



User Manual



24-PORT MANAGED WORKGROUP SWITCH
(DN-60031)



24-PORT MANAGED WORKGROUP SWITCH
(DN-60041)



48-PORT MANAGED WORKGROUP SWITCH
(DN-60051)



24-PORT MANAGED GIGABIT SWITCH
(DN-80231)



48-PORT MANAGED GIGABIT SWITCH
(DN-80232)

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FCC Statement

This product has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against such interference when operating in a commercial environment. This equipment generates uses and can radiate radio frequency energy, and if not installed and used according to the instructions, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause interference, in which case the user, at his or her own expense will be required to take whatever measures to correct the interference.

CE Mark Warning

This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

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1. Introduction

Thank you for choosing Layer 2/2+ series Management Switch. These switches are cost-effective switching solution idea for small business and the network edge. It provides the Quality of Service (QoS) features, like 802.1p, DSCP and Rate Control etc, to ensure the traffic is prioritized properly to deliver real-time applications like voice and video and also have a good control in network bandwidth usage. The 802.1Q feature enables you separate the network traffic easily and quickly. The Network Security features, like ACL, Port Security, Storm Control, 802.1X and Management IP List etc, enables you to prevent unauthorized access to company network and block intentional or inadvertent network traffic. The Spanning Tree Protocol (STP) provides you a loop-free network. The IGMP snooping enables you to have efficient network usage in IP multicast environment. The one-to-one or many-to-one Port Mirroring feature of the switch enables you to monitor the traffic on the network. With these features, you can build or expand your network quickly and easily.

1.1. Package Contents

These L2/L2+ Management Switches package contains the following:

- > One L2/L2+ Management Switch
- > One RS-232 cable
- > One power cord/adaptor
- > One set of brackets.
- > One CD for user manual and utilities.

If any of the listed items is missing or damaged, please contact the place of purchase.

1.2. How to Use this Guide

This user guide is structured as follows:

Chapter 2, Installation explains the functions of the switch and how to physically install it.

Chapter 3, Configuration explains how to set up and modify the configuration of the switch.

Chapter 4, Specifications contains information about the cables, and the technical specifications of the switch.
Appendices include the Warranty Statement. Read them as necessary.

2. Installation

This chapter describes the function of the management switch components and shows how to install it on the desktop or shelf. Basic knowledge of networking is assumed. Read this chapter completely before continuing.

2.1. Product Description Overview

These products are all L2/ L2+ management switches which supports 802.1Q VLAN, QoS, 802.1d / 1w/ 1s Spanning Tree Protocol, 802.1x, Port Security, Port Mirroring, IGMP Snooping, SNTP, Storm Control, Rate Control, SNMP etc. features.

2.2. Reset Button

There is a Reset button on the front panel, which has two functionalities:

- a) To restore switch configuration to factory defaults
Press the **Reset** button for more than 10 seconds, switch configuration will be restored to factory defaults and then reboots.
- b) To reboot switch
Press the **Reset** button for less than 10 seconds, switch will reboot. Please note, you will lose unsaved change when doing this.

2.3. Installing the Switch

This section describes how to install and make connection to your Managed Switch. The following diagrams shows the a typical network configuration, Figure 2.5.1 shows the network configuration for L2/L2+ Management Switch; Figure 2.5.2 shows the network configuration for L2/L2+ Management Switch with PoE function.

Figure 2.3.1 Network Configuration for L2/L2+ Management Switch

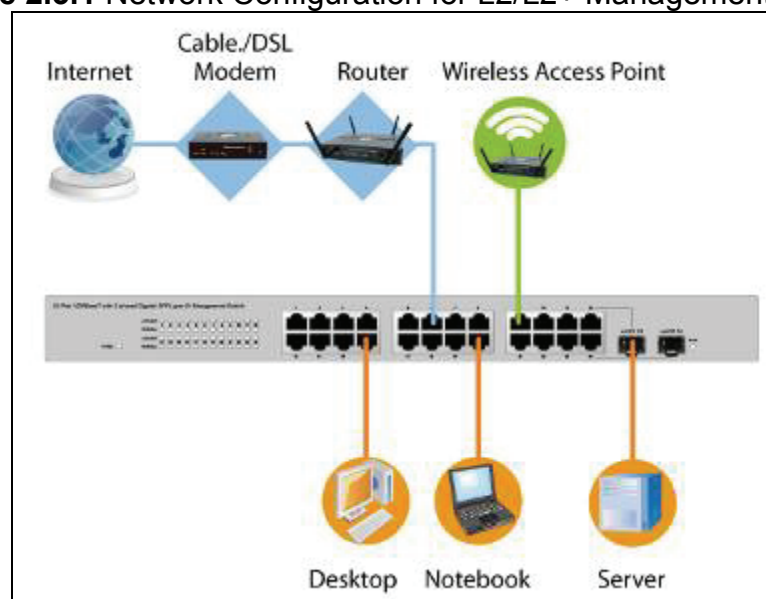
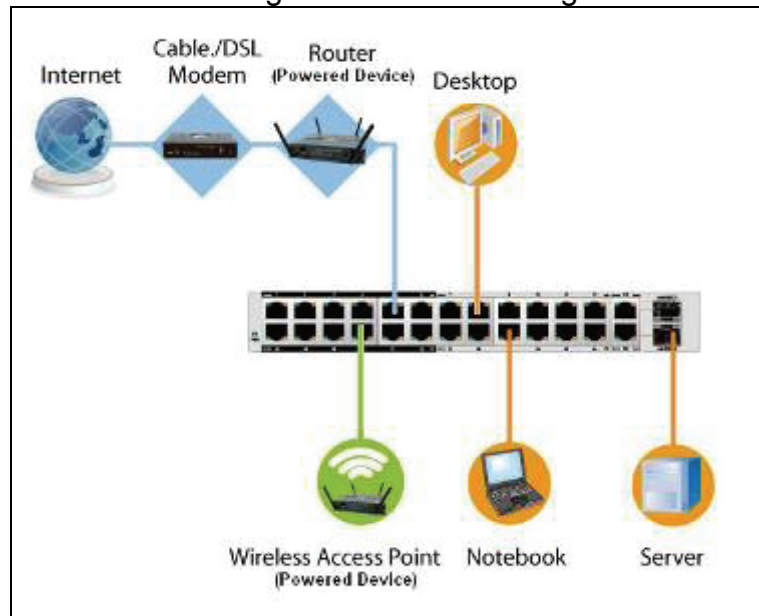


Figure 2.3.2 Network Configuration for L2 Management Switch with PoE



Read and perform the following procedures to install the switch,
Pre-Installation Considerations

Gigabit Considerations:

If you will use the switch for Gigabit applications, keep in mind that the maximum UTP cabling length of Category 5e cable is 328 feet (100 meters).

Positioning the switch:

When choosing a location for the switch, observe the following guidelines:
Keep enough ventilation space between the switch and the surrounding objects.

Keep cabling away from sources of electrical noise, power lines, and fluorescent lighting fixtures.

Do not stack free-standing switch more than four units high.

Desktop or Shelf Mounting

To install the switch on a desktop or shelf, simply complete the following steps:

Step 1 Place the switch on a desktop or shelf near an AC power source.

Step 2 Keep enough ventilation space between the switch and the surrounding objects.

Note: When choosing a location, keep in mind the environmental restrictions discussed in Chapter 4, Specifications.

Step 3 Connect the switch to network devices.

A. Connect one end of a standard network cable to the RJ-45 ports on the front of the switch.

B. Connect the other end of the cable to the network devices such as printer servers, workstations or routers.

Note: It is recommended to use the UTP Category 5e network cabling with RJ-45 tips for the network connection. For more information, please

see the Cable Specifications in Chapter 4, Specifications.

Step 4 Supply power to the switch.

- A. Connect one end of the power cable to the switch.
- B. Connect the power cube end of the power cable to a standard wall outlet.

2.4. Rack- Mount Placement

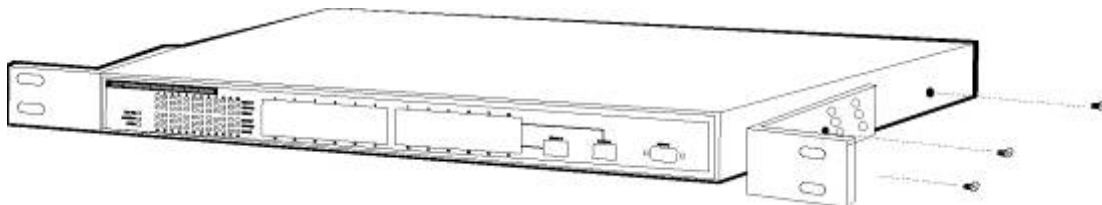
Before mounting the Switch, please read the following instructions carefully,

- A) Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (T_{ma}) specified by the manufacturer.
- B) Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
- C) Mechanical Loading - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
- D) Circuit Overloading - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
- E) Reliable Earthing - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips)."

To mount the Switch in any standard-sized, 19-inch wide, 1U high rack, please follow these instructions:

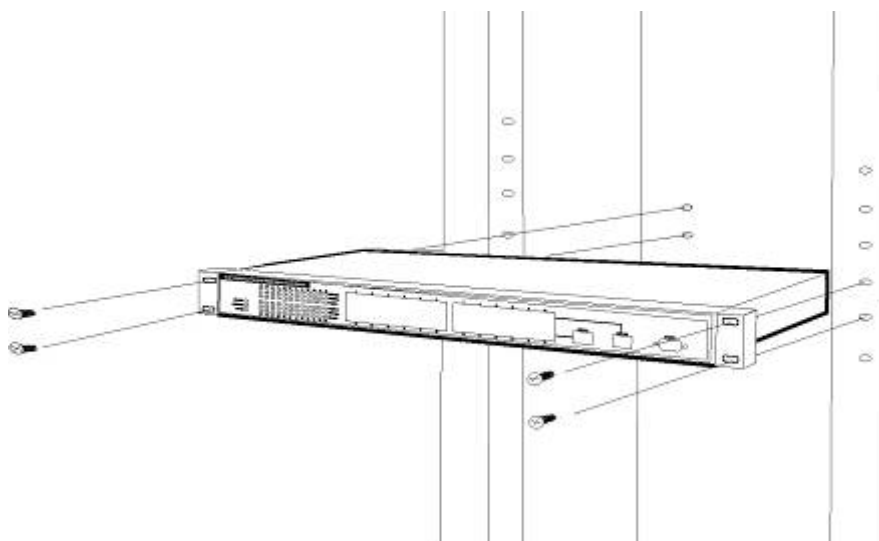
Place the Switch on a hard flat surface with the front panel facing you. Attach a rack-mount bracket to one side of the Switch with the supplied screws. Then attach the other bracket to the other side. (Figure 2.6.1)

Figure 2.4.1



Make sure the brackets are properly attached to the Switch. Use the appropriate screws (not included) to securely attach the brackets to your rack. (Figure 2.6.2)

Figure 2.4.2



Configuration

The configuration programs are supplied with these Layer 2 Management Switches. Unlike the unmanaged switch (dumb switch), the switch performs "management" functions that make the switch operate more effectively. This Chapter will describe the use of the switch Management Configuration program.

2.5. Preparing for configuration

Layer 2 Management Switch offers a console CLI interface for switch configuration and management. Users can use this interface to perform the activities such as configuring DHCP, ARP, assigning IP address and upgrading firmware etc.

There are four methods to manage your switch:

Local Console Management

You can manage the switch locally by connecting the switch to a PC or workstation with terminal emulation software using the serial port.

Remote Console Management

You can manage the switch by having a remote host establish a Telnet connection to the switch via an Ethernet or modem link.

SNMP Management

You can manage the switch across a LAN using an SNMP Network Management Station with a graphical user interface. Note that to use this management method, your network must use the IP protocol and your switch must be configured on the Network with a proper IP address. You may use any of the following method to manage the switch.

Web-Browser

You can manage the switch through a web connection by connecting to the switch's IP address using your web browser.

This User Guide provides instructions on how to configure the switch using the console interface. Read the following sections to start up!

2.5.1. Connecting a PC or Terminal to the RS-232 Port

When you are ready to configure the Management Function of the switch, make sure you have connected the supplied RS-232 serial cable to the RS-232 port at the front panel of your switch and your PC.

2.5.2. Terminal Emulation Setup Program

Run a terminal emulation program with the following setting.

Emulation: VT-100 compatible

Baud per second: 38400

Data bits: 8

Parity: None

Stop bits: 1

Flow Control: None

2.5.3. Logging on to the switch

Enter the factory default user name “**admin**” with no password when logging on to the switch. The password is set to be empty. If you can enter “?” on the command line screen, it will display all items so that you can configure by your requirements.

2.6. Web-based configuration

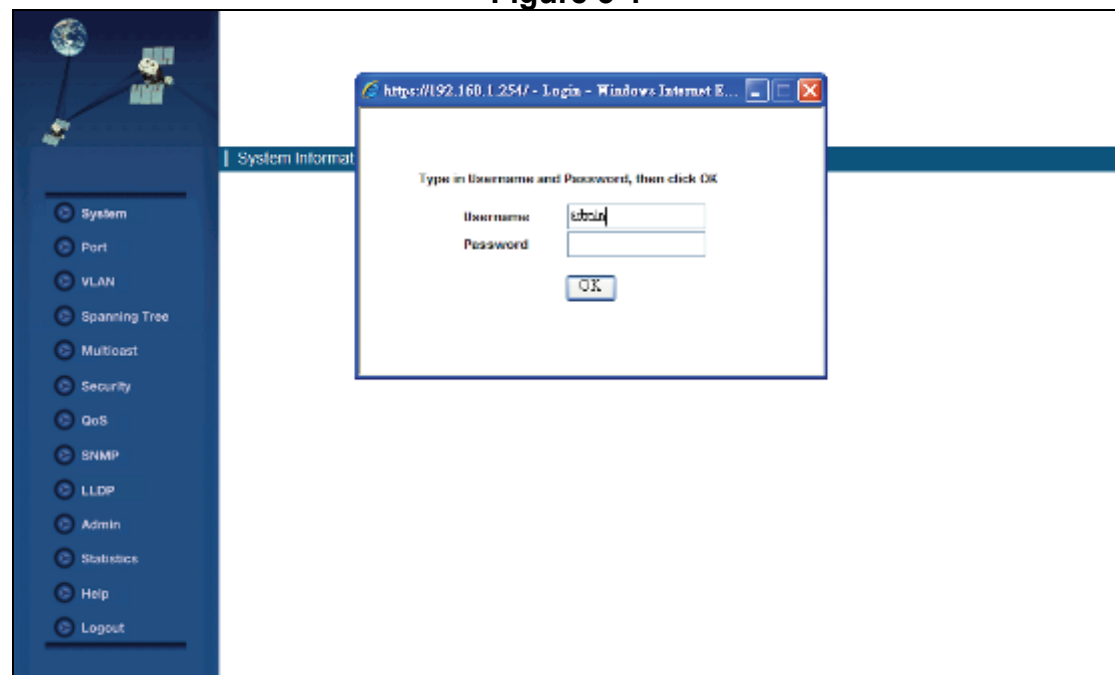
The Switch provides a Web-based interface for configuring and managing the Switch. This interface allows you to access the switch using the Web browser of your choice. This chapter describes how to use the switch’s Web browser interface to con-figure and manage the switch.

2.6.1. Logging on the switch

To log on to the Switch:

1. In your web browser, specify the IP address of the switch. Default IP address is **192.168.1.254**.
2. Enter the factory default “admin” to login on the Switch with no password. Refer to the figure 3-1.

Figure 3-1



2.7. Command Line Interface (by Console or Telnet)

2.7.1. Mode-based Command Hierarchy

The Command Line Interface (CLI) groups all the commands in appropriate modes by the nature of the commands. Examples of the CLI command modes are described below. Each of the command modes supports specific switch's commands.

The CLI Command Modes table captures the command modes, the prompts visible in that mode and the exit method from that mode.

Table 1 CLI Command Modes

Command Mode	Access Method	Prompt	Exit or Access Previous Mode
User Mode	This is the first level of access. Perform basic tasks and list system information.	COMMAND>	Enter Logout command
Privileged Mode	From the User Mode, enter the enable command.	Switch#	To exit to the User Mode, enter exit or Logout.
Global Config Mode	From the Privileged Mode, enter the configuration command.	Switch (Config)#	To exit to the Privileged Mode, enter the exit command.
Interface Config Mode	From the Global Config mode, enter the interface <port#> command.	Switch (Interface <port#>)#	To exit to the Global Config mode, enter exit.

The CLI is divided into various modes. The commands in one mode are not available until the operator switches to that particular mode. The commands available to the operator at any point in time depend upon the mode. Entering a question mark (?) at the CLI prompt, and displays a list of the available commands and descriptions of the commands.

The CLI provides the following modes:

User Mode

When the operator logs into the CLI, the User Mode is the initial mode. The User Mode contains a limited set of commands. The command prompt shown at this level is:

Command Prompt: COMMAND>

Privileged Mode

To have access to the full suite of commands, the operator must enter the Privileged Mode. The Privileged Mode requires password authentication. From Privileged Mode, the operator can issue any Exec command to enter the Global Configuration mode. The command prompt shown at this level is:

Command Prompt: Switch#

Global Config Mode

This mode permits the operator to make modifications to the running configuration. General setup commands are grouped in this mode. From the Global Configuration mode, the operator can enter the Interface Configuration mode. The command prompt at this level is:

Command Prompt: Switch(Config)#

From the Global Config mode, the operator may enter the following configuration modes:

Interface Config Mode

Many features are enabled for a particular interface. The Interface commands enable or modify the operation of an interface. In this mode, a physical port is set up for a specific logical connection operation. The command prompt at this level is:

Command Prompt: Switch(Interface <port#>)#

2.7.2. User Mode commands

help

This command displays help information

Format help

Mode User Mode

?

This command displays help information

Format help

Mode User Mode

logout

This command is used to exit from the telnet

Format logout

Mode User Mode

ping

This command sends echo messages.

Format ping <A.B.C.D>

Mode User Mode

show

1) show port

This command displays port status.

Format show port {<port#> | all}

Mode User Mode

2) show network

This command displays switch IP configuration

Format show network

Mode User Mode

- 3) show system
This command displays system information.
Format show system
Mode User Mode
- 4) show port statistics
This command displays port statistics.
Format show port statistics {<port#> | all}
Mode User Mode

enable

Enter to the Privileged Mode

Format enable

Mode User Mode

2.7.3.Privileged Mode commands

cable-diag

This command is used to proceed cable diagnostic

Format cable-diag port <port ID>

Mode Privileged Mode

e.g. Switch#cable-diag port 1

clear

- 1) clear arl
This command is used to clear ARL table entries
Format clear arl
Mode Privileged Mode
- 2) clear arl dynamic
This command is used to Clear dynamic arl table entries
Format clear arl dynamic
Mode Privileged Mode
- 3) clear arl static
This command is used to clear static arl table entries
Format clear arl static mac <mac-addr>
Mode Privileged Mode
- 4) clear config
This command is used to restore switch factory default configuration
Format clear config
Mode Privileged Mode
- 5) clear counters
This command is used to clear RMON statistics for entire switch
Format clear counters
Mode Privileged Mode
- 6) clear igmpsnooping
This command is used to restore igmpsnooping configuration to factory default
Format clear igmpsnooping
Mode Privileged Mode
- 7) clear static-mcast
This command is used to clear static multicast groups

Format clear static-mcast

Mode Privileged Mode

8) clear pass

This command is used to restore administrator's password to factory default

Format clear pass

Mode Privileged Mode

9) clear lacp

This command is used to restore LAG and LACP configuration to factory default

Format clear lacp

Mode Privileged Mode

10) clear logs

This command is used to clear memory/flash logs

Format clear logs

Mode Privileged Mode

11) clear vlan

This command is used to delete all VLAN groups

Format clear vlan

Mode Privileged Mode

configuration

Enter into Global Configuration mode

Format configuration

Mode Privileged Mode

copy

This command is used to upload file from switch to host, or download file to switch from host

1) copy nvram_config

This command is used to backup switch configuration

Format copy nvram_config tftp <A.B.C.D> file <filename>

Mode Privileged Mode

e.g. Switch#copy nvram_config tftp 192.168.1.100 file switch_configuration

2) copy system_image

This command is used to backup switch runtime image

Format copy system_image tftp <A.B.C.D> <filename>

Mode Privileged Mode

e.g. Switch#copy system_image tftp 192.168.1.100 image_file

3) copy tftp

This command is used to upload configuration or runtime image

Format copy tftp <A.B.C.D> file <filename> {nvram_config | system_image}

Mode Privileged Mode

e.g. Switch#copy tftp 192.168.1.100 file switch_configuration nvram_config

Switch#copy tftp 192.168.1.100 file runtime_code system_image

exit

This command is used to exit current shell

Format exit

Mode Privileged Mode

help

This command displays help information

Format help

Mode Privileged Mode

logout

This command is used to exit current shell

Format logout

Mode Privileged Mode

ping

This command is used to proceed ping destination host

Format ping <A.B.C.D>

Mode Privileged Mode

reload

This command is used to reboot system

Format reload

Mode Privileged Mode

save

This command is used to save configuration

Format save

Mode Privileged Mode

show

This command is used to show configured data

1) show qos

This command display class of service information

1.1) show qos cos

This command display the cos mapping

Format show qos cos

Mode Privileged Mode

1.2) show qos queue-settings

This command display the queue-settings mapping

Format show qos queue-settings

Mode Privileged Mode

1.3) show qos advanced

This command display qos advanced mode information

1.3.1) show qos advanced mode

This command display mode of qos

Format show qos advanced mode

Mode Privileged Mode

1.3.2) show qos advanced dscp

This command display qos dscp mapping

Format show qos advanced dscp

Mode Privileged Mode

1.3.3) show qos advanced ip-precedence

This command display qos ip precedence mapping

Format show qos advanced ip-precedence

Mode Privileged Mode

- 1.4) show qos port-based
 - This command is used to display class of service information
 - 1.4.1) show qos port-based port
 - This command display class of service information
 - Format** show qos port-based port <port-ID>
 - Mode** Privileged Mode
 - 1.4.2) show qos port-based all
 - This command display all switch interfaces' cos settings
 - Format** show qos port-based all
 - Mode** Privileged Mode
- 2) show dot1x
 - This command display dot1x information
 - 2.1) show dot1x config
 - This command display dot1x and port configuration
 - Format** show dot1x config
 - Mode** Privileged Mode
 - 2.2) show dot1x radius
 - This command display radius configuration
 - Format** show dot1x radius
 - Mode** Privileged Mode
 - 2.3) show dot1x statistics
 - This command display dot1x statistics
 - Format** show dot1x statistics
 - Mode** Privileged Mode
- 3) show igmp snooping
 - This command display IGMP snooping information
 - 3.1) show igmp snooping dynamic_router_port
 - This command display dynamic router ports information
 - Format** show *igmp* snooping dynamic_router_port
 - Mode** Privileged Mode
 - 3.2) show IGMP snooping groups
 - This command is used to display *igmp* groups information
 - Format** show IGMP snooping groups
 - Mode** Privileged Mode
- 4) show interface
 - This command is used to display summary statistics
 - 4.1) show interface history
 - This command is used to display port RX and TX
 - Format** show interface history <port-ID>
 - Mode** Privileged Mode
 - 4.2) show interface statistics
 - This command is used to display port summary statistics
 - Format** show interface statistics <port-ID>
 - Mode** Privileged Mode
- 5) show lag
 - This command is used to display link aggregation groups information
 - 5.1) show lag lag-index
 - This command is used to specify an switch lag
 - Format** show lag lag-index <port-ID>
 - Mode** Privileged Mode
 - 5.2) show lag all

This command is used to display all switch lag

Format show lag all <port-ID>

Mode Privileged Mode

6) show lldp

This command is use to display lldp statistics

6.1) show lldp statistic

This command is used to display lldp statistic

Format show lldp statistic

Mode Privileged Mode

6.2) show lldp local

This command is used to display local information

Format show lldp local

Mode Privileged Mode

6.3) show lldp msap

This command is used to display msap information

Format show lldp msap

Mode Privileged Mode

6.4) show lldp msap-entry

This command is used to display msap details information

Format show lldp msap-entry <1..26>

Mode Privileged Mode

7) show logging

This command is used to display trap records

7.1) show logging memory-log

This command display memory log

Format show logging memory-log

Mode Privileged Mode

7.2) show logging flash-log

This command display flash logs

Format show logging flash-log

Mode Privileged Mode

8) show monitor

This command is used to display port mirroring settings

Format show monitor

Mode Privileged Mode

9) show network

This command is used to configuration for inband connectivity

Format show network

Mode Privileged Mode

10) show port

This command is used to display port mode and settings, display port status

10.1) show port port-index

This command is used to specify an switch interface

Format show port port-index <port-ID>

Mode Privileged Mode

10.2) show port all

This command is used to display all switch interface

Format show port all

Mode Privileged Mode

11) show port-security

This command is used to display port security settings

- 11.1) show port-security port
This command is used to specify an switch interface
Format show port-security port <port-ID>
Mode Privileged Mode
- 11.2) show port-security all
This command is used to display all interfaces' status
Format show port-security all
Mode Privileged Mode
- 12) show rate-limit
This command is used to ingress and egress rate limit information
- 12.1) show rate-limit port
This command is used to specify an switch interface
Format show rate-limit port <port-ID>
Mode Privileged Mode
e.g. Switch#Show rate-limit port 1
Switch#Show rate-limit port g1
- 12.2) show rate-limit all
This command is used to display all interfaces' status
Format show Rate-Limit all
Mode Privileged Mode
- 13) show running-config
This command is used to display switch running config
Format show running-config
Mode Privileged Mode
- 14) show snmp
This command is used to display all snmp config
- 14.1) show snmp groups
This command display all snmp groups
Format show snmp groups
Mode Privileged Mode
- 14.2) show snmp users
This command display all snmp users
Format show snmp users
Mode Privileged Mode
- 3) show snmp communities
This command display all snmp communities
Format show snmp communities
Mode Privileged Mode
- 15) show snmp
This command is used to display switch snmp information
Format show snmp
Mode Privileged Mode
- 16) show spanning-tree
This command displays Spanning Tree information
- 16.1) show spanning-tree interface
This command displays RSTP ports information
- 16.1.1) show spanning-tree interface port
This command specify an switch interface
Format show spanning-tree interface port<port-ID>
Mode Privileged Mode
- 16.1.2) show spanning-tree interface all

- This command display all switch interface
Format show spanning-tree interface all
Mode Privileged Mode
- 16.2) show spanning-tree mst
This command display MST information
- 16.2.1) show spanning-tree mst detailed
This command display a MST instance information
Format show spanning-tree mst detailed <0..4094>
Mode Privileged Mode
- 16.2.2) show spanning-tree mst instance
This command display ports information on a MST instance
Format show spanning-tree mst instance <0..4094>
Mode Privileged Mode
- 16.2.3) show spanning-tree mst summary
This command display all MST instance information
Format show spanning-tree mst summary
Mode Privileged Mode
- 16.2.4) show spanning-tree status
This command is used to display spanning-tree status
Format show Spanning-tree status
Mode Privileged Mode
- 17) show storm-control
This command is used to display storm-control information
Format show storm-control
Mode Privileged Mode
- 18) show sysinfo
This command is used to display system information including system up time
Format show sysinfo
Mode Privileged Mode
- 19) show switch
This command is used to display switch information
- 19.1) show switch admin-time
This command display the age time of web and console
Format show switch admin-time
Mode Privileged Mode
- 19.2) show switch age-time
This command display the age time of L2 table
Format show switch age-time
Mode Privileged Mode
- 19.3) show switch mac-table
This command is used to display address resolution protocol cache
Format show switch mac-table
Mode Privileged Mode
- 19.4) show switch mcast-table
This command display multicast address table
Format show switch mcast-table
Mode Privileged Mode
- 20) show trapflags
This command is used to display the value of trap flags that apply to the switch

- Format** show trapflags
Mode Privileged Mode
- 21) show vlan
This command is used to display vlan configuration
- 21.1) show vlan member
This command display vlan configuration
Format show vlan member <1..4094>
Mode Privileged Mode
- 21.2) show vlan number
This command display how many vlan has been created
Format show vlan number
Mode Privileged Mode
- 22) show rmon
- 22.1) show rmon event
- 22.2) show rmon event Index
This command displays rmon Event.
Format show rmon event index <1..65535>
Mode Privileged Mode
- 22.3) show rmon event
Format Show rmon event<CR>
Mode Privileged Mode
- 22.4) show rmon event log
This command displays rmon event log.
Format Show rmon Event log event index <1..65535>
Mode Privileged Mode
- 22.5) show rmon alarm
- 22.5.1) show rmon alarm index
This command displays rmon Alarm.
Format show rmon alarm index <1..65535>
Mode Privileged Mode
- 22.5.2) show rmon alarm
Format show rmon alarm<CR>
Mode Privileged Mode
- 22.5.3) show rmon event log
This command displays rmon event log.
Format show rmon event log event index <1..65535>
Mode Privileged Mode
- 22.6) show rmon history
This command displays rmon history.
Format show rmon history index <1..65535>
Mode Privileged Mode
- 22.7) show rmon statistics
This command displays port rmon statistics.
Format Show rmon statistics
Mode Privileged Mode
- 23) show poe
This command is used to display poe mode and settings, display poe port status
- 23.1) show poe port-index
This command is used to specify an switch poe interface
Format show poe port-index <port-ID>

Mode Privileged Mode
23.2) show poe all
This command is used to display all switch poe interface
Format show poe all
Mode Privileged Mode

24) show tacplus
This command is used to display TACACS+ information, includes authentication type and server parameters.
Format show tacplus
Mode Privileged Mode

telnet

This command telnet the other host.

Format telnet <A.B.C.D>

Mode Privileged Mode

2.7.4. Global Config mode commands

exit

This command is used to exit current shell

Format exit

Mode Global Config

vlan

This command is used to configure vlan

1) vlan add

This command is used to create a new vlan

1.1) vlan add number

This command enter a vlan ID

Format vlan add number <vlan-ID>

Mode Global Config

1.2) vlan add range

This command enter a range of vlan ID

Format vlan add range from < vlan-ID > to <vlan-ID>

Mode Global Config

2) vlan delete

This command remove a existed vlan

Format vlan delete <vlan-ID>

Mode Global Config

3) vlan ingress

This command performs ingress vlan source port membership check

3.1) vlan ingress forward

The command is used to forward frame but don't learn SA into ARL table

Format vlan ingress forward

Mode Global Config

3.2) vlan ingress drop

This command is used to drop frames violation vid

Format vlan ingress drop

- Mode** Global Config
- 3.3) vlan ingress bypass
This command is used to forward frame and learn SA into ARL table
Format vlan ingress bypass
Mode Global Config
- 4) vlan port
This command is used to configure 802.1Q port parameters for vlans
- 4.1) vlan port all
This command is used to configure all ports
1.1) vlan port all port-configure
This command is used to configure ports in a specific vlan
Format vlan port all port configure <vlan-ID>
Mode Global Config
1.2) vlan port all protected
This command is used to configure protected ports
Format vlan port all protected {enable|disable}
Mode Global Config
1.3) vlan port all pvid
This command is used to configure port pvid
Format vlan port all pvid <vlan-ID>
Mode Global Config
- 4.2) vlan port ports
This command is used to configure multiple ports
4.2.1) vlan port ports port-configure
This command is used to configure ports in a specific vlan
Format vlan port ports port-configure <vlan-ID>
Mode Global Config
4.2.2) vlan port ports protected
This command is used to configure protected ports
Format vlan port ports protected {enable|disable}
Mode Global Config
4.2.3) vlan port ports pvid
This command is used to configure port vid
Format vlan port ports pvid < vlan-ID>
Mode Global Config
- 5) vlan lag
This command is used to configure lag to a special vlan
- 5.1) vlan lag vlan < vlan-id> exclude
This command is used to remove lag from a vlan
Format vlan lag vlan < vlan-ID> exclude lags <lag-ID>
Mode Global Config
- 5.2) vlan lag vlan <vlan-ID> untagged
This command is used to set to untagged lag.
Format vlan lag vlan <vlan-ID> untagged lags <lag-ID>
Mode Global Config
- 5.3) vlan lag vlan <vlan-ID> tagged
This command is used to set to tagged lag.
Format vlan lag vlan <vlan-ID> tagged lags <lag-ID>
Mode Global Config

bridge

This command is used to configure switch aging time

Format bridge aging-time <0-1048575>

Mode Global Config

lacp-syspri

This command is used to configure lacp system priority

Format lacp-syspri system-priority <0-65535>

Mode Global Config

link-aggregation

This command is used to configure link aggregation

1) link-aggregation addport

This command is used to configure LAG groups

Format Link Aggregation addport lag <LAG-ID>

Mode Global Config

2) link aggregation delport

This command remove ports from LAG

2.1) Link Aggregation delport all

This command remove all ports from a LAG

Format link-aggregation-delport all lag <LAG-ID>

Mode Global Config

2.2) link aggregation delport lag

This command remove specify LAG group

Format link aggregation delport lag <LAG-ID>

Mode Global Config

lldp

1) lldp enable

This command is used to enable lldp functions

Format lldp enable

Mode Global Config

2) lldp disable

This command is used to disable lldp functions

Format lldp disable

Mode Global Config

3) lldp adv-interval

This command is used to specify advertised interval in seconds

Format lldp adv-interval <5-32768>

Mode Global Config

4) lldp fast-startcnt

This command is used to specify fast-start count

Format lldp fast-startcnt <1-10>

Mode Global Config

5) lldp hold

This command is used to specify hold value

Format lldp hold <2-10>

Mode Global Config

6) lldp notify-interval

This command is used to specify notification interval in seconds

Format lldp notify-interval <5-3600>

Mode Global Config

7) lldp reinit-delay

This command is used to specify re-initialization delay in seconds

Format lldp reinit-delay <1-10>

Mode Global Config

8) lldp tx-delay

Transmit Delay in seconds

Format lldp tx-delay <1-8192>

Mode Global Config

9) lldp mgmt-addrtxport

A range of ports can be set.

Format lldp mgmt-addrtxport ports <port list>

Mode Global Config

e.g. switch(config)# lldp mgmt-addrtxport ports 1
switch(config)# lldp mgmt-addrtxport ports 1-4

log

This command is used to configure log server

1) log log-server

This command is used to configure log server

1.1) log log-server name <WORD> add

This command is used to specify log server name, enter a name, up to 12 characters, add a log server IP address

Format log log-server name <WORD> add ipaddr word

Mode Global Config

1.2) log log-server name <word> delete

This command is used to delete a log server

Format log log-server name <WORD> delete

Mode Global Config

2) log logging-target

This command is used to configure log notification level

2.1) log logging-target memory

This command is used to specify memory log notify-level

Format log logging-target memory {enable|disable}

Mode Global Config

2.2) log logging-target flash

This command is used to specify flash log notify-level

Format log logging-target flash {enable|disable}

Mode Privileged Mode

2.3) log logging-target console

This command is used to specify console log notify-level

Format log logging-target console {enable|disable}

Mode Global Config

2.4) log logging-target server

This command is used to specify console log notify-level

Format log logging-target server name <WORD> {enable|disable}

Mode Global Config

radius-server

This command is used to configure radius server

Format radius-server ip <IP addr>

Mode Global Config

static-address

This command is used to specify static address

1) static-address add

This command is used to add static mac address

Format static-address add <mac addr> vid <vlan-ID> port <port-ID>

Mode Global Config

2) static-address delete

This command is used to delete static mac address

Format static-address delete <mac addr> vid <vlan-ID>

Mode Global Config

mgmt-accesslist

1) mgmt-accesslist ipaddr

This command specifies a management access IP for the DUT, up to 8 IP address can be set.

Format mgmt-accesslist ipaddr <IP addr>

Mode Global Config

2) mgmt-accesslist enable

This command enables management access list. Only the IP address specified in the management list is allowed to access DUT.

Format mgmt-accesslist enable

Mode Global Config

3) mgmt-accesslist disable

This command disables management access list.

Format mgmt-accesslist disable

Mode Global Config

monitor

1) monitor enable

This command enables port mirroring.

Format monitor enable

Mode Global Config

2) monitor disable

This command disables port mirroring.

Format monitor disable

Mode Global Config

3) monitor des

Configure destination port.

3.1) monitor des <port-ID> probetype bidirection

This command configures port monitor probetype as bi-direction traffic.

Format monitor des <port-ID> probetype bidirection src <port list>

Mode Global Config

e.g. Switch(config)# monitor des 1 probetype bidirection src 2-8

3.2) monitor des <port-ID> probetype ingress

This command configures port monitor probetype as ingress traffic.

Format monitor des <port-ID> probetype ingress src <port list>

Mode Global Config

e.g. Switch(config)# monitor des 1 probetype ingress src 2-8

3.3) monitor des <port-ID> probetype egress

This command configures port monitor probetype as egress traffic.

Format monitor des <port-ID> probetype egress src <port list>

Mode Global Config

e.g. Switch(config)# monitor des 1 probetype egress src 2-8

dot1x

1) dot1x enable

This command enables global 802.1x function.

Format dot1x enable

Mode Global Config

2) dot1x disable

This command disables global 802.1x function.

Format dot1x disable

Mode Global Config

3) dot1x port-control

Configure port auto-authentication mode.

3.1) dot1x port-control enable

This command set auto-authorized on a list of ports.

Format dot1x port-control enable port <port list>

Mode Global Config

3.2) dot1x port-control disable

This command set force authorized on a list of ports.

Format dot1x port-control disable port <port list>

Mode Global Config

e.g. Switch(config)# dot1x port-control disable port 1-4

network

1) network mgmt-vlan

This command changes management vlan.

Format network mgmt-vlan <vlan-ID>

Mode Global Config

2) network parms

This command configures static IP address of the switch.

Format network parms <IP addr> <subnet mask> <gateway>

Mode Global Config

3) network protocol

This command configure switch dhcp client.

Format network protocol {dhcp|none}

Mode Global Config

4) network dhcp-relay

Configure switch dhcp relay functions.

4.1) network dhcp-relay mode

This command configures dhcp relay mode.

Format network dhcp-relay mode {enable|disable}

Mode Global Config

4.2) network dhcp-relay server

This command configures dhcp-relay server ip-address.

Format network dhcp-relay server <A.B.C.D>

Mode Global Config

4.3) network dhcp-relay vlan

Configure dhcp-relay option-82 vlan information.

3.1) network dhcp-relay vlan <vlan-ID> add

This command enters a vlan which will be enable DHCP-relay option82.

Format network dhcp-relay vlan <vlan-ID> add

Mode Global Config

3.2) network dhcp-relay vlan <vlan-ID> remove

This command enters a vlan which will be disable dhcp-relay option82.

Format network dhcp-relay vlan <vlan-ID> remove

Mode Global Config

5) network sysinfo

Configure switch system information.

5.1) Network sysinfo sysname

This command configures system name.

Format network sysinfo sysname <WORD>

Mode Global Config

5.2) network sysinfo syslocate

This command configures system location.

Format network sysinfo syslocate <WORD>

Mode Global Config

5.3) network sysinfo syscontact

This command configures system contact information.

Format network sysinfo syscontact <WORD>

Mode Global Config

6) network admin-timeout

This command configures web/console admin time out interval.

'0' means disable.

Format network admin-timeout <0-65535>

Mode Global Config

port-all

1) port-all admin-mode

This command configures ports admin mode.

Format port-all admin-mode {enable | disable}

Mode Global Config

2) port-all auto-negotiate

This command configures ports auto-negotiation mode.

Format port-all auto-negotiate {enable|disable}

Mode Global Config

3) port-all flow-control

This command configures ports flow control.

Format port-all flow-control {enable|disable}

Mode Global Config

4) port-all portsec-lockmode

Configure port security.

4.1) port-all portsec-lockmode none

This command disable port security.

Format port-all portsec-lockmode none

Mode Global Config

4.2) port-all portsec-lockmode static

Note: This commands only support on **24-Port 100BaseTX + 2 Gigabit combo Layer 2 Management Switch & 48-Port 100BaseTX + 4 1000BaseT with 2 shared Gigabit SFP Layer 2+ Management Switch models**

This command enable static lock mode.

Format port-all portsec-lockmode static

Mode Global Config

4.3) port-all portsec-lockmode dynamic

This command enable limited dynamic lock mode.

Format port-all portsec-lockmode dynamic max-entries <0-24>

Mode Global Config

5) port-all rate-limit

Configure rate limit value on all ports.

5.1) port-all rate-limit egress

This command specifies egress rate limit.

Format port-all Rate-Limit egress <value>

Mode Global Config

5.2) port-all rate-limit ingress

This command specifies ingress rate limit.

Format port-all rate-limit ingress <value>

Mode Global Config

6) port-all rmon-counter

This command configures rmon counter capability on ports.

Format port-all rmon-counter {enable|disable}

Mode Global Config

7) port-all speed

This command configures ports speed.

Format port-all speed {10hd|10fd|100hd|100fd}

Mode Global Config

8) port-all storm-control

Configure all ports' storm control settings.

8.1) port-all storm-control disable

This command disables storm control.

Format port-all Storm-Control disable

Mode Global Config

8.2) port-all storm-control broadcast

This command configures storm control for broadcast only.

Format port-all storm-control broadcast <value>

Mode Global Config

8.3) port-all storm-control broadcast-multicast

This command configures storm control for broadcast and multicast.

Format port-all Storm-Control broadcast-multicast <value>

Mode Global Config

8.4) port-all storm-control broadcast-unknown

This command configures storm control for broadcast and unknown unicast.

Format port-all storm-control broadcast-unknown <value>

Mode Global Config

8.5) port-all storm-control all-cast

This command configures storm control for broadcast, multicast and unknown unicast.

Format port-all Storm-Control all-cast <value>
Mode Global Config

qos

1) qos qos-advanced

Configure qos advanced mode.

1.1) qos qos-advanced DSCP

This command enables DSCP mode.

Format qos qos-advanced DSCP

Mode Global Config

1.2) qos qos-advanced ip_precedence

This command enables IP Precedence mode.

Format qos qos-advanced ip_precedence

Mode Global Config

1.3) qos qos-advanced none

This command disables qos advanced mode.

Format qos qos-advanced none

Mode Global Config

2) qos cos

This command configures 802.1p priority queue mapping.

Format Qos cos priority <0-7> queue <1-4>

Mode Global Config

3) qos dscp

This command specifies dscp value to queue mapping.

Format qos dscp <0-63> queue <1-4>

Mode Global Config

4) qos port-based

This command configures port-based priority mapping.

Format qos port-based port <WORD>status {enable | disable}

Mode Global Config

5) qos scheduling

Configure qos scheduling mode.

5.1) qos scheduling strict

This command sets to strict priority.

Format qos scheduling strict

Mode Global Config

5.2) qos scheduling wrr

This command sets to Weight Round-Robin.

Format qos scheduling wrr

Mode Global Config

6) qos ip-precedence

This command configures IP precedence queue mapping.

Format qos ip-precedence <0-7> queue <1-4>

Mode Global Config

7) qos wrr

This command configures queue weight for weight round robin.

Format qos wrr weight <1-15> queue <1-4>

Mode Global Config

8) qos dscp-remark

Note: This command only supports on the following switches,

2. 24-Port 100BaseTX + 2 Gigabit combo Layer 2+ Management Switch

4. 24-Port 1000BaseT with 2 shared Gigabit SFP Layer 2+ Management Switch

5. 48-Port 1000BaseT with 4 shared Gigabit SFP Layer 2+ Management Switch

This command is used to change DSCP value if the outgoing packet is an IP packet. Select an ACL Entry Name as the criterion and then enter New DSCP Value as the action. Once the criterion is hit, the DSCP value will be changed.

Format qos dscp-remark acl_entry_name <name> new_dscp_value <0-63>

Mode Global Config

set

1) set IGMP

Configure IGMP snooping.

1.1) set igmp enable

This command enables igmp snooping.

Format set igmp enable

Mode Global Config

1.2) set igmp disable

This command disables IGMP snooping.

Format set igmp disable

Mode Global Config

1.3) set igmp last-memberquery

This command specifies last member query interval.

Format set igmp last-memberquery <1-200>

Mode Global Config

1.4) set igmp last-membercount

This command specifies last member count.

Format set igmp last-membercount <1-20>

Mode Global Config

1.5) set igmp query-interval

This command specifies igmp query interval<secs>.

Format set igmp query-interval <10-600>

Mode Global Config

1.6) set igmp query-resinterval

This command specifies igmp query response interval<secs>.

Format set igmp query-resinterval <0-200>

Mode Global Config

1.7) set igmp robustness

This command specifies robustness variable.

Format set igmp robustness <1-20>

Mode Global Config

1.8) set igmp router-port

This command specifies igmp router port.

Format set igmp router-port ports <port list>

Mode Global Config

e.g. Switch(config)# set igmp router-port ports 1-10

2) set igmp-querier

This command configures igmp querier.

Format set igmp-querier {enable | disable}

Mode Global Config

3) set igmp-proxy

This command configures igmp proxy.

Format set igmp-proxy {enable | disable}

Mode Global Config

4) set static-mcast

Configure static multicast.

4.1) set static-mcast name <WORD> add

This command create a multicast group.

Format set static-mcast name <WORD> add vid <vlan-ID> mac
<mac-addr>member port <port list>

Mode Global Config

4.2) set static-mcast name <WORD>delete

This command delete a static multicast group.

Format set static-mcast name <WORD>delete

Mode Global Config

snmp

1) snmp notify

This command configures snmp notification.

Format snmp notify {enable|disable}

Mode Global Config

2) snmp group

2.1) snmp group add

This command create a snmp group.

Format snmp group add <WORD>version <1-2>

Mode Global Config

2.2) snmp group delete

This command delete a snmp group.

Format snmp group delete <WORD>

Mode Global Config

3) snmp user

3.1) snmp user add

This command creates a snmp user.

Format snmp user add <user name> group <group name> version
<1-3>

Mode Global Config

3.2) snmp user delete

This command deletes a snmp user.

Format snmp user delete <WORD>

Mode Global Config

4) snmp community

4.1) snmp community add

This command creates a community.

Format snmp community add <community name> group <group
name> mgmt-ip <ip-addr>

Mode Global Config

4.2) snmp community delete

This command deletes a community.

Format snmp community delete <community name>.

Mode Global Config

5) snmp trapstation

5.1) snmp trapstation add

Create a snmp trap station.

5.1.1) snmp trapstation add <ip-addr> community <community name>
type bootup

Send trap when system reboot

Format snmp trapstation add <ip-addr> community <community name> type bootup trap-version {1|2}

Mode Global Config

5.1.2) snmp trapstation add <ip-addr> community <community name>
type linkchange

Send trap when port link change.

Format snmp trapstation add <ip-addr> community <community name> type linkchange trap-version {1|2}

Mode Global Config

5.1.3) snmp trapstation add <ip-addr> community <community name>
type both

Send trap when system reboot or port link change.

Format snmp trapstation add <ip-addr> community <community name> type both trap-version {1-2}

Mode Global Config

5.1.4) snmp trapstation add <ip-addr> community <community name>
type none

Send no trap.

Format snmp trapstation add <ip-addr> community <community name> type none trap-version {1-2}

Mode Global Config

5.2) snmp trapstation delete

This command delete a trap station.

Format snmp trapstation delete <WORD>

Mode Global Config

sntp

1) sntp daylight

This command enables or disables the daylight saving configuration.

Format sntp daylight {enable|disable}

Mode Global Config

2) sntp localtime

Configure the local time.

2.1) sntp localtime enable

This command enables local time.

Format sntp localtime enable

Mode Global Config

2.2) sntp localtime localtime_date

This command sets local time.

Format sntp localtime localtime_date <year> <month> <date> <hour>
<minute> <second>

Mode Global Config

3) sntp server

3.1) sntp server enable

This command enables sntp server.

Format sntp server enable

Mode Global Config

3.2) sntp server ipaddr

This command sets sntp server IP address.

Format sntp server ipaddr <IP-addr>

Mode Global Config

3.3) sntp server polling

This command sets sntp server polling time interval.

Format sntp serve polling <0-9>

Mode Global Config

4) sntp timezone

This command sets sntp timezone.

Format sntp timezone <1-75>

Mode Global Config

spanning-tree

1) spanning-tree forceversion

This command configures Spanning Tree protocol version.

1.1) spanning-tree forceversion 8021s

This command selects spanning tree type as 8021.s(multiple Spanning Tree).

Format spanning-tree forceversion 8021s

Mode Global Config

1.2) spanning-tree forceversion 8021w

This command selects spanning tree type as 802.1w(rapid Spanning Tree).

Format spanning-tree forceversion 8021w

Mode Global Config

1.3) spanning-tree forceversion none

This command selects none spanning tree type.

Format spanning-tree forceversion none

Mode Global Config

2) spanning-tree configuration

This command configures MSTP region name and revision.

2.1) spanning-tree configuration name

This command configures MSTP region name (Max.32 chars).

Format spanning-tree configuration name <WORD>

Mode Global Config

2.2) spanning-tree configuration revision

This command configures revision level.

Format spanning-trees configuration revision <0-65535>

Mode Global Config

3) spanning-tree forward-time

This configures the bridge forward delay parameter.

Format spanning-tree forward-time <4-30>

Mode Global Config

4) spanning-tree max-age

This command configures the bridge max age parameter.

Format spanning-tree max-age <6-40>

Mode Global Config

5) spanning-tree max-hops

This command configure the number of hops in a region.

Format spanning-tree max-hops <1-40>

Mode Global Config

- 6) spanning-tree port
 - 6.1) spanning-tree port all

This command specifies RSTP capability for all ports.

Format spanning-tree port all {enable |disable}

Mode Global Config
 - 6.2) spanning-tree port cost

This command configures RSTP port path cost.

Format spanning-tree port cost <0-2000000000>

Mode Global Config
 - 6.3) spanning-tree port priority

This command configures RSTP port priority.

Format spanning-tree port priority <0-24>

Mode Global Config
 - 6.4) spanning-tree port edge

This command configures STP edge .

Format spanning-tree port edge {enable|disable}

Mode Global Config
 - 6.5) spanning-tree port force-p2plink

This command configures force point to point link mode on ports.

Format spanning-tree port force-p2plink {auto|enable|disable}

Mode Global Config
 - 6.6) spanning-tree port migration-check

This command Re-checks the appropriate BPDU format to send on ports.

Format spanning-tree port migration-check {enable|disable}

Mode Global Config
- 7) spanning-tree priority

This command configures RSTP bridge priority value.

Format spanning-tree priority <0-61440>

Mode Global Config
- 8) spanning-tree mst

Configure a multiple spanning tree instance.

 - 8.1) spanning-tree mst instance

This command creates or removes a MST instance

 - 8.1.1) spanning-tree mst instance add

This command creates a MST instance.

Format spanning-tree mst instance add vlan <vlan list> mstpid <MST ID>

Mode Global Config

e.g. Switch(Config)# Spanning-Tree mst instance add vlan 2-5 mstpid 2

Switch(Config)# Spanning-Tree mst instance add vlan 6 mstpid 3
 - 8.1.2) spanning-tree mst instance delete

This command removes the last MST instance.

Format spanning-tree mst instance delete

Mode Global Config
 - 8.2) spanning-tree mst vlan

This command adds or deletes vlan from a MSTP instance.

 - 8.2.1) spanning-tree mst vlan <MST ID> <vlan list> add

This command creates a MST instance.

Format spanning-tree mst vlan <MST ID> <vlan list> add

Mode Global Config

- e.g. Switch(Config)# Spanning-Tree mst vlan 3 3-5 add
- 8.2.2) Spanning-Tree mst vlan <MST ID> <vlan list> delete
This command deletes a vlan from a MST instance.
Format Spanning-Tree mst vlan <MST ID> <vlan list> delete
Mode Global Config
- 8.3) spanning-tree mst bridgepri
This command configures bridge priority for a MST instance.
Format spanning-tree mst bridgepri <MST ID> <priority>
Mode Global Config
- 8.4) spanning-tree mst cost
This command configures port path cost in a MST instance.
Format spanning-tree mst cost <MST ID> <path cost> ports <port list>
Mode Global Config
- 8.5) spanning-tree mst priority
This command configures port priority in a MST instance
Format spanning-tree mst priority <MST ID> <priority> ports <port list>
Mode Global Config

User

This command changes user password.

Format user password

Mode Global Config

Interface

This command enters into configure interface mode.

Format Interface <port-ID>

Mode Global Config

rmon

This command is used to configure RMON.

1) rmon event

This command creates rmon event entry.

Format rmon event index < 1..65535 > desc <WORD> event <1..4>
community <WORD>owner<WORD>

Mode Global Config

e.g. Switch(Config)# rmon event index 1 desc 123 event 4 community 123
owner test

2) rmon alarm

This command creates rmon alarm entry.

Format rmon alarm index < 1..65535 > interval<0..3600>interface<port
number>counter<1..17>sample{absolute|delta}start{rasing|falling|all}rthresh
old<0..65535>fthreshold<0..65535> reindex <0..65535> feindex<0..65535>
owner< WORD>

Mode Global Config

e.g. Switch(Config)# RMON alarm index 1 interval 10 interface counter 1
sample delta start all rthreshold 100 fthreshold 10 reindex 1 feindex 0
owner test

3) rmon del

3.1) rmon del event

This command deletes rmon event entry.

Format rmon del event index< 1..65535 >

Mode Global Config

3.2) rmon del alarm

This command deletes rmon alarm entry.

Format rmon del alarm index< 1..65535 >

Mode Global Config

access list

Note: This commands only support on L2+ Management Switches.

1) access-list name <WORD> add

This command creates a new access-list.

Format access-list name <WORD> add priority <1-65535>

Mode Global Config

2) access-list name <WORD> action

2.1) access-list name <WORD> action deny

This command denies an ACL entry.

Format access-list name <WORD> action deny

Mode Global Config

2.2) access-list name <WORD> action permit

This command permits an ACL entry and queue 1-4 will assign priority queue when rule activated.

Format access-list name <WORD> action permit {<cr>|queue <1-4>}

Mode Global Config

3) access-list name <WORD> clear

This command clears ACL entry contents.

3.1) access-list name <WORD> clears SRC IP

This command clears the source IP/subnet mask filter.

Format access-list name <WORD> clear SRC IP

Mode Global Config

3.2) access-list name <WORD> clears DST IP

This command clears the destination IP/subnet mask filter.

Format access-list name <WORD> clear DST IP

Mode Global Config

3.3) access-list name <WORD> clear L4port

3.3.1) access-list name <WORD> clear L4port SRC port

This command clears TCP/UDP source port filter.

Format access-list name <WORD> clear l4port SRC port

Mode Global Config

3.3.2) access-list name <WORD> clear l4port DST port

This command clears TCP/UDP destination port filter.

Format access-list name <WORD> clear l4port DST port

Mode Global Config

3.4) access-list name <WORD> clear packet-type

This command clears packet type filter.

Format access-list name <WORD> clear packet-type

Mode Global Config

3.5) access-list name <WORD> clear mac SA

This command clears a source mac address.

Format Access-list name <WORD> clear mac SA

Mode Global Config

3.6) access-list name <WORD> clear MAC DA

This command clears a destination mac address.

- Format** Access-list name <WORD> clear mac DA.
Mode Global Config
- 3.7) access-list name <WORD> clear VID
 This command clears the 802.1Q VLAN tag of packet.
Format Access-list name <WORD> clear VID
Mode Global Config
- 3.8) access-list name <WORD> clear ether-type
 This command clears ether type filter.
Format access-list name <WORD> clear ether-type
Mode Global Config
- 4) access-list name <WORD> deletes.
 This command removes the ACL entry.
Format access-list name <WORD> deletes
Mode Global Config
- 5) access-list name <WORD> {enable|disable}
 This command enables/disables the ACL entry.
Format access-list name <WORD> {enable|disable}
Mode Global Config
- 6) access-list name <WORD> set
- 6.1) access-list name <WORD> set priority
 This command specifies ACL entry priority.
Format access-list name <WORD> set priority <0-65535>
Mode Global Config
- 6.2) access-list name <WORD> set IP-mode
- 6.2.1) access-list name <WORD> set IP-mode SRC IP.
 This command specifies a source IP address.
Format access-list name <WORD> set IP-mode SRC IP
 <IP-addr> <mask-addr>
Mode Global Config
- 6.2.2) access-list name <WORD> set IP-mode DST IP
 This command specifies a destination IP address.
Format access-list name <WORD> set IP-mode DSP IP
 <IP-addr> <mask-addr>
Mode Global Config
- 6.3) access-list name <WORD> set L4port
 This command specifies the TCP/UDP port range.
- 6.3.1) access-list name <WORD> set l4port SRC-port
 This command specifies the source TCP/UDP port range.
Format Access-list name <WORD> set L4 port SRE-port from
 <1-65535> to <1-65535>
Mode Global Config
- 6.3.2) access-list name <WORD> set l4port DST-port
 This command specifies the destination TCP/UDP port range.
Format access-list name <WORD> set l4port DST-port from
 <1-65535> to <1-65535>
Mode Global Config
- 6.4) access-list name <WORD> set IP-mode packet-type
 This command specifies the packet type.
Format access-list name <WORD> set IP-mode packet-type
 {ICMP|IGMP|IP|TCP|UDP|GRE}
Mode Global Config

6.5) access-list name <WORD> set mac-mode

Specify ACL entry priority.

6.5.1) access-list name <WORD> set mac-mode mac SA

This command specifies a source mac address.

Format access-list name <WORD> set mac-mode mac SA
<mac-addr> <mask-addr>

Mode Global Config

6.5.2) access-list name <WORD> set mac-mode mac DA

This command specifies a destination mac address.

Format access-list name <WORD> set mac-mode mac DA
<mac-addr> <mask-addr>

Mode Global Config

6.6) access-list name <WORD> set mac-mode ether-type

This command specifies the ether type of the packet.

Format access-list name <WORD> set mac-mode ether-type
{ipv4|ARP|xns}

Mode Global Config

7) access-list name <name> set portlist

Note: This command only supports on the following switches,

2. 24-Port 100BaseTX + 2 Gigabit combo Layer 2+ Management Switch

3. 48-Port 100BaseTX + 4 1000BaseT with 2 shared Gigabit SFP Layer 2+ Management Switch

4. 24-Port 1000BaseT with 2 shared Gigabit SFP Layer 2+ Management Switch

5. 48-Port 1000BaseT with 4 shared Gigabit SFP Layer 2+ Management Switch

This command is used to specify an acl entry to be work on a list of ports.

Format access-list name <name> set portlist <LINE | port_id>

Mode Global Config

arp

Note: This commands only support on **24-Port 1000BaseT with 2 shared Gigabit SFP Layer 2+ Management Switch / 48-Port 1000BaseT with 4 shared Gigabit SFP Layer 2+ Management Switch** models.

1) arp dynamic

1.1) arp dynamic enables and disables.

This command enables and disables dynamic arp functions.

Format arp dynamic {enable|disable}

Mode Global Config

1.2) arp dynamic aging-time

This command set arp dynamic aging-time between 0s and 999s."0" means disable.

Format arp dynamic aging-time <0~999>

Mode Global Config

1.3) arp dynamic ports

This command set dynamic arp ports to trust and un-trust.

Format arp dynamic ports {trust|untrust} <port-list>

Mode Global Config

e.g. Swtich<Config># arp dynamic ports trust 1-4

Swtich<Config># arp dynamic ports untrust 4

1.4) arp dynamic vlan

This command set add/remove dynamic arp on specified vlan.

Format arp dynamic vlan {add|remove} from < vlan -id> to < vlan -id>

Mode Global Config

e.g. Switch<Config># arp dynamic vlan add from 1 to 1

Switch<Config># arp dynamic vlan remove from 1 to 1

2) arp static command

This command set arp static address table for mac address with IP Address.

Format arp static {add|delete} vid <1~4094> ip <A.B.C.D> mac
<mac-address>

Mode Global Config

dos

Note: This command only supports on the following switches,

3. 48-Port 100BaseTX + 4 1000BaseT with 2 shared Gigabit SFP Layer 2+ Management Switch

4. 24-Port 1000BaseT with 2 shared Gigabit SFP Layer 2+ Management Switch

5. 48-Port 1000BaseT with 4 shared Gigabit SFP Layer 2+ Management Switch

1) dos land

This command enables and disables land-type attacks prevention.

Format dos land {enable|disable}

Mode Global Config

2) dos blat

This command enables and disables blat-type attack prevention.

Format dos blat {enable|disable}

Mode Global Config

3) dos syn-fin

This command enables and disables SYN-fin-type attack prevention.

Format dos syn-fin {enable|disable}

Mode Global Config

4) dos ports

4.1) dos ports smurf

This command enables and disables Smurf-TYPR attack prevention.

Format dos ports smurf {enable|disable}

Mode Global Config

4.2)dos ports ping-flooding

This command enables and disables ping-flooding-type attack prevention.

Format dos ports ping-flooding {enable|disable}

Mode Global Config

4.3)dos ports synack-flooding

This command enables and disables SYNACK -flooding -type attack prevention. Set rate is 64 kbps or 128kbps for port lists (1, 3-5, 7-9.11)

Format dos ports synack -flooding {enable|disable} rate {64|128}
<port-list>

Mode Global Config

e.g. Switch<Config>#dos ports synack -flooding enablerate 64 1-4

Switch<Config>#dos ports synack -flooding enablerate 64 5

tacplus

1) tacplus authen_type

This command is used to set authentication type. There are three types for selecting: local, tacplus, localandtacplus.

Format tacplus authen_type {local | tacplus | localandtacplus}

Mode Global Config

2) tacplus add

This command is used to add a new TACACS+ server and set server IP address, priority, key string, authentication port and timeout for reply.

Format tacplus add server <IP_addr> priority <0-65535> key <key string>
port <auth port id> timeout <1-30>

Mode Global Config

3) tacplus del

This command is used to delete a TACACS+ server.

Format tacplus del server <IP_addr>

Mode Global Config

green-eth

Note: This command only supports on the following switches,

4. 24-Port 1000BaseT with 2 shared Gigabit SFP Layer 2+ Management Switch

5. 48-Port 1000BaseT with 4 shared Gigabit SFP Layer 2+ Management Switch.

This command is used to enable/disable green Ethernet function. Enable green Ethernet mode will reduce system power consumption when the link is not present.

Format green-eth { enable | disable }

Mode Global Config

2.7.5.Interface Config mode commands

exit

Exit current shell

Format exit

Mode Interface Config

dot1x

Set 802.1x port control.

Set auto-authorized on ports

Format 802.1x port-control {enable|disable}

Mode Interface Config

lACP

1) admin command

Configure admin key of port

Format lacp admin <0 ..65535>

Mode Interface Config

e.g. switch(interface g1)#lacp admin 36768

2) priority command

Configure lacp port priority

Format lacp priority <0..65535>

Mode Interface Config

addport

add one port to a LAG group

Format addport <LAG-ID>

Mode Interface Config

delpport

Remove a port from a LAG group

Format delpport <LAG-ID>

Mode Interface Config

lldp

An lldp agent can transmit information about the capabilities and current status of the system associated with its MSAP identifier. The lldp agent can also receive information about the capabilities and current status of the system associated with a remote MSAP identifier. However, lldp agents are not provided any means of soliciting information from other lldp agents via this protocol.

1) lldp state set

Only transmit the lldp status

Format lldp state {tx | rx | tx_rx | disable}

Mode Interface Config

2) configure notifications

Enable/disable notification form the agent

Format lldp notification {enable|disable}

Mode Interface Config

3) Configure med notifications

Configure whether or not MED notifications from the agent are enabled.

Enable/disable med notification form the agent

Format lldp med-notification {enable | disable}

Mode Interface Config

e.g. Switch(Interface 1)#lldp med-notification enable

4) Configures which TLVs are enabled for transmission.

4.1) basic set

Format lldp tlvs-tx {enable | disable} option basic {port-desc | sys-name | sys-desc | sys-cap | sys-cap }

Mode Interface Config

4.2) 8021 set

Status of local-802.1 settings

Format lldp tlvs-tx {enable | disable} option 8021 {pvid | vlannname | protocol-id}

Mode Interface Config

eg.switch(interdface 1)lldp tlvs enable option 8021 pvid

4.3) 8023 set

Format lldp tlvs-tx {enable | disable} option 8023 {mac-phy | power| link-aggregation| frame-size}

Mode Interface Config

4.4) MED-set

Status of MED Settings

Format lldp tlvs-tx {enable | disable} option med-set {capabilities |

net-policy | location-id | mdi}
Mode Interface Config

admin-mode

Configure administrative mode on a port

Format Switch(Interface 1)# admin-mode {enable | disable}

Mode Interface Config

auto-negotiate

Configure auto-negotiate mode on a port

Format auto-negotiate {enable | disable}

Mode Interface Config

speed

Set port speed to 10Mbps half duplex/ 10Mbps full/ 100Mbps half/ 100Mbps full/ 1000Mbps 100FX mode/1000base-x full .

Format speed {10hd | 10fd | 100hd | 100fd | 1000fd | 100fx | 1000base-x}

Mode Interface Config

flow-control

This command enable/disable flow-control at port.

Format flow-control {enable | disable}

Mode Interface Config

port-security

1) port-security

This command add or delete a static mac into mac security table.

Format port-security {add|delete} <sourcemac >

Mode Interface Config

2) port-security lock-mode

This command disable port security or specify static lock mode.

Format port-security lock-mode {none | static}

Mode Interface Config

3) port-security lock-mode dynamic

This command enable limited dynamic lock mode,and specify maximin learning entries for limited dynamic lock mode.the max-entries value :0~24

Format port-security lock-mode dynamic max-entries 24

Mode Interface Config

qos

This command specifies port-based qos.

Format qos port-based status {enable | disable}

Mode Interface Config

rate-limit

1) rate-limit egress

This command limits egress rate, which the unit is Kbps.

Format rate-limit egress <rate>

Mode Interface Config

2) rate-limit ingress

This command limits ingress rate, which the unit is Kbps.

Format rate-limit ingress <rate>

Mode Interface Config

storm-control

1) Enable/disable storm control.

Format storm-control {enable | disable}

Mode Interface Config

2) storm-control broadcast

This command storm control for broadcast only, and limited value :0,64,256,1024,10240,65536.102400,1024000,which the unit is Kbps and 0 means no limit.

Format storm-control broadcast <rate>

Mode Interface Config

3) storm-control broadcast-multicast

This command storm control limited value :0,64,256,1024,10240,65536.102400,1024000,which the unit is Kbps and 0 means no limit.

Format storm-control broadcast-multicast <rate>

Mode Interface Config

4) storm-control broadcast-unknown

This command storm control limited value :0,64,256,1024,10240,65536.102400,1024000,which the unit is Kbps and 0 means no limit.

Format storm-control broadcast-unknown <rate>

Mode Interface Config

e.g. Switch(Interface 1)# storm-control broadcast-unknown 64

5) storm-control all-cast

This command storm control limited value :0,64,256,1024,10240,65536.102400,1024000,which the unit is Kbps and 0 means no limit.

Format storm-control all-cast <rate>

Mode Interface Config

rmon-counter

This command specifies rmon counter capability on a port

Format rmon-counter {enable | disable}

Mode Interface Config

set igmp-router-port

This command specifies igmp router port .

Format set igmp-router-port {enable | disable}

Mode Interface Config

spanning tree

1) spanning-tree cost

This command configure RSTP port path cost, path cost value:0~200000000.

Format spanning-tree cost <pathcost>

Mode Interface Config

2) spanning-tree edge

This command configure edge property

Format spanning-tree edge {enable|disable}

Mode Interface Config

e.g. Switch(Interface 1)# spanning-tree edge enable

3) spanning-tree force-p2plink

This command configure force point to point link mode.

Format spanning-tree force-p2plink {auto|enable|disable}

Mode Interface Config

4) spanning-tree migration-check

This command re-checks the appropriate BPDU format to send on this port

Format spanning-tree migration-check {enable|disable}

Mode Interface Config

5) spanning-tree mst

This command configures multiple spanning tree instance.

5.1) spanning-tree mst cost

This command configure the path cost on a MST instance :1~200000000.

Format spanning-tree mst cost <pathcost>

Mode Interface Config

5.2) spanning-tree mst priority

This command configure the port priority on a MST instance:0~4096.

Format spanning-tree mst priority <1 4096>

Mode Interface Config

6) spanning-tree participation

This command configures RSTP capability on a port.

Format spanning-tree participation {enable|disable}

Mode Interface Config

7) spanning-tree priority

this command configure RSTP port priority:0~240

format spanning-tree priority <0..240>

mode Interface Config

vlan

1) vlan participation

This command join or leave a port to a vlan.

1.1) vlan participation exclude

This command leave a vlan.

Format vlan participation exclude < vlan id>

Mode Interface Config

1.2) vlan participation

This command join a vlan with untagged/tagged mode.

Format vlan participation {untagged |tagged}< vlan id>

Mode Interface Config

2) vlan protected

This command configures port protected property.

Format vlan protected {enable|disable}

Mode Interface Config

3) vlan dropnq

This command configure port drop none 802.1Q frame .

Format vlan dropnq {enable|disable}

Mode Interface Config

4) vlan pvid

This command configure port PVID.

Format vlan pvid <pvid>

Mode Interface Config

e.g. Switch(Interface 1)# vlan pvid 1

Interface commands

This command change another interface

Format Interface <port number>

Mode Interface Config

e.g. Switch(Interface 1)# interface g1

poe

1) func

This command configure poe function on a port

Format poe func {enable | disable}

Mode Interface Config

2) power-pri

This command configures the power priority on switch ports to decide which ports have priority to supply power which power devices are connected.

Legal value are low, normal, middle or high priority. If the same power priority on the ports, the lower port index the higher power priority.

Low Set to low priority

Normal Set to normal priority

Middle Set to middle priority

High Set to high priority

Format poe power-pri level {low | normal | middle | high}

Mode Interface Config

3) detection

This command configures detection type on a port. set to 0,1,2,3,4 or 5

0 No Detection

1 Legacy Capacitive Detection only

2 IEEE 802.3af 4-Point Detection only (Default)

3 IEEE 802.3af 4-Point followed by Legacy

4 IEEE 802.3af 2-Point only

5 IEEE 802.3af 2-Point followed by Legacy

Format poe detection type {0 | 1 | 2 | 3 | 4 | 5}

Mode Interface Config

4) high-power

This command configures power Energy Mode on a port

on Start High Power (Support 30W power device)

off End High Power Mode (Support 15.4W power device)

Format poe high-power status {enable | disable}

Mode interface Config

3. Specifications

3.1. Cable specifications

Straight-Through and Crossed-Over Cable Specifications Table

Ethernet Type	Cable Requirements	Maximum Length
10BASE-T	Category 3 or better, UTP or STP	328 ft (100M)
100BASE-TX	Category 5 or better, UTP or STP	328 ft (100M)
1000BASE-T	Category 5e or better, UTP or STP	328 ft (100M)

Caution: Please do not use telephone cables .Telephone cables do not support Ethernet or Gigabit .

Twisted-pair cabling comes in various grades, or categories. Category 5 is required for Fast Ethernet, and is also the most reliable and most commonly used category. You can buy UTP Category 5 (Unshielded Twisted Pair) Ethernet cabling in precrimped lengths, or you can crimp your own. Crimping your own can result in faulty connections if the RJ-45 tips are not attached properly. Precrimped Category 5 cabling is available at most computer retail stores.

The most reliable and commonly used type of Category 5 cabling used is UTP, or "unshielded twisted pair." STP, or "shielded twisted pair" wiring is only necessary for network environments exposed to excessive amounts of electromagnetic interference, or EMI. These environments include areas with high sources of electrical power, air conditioning, generators, and radio signals. STP is also used for wiring outdoors.

There are two types of the wiring: Straight-Through Cables and Crossover Cables. Category 5 UTP/STP cable has eight wires inside the sheath. The wires form four pairs. Straight-Through Cables has same pinouts at both ends while Crossover Cables has a different pin arrangement at each end.

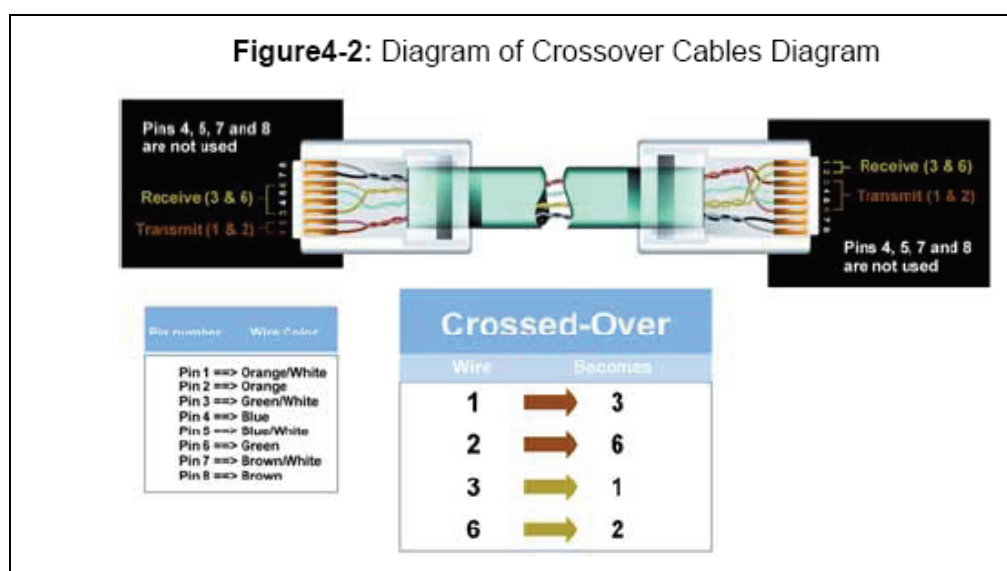
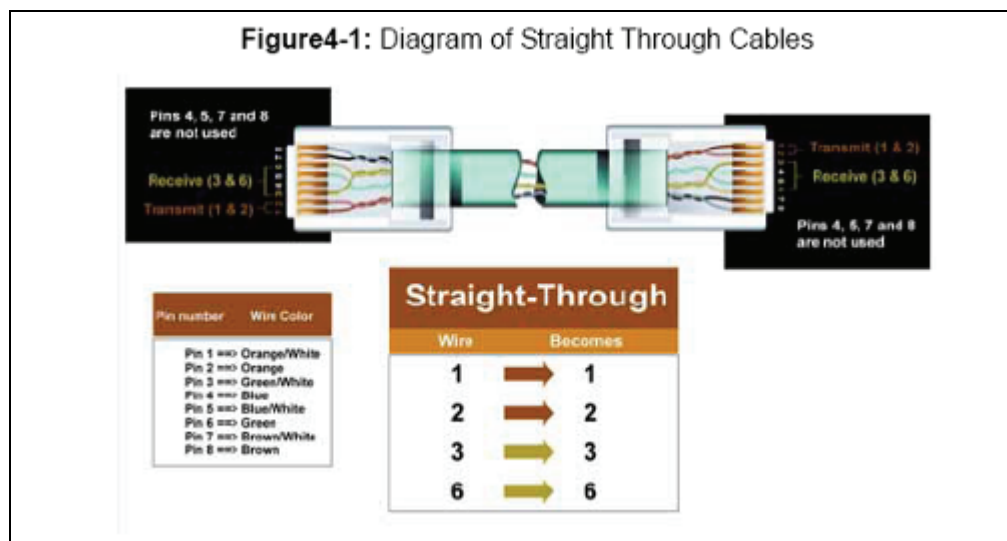
In a straight-through cable, wires 1,2,3,4,5,6,7 and 8 at one end of the cable are still wires 1~8 at the other end. In a crossover cable, the wires of 1,2,3,6 are reversed so that wire 1 become 3 at the other end of the cable, 2 becomes 6, and so forth.

To determine which wire is wire 1, hold the RJ-45 cable tip with the spring clip facing towards the ground and the end pointing away from you. The copper wires exposed upwards to your view. The first wire on the far left is wire 1. You can also refer to the illustrations and charts of the internal wiring on the following page.

There are two types of cables: Straight Through Cables and Crossover Cables. Category 5 UTP/STP cable has eight wires inside the sheath. The wires form four pairs. Straight Through Cables has same pinouts at both ends while

Crossover Cables has a different pin arrangement at each end.

Figure 4-1 shows the diagram of Straight Through Cables. Figure 4-2 shows the diagram of Crossover Cables.



3.2. Technical Specifications

3.2.1. Software Specification

1. 24-Port 100BaseTX + 2 Gigabit combo Layer 2 Management Switch

- Four groups (history, statistics, alarms, and events) of embedded remote monitoring (RMON) agents for network monitoring and traffic analysis
- Provides SNMP protocol(v1/v2c/v3) to monitor and control the switch by using SNMP management applications such as HP Open View
- IGMP snooping support to limit flooding of IP multicast traffic and filtering for controlling the set of multicast groups to which hosts on a switch port can belong
- Supports 802.1d/1w/1s Spanning Tree Protocol for loop free installation.
- Supports 802.1Q VLAN for assigning users to VLAN associated with appropriate network resources, traffic patterns, and bandwidth. Up to 256 VLAN entries can be configured

Supports Management VLAN for administration to protect switch to be attacked by client.

- Built-in DHCP client to get IP address from DHCP server automatically
- Supports SNTP to synchronize the precision time with Internet Time server.
- Supports one-to-one or many-to-one Port Mirroring.
- Supports IEEE 802.3ad Link Aggregation, up to 3 aggregation groups.
- Supports for IEEE 802.1p/DSCP CoS scheduling for classification and preferred high-priority voice traffic on a port-port basis
- Per port Ingress and Egress Rate Limiting. Minimum rate is 64 Kbps, granularity is 64 Kbps
- Supports Static Mode and Dynamic Learning Mode for Port Security function. Support up to 24 MAC addresses for each port.
- Supports Protected port feature.
- Supports 802.1X port-based authentication, and build-in RADIUS client to co-operate with the RADIUS servers.
- Supports broadcast, known-multicast, and unknown unicast storm control
- Supports web-based interface for management
- Supports CLI interface for local console or remote Telnet management
- Supports TFTP, HTTP and X-modem protocol for firmware/configuration upgrade or backup.

2. 24-Port 100BaseTX + 2 Gigabit combo Layer 2+ Management Switch

- Four groups (history, statistics, alarms, and events) of embedded remote monitoring (RMON) agents for network monitoring and traffic analysis
- Provides SNMP protocol(v1/v2c/v3) to monitor and control the switch by using SNMP management applications such as HP Open View
- Supports IGMP snooping to limit flooding of IP multicast traffic and filtering for controlling the set of multicast groups to which hosts on a switch port can belong
- Supports 802.1d/1w/1s Spanning Tree Protocol for loop free installation.
- Supports 802.1Q VLAN for assigning users to VLAN associated with appropriate network resources, traffic patterns, and bandwidth. Up to 256 VLAN entries can be configured
- Supports Management VLAN for administration to protect switch to be attacked by client.
- Supports IEEE 802.3ad Link Aggregation, up to 6 LAG groups, and 8 ports for each LAG group
- Built-in DHCP client to get IP address from DHCP server automatically
- Supports SNTP to synchronize the precision time with Internet Time server.
- Supports many-to-one, one-to-one Port Mirroring function.
- Supports for IEEE 802.1p/DSCP CoS scheduling for classification and preferred high-priority traffic.
- Supports per port Ingress and Egress Rate Limiting.
- Supports Dynamic Learning mode for Port Security function, up to 24 MAC addresses can be learned for each port
- Supports 802.1X port-based authentication, and build-in RADIUS client to co-operate with the RADIUS servers.
- Supports broadcast, multicast, and unknown unicast storm control
- Supports Protected Port feature.
- Supports SSL secure access.
- Supports Access Control List feature, up to 256 rules can be configured.
- Supports web-based interface for management
- Supports CLI interface for local console or remote Telnet management
- Supports TFTP, HTTP and X-modem protocol for firmware/configuration upgrade or backup.
- Supports TACACS+ login authentication.
- Supports DSCP remarking

3. 48-Port 100BaseTX + 4 1000BaseT with 2 shared Gigabit SFP Layer 2+ Management Switch

- Four groups (history, statistics, alarms, and events) of embedded remote monitoring (RMON) agents for network monitoring and traffic analysis
- Provides SNMP protocol(v1/v2c/v3) to monitor and control the switch by using SNMP management applications such as HP Open View
- Supports IGMP snooping to limit flooding of IP multicast traffic and filtering for controlling the set of multicast groups to which hosts on a switch port can belong
- Supports 802.1d/1w/1s Spanning Tree Protocol for loop free installation.
- Supports 802.1Q VLAN for assigning users to VLAN associated with appropriate network resources, traffic patterns, and bandwidth. Up to 256 VLAN entries can be configured
- Supports Management VLAN for administration to protect switch to be attacked by client.
- Supports IEEE 802.3ad Link Aggregation, up to 6 LAG groups, and 8 ports for each LAG group
- Built-in DHCP client to get IP address from DHCP server automatically
- Supports SNTP to synchronize the precision time with Internet Time server.
- Supports many-to-one, one-to-one Port Mirroring function.
- Supports for IEEE 802.1p/DSCP CoS scheduling for classification and preferred high-priority traffic.
- Supports per port Ingress and Egress Rate Limiting.
- Supports Dynamic Learning mode for Port Security function, up to 24 MAC addresses can be learned for each port
- Supports 802.1X port-based authentication, and build-in RADIUS client to co-operate with the RADIUS servers.
- Supports broadcast, multicast, and unknown unicast storm control
- Supports Protected Port feature.
- Supports SSL secure access.
- Supports Access Control List feature, up to 128 rules can be configured.
- Supports web-based interface for management
- Supports CLI interface for local console or remote Telnet management
- Supports TFTP, HTTP and X-modem protocol for firmware/configuration upgrade or backup.
- Supports TACACS+ login authentication.

4. 24-Port 1000BaseT with 2 shared Gigabit SFP Layer 2+ Management Switch

5. 48-Port 1000BaseT with 4 shared Gigabit SFP Layer 2+ Management Switch

- Four groups (history, statistics, alarms, and events) of embedded remote monitoring (RMON) agents for network monitoring and traffic analysis
- Provides SNMP protocol(v1/v2c/v3) to monitor and control the switch by using SNMP management applications such as HP Open View
- Supports IGMP snooping to limit flooding of IP multicast traffic and filtering for controlling the set of multicast groups to which hosts on a switch port can belong
- Supports 802.1d/1w/1s Spanning Tree Protocol for loop free installation.
- Supports 802.1Q VLAN for assigning users to VLAN associated with appropriate network resources, traffic patterns, and bandwidth. Up to 256 VLAN entries can be configured
- Supports Management VLAN for administration to protect switch to be attacked by client.
- Supports IEEE 802.3ad Link Aggregation, up to 14 LAG groups, and 8 ports for each LAG group
- Built-in DHCP client to get IP address from DHCP server automatically
- Supports SNTP to synchronize the precision time with Internet Time server.
- Supports many-to-one, one-to-one Port Mirroring function.
- Supports for IEEE 802.1p/DSCP CoS scheduling for classification and preferred high-priority traffic.
- Supports per port Ingress and Egress Rate Limiting.
- Supports Dynamic Learning mode for Port Security function, up to 24 MAC addresses can be learned for each port
- Supports 802.1X port-based authentication, and build-in RADIUS client to co-operate with the RADIUS servers.
- Supports broadcast, multicast, and unknown unicast storm control
- Supports Protected Port feature.
- Supports SSL secure access.
- Supports Access Control List feature, up to 256 rules can be configured.
- Supports web-based interface for management
- Supports CLI interface for local console or remote Telnet management
- Supports TFTP, HTTP and X-modem protocol for firmware/configuration upgrade or backup.
- Supports TACACS+ login authentication.
- Supports DSCP remarking
- Supports Green Ethernet.

6. 8-Port 100BaseTX + 2 Gigabit combo Layer 2 Management Switch with 8 PSE port embedded 100W PoE power budget

7. 24-Port 100BaseTX + 2 Gigabit combo Layer 2 Management Switch with 12 PSE port embedded 100W PoE power budget

- Four groups (history, statistics, alarms, and events) of embedded remote monitoring (RMON) agents for network monitoring and traffic analysis
- Provides SNMP protocol(v1/v2c/v3) to monitor and control the switch by using SNMP management applications such as HP Open View
- IGMP snooping support to limit flooding of IP multicast traffic and filtering for controlling the set of multicast groups to which hosts on a switch port can belong
- Supports 802.1d/1w/1s Spanning Tree Protocol for loop free installation.
- Supports 802.1Q VLAN for assigning users to VLAN associated with appropriate network resources, traffic patterns, and bandwidth. Up to 256 VLAN entries can be configured

Supports Management VLAN for administration to protect switch to be attacked by client.

- Built-in DHCP client to get IP address from DHCP server automatically
- Supports SNTP to synchronize the precision time with Internet Time server.
- Supports one-to-one or many-to-one Port Mirroring.
- Supports IEEE 802.3ad Link Aggregation, up to 3 aggregation groups.
- Supports for IEEE 802.1p/DSCP CoS scheduling for classification and preferred high-priority voice traffic on a port-port basis
- Per port Ingress and Egress Rate Limiting. Minimum rate is 64 Kbps, granularity is 64 Kbps
- Supports Static Mode and Dynamic Learning Mode for Port Security function. Support up to 24 MAC addresses for each port.
- Supports Protected port feature.
- Supports 802.1X port-based authentication, and build-in RADIUS client to co-operate with the RADIUS servers.
- Supports broadcast, known-multicast, and unknown unicast storm control
- Supports web-based interface for management
- Supports CLI interface for local console or remote Telnet management
- Supports TFTP, HTTP and X-modem protocol for firmware/configuration upgrade or backup.
- Supports TACACS+ login authentication.

8. 8-Port 10/100BaseTX + 2 Gigabit Combo Layer 2 Management Switch

- Four groups (history, statistics, alarms, and events) of embedded remote monitoring (RMON) agents for network monitoring and traffic analysis
 - Provides SNMP protocol(v1/v2c/v3) to monitor and control the switch by using SNMP management applications such as HP Open View
 - IGMP snooping support to limit flooding of IP multicast traffic and filtering for controlling the set of multicast groups to which hosts on a switch port can belong
 - Supports 802.1d/1w/1s Spanning Tree Protocol for loop free installation.
 - Supports 802.1Q VLAN for assigning users to VLAN associated with appropriate network resources, traffic patterns, and bandwidth. Up to 256 VLAN entries can be configured
- Supports Management VLAN for administration to protect switch to be attacked by client.
- Built-in DHCP client to get IP address from DHCP server automatically
- Supports SNTP to synchronize the precision time with Internet Time server.
Supports one-to-one or many-to-one Port Mirroring.
- Supports IEEE 802.3ad Link Aggregation, up to 3 aggregation groups.
 - Supports for IEEE 802.1p/DSCP CoS scheduling for classification and preferred high-priority voice traffic on a port-port basis
 - Per port Ingress and Egress Rate Limiting. Minimum rate is 64 Kbps, granularity is 64 Kbps
 - Supports Static Mode and Dynamic Learning Mode for Port Security function. Support up to 24 MAC addresses for each port.
 - Supports Protected port feature.
 - Supports 802.1X port-based authentication, and build-in RADIUS client to co-operate with the RADIUS servers.
 - Supports broadcast, known-multicast, and unknown unicast storm control
 - Supports web-based interface for management
 - Supports CLI interface for local console or remote Telnet management
 - Supports TFTP, HTTP and X-modem protocol for firmware/configuration upgrade or backup.

9. 24-Port 100BaseTX + 2 Gigabit combo Layer 2+ Management Switch with 12 PSE port embedded 180W PoE power budget

- Four groups (history, statistics, alarms, and events) of embedded remote monitoring (RMON) agents for network monitoring and traffic analysis
- Provides SNMP protocol(v1/v2c/v3) to monitor and control the switch by using SNMP management applications such as HP Open View
- Supports IGMP snooping to limit flooding of IP multicast traffic and filtering for controlling the set of multicast groups to which hosts on a switch port can belong
- Supports 802.1d/1w/1s Spanning Tree Protocol for loop free installation.
- Supports 802.1Q VLAN for assigning users to VLAN associated with appropriate network resources, traffic patterns, and bandwidth. Up to 256 VLAN entries can be configured
- Supports Management VLAN for administration to protect switch to be attacked by client.
- Supports IEEE 802.3ad Link Aggregation, up to 6 LAG groups, and 8 ports for each LAG group
- Built-in DHCP client to get IP address from DHCP server automatically
- Supports SNTP to synchronize the precision time with Internet Time server.
- Supports many-to-one, one-to-one Port Mirroring function.
- Supports for IEEE 802.1p/DSCP CoS scheduling for classification and preferred high-priority traffic.
- Supports per port Ingress and Egress Rate Limiting.
- Supports Dynamic Learning mode for Port Security function, up to 24 MAC addresses can be learned for each port
- Supports 802.1X port-based authentication, and build-in RADIUS client to co-operate with the RADIUS servers.
- Supports broadcast, multicast, and unknown unicast storm control
- Supports Protected Port feature.
- Supports SSL secure access.
- Supports Access Control List feature, up to 256 rules can be configured.
- Supports web-based interface for management
- Supports CLI interface for local console or remote Telnet management
- Supports TFTP, HTTP and X-modem protocol for firmware/configuration upgrade or backup.
- Supports TACACS+ login authentication.
- Supports DSCP remarking

10. 24-Port 100BaseTX + 2 Gigabit combo Layer 2 Management Switch (Desktop)

- Four groups (history, statistics, alarms, and events) of embedded remote monitoring (RMON) agents for network monitoring and traffic analysis
- Provides SNMP protocol(v1/v2c/v3) to monitor and control the switch by using SNMP management applications such as HP Open View
- IGMP snooping support to limit flooding of IP multicast traffic and filtering for controlling the set of multicast groups to which hosts on a switch port can belong
- Supports 802.1d/1w/1s Spanning Tree Protocol for loop free installation.
- Supports 802.1Q VLAN for assigning users to VLAN associated with appropriate network resources, traffic patterns, and bandwidth. Up to 256 VLAN entries can be configured
- Supports Management VLAN for administration to protect switch to be attacked by client.
- Built-in DHCP client to get IP address from DHCP server automatically
- Supports SNTP to synchronize the precision time with Internet Time server.
- Supports one-to-one or many-to-one Port Mirroring.
- Supports IEEE 802.3ad Link Aggregation, up to 3 aggregation groups.
- Supports for IEEE 802.1p/DSCP CoS scheduling for classification and preferred high-priority voice traffic on a port-port basis
- Per port Ingress and Egress Rate Limiting. Minimum rate is 64 Kbps, granularity is 64 Kbps
- Supports Static Mode and Dynamic Learning Mode for Port Security function. Support up to 24 MAC addresses for each port.
- Supports Protected port feature.
- Supports 802.1X port-based authentication, and build-in RADIUS client to co-operate with the RADIUS servers.
- Supports broadcast, known-multicast, and unknown unicast storm control
- Supports web-based interface for management
- Supports CLI interface for local console or remote Telnet management
- Supports TFTP, HTTP and X-modem protocol for firmware/configuration upgrade or backup.

3.2.2. Hardware Specification

1. 24-Port 100BaseTX + 2 Gigabit combo Layer 2 Management Switch

- Supports 24 ports 100Base-TX and 2 1000BaseT with 2 shared Mini-GBIC.
- User configurable 100FX or 1000Base-SX/LX mini-GBIC fiber module on mini-GBIC ports
- IEEE 802.3ab Auto MDI/MDI-X on all 10/100/1000 twisted-pair ports
- Automatic polarity detection and correction on all RJ-45 ports for automatic adjustment of wiring errors
- Throughput: Up to 8.8 Gbps.
- Provides Flow Control mechanism ensures zero packet loss, IEEE802.3x Flow Control for full-duplex operation and Back Pressure for half-duplex operation
- Supports 8K MAC address and Up to 3Mb packet buffer
- Supports Store & Forward architecture and performs forwarding and filtering
- Provides non-blocking switching performance
- Provides a RS-232 port for system configuration.

2. 24-Port 100BaseTX + 2 Gigabit combo Layer 2+ Management Switch

- Supports 24 ports 100Base-TX and 2 1000BaseT with 2 shared Mini-GBIC.
- User configurable 100FX or 1000Base-SX/LX mini-GBIC fiber module on mini-GBIC ports
- IEEE 802.3ab Auto MDI/MDI-X on all 10/100/1000 twisted-pair ports
- Automatic polarity detection and correction on all RJ-45 ports for automatic adjustment of wiring errors
- Throughput: Up to 8.8 Gbps.
- Provides Flow Control mechanism ensures zero packet loss, IEEE802.3x Flow Control for full-duplex operation and Back Pressure for half-duplex operation
- Supports 8K MAC address and Up to 3Mb packet buffer
- Supports Store & Forward architecture and performs forwarding and filtering
- Provides non-blocking switching performance
- Provides a RS-232 port for system configuration.
- Flexible TCAM-based Compact Field Process for packet classification and filtering.

3. 48-Port 100BaseTX + 4 1000BaseT with 2 shared Gigabit SFP Layer 2+ Management Switch

- Standard models equipped with 48 RJ-45 ports for 10/100BASE-TX connections and four RJ-45 ports for 10/100/1000BASE-T with 2 shared Mini-GBIC slots for further extension.
- User configurable 100FX or 1000Base-SX/LX mini-GBIC fiber module on mini-GBIC ports
- Supports half duplex and full duplex modes and auto-negotiation for all FE & GE ports.
- MDI/MDI-X auto-sense on all ports and IEEE 802.3ab Auto MDI/MDI-X on all 100/1000 twisted-pair ports.
- Provides per-port flow control and backpressure.
- Supports 8K MAC addresses.
- Supports 4K entry multicast address table.
- Supports 4-Mbit total packet buffer and control memory.
- Provides Store-and-Forward switching mechanism.
- Provides non-blocking switching performance.
- Provides a RS-232 port for system configuration.
- Flexible TCAM-based Compact Field Process for packet classification and filtering.

4. 24-Port 1000BaseT with 2 shared Gigabit SFP Layer 2+ Management Switch

- Support 24 10/100/1000 Mbps copper ports with 2 shared mini-GBIC slots
- User configurable 100FX or 1000Base-SX/LX mini-GBIC fiber module on mini-GBIC ports
- Supports half duplex and full duplex modes and auto-negotiation for all 10BASE-T/100BASE-TX/1000BASE-T ports
- IEEE 802.3ab Auto MDI/MDI-X on all 100/1000 twisted-pair ports
- Automatic polarity detection and correction on all RJ-45 ports for automatic adjustment of wiring errors
- Throughput up to 48 Gbps.
- Provides IEEE802.3x Flow Control mechanism ensures zero packet loss, which uses Back Pressure for half-duplex operation and Flow Control for full duplex operation.
- Supports 8K MAC address and Up to 4Mb packet buffer
- Supports Store & Forward architecture and performs forwarding and filtering
- Provides non-blocking switching performance
- Supports Jumbo Frame up to 9KB
- Provides a RS-232 port for system configuration.
- Flexible TCAM-based Compact Field Process for packet classification and filtering.

5. 48-Port 1000BaseT with 4 shared Gigabit SFP Layer 2+ Management Switch

- Supports 48 ports 10/100/1000 Mbps copper ports with 4 shared mini-GBIC slots
- User configurable 100FX or 1000Base-SX/LX mini-GBIC fiber module on mini-GBIC ports
- Supports half duplex and full duplex modes and auto-negotiation for all 10BASE-T/100BASE-TX/1000BASE-T ports
- IEEE 802.3ab Auto MDI/MDI-X on all 100/1000 twisted-pair ports
- Automatic polarity detection and correction on all RJ-45 ports for automatic adjustment of wiring errors
- Throughput up to 96 Gbps
- Provides IEEE802.3x Flow Control mechanism ensures zero packet loss, which uses Back Pressure for half-duplex operation and Flow Control for full duplex operation.
- Supports 8K MAC address and up to 4Mb packet buffer
- Supports Store & Forward architecture and performs forwarding and filtering
- Provides non-blocking switching performance
- Supports Jumbo Frame up to 9KB
- Flexible TCAM-based Compact Field Process for packet classification and filtering.

6. 8-Port 100BaseTX + 2 Gigabit combo Layer 2 Management Switch with 8 PSE port embedded 100W PoE power budget

- Supports 8 ports 100Base-TX (with PoE PSE) and 2 1000BaseT with 2 shared Mini-GBIC.
- User configurable 100FX or 1000Base-SX/LX mini-GBIC fiber module on mini-GBIC ports
- IEEE 802.3ab Auto MDI/MDI-X on all 10/100/1000 twisted-pair ports
- Automatic polarity detection and correction on all RJ-45 ports for automatic adjustment of wiring errors
- Throughput: Up to 5.6 Gbps.
- Provides Flow Control mechanism ensures zero packet loss, IEEE802.3x Flow Control for full-duplex operation and Back Pressure for half-duplex operation
- Supports 8K MAC address and Up to 3Mb packet buffer
- Supports Store & Forward architecture and performs forwarding and filtering
- Provides non-blocking switching performance
- Provides a RS-232 port for system configuration.
- Total Power Budget 100 W with 8 W guard band. It means system can provide total 92 W power to power devices.
- Supports 30 W high power devices.

7. 24-Port 100BaseTX + 2 Gigabit combo Layer 2 Management Switch with 12 PSE port embedded 100W PoE power budget

- Supports 24 ports 100Base-TX (with 12 ports PoE PSE) and 2 1000BaseT with 2 shared Mini-GBIC.
- User configurable 100FX or 1000Base-SX/LX mini-GBIC fiber module on mini-GBIC ports
- IEEE 802.3ab Auto MDI/MDI-X on all 10/100/1000 twisted-pair ports
- Automatic polarity detection and correction on all RJ-45 ports for automatic adjustment of wiring errors
- Throughput: Up to 8.8 Gbps.
- Provides Flow Control mechanism ensures zero packet loss, IEEE802.3x Flow Control for full-duplex operation and Back Pressure for half-duplex operation
- Supports 8K MAC address and Up to 3Mb packet buffer
- Supports Store & Forward architecture and performs forwarding and filtering
- Provides non-blocking switching performance
- Provides a RS-232 port for system configuration.
- Total Power Budget 100 W with 8 W guard band. It means system can provide total 92 W power to power devices.
- Supports 30 W high power devices.

8. 8-Port 10/100BaseTX + 2 Gigabit Combo Layer 2 Management Switch

- Supports 8 ports 100Base-TX and 2 1000BaseT with 2 shared Mini-GBIC.
- User configurable 100FX or 1000Base-SX/LX mini-GBIC fiber module on mini-GBIC ports
- IEEE 802.3ab Auto MDI/MDI-X on all 10/100/1000 twisted-pair ports
- Automatic polarity detection and correction on all RJ-45 ports for automatic adjustment of wiring errors
- Throughput: Up to 5.6 Gbps.
- Provides Flow Control mechanism ensures zero packet loss, IEEE802.3x Flow Control for full-duplex operation and Back Pressure for half-duplex operation
- Supports 8K MAC address and Up to 3Mb packet buffer
- Supports Store & Forward architecture and performs forwarding and filtering
- Provides non-blocking switching performance
- Provides a RS-232 port for system configuration.

9. 24-Port 100BaseTX + 2 Gigabit combo Layer 2+ Management Switch

- Supports 24 ports 100Base-TX (with 12 ports PoE PSE) and 2 1000BaseT with 2 shared Mini-GBIC.
- User configurable 100FX or 1000Base-SX/LX mini-GBIC fiber module on mini-GBIC ports
- IEEE 802.3ab Auto MDI/MDI-X on all 10/100/1000 twisted-pair ports
- Automatic polarity detection and correction on all RJ-45 ports for automatic adjustment of wiring errors
- Throughput: Up to 8.8 Gbps.
- Provides Flow Control mechanism ensures zero packet loss, IEEE802.3x Flow Control for full-duplex operation and Back Pressure for half-duplex operation
- Supports 8K MAC address and Up to 3Mb packet buffer
- Supports Store & Forward architecture and performs forwarding and filtering
- Provides non-blocking switching performance
- Provides a RS-232 port for system configuration.
- Flexible TCAM-based Compact Field Process for packet classification and filtering.
- Total Power Budget 180 W with 8 W guard band. It means system can provide total 172 W power to power devices.
- Supports 30 W high power devices.

10. 24-Port 100BaseTX + 2 Gigabit combo Layer 2 Management Switch (Desktop)

- Supports 24 ports 100Base-TX and 2 1000BaseT with 2 shared Mini-GBIC.
- User configurable 100FX or 1000Base-SX/LX mini-GBIC fiber module on mini-GBIC ports
- IEEE 802.3ab Auto MDI/MDI-X on all 10/100/1000 twisted-pair ports
- Automatic polarity detection and correction on all RJ-45 ports for automatic adjustment of wiring errors
- Throughput: Up to 8.8 Gbps.
- Provides Flow Control mechanism ensures zero packet loss, IEEE802.3x Flow Control for full-duplex operation and Back Pressure for half-duplex operation
- Supports 8K MAC address and Up to 3Mb packet buffer
- Supports Store & Forward architecture and performs forwarding and filtering
- Provides non-blocking switching performance
- Provides a RS-232 port for system configuration.

3.2.3. Environments Specification

1. 24-Port 100BaseTX + 2 Gigabit combo Layer 2 Management Switch:

Size (H x W x D)	44.45 x 430 x 180mm
Weight(Net/Gross)	2.4kg / 3.5kg (88.2 oz / 123.5 oz)
Power	100~120/200~240 VAC~1.0 A/0.5 A 50~60Hz
Operating Temp.	0 °C ~ 40 °C (32 °F ~ 104 °F)
Storage Temp.	-40 °C ~ 70 °C (-40 °F ~ 158 °F)
Operating Humidity	20% to 85%,relative humidity, non-condensing
Storage Humidity	20% to 90%,relative humidity, non-condensing

2. 24-Port 100BaseTX + 2 Gigabit combo Layer 2+ Management Switch

3. 48-Port 1000BaseT with 4 shared Gigabit SFP Layer 2+ Management Switch

4. 24-Port 1000BaseT with 2 shared Gigabit SFP Layer 2+ Management Switch:

Size (H x W x D)	44.45 x 430 x 250mm
Weight(Net/Gross)	3.5kg / 5.0kg (105.8 oz / 141 oz)
Power	100~120/200~240 VAC~1.0 A/0.5 A 50~60Hz
Operating Temp.	0 °C ~ 40 °C (32 °F ~ 104 °F)
Storage Temp.	-40 °C ~ 70 °C (-40 °F ~ 158 °F)
Operating Humidity	20% to 85%,relative humidity, non-condensing
Storage Humidity	20% to 90%,relative humidity, non-condensing

5. 48-Port 1000BaseT with 4 shared Gigabit SFP Layer 2+ Management Switch:

Size (H x W x D)	H 44.45 x W 430 x D 350mm
Weight(Net/Gross)	4.7kg / 5.8kg (165 oz / 204 oz)
Power	100~120/200~240 VAC~1.5 A/0.75 A 50~60Hz
Operating Temp.	0 °C ~ 40 °C (32 °F ~ 104 °F)
Storage Temp.	-40 °C ~ 70 °C (-40 °F ~ 158 °F)
Operating Humidity	20% to 85%,relative humidity, non-condensing
Storage Humidity	20% to 90%,relative humidity, non-condensing

6. 8-Port 100BaseTX + 2 Gigabit combo Layer 2 Management Switch with 8 PSE port embedded 100W PoE power budget:

Size (H x W x D)	H44 x W263 x D170 mm
Weight(Net/Gross)	1.3kg /2.0kg (45oz/ 70oz)
Power	48VDC 2.5A, 4pin DC-inlet
Operating Temp.	0 ° ~ 40 ° (32 ° ~ 104 °)
Storage Temp.	-40 ° ~ 70 ° (-40 ° ~ 158 °)
Operating Humidity	20% to 85%,relative humidity, non-condensing
Storage Humidity	20% to 90%,relative humidity, non-condensing

7. 24-Port 100BaseTX + 2 Gigabit combo Layer 2 Management Switch with 12 PSE port embedded 100W PoE power budget:

Size (H x W x D)	H44 x W263 x D170 mm
Weight(Net/Gross)	1.3kg /2.0kg (45oz/ 70oz)
Power	48VDC 2.5A, 4pin DC-inlet
Operating Temp.	0 ° ~ 40 ° (32 ° ~ 104 °)
Storage Temp.	-40 ° ~ 70 ° (-40 ° ~ 158 °)
Operating Humidity	20% to 85%,relative humidity, non-condensing
Storage Humidity	20% to 90%,relative humidity, non-condensing

8. 8-Port 10/100BaseTX + 2 Gigabit Combo Layer 2 Management Switch

Size (H x W x D)	H44.45 x W260 x D170 mm
Weight(Net/Gross)	1.3kg /2.0kg (45oz/ 70oz)
Power	12VDC 1.0A
Operating Temp.	0 ° ~ 40 ° (32 ° ~ 104 °)
Storage Temp.	-40 ° ~ 70 ° (-40 ° ~ 158 °)
Operating Humidity	20% to 85%,relative humidity, non-condensing
Storage Humidity	20% to 90%,relative humidity, non-condensing

9. 24-Port 100BaseTX + 2 Gigabit combo Layer 2 Management Switch with 12 PSE port embedded 180W PoE power budget:

Size (H x W x D)	H 44 x W 430 x D 350mm
Weight(Net/Gross)	4.1kg /5.1kg (145 oz/ 180 oz)
Power	100~120/200~240 VAC~3.0 A/1.5 A 50~60Hz
Operating Temp.	0 ° ~ 40 ° (32 ° ~ 104 °)

Storage Temp.	-40 ° ~ 70 ° (-40 ° ~ 158 °)
Operating Humidity	20% to 85%,relative humidity, non-condensing
Storage Humidity	20% to 90%,relative humidity, non-condensing

10. 24-Port 10/100BaseTX + 2 Gigabit Combo Layer 2 Management Switch (Desktop)

Size (H x W x D)	H44.45 x W260 x D170 mm
Weight(Net/Gross)	1.3kg /2.0kg (45oz/ 70oz)
Power	12VDC 1.5A
Operating Temp.	0 ° ~ 40 ° (32 ° ~ 104 °)
Storage Temp.	-40 ° ~ 70 ° (-40 ° ~ 158 °)
Operating Humidity	20% to 85%,relative humidity, non-condensing
Storage Humidity	20% to 90%,relative humidity, non-condensing

3.2.4. Standard Conformance

EMC Certification	FCC Class A, CE
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5. Warranty statement

We provide this limited warranty for it originally purchased the product from us or its authorized reseller or distributor. We guarantee that equipment is free from physical defects in workmanship and material under normal use from the date of original retail purchase of the Hardware. If the product proves defective during this warranty period, call our Customer Service in order to obtain a Return Authorization number. Be sure to have a proof of purchase on hand when calling. Return requests cannot be processed without proof of purchase. When returning a product, mark the Return Authorization Number clearly on the package pack and include you original proof of purchase. All customers outside the R.O.C shall be held responsible for shipping and handling charges.

In no event shall our liability exceed the price paid for the product from direct, incidental or consequential damage resulting from the use of the product, its accompanying software, or its documentation. We make no warranty or representation, expressed, implied, or statutory, with respect to its products or the contents or use of this documentation and all accompanying software, and specifically disclaim its quality, performance, merchantability, or fitness for any particular purpose. We reserve the right to revise or update its products, software, or documentation without obligation to notify any individual or entity.