Avenview

Control Your Video

VIDEO WALLS VIDEO PROCESSORS
VIDEO MATRIX SWITCHES EXTENDERS
EXTENDERS SPLITTERS WIRELESS
CABLES & ACCESSORIES

M SERIES

INSTALLER'S NETWORK SWITCH CONFIGURATION GUIDE

CISCO HUAWEI

HDM-C6MXIP-SET HDM-C6MWIP-SET

M-SERIES- HDM-C6MXIP & MWIP

CISCO& HUAWEI SWITCH CONFIGURATION GUIDE

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

What is Multicast Video?

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

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

What is IGMP?

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

Network Strategy

It is very important for any system designer to plan the network layout to ensure proper bandwith calculations and network switch topology with layers if needed to be stacked.
Listed below are some guidelines we have noted worked well when testing and properly monitored the bandwidth with network analyzer.

Cisco Catayist 2960 the multicast router sends out periodic general queries to all VLANs. All hosts interested in this multicast traffic send join requests and are added to the forwarding table entry.
The switch creates one entry per VLAN in the IGMP snooping IP multicast forwarding table for each group from which it receives an IGMP join request.

The switch supports IP multicast group-based bridging, rather than MAC-addressed based groups. With multicast MAC address-based groups, if an IP address being configured translates (aliases) to a previously configured MAC address or to any reserved multicast MAC addresses (in the range 224.0.0.xxx), the command fails. Because the switch uses IP multicast groups, there are no address aliasing issues.

The IP multicast groups learned through IGMP snooping are dynamic. However, you can statically configure multicast groups by using the ip igmp snooping vlan vlan-id static ip_address interface interface-id global configuration command. If you specify group membership for a multicast group address statically, your setting supersedes any automatic manipulation by IGMP snooping. Multicast group membership lists can consist of both user-defined and IGMP snooping-learned settings.

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Preparations

Before you start installing the M-Series system, please carefully read and absolutely follow the instructions below.
Only use accessories and cables that are supplied with our products or purchased as required.

Recomended:

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

Network switches

Small Solutions

CISCO CATALYST 2960 SWITCHES		CISCO SG300 FAMILY SWITCHES	
WS-C2960-24TC-L	24-port 100Mbps Ethernet switch	SG300-28	28-port 1000Mbps Ethernet switch
WS-C2960S-24PS-L	24-port 1000Mbps PoE Ethernet switch	SG300-28P	28-port 1000Mbps PoE Ethernet switch

Medium Solutions

CISCO CATALYST 2960 SWITCHES		CISCO SG500 FAMILY SWITCHES	
WS-C2960X-24PSQ-L	24-port 1000Mbps PoE	SG500-28P	28-port 1000Mbps Ethernet switch
WS-C2960X-48FPS-L	48-port 1000Mbps Ethernet switch	SG500-48P	48-port 1000Mbps PoE Ethernet switch

Large Solutions

CISCO CATALYST 2960 SWITCHES		CISCO SG500 FAMILY SWITCHES	
WS-C2960X-48FPS-L	48-port 1000Mbps Ethernet switch	SG500-52P	52-port 1000Mbps Ethernet switch

HUAWEI SWITCHES

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

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

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

SHARP
40" - LCD-40 LX440A

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

RS232 Data
The M-series devices support ASCii commands as well as Hex commands to control external devices for simple automation control. This is supported by connecting wires to the phoneix connector at the rear panel of the TX and RX. Sending commands from the MIP control box WEB interface or 3rd Party control systems over Telnet.
Our M-series setup with CTRLPRO-MIP control box can also receive feedback DEVICE INFO when requested from 3rd Party control system. Example Volume level, Online and Offline status.

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

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

Preparations

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

Single Switch Network Setup,
It is very important to follow this rule to ensure proper bandwidth and network switch model is capable in the system.

TX/RX Devices should be < (less than) or = (equal to) 44

Example :
< or = 20 in Total devices (TX and RX combined) Cisco or HUAWEI 24 port 1000Mbps Ethernet Switch
< or = 44 in Total devices (TX and RX combined) Cisco or HUAWEI 48 port 1000Mbps Ethernet Switch

Detailed Connection

The Cisco switch diagram above demonstrates how to simply connect the UTP cables on the switch for easy configuration, record keeping and troubleshooting.

Port 1: Reserve this port for the installer PC/Laptop for configuring the switch or accessing the switch WEB GUI.
Set this port as Forbidden in switch configuration

Port 2-21: Reserve these ports for Avenview Tx Encoders (HDM-C6MX/WIP-S) and Rx Decoders (HDM-C6MX/WIP-R) .
Don't set these port as Forbidden in switch configuration.

Port 22/23: Reserve these ports for Avenview CTRLPRO-MIP IP control box. Connect the two available ports to your network switch for use with enviroments using only PC control software. IP Address 192.168.11.243 (Default) to WEB GUI
Set this port as Forbidden in switch configuration
If using Router with Wifi connect LAN 2 (c) to Router LAN port, then Router to port labeled blue.
Set these port as Forbidden in switch configuration.

Port 24: Reserve this port for ethernet devices or Router with Wifi capabilities 2.4/5Ghz (300Mhz). Connect to LAN port on router.
Set this port as Forbidden in switch configuration

Cascading Switch Network Setup,
It is very important to follow this rule to ensure proper bandwidth and network switch model is capable in the system.

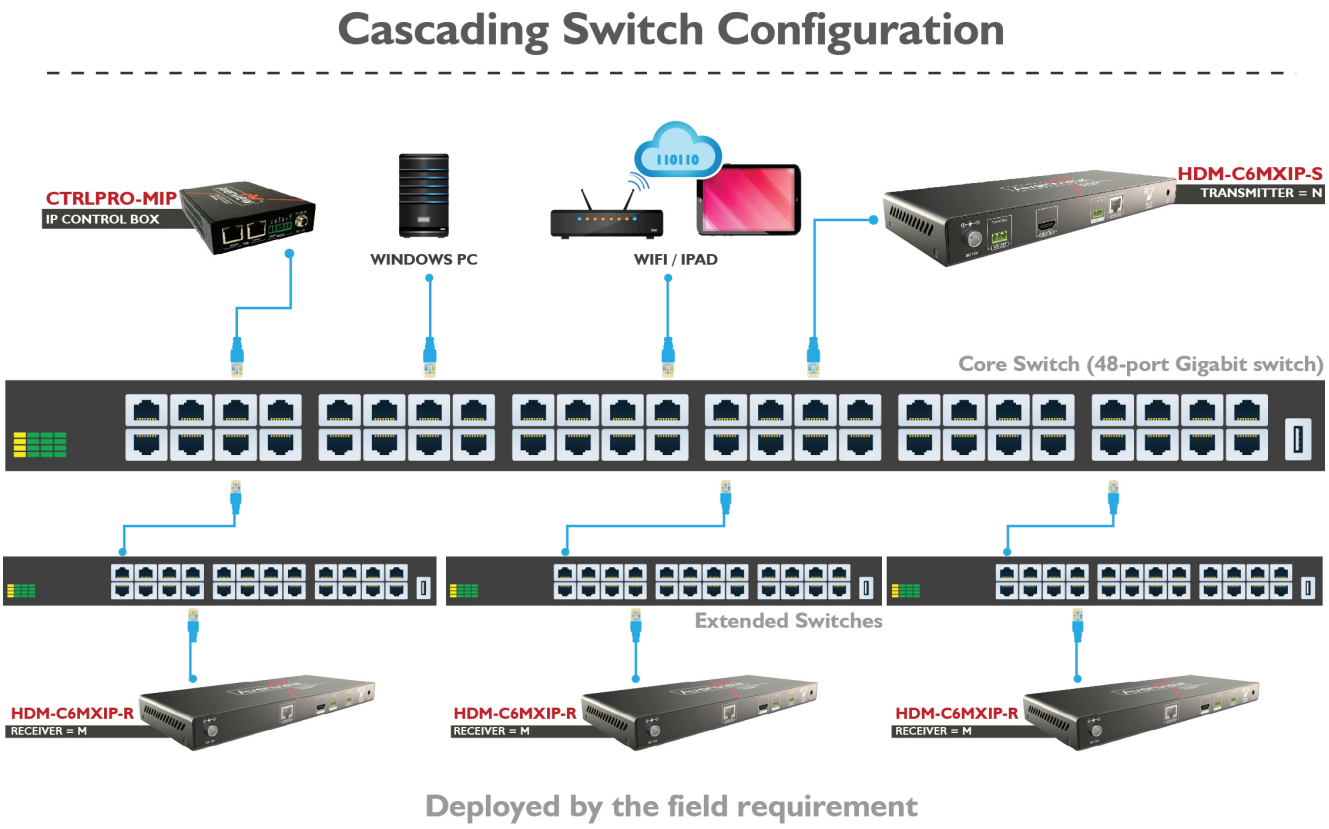
Preparations

Multi-Switch Network Setup,
It is very important to follow this rule to ensure proper bandwidth and network switch model is capable in the system.

TX Devices = (equal to) 40

Example :
< or = 40 in TX devices HDM-C6MXIP-S recommended Cisco Catalyst 2960 48 Port with 4 cascading ports.
< or = 176 in RX devices HDM-C6MXIP-R recommended 4 x Cisco Catalyst 2960 48 Port.

Creating a 40 x176 Modular Matrix setup.



Understanding Cisco Catayst 2960 Stacks
A switch stack is a set of up to four Catalyst 2960-S switches connected through their stack ports. One of the switches controls the operation of the stack and is called the stack master. The stack master and the other switches in the stack are stack members. Layer 2 protocol presents the entire switch stack as a single entity to the network.

A switch stack is different from a switch cluster. A switch cluster is a set of switches connected through their LAN ports, such as the 10/100/1000 ports.

Every member is uniquely identified by its own stack member number.

You manage the stack through a single IP address.

NOTE: We have encountered some performance problems with Cisco SG300 series switches based on our testing data.

(a) The ability to handle multicast request is insufficient. It takes a long time for switches to start forwarding multicast packets to the corresponding ports after receiving IGMP Join messages. The switches that act as stack member in a cascade network have more noticable issues. If they receive more multicast requests in a short period, some of the requests will be discarded because the switches are unable to handle in queue, resulting in Rx switch failure.
(b) Multicast forwarding synchronization not processed correctly. When copying and forwarding the same multicast packet to the multiple host ports a time difference occurs. When each port receives multicast packets a difference of 20ms or the user may visibly encounter the source streaming on different Rx may be out of sync.

In summary, Cisco SG300 can be used in single switch networking. Large Multi-screen synchronization is not required.
A cascaded network, large setups with Matrix and Videowall the Cisco C2960 series for networking is recommended.

This section guides the user through simple configuration methods related to M-series devices on a network and Avenview recommended switches.
Below, the user will understand how to manually setup and import network switch configuration files.

-Manual configuration allows the user to configure to each system setup differently depending on the network architecture, amount of devices and 3rd Party control systems embedded.
-Import configuration allows the user to use the saved file from the same Model switch configured correctly and import directly into the new or same stype of setup.

NOTE: Check with Avenview before upgrading the firmware on your network switch to ensure its compatibility.

Cisco SG300 Series

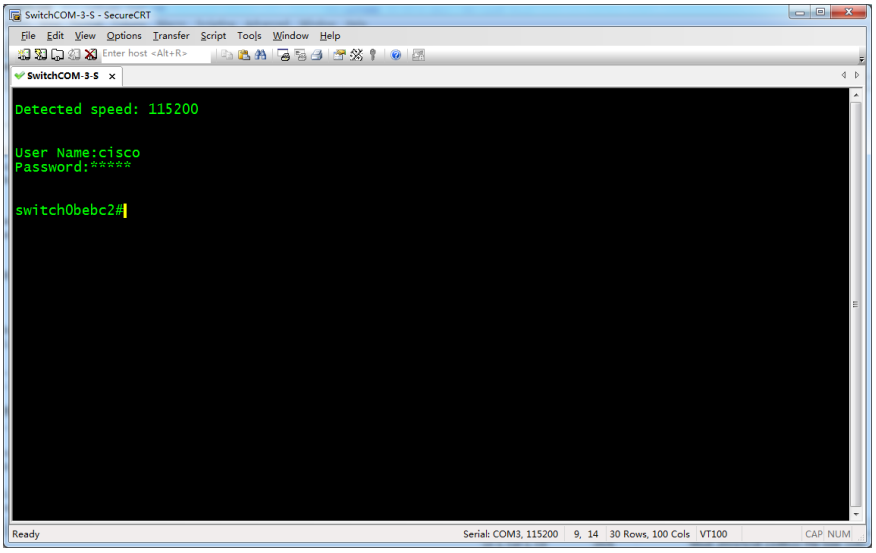
Recommend models - SG300-28 and SG300-28P.
Enviroment - Single switch network setup, not reliable with stacking configuration/multicast problems.

Console Connection

Use the serial cable provided with the switch. Connect you PC/Laptop with the serial cable. NOTE: No serial port use USB to serial cable. Prolific brand recommended.

Start Terminal or use Putty on you PC/Laptop to begin connection to the network switch.
Baud Rate 115200bps
Flow Control None
Parity None
Stop Bits 1
Data Bits 8 bits

When connection is successful between PC/laptop and Terminal software, follow the steps below:	
STEP 1: Press Enter	Result: `detected speed: 115200`
STEP 2: Press Enter	Result: `User Name :`
STEP 3: Type cisco	Factory default user cisco Factory Password cisco
	Result: `switch0bebc2#` Cisco uses the last six characters of the MAC address in the prompt above.



Reset Switch to Factory Default

STEP 4: Delete startup config

```
switch0bebc2#delete startup-config
Delete startup-config? (Y/N)[N]
```

Type: Y is not case sensitive

```
switch0bebc2#02-May-2013 14:59:54 %FILE-I-DELETE: File Delete - file URL
flash://startup-config
```

Type: reload

```
switch0bebc2#reload
You haven't saved your changes. Are you sure you want to continue ?
(Y/N)[N]
```

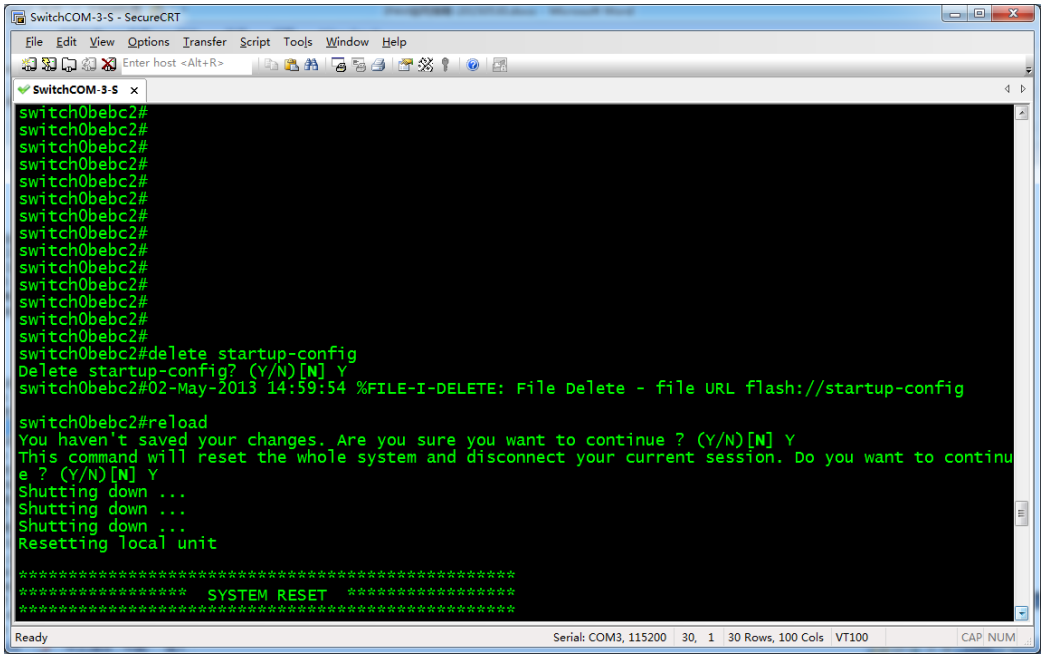
Type: Y

```
This command will reset the whole system and disconnect your current
session. Do you want to continue ? (Y/N)[N]
```

Type: Y

```
Shutting down ...
Shutting down ...
Shutting down ...
Resetting local unit
************************************************
*****************  SYSTEM RESET  *****************
************************************************
```

Summary of All Steps.



STEP 5: Switch reboots

When the switch reboots and the prompt below appears

```
Console baud-rate auto detection is enabled, press Enter twice to
complete the detection process
```

Press: Enter twice to acknowledge the baud rate detection.

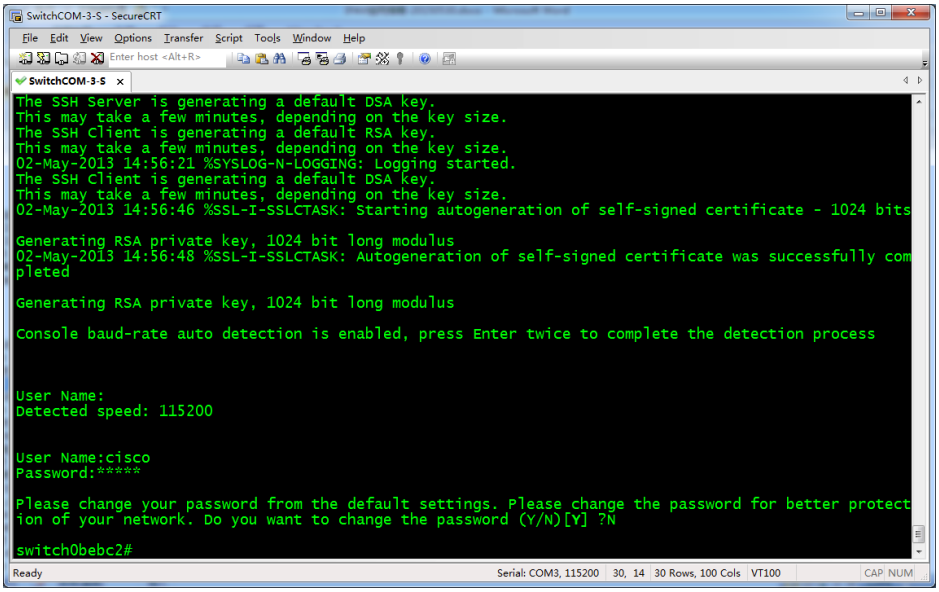
```
Detected speed: 115200
User Name:cisco
Password: cisco
```

STEP 5: Delete startup config

```
Please change your password from the default settings. Please change
the password for better protection of your network. Do you want to
change the password (Y/N)[Y] ?
```

Type: Y is not case sensitive

Summary of All Steps.



STEP 6: Console Configuration Global Cofiguration

```
switch0bebc2#
```

Type: config to enter the switch global configuration mode

```
switch0bebc2#config
switch0bebc2(config)#
```

Type: no eee enable

```
switch0bebc2(config)#no eee enable
switch0bebc2(config)#02-May-2013 15:02:16 %LINK-W-Down: gi1
02-May-2013 15:02:16 %LINK-W-Down: gi9
02-May-2013 15:02:16 %LINK-W-Down: gi11
02-May-2013 15:02:16 %LINK-W-Down: Vlan 1
02-May-2013 15:02:18 %LINK-I-Up: gi1
02-May-2013 15:02:18 %LINK-I-Up: Vlan 1
02-May-2013 15:02:19 %LINK-I-Up: gi9
02-May-2013 15:02:19 %LINK-I-Up: gi11
02-May-2013 15:02:22 %STP-W-PORTSTATUS: gi1: STP status Forwarding
02-May-2013 15:02:23 %STP-W-PORTSTATUS: gi9: STP status Forwarding
02-May-2013 15:02:24 %STP-W-PORTSTATUS: gi11: STP status Forwarding
```

Type: bridge multicast filtering

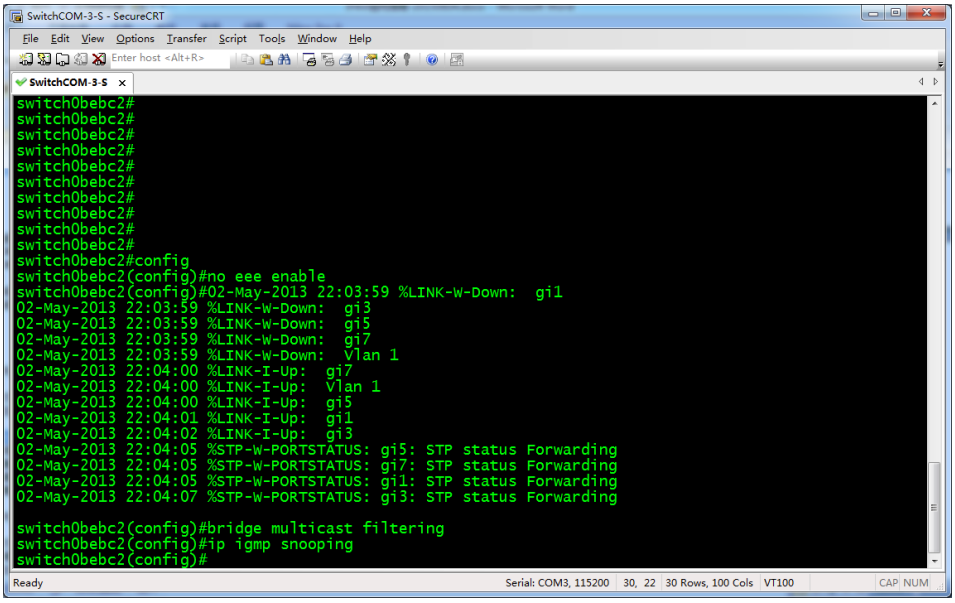
```
switch0bebc2(config)#bridge multicast filtering
switch0bebc2(config)#
```

Type: ip igmp snooping

```
switch0bebc2(config)#ip igmp snooping
switch0bebc2(config)#
```

STEP 6: Continued

Summary of All Steps.



STEP 7:Global Configuration VLAN Configuration

Type: ip igmp snooping vlan 1

```
switch0bebc2(config)#ip igmp snooping vlan 1
switch0bebc2(config)#
```

Assign IP Address IGMP Querier.

Type: ip igmp snooping vlan 1 querier address 192.168.22.222

```
switch0bebc2(config)#ip igmp snooping vlan 1 querier address 192.168.22.222
switch0bebc2(config)#
```

Enable IGMP Querier Function VLAN1

Type: ip igmp snooping vlan 1 querier

```
switch0bebc2(config)#ip igmp snooping vlan 1 querier
switch0bebc2(config)#
```

Enable Multicast Fast Leave VLAN1

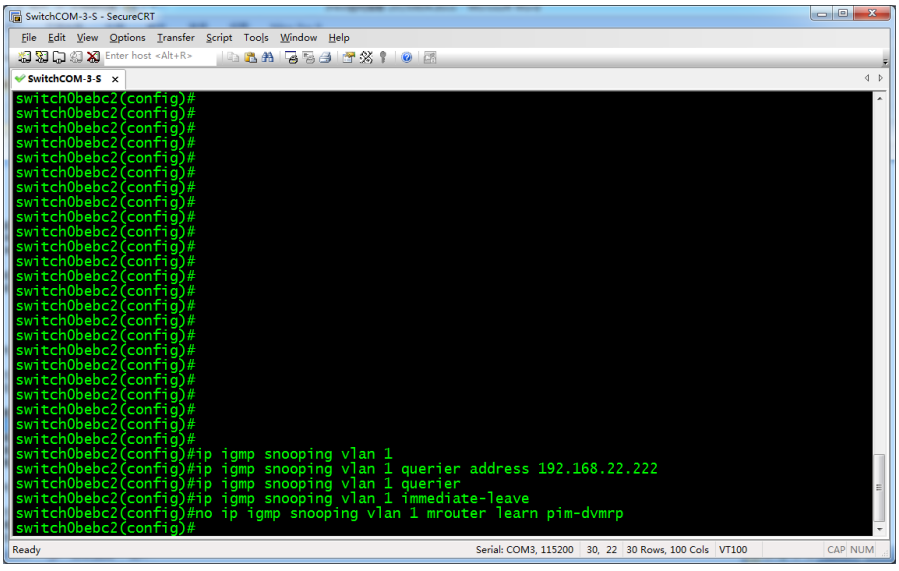
Type: ip igmp snooping vlan 1 immediate-leave

```
switch0bebc2(config)# ip igmp snooping vlan 1 immediate-leave
switch0bebc2(config)#
```

Disable Dynamic Multicast Router Ports VLAN1

Type: no ip igmp snooping vlan 1 mrouter learn pim -dvmrp

```
switch0bebc2(config)#no ip igmp snooping vlan 1 mrouter learn pim-dvmrp
switch0bebc2(config)#
```



STEP 8: Port Configuration

Type: interface range gi1-28

```
switch0bebc2(config)#interface range gi1-28
switch0bebc2(config-if-range)#
```

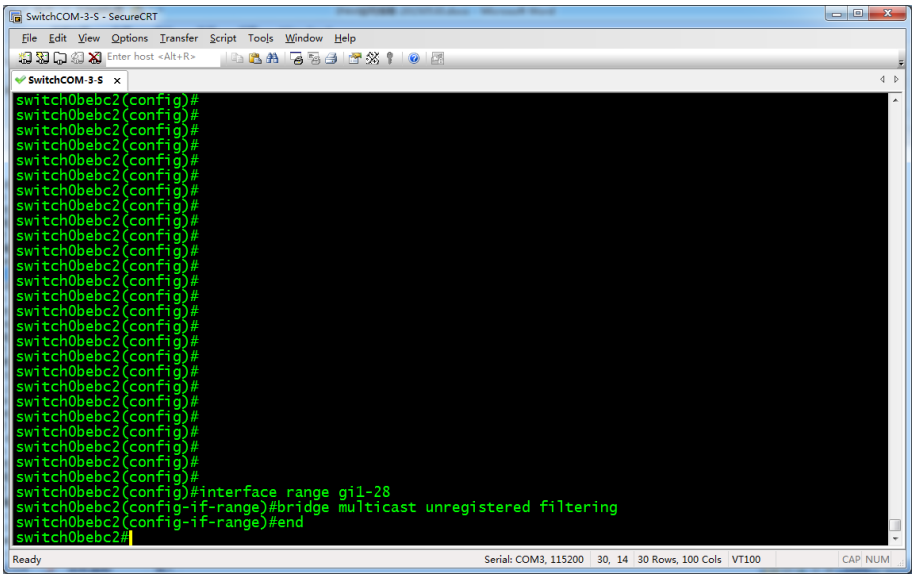
Type: bridge multicast unregistered filtering

```
switch0bebc2(config-if-range)#bridge multicast unregistered filtering
switch0bebc2(config-if-range)#
```

Type: end

```
switch0bebc2(config-if-range)#end
switch0bebc2#
```

This command will exit/end the global session and return to normal session.



STEP 9: Confirm Configuration

```
switch0bebc2#
```

Type: show running -config

```
switch0bebc2#show running-config
config-file-header
...
bridge multicast filtering
...
ip igmp snooping
ip igmp snooping vlan 1
no ip igmp snooping vlan 1 mrouter learn pim-dvmrp
ip igmp snooping vlan 1 immediate-leave
ip igmp snooping querier address 192.168.22.222
ip igmp snooping vlan 1 querier
no eee enablehostname switch0bebc2
!
interface gigabitethernet1
bridge multicast unregistered filtering
!
interface gigabitethernet2
bridge multicast unregistered filtering ...
!
interface gigabitethernet28
bridge multicast unregistered filtering !
exit
switch0bebc2#
```

STEP 10: Saving Configuration	switch0bebc2# Type: write switch0bebc2#write Overwrite file [startup-config].... (Y/N)[N] ? Type: Y 02-May-2013 15:01:12 %COPY-I-FILECPY: Files Copy - source URL running-config destination URL flash://startup-config 02-May-2013 15:01:16 %COPY-N-TRAP: The copy operation was completed successfully Copy succeeded switch0bebc2#
STEP 11: Import Configuration	switch0bebc2# Type: config switch0bebc2#config Type: interface vlan 1 switch0bebc2(config)#interface vlan 1 switch0bebc2(config-if)# Type: ip address 192.168.1.139 255.255.255.0 switch0bebc2(config-if)#ip address 192.168.1.39 255.255.255.0 Please ensure that the port through which the device is managed has the proper settings and is a member of the new management interface. Would you like to apply this new configuration? (Y/N)[N] Type: Y Type: end switch0bebc2(config-if) switch0bebc2(config-if)#end switch0bebc2# Type: copy tftp://192.168.1.73/SG300.CFG startup-config switch0bebc2#copy tftp://192.168.1.73/SG300.CFG startup-config Overwrite file [startup-config].... (Y/N)[N] ? **NOTE:** the file name and IP address is only for example, please use the connected PC/Laptop IP address. Type: Y 02-May-2013 15:04:09 %COPY-I-FILECPY: Files Copy - source URL tftp://192.168.1.73/SG300.CFG destination URL flash://startup-config !!..02-May-2013 15:04:15 %COPY-N-TRAP: The copy operation was completed successfully ! Copy: 14103 bytes copied in 00:00:06 [hh:mm:ss] Type: reload switch0bebc2# switch0bebc2#reload You haven't saved your changes. Are you sure you want to continue ? (Y/N)[N] Type: Y twice to confirm Shutting down ... Shutting down ... Shutting down ... Resetting local unit ********** ********** SYSTEM RESET ********** **********

This section guides the user through simple configuration methods related to M-series devices on a network and Avenview recommended switches.
Below, the user will understand how to manually setup and import network switch configuration files.

-Manual configuration allows the user to configure to each system setup differently depending on the network architecture, amount of devices and 3rd Party control systems embedded.
-Import configuration allows the user to use the saved file from the same Model switch configured correctly and import directly into the new or same stype of setup.

NOTE: Check with Avenview before upgrading the firmware on your network switch to ensure its compatibility.

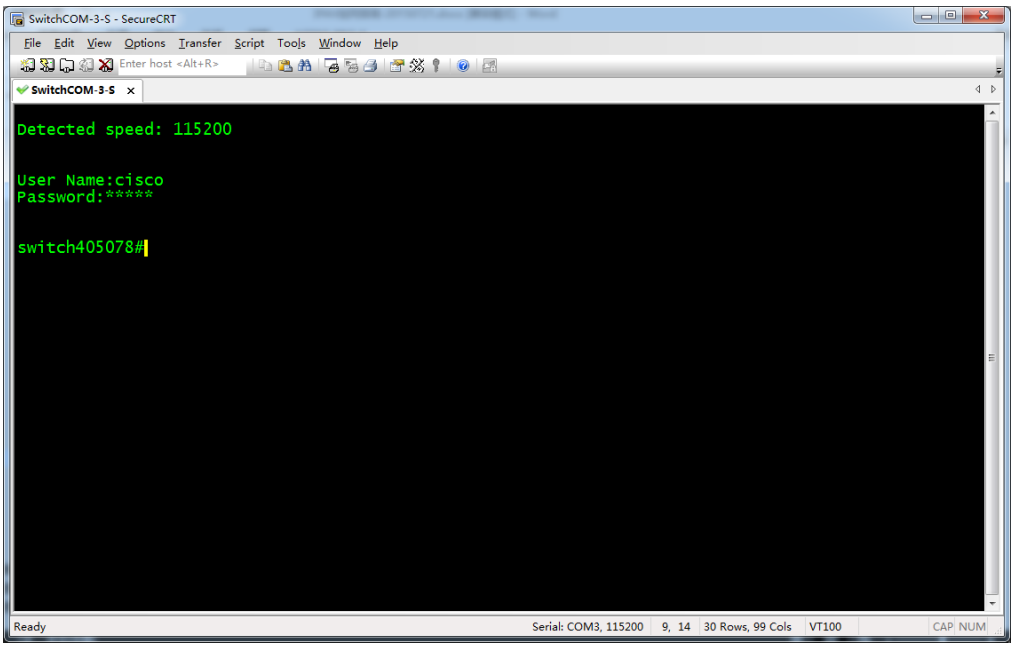
Cisco SG500 Series

Recommend models - SG500-28, SG500-28P, SG500-52 and SG500-52MP

Console Connection

Use the serial cable provided with the switch. Connect you PC/Laptop with the serial cable. NOTE: No serial port use USB to serial cable. Prolific brand recommended.

Start Terminal or use Putty on you PC/Laptop to begin connection to the network switch.
Baud Rate 115200bps
Flow Control None
Parity None
Stop Bits 1
Data Bits 8 bits

When connection is successful between PC/laptop and Terminal software, follow the steps below:	
STEP 2: Press Enter	Result: `Detected speed 115200>`
STEP 2: Press Enter/Type	Result: `User Name :cisco`
STEP 3: Type Press Enter	Result: `Password :cisco` Result: `switch405078#` Cisco uses the last six characters of the MAC address in the prompt above.
	

Reset Switch to Factory Default

STEP 4: Delete startup config

```
switch405078#delete startup-config
Delete startup-config? (Y/N)[N]
```

Type: Y is not case sensitive

```
switch405078#02-May-2013 17:03:05 %FILE-I-DELETE: File Delete - file URL
flash://startup-config
```

Type: reload

```
switch405078#reload
You haven't saved your changes. Are you sure you want to continue ?
(Y/N)[N]
```

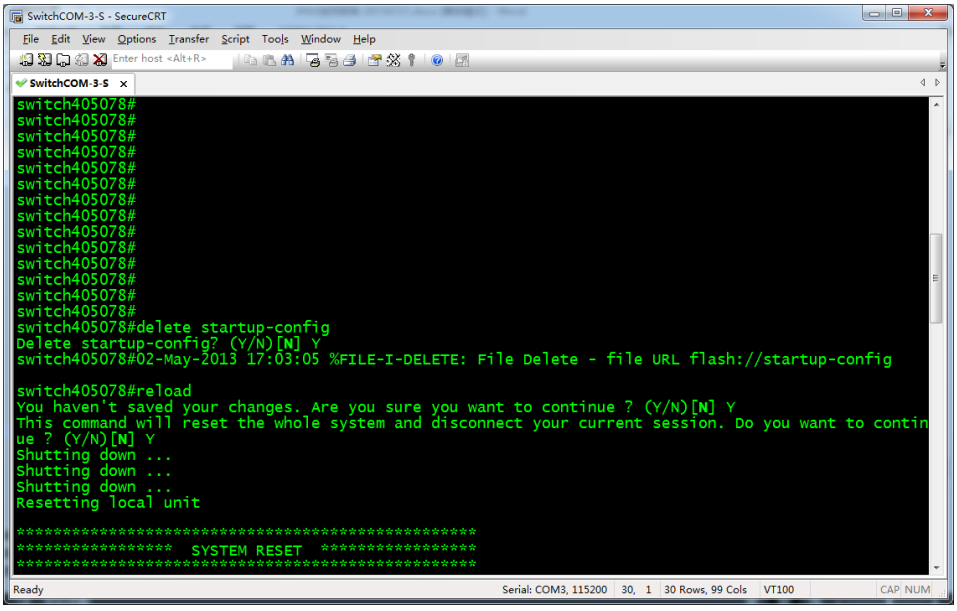
Type: Y

```
This command will reset the whole system and disconnect your current
session. Do you want to continue ? (Y/N)[N]
```

Type: Y

```
Shutting down ...
Shutting down ...
Shutting down ...
Resetting local unit
************************************************
*****************  SYSTEM RESET  *****************
************************************************
```

Summary of All Steps.



STEP 5: Switch reboots

When the switch reboots and the prompt below appears

```
Console baud-rate auto detection is enabled, press Enter twice to
complete the detection process
```

Press: Enter twice to acknowledge the baud rate detection.

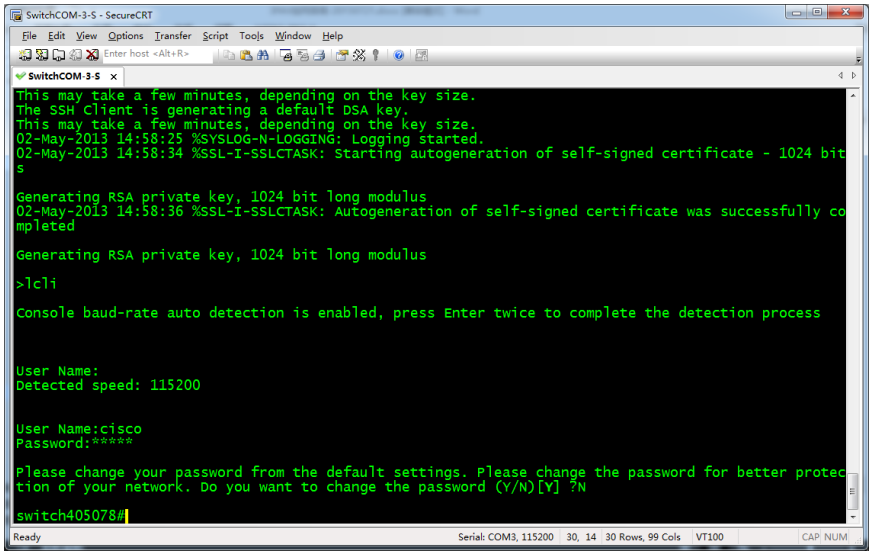
```
Detected speed: 115200
User Name:cisco
Password: cisco
```

STEP 5: Delete startup config

```
Please change your password from the default settings. Please change
the password for better protection of your network. Do you want to
change the password (Y/N)[Y] ?
```

Type: Y is not case sensitive

Summary of All Steps.



STEP 6: Console Configuration Global Cofiguration

```
switch405078#
```

Type: config to enter the switch global configuration mode

```
switch405078#config
switch405078(config)#
```

Type: no eee enable

```
switch405078(config)#no eee enable
switch405078(config)#
02-May-2013 14:59:25 %LINK-W-Down:  gi1/1/6
02-May-2013 14:59:25 %LINK-W-Down:  gi1/1/8
02-May-2013 14:59:25 %LINK-W-Down:  Vlan 1
02-May-2013 14:59:28 %LINK-I-Up:  gi1/1/8, aggregated (1)
02-May-2013 14:59:28 %LINK-I-Up:  Vlan 1, aggregated (1)
02-May-2013 14:59:29 %LINK-I-Up:  gi1/1/6, aggregated (1)
02-May-2013 14:59:32 %STP-W-PORTSTATUS: gi1/1/8: STP status Forwarding,
aggregated (1)
02-May-2013 14:59:34 %STP-W-PORTSTATUS: gi1/1/6: STP status Forwarding,
aggregated (1)
02-May-2013 15:00:32 %INIT-I-Startup: Warm Startup
```

Type: bridge multicast filtering

```
switch405078(config)#bridge multicast filtering
switch405078(config)#
```

Type: ip igmp snooping

```
switch405078(config)#ip igmp snooping
switch405078(config)#
```

STEP 6:Global Configuration VLAN Configuration

Type: ip igmp snooping vlan 1

```
switch405078(config)#ip igmp snooping vlan 1
switch405078(config)#
```

Type: ip igmp snooping vlan 1 querier address 192.168.22.222

STEP 6: Continued

Assign IP Address IGMP Querier.

```
switch405078(config)#ip igmp snooping vlan 1 querier address 192.168.22.222
switch405078(config)#
```

Enable IGMP Querier Function VLAN1

Type: ip igmp snooping vlan 1 querier

```
swswitch405078(config)#ip igmp snooping vlan 1 querier
switch405078(config)#
```

Disable Dynamic Multicast Router Ports VLAN1

Type: no ip igmp snooping vlan 1 mrouter learn pim -dvmrp

```
switch405078(config)#no ip igmp snooping vlan 1 mrouter learn pim-dvmrp
switch405078(config)#
```

STEP 7: Example using 28 port Switch.
Global Configuration to drop Unknown Multicast all ports

Type: interface range gi1/1/1-28)

```
switch405078(config)#interface range gi1/1/1-28
switch405078(config-if-range)#
```

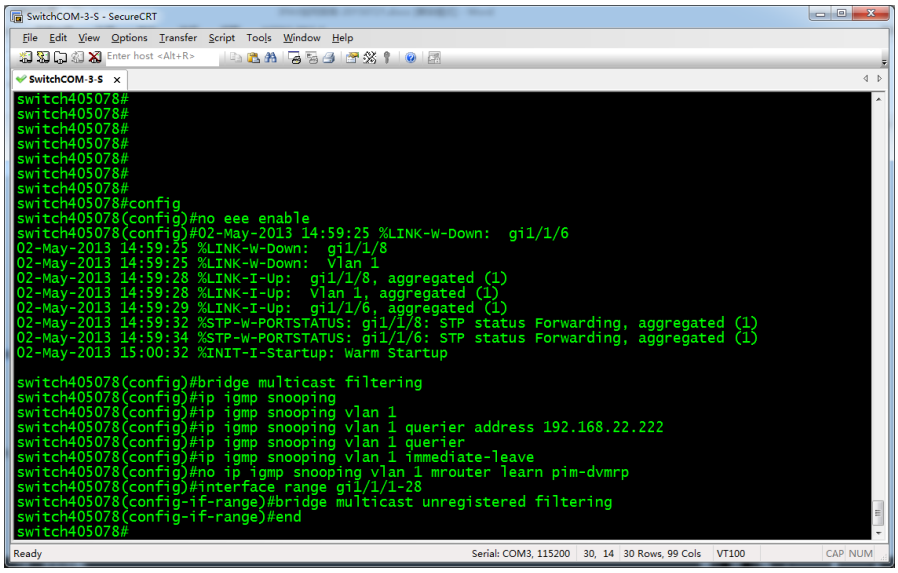
Type: bridge multicast unregistered filtering

```
switch405078(config-if-range)#bridge multicast unregistered filtering
switch405078(config-if-range)#
```

Type: end-This command will exit/end the global session and return to normal session

```
switch405078(config-if-range)#end
switch405078#
```

Enable Multicast Fast Leave VLAN1



STEP 8: Confirm and Save

```
switch405078#show running-config
config-file-header
switch405078
...
bridge multicast filtering
...
ip igmp snooping
ip igmp snooping vlan 1
no ip igmp snooping vlan 1 mrouter learn pim-
dvmrp
ip igmp snooping vlan 1 querier
ip igmp snooping vlan 1 querier address
192.168.22.222 no eee enable
hostname switch405078
!
interface gigabitethernet1/1/1
bridge multicast unregistered filtering
!
interface gigabitethernet1/1/2
bridge multicast unregistered filtering
...
```

STEP 8: Continued	interface gigabitethernet1/1/28 bridge multicast unregistered filtering ! exit switch405078#
STEP 9: Confirm and Write to save configuration.	switch405078#write Overwrite file [startup-config].... (Y/N)[N] ? Type: Y to confirm 02-May-2013 15:25:40 %COPY-I-FILECPY: Files Copy - source URL running-config destination URL flash://startup-config 02-May-2013 15:25:50 %COPY-N-TRAP: The copy operation was completed successfully Copy succeeded switch405078#
STEP 8: Confirm and Save	switch405078#show running-config config-file-header switch405078 bridge multicast filtering ... ip igmp snooping ip igmp snooping vlan 1 no ip igmp snooping vlan 1 mrouter learn pim-dvmrp ip igmp snooping vlan 1 immediate-leave ip igmp snooping vlan 1 querier ip igmp snooping querier address 192.168.22.222 no eee enable

STEP 8: Port Configuration

Type: interface range gi1-28

```
switch0bebc2(config)#interface range gi1-28
switch0bebc2(config-if-range)#
```

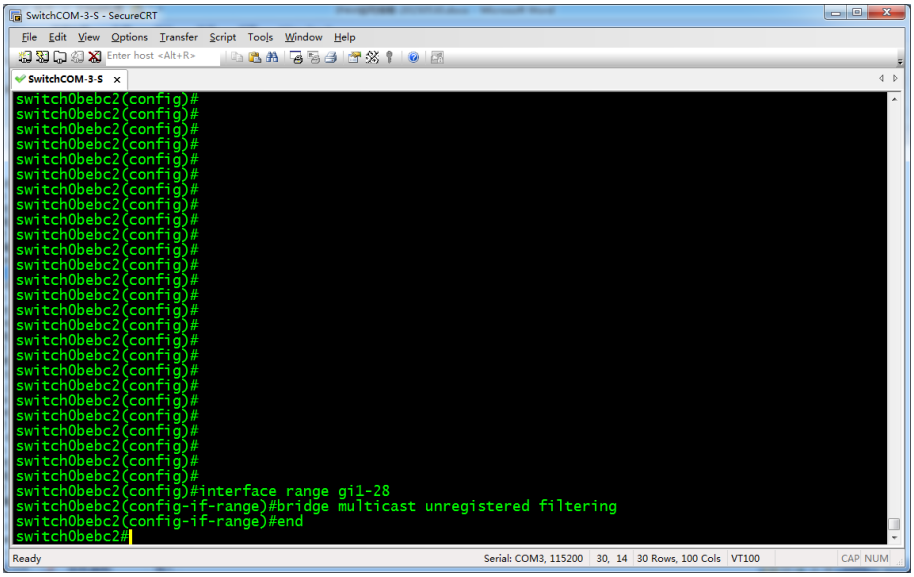
Type: bridge multicast unregistered filtering

```
switch0bebc2(config-if-range)#bridge multicast unregistered filtering
switch0bebc2(config-if-range)#
```

Type: end

```
```

This command will exit/end the global session and return to normal session.



STEP 9: Confirm Configuration

```
switch0bebc2#
```

Type: show running -config

```
switch0bebc2#show running-config
config-file-header
...
bridge multicast filtering
...
ip igmp snooping
ip igmp snooping vlan 1
no ip igmp snooping vlan 1 mrouter learn pim-dvmrp
ip igmp snooping vlan 1 immediate-leave
ip igmp snooping querier address 192.168.22.222
ip igmp snooping vlan 1 querier
no eee enablehostname switch0bebc2
!
interface gigabitethernet1
bridge multicast unregistered filtering
!
interface gigabitethernet2
bridge multicast unregistered filtering ...
!
interface gigabitethernet28
bridge multicast unregistered filtering !
exit
switch0bebc2#
```

This section guides the user through simple configuration methods related to M-series devices on a network and Avenview recommended switches.
Below, the user will understand how to manually setup and import network switch configuration files.

-Manual configuration allows the user to configure to each system setup differently depending on the network architecture, amount of devices and 3rd Party control systems embedded.
-Import configuration allows the user to use the saved file from the same Model switch configured correctly and import directly into the new or same stype of setup.

NOTE: Check with Avenview before upgrading the firmware on your network switch to ensure its compatibility.

Cisco C2960 Series

Recommend models - , WS-C2960S-24PS-L,WS-C2960X-24PSQ-L and WS-C2960X-48FPS-L.

Enviroment - Multi-switch network setup, reliable with stacking configuration
Recommended with cascading/extended only - WS-C2960-24TC-L, WS-C2960-48TC-L

Console Connection

Use the serial cable provided with the switch. Connect you PC/Laptop with the serial cable. NOTE: No serial port use USB to serial cable. Prolific brand recommended.

Start Terminal or use Putty on you PC/Laptop to begin connection to the network switch.
Baud Rate 9600bps
Flow Control None
Parity None
Stop Bits 1
Data Bits 8 bits

When connection is successful between PC/laptop and Terminal software, follow the steps below:	
STEP 1: Press Enter	Result: `Switch>`
STEP 2: Press Enter	Result: `Switch>`
STEP 3: MODES	Normal Mode `Switch>` Admin Mode `Switch#` Global Mode: