce Configurat	ion							۲
nterface	1 1	VLANS All				Go To Interface		io i			
Configuration		Interface	Admin	Protocol	IP	Hello Tetencel(secs)	Join/Prune	BSR	DR Reinsibe	Designated	Neighbor
OVMRP		Internace	Mode	State	Address	meno interval(secs)	Interval(secs)	Border	Dic Priority	Router	Count
IM											
Global	13	1/0/1	Enable	Operational	172.160.1.1	30	60	Disable	1	172.160.1.1	0
Configuration		1/0/2	Enable	Non-Operational	0.0.0.0	30	60	Disable	1		
SSM Configuration		1/0/3	Enable	Non-Operational	0.0.0.0	30	60	Disable	1		
Configuration		1/0/4	Enable	Non-Operational	0.0.0.0	30	60	Disable	1		
PIM Neighbor		1/0/5	Enable	Non-Operational	0.0.0.0	30	60	Disable	1		
Candidate RP		1/0/6	Enable	Non-Operational	0.0.0.0	30	60	Disable	1		
Configuration		1/0/7	Enable	Non-Operational	0.0.0.0	30	60	Disable	1		
BSR Candidate		1/0/8	Enable	Non-Operational	0.0.0.0	30	60	Disable	1		
Static RP	10	1/0/9	Enable	Non-Operational	0.0.0.0	30	60	Disable	1		
Configuration		1/0/10	Enable	Non-Operational	0.0.0.0	30	60	Disable	1		
static Routes	1	1/0/11	Enable	Non-Operational	0.0.0.0	30	60	Disable	1		
Configuration		1/0/12	Enable	Non-Operational	0.0.0.0	30	60	Disable	1		
Configuration	10	1/0/13	Enable	Non-Operational	0.0.0.0	30	60	Disable	1		
		1/0/14	Enable	Non-Operational	0.0.0.0	30	60	Disable	1		
	10	1/0/15	Enable	Non-Operational	0.0.0.0	30	60	Disable	1		
		1/0/16	Enable	Non-Operational	0.0.0.0	30	60	Disable	1		
	10	1/0/17	Enable	Non-Operational	0.0.0.0	30	60	Disable	1		
		1/0/18	Enable	Non-Operational	0.0.0.0	30	60	Disable	1		
	10	1/0/19	Enable	Non-Operational	0.0.0.0	30	60	Disable	1		
		1/0/20	Enable	Non-Operational	0.0.0.0	30	60	Disable	1		
	10	1/0/21	Enable	Non-Operational	0.0.0.0	30	60	Disable	1		
		1/0/22	Enable	Non-Operational	0.0.0.0	30	60	Disable	1		
	10	1/0/23	Enable	Non-Operational	0.0.0.0	30	60	Disable	1		
		1/0/24	Enable	Non-Operational	0.0.0.0	30	60	Disable	1		
						Go To Interface					



14. Choose **Routing > OSPF > Basic > OSPF Configuration.** Select Enable and set the router ID to 0.0.0.1. Click **APPLY**. Remember that the router ID must be unique to each stack in your LAN network.

NETGE	<b>A R'</b>									XSM72245 24-Port 10G SFP+ Ports Managed L2+ Stackable Switch
System	Switching	Routing	QoS	Security	Monitoring	Maintenance	Help	Index		LOGOUT
Routing Table	IP   IPv6	VLAN   ARP	RIP   OSPF	OSPFv3	Router Discovery	VRRP   Multicost	IPv6 Multicast			
* Basic		OSPF Confi	guration							
		OSPF Con	figuration					Ð		
> Advanced		Admin Mode			🔿 Disable 🧕	Enable				
		Router ID			0.0.0.1					
										CANCEL APPLY



15. Choose **Routing > OSPF > Advanced > Route Redistribution**. Select Connected and enable Redistribution Option. Click **APPLY**.

ETGE	AR'											X 24-Port Managed 12+ S
Sustem	Switching	Poutie		Oas	Security	Manitoring	Maintenance	Help	Index			Manageo C2+ 3
outing Table	IP I IPv6	VIAN	ARP I I		OSPEv3	Router Discovery	VRRP Multicost	IPv6 Multicost	moex			
sic Ivanced		Route F	Redist	ribution								
OSPF		OSPF	Route	Redistributi	ion							•
configuration	ea internet	Sou	rce	Redistribut Option	e Metric		Metric Type	Tag		Subnets	Distribute List	
nfiguration In Area	n						-					
uration	n	Con	nected	Enable	0		External Type 2	0		Disable		
rea		Stati	ic	Disable	0		External Type 2	0		Disable		
nge		E RIP		Disable	0		External Type 2	0		Disable		
te istribution OSPF Inmary	n											
												CANCEL



16. Choose **Routing > OSPF > Advanced > Interface Configuration.** Click **All** above the column headings to list physical and VLAN interfaces. Select all entries by clicking the checkbox in the column header. Enable Admin Mode and click **APPLY**.

Address         Address         Address         Configuration           Configuration         Configuration         SPF Interface Configuration         SPF Interface Configuration           Sub Area         Configuration         SPF Interface Configuration         SPF Interface Configuration           Sub Area         Interface         Address         Sub Area         State         State           Configuration         10/1         172.496.1         State         S         10           Interface         Sub Area         Sub Area         S         10         Interval         Interval           Configuration         10/1         172.496.1         State         S         10         S         10           Interface Statistics         10/2         0.0.0         0.0.0         Enable         S         10           Interface Statistics         10/4         0.0.0         0.0.0         Enable         S         10           Interface Statistics         10/9         0.0.0         0.0.0         Enable         S         10           Interface Statistics         10/8         0.0.0         0.0.0         Enable         S         10           Interface Statistics         10/9         0.0.0         0.0.0 </th <th>System</th> <th>Switching</th> <th></th> <th>Routing</th> <th>QoS</th> <th>Security</th> <th>Monitorina</th> <th>Maintenance</th> <th>Held</th> <th>Index</th> <th></th> <th></th> <th>1000</th>	System	Switching		Routing	QoS	Security	Monitorina	Maintenance	Held	Index			1000
Ans. Configuration         Configuration           Configuration Area Range Range Area Range Area Range Area Range Area Range Range Area Ran	outing Table	I IP I IPv6	VI A	N I APP I	RIP   OSPE	OSPE-3   Po	uter Discovery	VRRP 1 Multicent 1	P.A.M.JS	cost.			
Airc Action Configuration         Difference Configuration           Configuration <t< td=""><td>ouning room</td><td>1 1 1 1 1 1</td><td>104</td><td></td><td>Mar 1, 0941</td><td>Contro   No</td><td>and biscorery (</td><td>THE PROPERTY I</td><td></td><td></td><td></td><td></td><td></td></t<>	ouning room	1 1 1 1 1 1	104		Mar 1, 0941	Contro   No	and biscorery (	THE PROPERTY I					
OVERFET LIFE CENTIFY           Configuration Configurati Configuration Configuration Configuration Configuratio	asic		Inte	erface Co	onfiguratio	n							
Configuration Configuration Sub Area Configuration NSSA Area Configuration Configuration NSSA Area Configuration NSSA Area Configuration NSSA Area Configurati Configurati Configuration NSSA Area Configuration NSSA Area Conf	dvanced			OSPF Inter	face Configu	ration							
Common Area         Configuration         Studies         P         Submet         Area ID         Admin         Router         Petransmit         Interval         Interval           Stob Area         Configuration         NSSA Area         Image: Stob Area         Image:	OSPF Configuratio	0	1.1	VLANS All									
Configuration Stob Area Configuration NSA Area Rask A	Common Ar	ea											
Stub Area         Notes         Notes         Notes         Notes         Notes         Notes         Notes         Notes           NSSA Area         Configuration         1         1/0/1         172.160.1.1         255.255.25.0         0.0.0         Enable         1         5         10           Configuration         1/0/2         0.0.0         0.0.0         Enable         1         5         10           Configuration         1/0/3         0.0.0         0.0.0         Enable         1         5         10           Configuration         1/0/4         0.0.0         0.0.0         Enable         1         5         10           Intervase         1/0/4         0.0.0         0.0.0         Enable         1         5         10           Intervase         1/0/6         0.0.0         0.0.0         Enable         1         5         10           Intervase         1/0/7         0.0.0         0.0.0         Enable         1         5         10           Intervase         1/0/7         0.0.0         0.0.0         Enable         1         5         10           Intervas         0.0.0         0.0.0.0         0.0.0         Enable <t< td=""><td>Configuratio</td><td>n</td><td></td><td>Interface</td><td>IP Address</td><td>Subnet</td><td>Area ID</td><td>Admin</td><td>Ro</td><td>outer</td><td>Retransmit</td><td>Hello</td><td>De</td></t<>	Configuratio	n		Interface	IP Address	Subnet	Area ID	Admin	Ro	outer	Retransmit	Hello	De
Configuration Area Range Configuration Area Range Configuration I 1/0/3         Vol         Vol         Vol         Vol         Vol         Vol           1 1/0/3         0.0.0.0         0.0.0.0         0.0.0.0         Enable         1         5         10           Configuration Interface Statistics Neighbor Table         1/0/3         0.0.0.0         0.0.0.0         Enable         1         5         10           Interface Statistics Neighbor Table         1/0/3         0.0.0.0         0.0.0.0         Enable         1         5         10           Interface Statistics         1/0/5         0.0.0.0         0.0.0.0         Enable         1         5         10           Configuration Interface Statistics         1/0/7         0.0.0.0         0.0.0.0         Enable         1         5         10           Statistics         1/0/11         0.0.0.0 <td< td=""><td>Stub Area</td><td></td><td></td><td></td><td>Address</td><td>mask</td><td></td><td>Hode</td><td></td><td>tority</td><td>Interval</td><td>Interval</td><td>10</td></td<>	Stub Area				Address	mask		Hode		tority	Interval	Interval	10
Configuration       1       1       5       10         Area Range Configuration       1       1/0/2       0.0.00       0.0.00       Enable       1       5       10         Configuration       1/0/2       0.0.00       0.0.00       Enable       1       5       10         Configuration       1/0/2       0.0.00       0.0.00       Enable       1       5       10         Interface       1/0/2       0.0.00       0.0.00       Enable       1       5       10         Interface       1/0/2       0.0.00       0.0.00       Enable       1       5       10         Configuration       1/0/10       0.0.00       0.0.00       Enable       1       5       10         Configuration       1/0/11       0.0.00       0.0.00       Enable       1       5       10         Sommar	Configuratio NSSA Area	0											
Area Range       1/0/2       0.0.0       0.0.0       Enable       1       5       10         Configuration       1/0/3       0.0.0       0.0.0       0.0.0       Enable       1       5       10         Configuration       1/0/4       0.0.0.0       0.0.0.0       Enable       1       5       10         Enable       1/0/5       0.0.0.0       0.0.0.0       Enable       1       5       10         Instrations       1/0/5       0.0.0.0       0.0.0.0       Enable       1       5       10         Instrations       1/0/7       0.0.0.0       0.0.0.0       Enable       1       5       10         Virual Link       1/0/7       0.0.0.0       0.0.0.0       Enable       1       5       10         State       1/0/7       0.0.0.0       0.0.0.0       Enable       1       5       10         State       1/0/10       0.0.0.0       0.0.0.0       Enable       1       5       10         Summary       1/0/12       0.0.0.0       0.0.0.0       Enable       1       5       10         Invariance       1/0/14       0.0.0.0       0.0.0.0       Enable       1       5 <t< td=""><td>Configuratio</td><td>n</td><td>13</td><td>1/0/1</td><td>172.160.1.1</td><td>255.255.255.0</td><td>0.0.0.0</td><td>Enable</td><td>1</td><td></td><td>5</td><td>10</td><td>40</td></t<>	Configuratio	n	13	1/0/1	172.160.1.1	255.255.255.0	0.0.0.0	Enable	1		5	10	40
Sortinguration interfaces       1/0/3       0.0.0.0       0.0.0.0       Enable       1       S       10         Sortinguration interfaces Statistics       1/0/4       0.0.0.0       0.0.0.0       Enable       1       S       10         Interfaces Statistics       1/0/5       0.0.0.0       0.0.0.0       Enable       1       S       10         States statistics       1/0/7       0.0.0.0       0.0.0.0       Enable       1       S       10         States statistics       1/0/7       0.0.0.0       0.0.0.0       Enable       1       S       10         States statistics       1/0/7       0.0.0.0       0.0.0.0       Enable       1       S       10         States statistics       1/0/7       0.0.0.0       0.0.0.0       Enable       1       S       10         States statistics       1/0/11       0.0.0.0       0.0.0.0       Enable       1       S       10         States statistics       1/0/12       0.0.0.0       0.0.0.0       Enable       1       S       10         States statistics       1/0/15       0.0.0.0       0.0.0.0       Enable       1       S       10         States statistics       1/0/15	Area Range			1/0/2	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1		5	10	4(
Construction Interface Statistics eighbor Tables         1         10/4         0.0.0         0.0.0         Enable         1         5         10           1         1/0/5         0.0.0         0.0.0         0.0.0         Enable         1         5         10           1         1/0/5         0.0.0         0.0.0         0.0.0         Enable         1         5         10           1         1/0/6         0.0.0         0.0.0         0.0.0         Enable         1         5         10           1         1/0/7         0.0.0         0.0.0         0.0.0         Enable         1         5         10           1         1/0/18         0.0.0         0.0.0         0.0.0         Enable         1         5         10           1         1/0/12         0.0.0         0.0.0         0.0.0         Enable         1         5         10           1         1/0/12         0.0.0         0.0.0         0.0.0         Enable         1         5         10           1         1/0/12         0.0.0         0.0.0         Enable         1         5         10           1         1/0/15         0.0.0         0.0.0         Ena	Configuratio	0		1/0/3	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1		5	10	4
netrace Statistics       1/0/5       0.0.0       0.0.0       Enable       1       S       10         highbor Table       1/0/6       0.0.0.0       0.0.0.0       Enable       1       S       10         highbor Table       1/0/7       0.0.0.0       0.0.0.0       Enable       1       S       10         highbor Table       1/0/7       0.0.0.0       0.0.0.0       Enable       1       S       10         highbor Table       1/0/7       0.0.0.0       0.0.0.0       Enable       1       S       10         highbor Table       1/0/7       0.0.0.0       0.0.0.0       Enable       1       S       10         highbor Table       1/0/19       0.0.0.0       0.0.0.0       Enable       1       S       10         highbor Table       1/0/19       0.0.0.0       0.0.0.0       Enable       1       S       10         highbor Table       1/0/19       0.0.0.0       0.0.0.0       Enable       1       S       10         highbor Table       1/0/13       0.0.0.0       0.0.0.0       Enable       1       S       10         highbor Table       1/0/13       0.0.0.0       0.0.0.0       Enable       1		0		1/0/4	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1		5	10	4
Beighbor Table ink State batabase birtual Link configuration (styl Unik configuration (styl Unik configuration (styl OSFP)         0.0.0.0         0.0.0.0         0.0.0.0         Enable         1         S         10           1/0/10         0.0.0.0         0.0.0.0         0.0.0.0         Enable         1         5         10           1/0/11         0.0.0.0         0.0.0.0         Enable         1         5         10           1/0/12         0.0.0.0         0.0.0.0         Enable         1         5         10           1/0/13         0.0.0.0         0.0.0.0         Enable         1         5         10           1/0/14         0.0.0.0         0.0.0.0         Enable         1         5         10           1/0/15         0.0.0.0         0.0.0.0         Enable         1         5         10           1/0/15         0.0.0.0         0.0.0.0         Enable         1	nterface St	atistics		1/0/5	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1		5	10	4
init State state set intual Link:       1/0/7       0.0.0       0.0.0       0.0.0       Enable       1       S       10         1/0/8       0.0.0.0       0.0.0.0       0.0.0.0       Enable       1       S       10         1/0/8       0.0.0.0       0.0.0.0       0.0.0.0       Enable       1       S       10         1/0/10       0.0.0.0       0.0.0.0       0.0.0.0       Enable       1       S       10         ioute       edistribution       5       0.0.0.0       0.0.0.0       Enable       1       S       10         i/0/12       0.0.0.0       0.0.0.0       0.0.0.0       Enable       1       S       10         i/0/12       0.0.0.0       0.0.0.0       0.0.0.0       Enable       1       S       10         i/0/13       0.0.0.0       0.0.0.0       0.0.0.0       Enable       1       S       10         1/0/14       0.0.0.0       0.0.0.0       0.0.0.0       Enable       1       S       10         1/0/15       0.0.0.0       0.0.0.0       0.0.0.0       Enable       1       S       10         1/0/17       0.0.0.0       0.0.0.0       0.0.0.0       Enable	leighbor Ta	ble		1/0/6	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1		5	10	4
alabase       1/0/8       0.0.0       0.0.0       0.0.0       Enable       1       5       10         initial Link,       1/0/9       0.0.0       0.0.0       0.0.0       Enable       1       5       10         initial Link,       1/0/10       0.0.0       0.0.0.0       0.0.0       Enable       1       5       10         initial Link,       1/0/11       0.0.0       0.0.0.0       Enable       1       5       10         SK 05FF       1/0/12       0.0.0       0.0.0.0       0.0.0       Enable       1       5       10         SK 05FF       1/0/12       0.0.0       0.0.0       0.0.0       Enable       1       5       10         1/0/12       0.0.0       0.0.0       0.0.0       Enable       1       5       10         1/0/13       0.0.0       0.0.0       0.0.0       Enable       1       5       10         1/0/14       0.0.0       0.0.0       0.0.0       Enable       1       5       10         1/0/17       0.0.0       0.0.0       0.0.0       Enable       1       5       10         1/0/18       0.0.0       0.0.0       0.0.0       Enable	ink State			1/0/7	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1		5	10	4
Drifiguration Golde       1 /0/9       0.0.0.0       0.0.0.0       Enable       1       S       10         Golde Golde       1 /0/10       0.0.0.0       0.0.0.0       Enable       1       S       10         Str OSPF       1/0/12       0.0.0.0       0.0.0.0       Enable       1       S       10         Str OSPF       1/0/12       0.0.0.0       0.0.0.0       Enable       1       S       10         Str OSPF       1/0/12       0.0.0.0       0.0.0.0       Enable       1       S       10         Str OSPF       1/0/12       0.0.0.0       0.0.0.0       Enable       1       S       10         Str OSPF       1/0/12       0.0.0.0       0.0.0.0       Enable       1       S       10         Str OSPF       1/0/12       0.0.0.0       0.0.0.0       Enable       1       S       10         Str OSPF       1/0/12       0.0.0.0       0.0.0.0       Enable       1       S       10         Str OSPF       1/0/12       0.0.0.0       0.0.0.0       Enable       1       S       10         Str OSPF       1/0/12       0.0.0.0       0.0.0.0       Enable       1       S       10	/irtual Link			1/0/8	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1		5	10	4
ioute         iout         ioute         ioute <thi< td=""><td>onfiguratio</td><td>0</td><td></td><td>1/0/9</td><td>0.0.0.0</td><td>0.0.0.0</td><td>0.0.0.0</td><td>Enable</td><td>1</td><td></td><td>5</td><td>10</td><td>4</td></thi<>	onfiguratio	0		1/0/9	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1		5	10	4
ediditivition of services of servic	loute			1/0/10	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1		5	10	4
Sar Gar Gar Gar Gar Gar Gar Gar Gar Gar G	tedistributio	in		1/0/11	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1		5	10	4
I       1/0/13       0.0.0.0       0.0.0.0       Enable       1       S       10         I       1/0/14       0.0.0.0       0.0.0.0       0.0.0.0       Enable       1       S       10         I       1/0/14       0.0.0.0       0.0.0.0       0.0.0.0       Enable       1       S       10         I       1/0/15       0.0.0.0       0.0.0.0       Enable       1       S       10         I       1/0/17       0.0.0.0       0.0.0.0       Enable       1       S       10         I       1/0/18       0.0.0.0       0.0.0.0       Enable       1       S       10         I       1/0/19       0.0.0.0       0.0.0.0       Enable       1       S       10         I       1/0/19       0.0.0.0       0.0.0.0       Enable       1       S       10         I       1/0/12       0.0.0.0       0.0.0.0       Enable       1       S       10         I       1/0/22       0.0.0.0       0.0.0.0       Enable       1       S       10         I       1/0/22       0.0.0.0       0.0.0.0       Enable       1       S       10         I	Ummary			1/0/12	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1		5	10	4
1/0/14       0.0.0.0       0.0.0.0       Enable       1       5       10         1/0/15       0.0.0.0       0.0.0.0       Enable       1       5       10         1/0/15       0.0.0.0       0.0.0.0       Enable       1       5       10         1/0/15       0.0.0.0       0.0.0.0       Enable       1       5       10         1/0/17       0.0.0.0       0.0.0.0       Enable       1       5       10         1/0/17       0.0.0.0       0.0.0.0       Enable       1       5       10         1/0/18       0.0.0.0       0.0.0.0       Enable       1       5       10         1/0/19       0.0.0.0       0.0.0.0       Enable       1       5       10         1/0/21       0.0.0.0       0.0.0.0       Enable       1       5       10         1/0/22       0.0.0.0       0.0.0.0       Enable				1/0/13	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1		5	10	4
1/0/15       0.0.0       0.0.0       0.0.0       Enable       1       S       10         1/0/16       0.0.0       0.0.0.0       0.0.0.0       Enable       1       S       10         1/0/16       0.0.0.0       0.0.0.0       0.0.0.0       Enable       1       S       10         1/0/17       0.0.0       0.0.0.0       0.0.0.0       Enable       1       S       10         1/0/19       0.0.0.0       0.0.0.0       Enable       1       S       10         1/0/20       0.0.0.0       0.0.0.0       Enable       1       S       10         1/0/21       0.0.0.0       0.0.0.0       Enable       1       S       10         1/0/22       0.0.0.0       0.0.0.0       Enable       1       S       10         1/0/24       0.0.0.0       0.0.0.0       Enable       1       S       10         1				1/0/14	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1		5	10	4
1/0/16         0.0.0         0.0.0         0.0.0         Enable         1         5         10           1/0/17         0.0.0         0.0.0.0         0.0.0.0         Enable         1         5         10           1/0/17         0.0.0.0         0.0.0.0         0.0.0.0         Enable         1         5         10           1/0/18         0.0.0.0         0.0.0.0         Enable         1         5         10           1/0/19         0.0.0.0         0.0.0.0         Enable         1         5         10           1/0/10         0.0.0.0         0.0.0.0         Enable         1         5         10           1/0/12         0.0.0.0         0.0.0.0         Enable         1         5         10           1/0/21         0.0.0.0         0.0.0.0         Enable         1         5         10           1/0/22         0.0.0.0         0.0.0.0         Enable         1         5         10           1/0/24         0.0.0.0         0.0.0.0         Enable         1         5         10           1/0/24         0.0.0.0         0.0.0.0         Enable         1         5         10           1/0/24         0.0.0.0				1/0/15	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1		5	10	4
1/0/17         0.0.0         0.0.0         0.0.0         Enable         1         S         10           1/0/18         0.0.0.0         0.0.0.0         0.0.0.0         Enable         1         S         10           1/0/18         0.0.0.0         0.0.0.0         0.0.0.0         Enable         1         S         10           1/0/19         0.0.0.0         0.0.0.0         Enable         1         S         10           1/0/20         0.0.0.0         0.0.0.0         Enable         1         S         10           1/0/21         0.0.0.0         0.0.0.0         Enable         1         S         10           1/0/22         0.0.0.0         0.0.0.0         Enable         1         S         10           1/0/22         0.0.0.0         0.0.0.0         Enable         1         S         10           1/0/22         0.0.0.0         0.0.0.0         Enable         1         S         10           1/0/24         0.0.0.0         0.0.0.0         Enable         1         S         10           1/0/24         0.0.0.0         0.0.0.0         Enable         1         S         10           1/0/24         0.0.0				1/0/16	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1		5	10	4
1/0/18         0.0.0         0.0.0         0.0.0         Enable         1         S         10           1/0/19         0.0.0         0.0.0         0.0.0         Enable         1         S         10           1/0/19         0.0.0         0.0.0         0.0.0         Enable         1         S         10           1/0/19         0.0.0         0.0.0         0.0.0         Enable         1         S         10           1/0/20         0.0.0         0.0.0         0.0.0         Enable         1         S         10           1/0/21         0.0.0         0.0.0         0.0.0         Enable         1         S         10           1/0/23         0.0.0         0.0.0         0.0.0         Enable         1         S         10           1/0/23         0.0.0         0.0.0         0.0.0         Enable         1         S         10           1/0/24         0.0.0         0.0.0         0.0.0         Enable         1         S         10           1/0/24         0.0.0         0.0.0         0.0.0         Enable         1         S         10           1/0/24         1/0.0.0         0.0.0.0         0.0.0 <td></td> <td></td> <td></td> <td>1/0/17</td> <td>0.0.0.0</td> <td>0.0.0.0</td> <td>0.0.0.0</td> <td>Enable</td> <td>1</td> <td></td> <td>5</td> <td>10</td> <td>4</td>				1/0/17	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1		5	10	4
1/0/19       0.0.0       0.0.0       0.0.0       Enable       1       S       10         1/0/20       0.0.0.0       0.0.0.0       0.0.0.0       Enable       1       S       10         1/0/20       0.0.0.0       0.0.0.0       0.0.0.0       Enable       1       S       10         1/0/21       0.0.0.0       0.0.0.0       0.0.0.0       Enable       1       S       10         1/0/22       0.0.0.0       0.0.0.0       0.0.0.0       Enable       1       S       10         1/0/23       0.0.0.0       0.0.0.0       Enable       1       S       10         1/0/24       0.9.0.0       0.0.0.0       Enable       1       S       10         1/0/24       192.160.1.1       255.255.255.0       0.0.0.0       Enable       1       S       10         1       VLANS ALL       VLANS ALL       VLANS ALL       S				1/0/18	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1		5	10	4
1/0/20         0.0.0         0.0.0         0.0.0         Enable         1         S         10           1/0/21         0.0.0         0.0.0         0.0.0         Enable         1         S         10           1/0/22         0.0.0         0.0.0         0.0.0         Enable         1         S         10           1/0/23         0.0.0         0.0.0         0.0.0         Enable         1         S         10           1/0/23         0.0.0         0.0.0         0.0.0         Enable         1         S         10           1/0/24         192.166.1.1         255.255.255.0         0.0.0         Enable         1         S         10           1         VLANS ALL         V				1/0/19	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1		5	10	4
1/0/21         0.0.0         0.0.0         0.0.0         Enable         1         S         10           1/0/22         0.0.0.0         0.0.0.0         0.0.0.0         Enable         1         S         10           1/0/22         0.0.0.0         0.0.0.0         0.0.0.0         Enable         1         S         10           1/0/24         10         10.0.0         Enable         1         S         10				1/0/20	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1		5	10	4
I/0/22         0.0.0         0.0.0         0.0.0         Enable         1         S         10           I/0/23         0.0.0         0.0.0         0.0.0         Enable         1         S         10           I/0/24         0.0.0         0.0.0         0.0.0         Enable         1         S         10           I/0/24         0.0.0         0.0.0         0.0.0         Enable         1         S         10           I/0/24         0.0.0.1         0.0.0.0         0.0.0         Enable         1         S         10           Vian 100         192.168.1.1         255.255.255.0         0.0.0         Enable         1         S         10				1/0/21	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1		5	10	4
1/0/23         0.0.0         0.0.0         0.0.0         Enable         1         S         10           1/0/24         0.0.0.0         0.0.0.0         0.0.0.0         Enable         1         S         10           1/0/24         0.0.0.0         0.0.0.0         Enable         1         S         10           vian 100         192.168.1.1         255.255.255.0         0.0.0.0         Enable         1         S         10           1         VLANS         All         S         0.0.0.0         Enable         1         S         10				1/0/22	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1		5	10	4
1/0/24         0.0.0.0         0.0.0.0         0.0.0.0         Enable         1         5         10           vian 100         192.160.1.1         255.255.255.0         0.0.0.0         Enable         1         5         10           1         VLANS All         255.255.255.0         0.0.0.0         Enable         1         5         10				1/0/23	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1		5	10	4
Vian 100         192.168.1.1         255.255.255.0         0.0.0.0         Enable         1         5         10           1         VLANS         All            1          5         10				1/0/24	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1		5	10	4
1 VLANS AII				vian 100	192.168.1.1	255.255.255.0	0.0.0.0	Enable	1		5	10	4(
			1.1	VLANS All									
			_										
			4			111							



## Switch – M5300-52G3

1. Choose **Switching > VLAN > Basic > VLAN Configuration**. Specify 200 for the VLAN ID and click **ADD** to add the VLAN to the configuration.

NETGEAR Connect with Innovation*								M: Prochabile GE Swith	5300-28G3 oSafe 24-port Li ch with L3 Routing
System Switching	Routing	QoS	Security	Monitoring	Maintenance	Help	Index		LOGOUT
VLAN   Auto-VolP   ISCSI	STP   Multic	ast   MVR	Address Tol	ale   Ports   LAG					
* Basic * VLAN	VLAN Confi	iguration							
Configuration	Reset						0		
> Advanced	Reset Configur	ration							
	Internal V	LAN Configur	ation				0		
	Internal VLAN	Allocation Base		4093					
	Internal VLAN	Allocation Polic	- v	Ascending	Descending				
	VLAN Con	figuration				0	9		
	VLAN ID	VLAN Name	_	VLAN Type	Hake Stati	-			
					Disable -				
	1	default Auto MaTO		Default	Disable				
	2 200	Cleatidan		AUTO VOIP	Disable				
								ADD DELETE CANCEL	APPLY



2. Choose Switching > VLAN > Advanced > Vlan Membership. Select Vlan 200 from the VLAN ID drop-down menu. For all ports that will have clients connected to them, untag the VLAN on the port by clicking associated box, and cycle through options until you get to U. Click APPLY after all ports have been configured on the VLAN.

System Switch	ing Routing	QoS Security	Monitoring Maintenance Help Index	[100
LAN Auto-VolP	ISCSI   STP   Multi	cast   MVR   Address	Table   Ports   LAG	
	VI AN More	abaachia		
dvanced	VLAN Men	nbersnip		
VLAN	VLAN Mer	mbership	0	
VLAN Membership	VLAN ID	200 💌	Group Operation Untag All	
VLAN Status	VLAN Name	Static	TAGGED PORT MEMBERS	
Configuration	The Line of	Statue	INVOLUTION I MEMORIA	
MAC Based VLAN	Port 1 2 3	34567891	10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	
Protocol Based	U			
Configuration	25 26 2	27 28		
Protocol Based	+ LAG			
VLAN Group				
Membership				
IP Subnet Based				
Port DV/LAN				
Configuration				
Voice VLAN				
Configuration				
GARP Switch				
Configuration				
GARP Port				
Configuration				



3. Choose **Switching > VLAN > Advanced > Port PVID Configuration**. For all the ports configured for clients, select the associated box and enter 200 for the Configured PVID. When finished, click **APPLY**.

ustam Switchi		Routing	Oos	Security	Monitoring	Mainten	-	Help Index	
AN Auto VolP 1	ina Kosi si	IP   Multicon	MVR	Address	able   Parts   LA	G	ance	net most	
		PVID Confid	uration						
isic		LACE All	Juration	0	To Interface				
VLAN	-				Acceptable	Configured	Current		
Configuration /LAN Membership		Interface	Configured PVID	Current PVID	Frame	Ingress Filtering	Ingress	Port Priority	
/LAN Status									
Configuration	E73	1/0/1	200	200	Admit All	Disable	Disable	0	
AAC Based VLAN		1/0/2	1	1	Admit All	Disable	Disable	0	
Protocol Based	13	1/0/3	1	1	Admit All	Disable	Disable	0	
LAN Group		1/0/4	1	1	Admit All	Disable	Disable	0	
Protocol Based	10	1/0/5	1	1	Admit All	Disable	Disable	0	
LAN Group		1/0/6	1	1	Admit All	Disable	Disable	0	
tembership	10	1/0/7	1	1	Admit All	Disable	Disable	0	
P Subnet Based		1/0/8	1	1	Admit All	Disable	Disable	0	
ICAN Int DVLAN	10	1/0/9	1	1	Admit All	Disable	Disable	0	
Configuration		1/0/10	1	1	Admit All	Disable	Disable	0	
/oice VLAN	10	1/0/11	1	1	Admit All	Disable	Disable	0	
Configuration		1/0/12	1	1	Admit All	Disable	Disable	9	
SARP Switch	10	1/0/13	1	1	Admit All	Disable	Disable	9	
GARP Port		1/0/14	1	1	Admit All	Disable	Disable	9	
Configuration	10	1/0/15	1	1	Admit All	Disable	Disable	0	
		1/0/16	1	1	Admit All	Disable	Disable	9	
	10	1/0/17	1	1	Admit All	Disable	Disable	0	
		1/0/18	1	1	Admit All	Disable	Disable	9	
	10	1/0/19	1	1	Admit All	Disable	Disable	0	
		1/0/20	1	1	Admit All	Disable	Disable	9	
	100	1/0/21	1	1	Admit All	Disable	Disable	0	
		1/0/22	1	1	Admit All	Disable	Disable	9	
	100	1/0/23	1	1	Admit All	Disable	Disable	0	
		1/0/24	1	1	Admit All	Disable	Disable	9	
	100	1/0/25	1	1	Admit All	Disable	Disable	0	
		1/0/26	1	1	Admit All	Disable	Disable	0	
	100	1/0/27	1	0	Admit All	Disable	Disable	0	
		1/0/28	1	0	Admit All	Disable	Disable	0	
		2,0,20	•		Photon Photon	Charles	Disserve	•	



4. Configure the VLAN 200 interface for the subnet (192.168.4.0/24) and enable VLAN routing. Choose **Routing** > **VLAN** > **VLAN Routing**. Select the VLAN ID and assign IP address 192.168.4.1 with subnet mask 255.255.255.0. Click **ADD**.

ETGE ect with Innovat	AR'								Stackable (	M5300-280 ProSofe 24-por Se Switch with L3 Roo
System	Switching	Routing	QoS	Security	Monitoring	Maintenance	Help	Index		LOGOUT
outing Table	IP   IPv6	VLAN   ARP	RIP   OS	PF   OSPFv3	Router Discovery	VRRP   Multicast	IPv6 Multicast			
LAN Routing	2	VLAN Rout	ing Confi	guration						
Vizard LAN Routing	2	VLAN Rou	ting Config	aration			(	Ð		
		VLAN ID	Port M	Address	IP Address	Subnet P	lask			
		200	0/4/1 10	:0D:7F:4C:18:F	0 192,168,4,1	255,255,2	\$2.0			
			0,4,1 10	10011114011010	1911001411	200120012	2210			
									400 0	ETE CANCEL



5. Choose **Routing > IP > Basic > IP Configuration**. Enable Routing Mode and click **APPLY**.

NETGEAR Connect with Innovation"					
System Switching	Routing QoS S	ecurity Monitoring	Maintenance	Help	Index
Routing Table   IP   IPv6	VLAN   ARP   RIP   OSPF	OSPFv3   Router Discovery	VRRP   Multicost	IPv6 Multicast	
* Basic	IP Configuration				
<ul> <li>IP Configuration</li> <li>Statistics</li> </ul>	IP Configuration			0	D
> Advanced	Default Time to Live	64			1
	Routing Mode	Enable	Disable		
	ICMP Echo Replies	Enable	Disable		
	ICMP Redirects	💮 Enable 💿	Disable		
	ICMP Rate Limit Interval	1000	(0 to 21	47483647 ms)	
	ICMP Rate Limit Burst Size	100	(1 to 20	0)	
	Maximum Next Hops	4			
	Maximum Routes	6112			
	Select to configure Global Default	Gateway			
	Global Default Gateway	0.0.0.0			

6. Choose **Routing > IP > Advanced > IP Interface Configuration**. Assign the IP address for each interface that will act as an uplink to the XSM7224S stack. For each uplink, use consecutive 172.80.x.1/24 subnets. For each interface, set the IP address configuration method to Manual and enter the IP address and subnet mask. Enable Routing Mode and Admin Mode. Click **APPLY** after configuring each interface.

Switching		Routing	0.05	Security	Monitoring	Mainten	Help	Index				
ysiem ownening				ocerta	monnorms		nice nep	IIIGEX				
suting Table   IP   IPvo	I VLA	N   AKP	KIP   OSPF	USPHV3	Kouter Discovery	VKKP   Mulh	cast   IPvo Multicast					
isic	IP	Interfa	ce Configura	tion								
dvanced		ID Interfa	ace Configurati	0.0								
IP Configuration Statistics			uce compared	011								
IP Interface	1	VLANS A	ui -									
Configuration Secondary IP		Port	Description	VLAN ID	IP Address Configuration Method	IP Address	Subnet Mask	Routing Mode	Administrative Mode	Link Speed Data Rate	OSPF Admin Mode	Fi N D B
								-				Г
		1/0/1			Manual	172.160.1.1	255.255.255.0	Enable	Enable	10G Full	Disable	D
	<b>F</b>	1/0/2			None	0.0.00	0.0.0.0	Disable	Enable	Unknown	Disable	D
		1/0/3			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable	D
		1/0/4			None	0.0.00	0.0.0.0	Disable	Enable	Unknown	Disable	D
		1/0/5			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable	D
		1/0/6			None	0.0.00	0.0.0.0	Disable	Enable	Unknown	Disable	D
		1/0/7			None	0.0.00	0.0.0.0	Disable	Enable	Unknown	Disable	D
		1/0/8			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable	D
		1/0/9			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable	D
	<b></b>	1/0/10			None	0.0.00	0.0.0.0	Disable	Enable	Unknown	Disable	D
		1/0/11			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable	D
		1/0/12			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable	D
		1/0/13			None	0.0.00	0.0.0.0	Disable	Enable	Unknown	Disable	D
		1/0/14			None	0.0.00	0.0.0.0	Disable	Enable	Unknown	Disable	D
		1/0/15			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable	D
		1/0/16			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable	D
		1/0/17			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable	D
	<b></b>	1/0/18			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable	D
		1/0/19			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable	D
		1/0/20			None	0.0.00	0.0.0.0	Disable	Enable	Unknown	Disable	D
		1/0/21			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable	D
		1/0/22			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable	Di
		1/0/23			None	0.0.0	0.0.0.0	Disable	Enable	1000 Mbps	Disable	Di
		1/0/24			None	0.0.0.0	0.0.0.0	Disable	Enable	10G Full	Disable	Di
	1	VLANS A	di l									
	4											



7. Choose Routing > Multicast > Global Configuration. Enable Admin mode and click APPLY.

System Switchi	ng Routing QoS Secu	rity Monitoring Maintenance	Help Inde	
Routing Table   IP   IPv	6   VLAN   ARP   RIP   OSPF   OSP	Fv3   Router Discovery   VRRP   Multicest	IPv6 Multicast	
Mroute Table	Global Configuration			
Global	Global Configuration		0	
Interface	Admin Mode	🔿 Disable 😨 Enable		
Configuration	Protocol State	Non-Operational		
DVMRP	<b>Table Maximum Entry Count</b>	768		
PIM	Protocol	No Protocol Enabled		
Static Routes	Table Entry Count	0		
Configuration Admin Boundary				
Configuration				

8. Choose **Routing > Multicast > IGMP > Global Configuration**. Enable Admin Mode, and click **APPLY**.

				Y	V	Managed L2+ Stackable St
System Switching	Kouting		Perily Monitoring	Maintenance	Help Index	
Kooning roome   Ir   Ir vo	- The -		intro   social biscorery	T TERF   HOUSEOUT		
Mroute Table	IGMP Globa	al Configuration	•			
Configuration	IGMP Glob	bal Configuration			0	
Interface Configuration	Admin Mode		O Disable	Enable		
OVHRP						
Global						
Configuration Routing Interface						
Configuration						
Statistics						
IGMP Groups						
Proxy Interface						
Proxy Interface						
Statistics Prove Membership						
PIM						
Static Routes Configuration						
Admin Boundary						
Configuration						



9. Choose **Routing > Multicast > IGMP > Routing Interface Configuration**. Click All above the column headings to list physical and VLAN interfaces. Select all entries by clicking the checkbox in the column header. Enable Admin Mode and click **APPLY**.

tem Switching		Routing	QoS	Security	Monitoring	Mainte	enance	Help	Index		
Table   IP   IPvó	I VLA	N   ARP	RIP   OSPF	OSPFv3	Router Discovery	VRRP   M	ulticast   IPvi	Multicost			
	_								_		
ute Table sal		IGMP Routi	ng Interface (	Configuratio	on .						Q
guration	1	VLANS AII				so To Interfac	e	60		1	1 and
rface iguration RP		Interface	Admin Mode	Version	Robustness	Query Interval	Max Response Time	Startup Query Interval	Startup Query Count	Query Interval	Query Count
al											
guration		1/0/1	Enable	V3	2	125	100	31	2	10	2
ing Interface		1/0/2	Enable	V3	2	125	100	31	2	10	2
ing Interface		1/0/3	Enable	V3	2	125	100	31	2	10	2
tistics		1/0/4	Enable	V3	2	125	100	31	2	10	2
IP Groups		1/0/5	Enable	V3	2	125	100	31	2	10	2
P Membership		1/0/6	Enable	V3	2	125	100	31	2	10	2
figuration		1/0/7	Enable	V3	2	125	100	31	2	10	2
xy Interface		1/0/8	Enable	V3	2	125	100	31	2	10	2
tistics		1/0/9	Enable	V3	2	125	100	31	2	10	2
xy Membership		1/0/10	Enable	V3	2	125	100	31	2	10	2
Routes		1/0/11	Enable	V3	2	125	100	31	2	10	2
ration		1/0/12	Enable	V3	2	125	100	31	2	10	2
oundary		1/0/13	Enable	V3	2	125	100	31	2	10	2
uration		1/0/14	Enable	V3	2	125	100	31	2	10	2
		1/0/15	Enable	V3	2	125	100	31	2	10	2
		1/0/16	Enable	V3	2	125	100	31	2	10	2
		1/0/17	Enable	V3	2	125	100	31	2	10	2
		1/0/18	Enable	V3	2	125	100	31	2	10	2
		1/0/19	Enable	V3	2	125	100	31	2	10	2
		1/0/20	Enable	V3	2	125	100	31	2	10	2
		1/0/21	Enable	V3	2	125	100	31	2	10	2
		1/0/22	Enable	V3	2	125	100	31	2	10	2
		1/0/23	Enable	V3	2	125	100	31	2	10	2
		1/0/24	Enable	V3	2	125	100	31	2	10	2
		1/0/25	Enable	V3	2	125	100	31	2	10	2
		1/0/26	Enable	V3	2	125	100	31	2	10	2
		1/0/27	Enable	V3	2	125	100	31	2	10	2
		1/0/28	Enable	V3	2	125	100	31	2	10	2
		vlan 200	Enable	V3	2	125	100	31	2	10	2



10. Choose **Routing > Multicast > PIM > Global Configuration**. Set the PIM protocol type to PIM-SM for sparse mode and enable Admin Mode. Click **APPLY**.

nect with Innovation "			ProSofe 24 Stockable GE Switch with L3
System Switching	Routing QoS S	ecurity Monitoring Maintenance Help Index	(1000
Couting Table   IP   IPv6	VLAN   ARP   RIP   OSPF   (	OSPFv3   Router Discovery   VRRP   Multicast   IPv6 Multicast	
froute Table Global	PIM Global Configuration	1	
Configuration	PIM Global Configuration	U	
Interface	PIM Protocol Type	PIM-DM @ PIM-SM	
OVMRP	Admin Mode	O Disable  Enable Enable	
GMP			
12M			
Global			
SSM Configuration			
Interface			
Configuration			
PIM Neighbor			
Candidate RP			
BSR Candidate			
Configuration			
Static RP			
Configuration			
Static Routes			
Admin Boundary			
Configuration			



11. Choose **Routing > Multicast > PIM > Candidate RP Configuration**. Select the uplink interface to the XSM7224S stack as the PIM interface and assign 224.1.2.0/24 as the group address/mask. Adjust the multicast address range as needed. Click **ADD**.

12. Choose **Routing > Multicast > PIM > Interface Configuration**. Click **All** above the column headings to list physical and VLAN interfaces. Select all entries by clicking the checkbox in the column header. Enable Admin Mode and click **APPLY**.

d with innevation											Stockoble GE Swit	ch with
System Switching	3	Routing	QoS	Security M	onitoring	Maintenance	Help Index					Ľ
Routing Table   IP   IPv6	I VLA	IN   ARP	RIP   OSPF	OSPFv3   Router	Discovery   V	RRP   Multicost   IPv6	Multicast					
Maguda Tabla		PIM Interfa	ce Configurati	ion							(1)	
Global		VIANS All				Go To Interface		0				
Configuration			Admin	Protocol	TP		Join /Prune	BSD		Designated	Neighbor	
nterface		Interface	Mode	State	Address	Hello Interval(secs)	Interval(secs)	Border	DR Priority	Router	Count	
VMRP												
GMP	10	1/0/1	Enable	Non-Operational	0.0.0.0	30	60	Disable	1			
IM		1/0/2	Enable	Non-Operational	0.0.0.0	30	60	Disable	1		·	
Global	100	1/0/3	Enable	Non-Operational	0.0.0.0	30	60	Disable	1			
SSM Configuration	1	1/0/4	Enable	Non-Operational	0.0.0.0	30	60	Disable	1		(	
Interface	10	1/0/5	Enable	Non-Operational	0.0.0.0	30	60	Disable	1			
Configuration	2	1/0/6	Enable	Non-Operational	0.0.0.0	30	60	Disable	1			
PIM Neighbor		1/0/7	Enable	Non-Operational	0.0.0.0	30	60	Disable	1			
Configuration		1/0/8	Enable	Non-Operational	0.0.0.0	30	60	Disable	1			
BSR Candidate	100	1/0/9	Enable	Non-Operational	0.0.0.0	30	60	Disable	1			
Configuration		1/0/10	Enable	Non-Operational	0.0.0.0	30	60	Disable	1			
Static RP	10	1/0/11	Enable	Non-Operational	0.0.0.0	30	60	Disable	1			
Static Routes		1/0/12	Enable	Non-Operational	0.0.0.0	30	60	Disable	1			
Configuration	100	1/0/13	Enable	Non-Operational	0.0.0.0	30	60	Disable	1			
Admin Boundary		1/0/14	Enable	Non-Operational	0.0.0.0	30	60	Disable	1			
onfiguration	10	1/0/15	Enable	Non-Operational	0.0.0.0	30	60	Disable	1			
		1/0/16	Enable	Non-Operational	0.0.0.0	30	60	Disable	1			
	10	1/0/17	Enable	Non-Operational	0.0.0.0	30	60	Disable	1			
		1/0/18	Enable	Non-Operational	0.0.0.0	30	60	Disable	1			
		1/0/19	Enable	Non-Operational	0.0.0.0	30	60	Disable	1			
		1/0/20	Enable	Non-Operational	0.0.0.0	30	60	Disable	1			
	23	1/0/21	Enable	Non-Operational	0.0.0.0	30	60	Disable	1			
		1/0/22	Enable	Non-Operational	0.0.0.0	30	60	Disable	1			
	10	1/0/23	Enable	Non-Operational	0.0.0.0	30	60	Disable	1			
		1/0/24	Enable	Non-Operational	0.0.0.0	30	60	Disable	1		_	
	23	1/0/25	Enable	Non-Operational	172.80.1.2	30	60	Disable	1			
		1/0/26	Enable	Non-Operational	0.0.0.0	30	60	Disable	1			
	1	1/0/27	Enable	Non-Operational	0.0.0.0	30	60	Disable	1			
		1/0/28	Enable	Non-Operational	0.0.0.0	30	60	Disable	1			
		vlan 200	Enable	Non-Operational	192.168.4.1	30	60	Disable	1			
	1	VLANS AL				Go To Interface	0	0				



13. Choose **Routing > OSPF > Basic > OSPF Configuration**. Select Enable and set the router ID to 0.0.0.2. Click **APPLY**. Remember that the router ID must be unique to each stack in your LAN network.

	AR'								M.5300-28 ProSafe 24-po Stackable GE Switch with L3 Rot
System	Switching	Routing	QoS	Security	Monitoring	Maintenance	Help	Index	LOGOUT
Routing Table	IP   IPv6	VLAN   ARP	RIP OSPF	OSPFv3	Router Discovery	VRRP   Multicost	IPvó Multicast		
Basic		OSPF Confi	iguration						
	an	OSPF Con	figuration				(	D	
Advanced		Admin Mode			Oisable (	Enable			
		Router ID			0.0.0.2				



	Switching	F	louting	QoS	Security Monitor	ing Maintenance	Help Index			LOG
Routing Table	IP   IPv6	VLA	N   ARP	RIP   OSPF	OSPFv3   Router Discov	ery   VRRP   Multicost	IPv6 Multicast			
Basic		Rou	te Redis	tribution						
Advanced			SPF Route	Redistributio	0					0
<ul> <li>OSPF</li> <li>Configuration</li> </ul>			-	Redistribute						
Common Area			Source	Option	Metric	Metric Type	Тад	Subnets	Distribute List	
Configuration										
Configuration		8	Connected	Enable	0	External Type 2	0	Disable		
NSSA Area			Static	Disable	0	External Type 2	0	Disable		
Configuration			RIP	Disable	0	External Type 2	0	Disable		
Virtual Link Configuration     Route Redistribution     NSF OSPF Summary										

14. Choose **Routing > OSPF > Advanced > Route Redistribution**. Select Connected, and select Enable for Redistribution Option. Click **APPLY**.



15. Choose **Routing > OSPF > Advanced > Interface Configuration**. Click **All** above the column headings to list physical and VLAN interfaces. Select all entries by clicking the checkbox in the column header. Enable Admin Mode and click **APPLY**.

ETGE nect with Innova	AR'									Stockable GE	M5300-2 ProSale 24-1 Switch with L3 P
System	Switching		Routing	QoS	Security	Monitoring Ma	intenance	Help Index			
Routing Table	IP   IPv6	VIA	N   ARP	RIP   OSPF	OSPFv3   Ro	ater Discovery   VRRP	Multicest   IPv6	Multicast			
lasic		-	OSPE Inter	face Configu	ration						
dvanced		1.1	VLANS All								
Configuratio	n			тр	Subset		Admin	Router	Petransmit	Hello	
Common Ar	ea.		Interface	Address	Hask	Area ID	Mode	Priority	Interval	Interval	Ĩ
Stub Area	n										
Configuratio	n	100	1/0/1	0000	0.0.0.0	0.0.0.0	Fashia			10	
45SA Area			1/0/2	0.0.0.0	0.0.0.0	0.0.0.0	Enable			10	
Jonnguratio Area Rance	n		1/0/3	0.0.0.0	0.0.0.0	0.0.0.0	Ecable	1	5	10	
Configuratio	n	m	1/0/4	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1	5	10	
			1/0/5	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1	5	10	_
Configuratio	n atistics	m	1/0/6	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1	5	10	
leighbor Ta	ble	100	1/0/7	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1	5	10	
ink State		E	1/0/8	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1	5	10	
atabase		10	1/0/9	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1	5	10	
/irtual Link	-		1/0/10	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1	5	10	
Route			1/0/11	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1	5	10	
edistributio	in in		1/0/12	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1	5	10	
NSF OSPF			1/0/13	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1	5	10	
Summary			1/0/14	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1	5	10	
			1/0/15	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1	5	10	
			1/0/16	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1	5	10	- 1 A
			1/0/17	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1	5	10	
			1/0/18	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1	5	10	
			1/0/19	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1	5	10	
			1/0/20	0.0.0.0	0.0.0	0.0.0.0	Enable	1	5	10	4
			1/0/21	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1	5	10	4
			1/0/22	0.0.0.0	0.0.0	0.0.0.0	Enable	1	5	10	4
			1/0/23	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1	5	10	4
			1/0/24	0.0.0.0	0.0.0	0.0.0.0	Enable	1	5	10	4
			1/0/25	172.80.1.2	255.255.255.0	0.0.0.0	Enable	1	5	10	4
			1/0/26	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1	5	10	4
			1/0/27	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1	5	10	4
			1/0/28	0.0.0.0	0.0.0.0	0.0.0.0	Enable	1	5	10	4
			vlan 200	192.168.4.1	255.255.252.0	0.0.0.0	Enable	1	5	10	4
		۰									



### Switch – M5300-52G-POE+

1. Choose **Switching > VLAN > Basic > VLAN Configuration.** Specify 101 for the camera VLAN ID and click **ADD** to add the VLAN to the configuration. Remember that the camera VLAN ID is unique to each M5300-52G-POE+ stack.

TGEAR'								N Prot GE PoE	5300 ale 24-p Switch w
stem Switching	Routing	QoS	Security	Monitoring	Maintenance	Help	Index		
Auto-VolP   ISCSI	STP   Multice	ost   MVR	Address Tol	ble   Ports   LAG					
	VLAN Confi	guration							
nced	Reset	-					0		
figuration	Reset Configur	ation							
4 Membership 4 Status	Tekenal VI AN Configuration								
VID	Internal VLAN Computation			4093			~		
Based VLAN	Internal VLAN Allocation Base			Ascending @ Descending					
ocol Based	Contract Contract of Contract								
figuration	VLAN Configuration						D		
locol Based	VLAN ID	VLAN Name	· ·	VLAN Type	Make S	atic			
bership	101	CameraVla		Default	Disable				
Jubnet Based	2	Auto VoIP		AUTO VoIP	Disable				
DVLAN	4093			Dynamic (IP VLAN)	Disable		-		
ARP Port onfiguration									
								ADD DELETE CA	NCEL



2. Choose **Switching > VLAN > Advanced > Vlan Membership**. Select Vlan 101 from the VLAN ID drop-down menu. For all ports that will have cameras connected to them, untag the VLAN on the port by clicking associated box, and cycle through options until you get to U. Click **APPLY** after all ports have been configured on the VLAN. Remember that the camera VLAN subnet is unique to each M5300-52G-POE+ stack.

ETGE	AR'							M530 ProSofe 24 GE PoE Switch	0-28G-POI port L2 Stackal with Static Rout
System	Switching	Routing	QoS Security	Monitoring	Maintenance	Help	Index		LOGOUT
VLAN   Auto	-VolP   ISCSI	STP   Multio	ost   MVR   Address	Table   Ports   LAG					
Basic		VLAN Mem	bership						
Advanced > VLAN		VLAN Men	nbership			0	D		
Configuratio	n	VLAN ID	101 💌	Group	Operation Unta	g All 💌			
<ul> <li>VLAN Status</li> </ul>		VLAN Name	CameraVlan	UNTA	GGED PORT MEMBERS				
Port PVID		VLAN Type	Static	TA	DGED PORT MEMBERS				
MAC Based	VLAN	Port 1 2 3	456789	10 11 12 13 14 1	5 16 17 18 19 20	21 22 23 24			
Protocol Bas	ed	U							
Configuratio	n	25 26 2	/ 28						
Protocol Bas	ed	LAG							
Membership									
IP Subnet B	ased								
Port DVLAN									
Configuratio	n								
Configuratio	n								
GARP Switch	n								
GARP Port	n								
Configuratio	n								
3. Choose **Switching > VLAN > Advanced > Port PVID Configuration**. For all the ports configured for cameras, select the associated box and enter 101 for the Configured PVID. Click **APPLY**.

iscsi s		0.0	e	Advertised on			Hala Index	
iscsi i s	Kouting	600	Security	Moniforing	Mainten	ance	neip Index	
	IP   Multico	al MVR	Address T	oble   Ports   LAC	9			
Po	t PVID C	onfiguratio	n					
	PVID Confi	guration					C	
1	LAGS All		G	o To Interface		0		
	Interface	Configured PVID	Current PVID	Acceptable Frame Types	Configured Ingress Filtering	Current Ingress Filtering	Port Priority	
	1/0/1	101	1	Admit All	Disable 💌	Disable	0	
	1/0/1	1	1	Admit All	Disable	Disable	0	
	1/0/2	1	1	Admit All	Disable	Disable	0	
	1/0/3	1	1	Admit All	Disable	Disable	0	
	1/0/4	1	1	Admit All	Disable	Disable	0	
	1/0/5	1	1	Admit All	Disable	Disable	0	
	1/0/6	1	1	Admit All	Disable	Disable	0	
1 m	1/0/7	1	1	Admit All	Disable	Disable	0	
	1/0/8	1	1	Admit All	Disable	Disable	0	
- m	1/0/9	1	1	Admit All	Disable	Disable	0	
	1/0/10	1	1	Admit All	Disable	Disable	0	
	1/0/11	1	1	Admit All	Disable	Disable	0	
	1/0/12	1	1	Admit All	Disable	Disable	0	
	1/0/13	1	1	Admit All	Disable	Disable	0	
	1/0/14	1	1	Admit All	Disable	Disable	0	
	1/0/15	1	1	Admit All	Disable	Disable	0	
	1/0/16	1	1	Admit All	Disable	Disable	0	
	1/0/17	1	1	Admit All	Disable	Disable	0	
	1/0/18	1	1	Admit All	Disable	Disable	0	
	1/0/19	1	1	Admit All	Disable	Disable	0	
	1/0/20	1	1	Admit All	Disable	Disable	0	
<b>1</b>	1/0/21	1	1	Admit All	Disable	Disable	0	
	1/0/22	1	1	Admit All	Disable	Disable	0	
	1/0/23	1	1	Admit All	Disable	Disable	0	
	1/0/24	1	1	Admit All	Disable	Disable	0	
	1/0/25	1	1	Admit All	Disable	Disable	0	
	1/0/26	1	1	Admit All	Disable	Disable	0	
	1/0/27	1	0	Admit All	Disable	Disable	0	
1771	1/0/28	1	0	Admit All	Disable	Disable	0	



4. Configure the VLAN 101 interface for the subnet (192.168.8.0/24) and enable VLAN routing. Choose **Routing** > **VLAN** > **VLAN Routing**. Select the VLAN ID and assign IP address 192.168.8.1 with subnet mask 255.255.255.0. Click **ADD**.

NETGEAR'						M 5300-28G-POE+ ProSale 24-port L2 Stackable GE R05 Switch with Static Routing
System Switching	Routing	QoS Security	Monitoring	Maintenance Help Ind	ex	LOGOUT
Routing Table   IP   IPv6	VLAN   ARP	RIP   OSPF   OSPFv3	Router Discovery   VR	RP   Multicast   IPv6 Multicast		
> VLAN Routing Wizard	VLAN Rout	ing Configuration				
v VLAN Routing	VLAN Rou	ting Configuration	10.1.1	()		
	VLAN ID	Port HAC Address	IP Address	Subnet Hask		
	101	0/4/1 10:0D:7F:5F:6	5:E8 192.168.8.1	255.255.255.0		
						ADD DELETE CANCEL



5. Choose **Routing > IP > Basic > IP Configuration**. Select Enable for Routing Mode to enable IP routing globally, and click **APPLY**.

NETGE Connect with Innovat	AR'							
System	Switching	Routing	QoS	Security	Monitoring	Ma	intenance	Help
Routing Table	IP   IPv6	VLAN   ARP	RIP   OSPF	OSPFv3	Router Discovery	VRRP	Multicast   IP	v6 Multicast
* Basic		IP Configur	ation					
<ul> <li>IP Configural</li> <li>Statistics</li> </ul>	tion	IP Configu	ration					0
Advanced		Default Time to	Live		64			
		Routing Mode			Enable	Disable		
		ICMP Echo Rep	lies		💿 Enable 🔘	Disable		
		ICMP Redirects			💮 Enable 🛞	Disable		
		ICMP Rate Limi	it Interval		1000		(0 to 2147	483647 ms)
		ICMP Rate Limi	it Burst Size		100		(1 to 200)	
		Maximum Next	Hops		4			
		Maximum Rout	es		6112			
		Select to config	gure Global De	fault Gateway				
		Global Default	Gateway		0.0.0.0			

6. Choose **Routing > IP > Advanced > IP Interface Configuration**. Assign the IP address for each interface that will act as an uplink to the XSM7224S stack. For each uplink, use consecutive 172.160.x.1/24 subnets. For each interface, set the IP address configuration method to Manual and enter the IP address and subnet mask. Enable Routing Mode and Admin Mode. Click **APPLY** after configuring each interface.

ct with Innovation "										ProSc GE PoE 1	de 24-port L witch with S	,2 St Natik			
vstem Switchir		Routing	QoS	Security	Monitoring	Mainten	Helo	Index			G	.00			
				0000-0	L Rudu Discourse	1 V222   M-M	and I ID 4 Making	Interest							
ning lable   Ir   Irva	0   10	474   A80	r   kir   Oarr	Uarrya	Kouller Discovery	VKKP   Multi	cast   IPVO Multicast					L			
iic	IP	Interfa	ace Configura	tion											
anced		ID Inter	face Configurati	0.0											
Configuration															
nterface	1	1 All													
figuration ondary IP		Port	Description	VLAN ID	IP Address Configuration Method	IP Address	Subnet Mask	Routing Mode	Administrative Mode	Link Speed Data Rate	OSPF Admin Mode				
		1/0/25	Uplink		Manual 💌	172.160.1.2	255.255.255.0	Enable 💌	Enable 💌	Unknown	Disable	Т			
		1/0/1			None	0.0.0.0	0.0.0.0	Disable	Enable	100 Mbps Full Duplex	Disable	Ī			
		1/0/2			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable				
		1/0/3			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable				
		1/0/4			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable				
	<b>E</b>	1/0/5			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable				
		1/0/6			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable				
	<b>1</b>	1/0/7			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable				
		1/0/8			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable				
	<b>1</b>	1/0/9			None	0.0.0.0	0.0.0.0	Disable	Enable	1000 Mbps	Disable				
		1/0/10			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable				
	<b>1</b>	1/0/11			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable				
		1/0/12			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable				
	<b>1</b>	1/0/13			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable				
		1/0/14			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable				
		1/0/15			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable				
		1/0/16			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable				
	<b>1</b>	1/0/17		_	None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable	L			
		1/0/18		_	None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable				
		1/0/19		_	None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable	1			
		1/0/20			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable				
		1/0/21			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable	14			
		1/0/22		_	None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable	ų,			
		1/0/23			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable	1			
		1/0/24			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable				
	4	1/0/25			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable				
		1/0/26			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable	(II			
	10	1/0/27			None	0.0.0.0	0.0.0.0	Disable	Enable	Unknown	Disable	1			



7. Choose **Routing > OSPF > Basic > OSPF Configuration**. Select Enable and set the router ID to 0.0.0.3. Click **APPLY**. Remember that the router ID must be unique to each stack in your LAN network

NETGE	AR'									M5300-28G-POE+ ProSale 24-port L2 Stackable GE PoE Switch with Static Routing
System	Switching	Routing	QoS	Security	Monitoring	Maintenance	Help	Index		LOGOUT
Routing Table	IP   IPv6	VLAN   ARP	RIP   OSPF	OSPFv3	Router Discovery	VRRP   Multicost	IPv6 Multicast			
* Basic		OSPF Confi	guration							
	•	OSPF Con	figuration				0	D		
Advanced		Admin Mode			Disable (	Enable				
		Router ID			0.0.0.3					
										CANCEL APPLY



8. Choose **Routing > OSPF > Advanced > Route Redistribution**. Select Connected and enable Redistribution Option. Click **APPLY**.

Routing     QoS     Security     Monitoring     Maintenance     Help     Index       IPv6     VLAN     ARP     KIP     OSPF     OSPF     OSPF     OSPF     OSPF     OSPF       Route Redistribution       Source     Redistribute       Øsource     Redistribute     Metric     Metric Type     Tag     Subnets     Distribute List       Øsource     Redistribute     0     External Type 2     O     Enable     Implementation       Øsource     Disable     0     External Type 2     O     Disable	
IPv6     VLAN     ARP     RIP     OSPF     OSPF     Rowter Discovery     VRRP     Multicast       Route Redistribution       Source     Redistribute Option     Hetric     Hetric Type     Tag     Subnets     Distribute List       © Connected     Enable     0     External Type 2     0     Enable     •       © Connected     Disable     0     External Type 2     0     Disable	
Source     Rolistribution       Source     Redistribute Option       Hetric     Metric Type       Tag     Subnets       Distribute List       Connected     Distribute       Connected     Disable       Static     Disable       Static     Disable	
Route Redistribution         Source Redistribute         Source       Redistribute Option       Hetric       Hetric Type       Tag       Subnets       Distribute List         Connected       Enable       0       External Type 2       0       Enable       0         Connected       Disable       0       External Type 2       0       Disable       0	
OSPF Route Redistribution     Redistribute Option     Metric     Metric Type     Tag     Subnets     Distribute List       Connected     Enable     0     External Type 2     0     Enable     Image: Connected Disable     Image: Connected Disable     Image: Connected Disable     0     External Type 2     0     Image: Connected Disable     Image: Connecte	
Source         Redistribute Option         Hetric         Hetric Type         Tag         Subnets         Distribute List           II         Connected         Enable         0         External Type 2         0         Enable         0           II         Connected         Disable         0         External Type 2         0         Disable         0           II         Static         Disable         0         External Type 2         0         Disable         0	۲
Connected         Enable         0         External Type 2         0         Enable         I           2         Connected         Disable         0         External Type 2         0         Disable         I           5         Static         Disable         0         External Type 2         0         Disable         I	
Connected         Disable         0         External Type 2         0         Disable           Static         Disable         0         External Type 2         0         Disable	
Static Disable 0 External Type 2 0 Disable	
RIP Disable 0 External Type 2 0 Disable	



9. Choose **Routing > OSPF > Advanced > Interface Configuration**. Click **All** above the column headings to list physical and VLAN interfaces. Select all entries by clicking the checkbox in the column header. Enable admin mode and click **APPLY**.

TGEAR d with Innovation									M.53 ProSole OE foe Swi	24-port L2 St tch with Static
ystem Switchin		Routing	QoS	Security	Monitoring M	aintenance	Help Index			100
uting Table   IP   IPvd	NV   V	IN   ARP	RIP   OSPF	OSPFv3   Ro	uter Discovery   VRRP	Multicost   IPv6	Multicast			
-1-	-	OCDE Inter	aco Conflou	miles						
vanced		USPF Inten	ace comigu	irauon						
OSPF		VLANS AII								
onfiguration common Area		Interface	IP Address	Subnet Mask	Area ID	Admin Mode	Router Priority	Retransmit Interval	Hello Interval	
itub Area						-				
onfiguration	173	1/0/1	0.0.0.0	0.0.0.0	0.0.0.0	Disable	1	5	10	
SSA Area onfiguration	171	1/0/2	0.0.0.0	0.0.0.0	0.0.0.0	Disable	1	5	10	
ea Range	10	1/0/3	0.0.0.0	0.0.0.0	0.0.0.0	Disable	1	5	10	
nfiguration		1/0/4	0.0.0.0	0.0.0.0	0.0.0.0	Disable	1	5	10	
erface	13	1/0/5	0.0.0.0	0.0.0.0	0.0.0.0	Disable	1	5	10	
riguration oface Statistics		1/0/6	0.0.0.0	0.0.0.0	0.0.0.0	Disable	1	5	10	
ighbor Table	10	1/0/7	0.0.0.0	0.0.0.0	0.0.0.0	Disable	1	5	10	
k State		1/0/8	0.0.0.0	0.0.0.0	0.0.0.0	Disable	1	5	10	
tabase		1/0/9	0.0.0.0	0.0.0.0	0.0.0.0	Disable	1	5	10	
Val Link		1/0/10	0.0.00	0.0.0.0	0.0.0.0	Disable	1	5	10	
te		1/0/11	0.0.0.0	0.0.0.0	0.0.0.0	Disable	1	5	10	
istribution		1/0/12	0.0.00	0.0.0.0	0.0.0.0	Disable	1	5	10	
F OSPF		1/0/13	0.0.0.0	0.0.0.0	0.0.0.0	Disable	1	5	10	
nmary		1/0/14	0.0.0.0	0.0.0.0	0.0.0.0	Disable	1	5	10	
	23	1/0/15	0.0.0.0	0.0.0.0	0.0.0.0	Disable	1	5	10	
		1/0/16	0.0.00	0.0.0.0	0.0.0.0	Disable	1	5	10	
	23	1/0/17	0.0.0.0	0.0.0.0	0.0.0.0	Disable	1	5	10	
		1/0/18	0.0.0.0	0.0.0.0	0.0.0.0	Disable	1	5	10	
		1/0/19	0.0.0.0	0.0.0.0	0.0.0.0	Disable	1	5	10	
		1/0/20	0.0.0.0	0.0.0.0	0.0.0.0	Disable	1	5	10	
		1/0/21	0.0.0.0	0.0.0.0	0.0.0.0	Disable	1	5	10	
		1/0/22	0.0.0.0	0.0.0.0	0.0.0.0	Disable	1	5	10	4
		1/0/23	0.0.0.0	0.0.0.0	0.0.0.0	Disable	1	5	10	4
		1/0/24	0.0.0.0	0.0.0.0	0.0.0.0	Disable	1	5	10	4
	1	1/0/25	172.80.1.2	255.255.255.0	0.0.0.0	Enable	1	5	10	4
		1/0/26	0.0.0.0	0.0.0.0	0.0.0.0	Disable	1	5	10	4
		1/0/27	0.0.0.0	0.0.0.0	0.0.0.0	Disable	1	5	10	4
		1/0/28	0.0.0.0	0.0.0.0	0.0.0.0	Disable	1	5	10	4
	12	vlan 101	192.168.8.1	255.255.255.0	0.0.0.0	Disable	1	5	10	4
	۰									

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