

# Lantech

## LGS-1424C

**24 10/100/1000TX plus 4 Mini GBIC**

**Web Managed Switch**

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## User Manual



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# Content

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<b>INTRODUCTION .....</b>	<b>4</b>
Features .....	4
Software Feature .....	5
Package Contents .....	7
<b>HARDWARE DESCRIPTION .....</b>	<b>8</b>
Physical Dimension .....	8
Front Panel .....	8
LED Indicators .....	9
Rear Panel.....	10
Desktop Installation .....	10
Attaching Rubber Pads.....	10
Rack-mounted Installation .....	10
Power On.....	11
<b>NETWORK APPLICATION .....</b>	<b>12</b>
Small Workgroup .....	12
Segment Bridge.....	13
<b>WEB-BASED MANAGEMENT.....</b>	<b>15</b>
About Web-based Management.....	15
System Login.....	15
System Configuration .....	16
Port Configuration.....	18
VLAN Setting.....	20
VLAN Port Setting.....	20
Aggregation .....	22
LACP Setting .....	23
Rapid Spanning Tree.....	25
System Configuration .....	25

Port Configuration .....	26
802.1X Configuration .....	27
Parameters Configuration .....	29
IGMP Snooping .....	29
QoS Setting .....	31
Filter Configuration .....	34
Rate Limiting .....	35
Port Mirroring .....	37
Statistics Overview .....	39
Statistics Detail .....	39
LACP Status .....	40
Spanning Tree Status .....	41
IGMP Status .....	43
Warm Restart .....	43
Factory Default .....	44
Firmware Upload .....	44
Configuration File Transfer .....	44
<b>TROUBLESHOOTING .....</b>	<b>46</b>
Incorrect connections .....	46
Faulty or loose cables .....	46
Non-standard cables .....	46
Improper Network Topologies .....	47
Diagnosing LED Indicators .....	47
<b>TECHNICAL SPECIFICATION .....</b>	<b>48</b>
<b>APPENDIX .....</b>	<b>50</b>
Cables .....	50
100BASE-TX/10BASE-T Pin Assignments .....	50

# Introduction

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The 24 10/100/1000TX plus 4 Mini GBIC Web Managed Switch is a multi-port Switch that can be used to build high-performance switched workgroup networks. This switch is a store-and-forward device that offers low latency for high-speed networking. The switch is targeted at workgroup, department or backbone computing environment.

The 24 10/100/1000TX plus 4 Mini GBIC Web Managed Switch has 24 auto-sensing 10/100/1000 Base-TX RJ-45 ports and 4 mini GBIC slots for higher connection speed.

## Features

- Conform to IEEE802.3 10BASE-T, IEEE802.3u 100BASE-TX Fast Ethernet, IEEE 802.3ab 1000Base-T, IEEE 802.3z Gigabit Fiber, IEEE802.3x Flow control and Back pressure, IEEE802.1d Spanning tree protocol, IEEE 802.s Rapid Spanning Tree, IEEE 802.3ad Port trunk with LACP, IEEE802.1p Class of service, IEEE802.1Q VLAN Tagging
- Store-and-Forward Switching Architecture
- Auto-MDIX on all ports
- 48Gbps Back-Plane
- 8K MAC Address Table
- 500Kbytes memory buffer
- N-Way Auto-Negotiation
- True Non-Blocking Switching
- 10K Jumbo Frame support
- Back Pressure with half duplex
- Flow Control with full duplex
- Support Port Based VLAN and Tag VLAN

- Support IGMP Snooping
- Support Class of Service
- Support Port Mirror
- Support Port Trunk
- Support Rapid Spanning Tree
- Supports ingress packet filter and egress rate limit
- Support IP address security to prevent unauthorized intruder
- Provides Web interface management and one default button for system default setting
- Support Bandwidth control

## Software Feature

<b>Management</b>	Web Management
<b>Firmware update</b>	TFTP firmware upgrade
<b>Port configuration</b>	Port enable/disable  Port speed  Full /half duplex  Flow control
<b>Port Trunk</b>	IEEE802.3ad port trunk with link aggregation control protocol (LACP)  The trunk group up to 8 and maximum trunk port member up to 16 ports

<b>Port statistics</b>	Several of counters for TX and RX packet.
<b>VLAN</b>	Port based VLAN Tag VLAN and GVRP protocol The VLAN entry up to 4K and VID up to 4094
<b>Quality of Service</b>	Port based Tag based IPv4 ToS IPv6 DSCP
<b>Class of Service</b>	Per port support 4 priority queues
<b>Spanning Tree</b>	IEEE802.1w rapid spanning tree Compatible with IEEE 802.1d
<b>Port Mirror</b>	RX packet mirror
<b>IGMP</b>	IGMP V1, V2 Multicast groups up to 8K
<b>Broadcast Storm</b>	Disable/5%/10%/20%
<b>Bandwidth Control</b>	Per port support Bandwidth control. Per level 128 Kbps.

## Package Contents

Unpack the contents of the 24 10/100/1000TX plus 4 Mini GBIC Web Managed Switch and verify them against the checklist below:

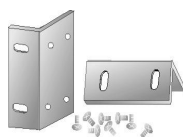
- 24 10/100/1000TX plus 4 Mini GBIC Web Managed Switch
- Four Rubber Pads
- Rack-mounted Kit
- Power Cord
- User Manual



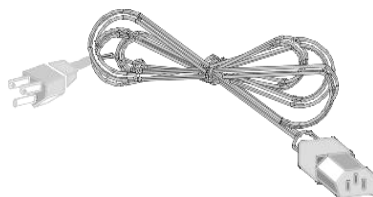
**24 10/100/1000TX plus 4 Mini GBIC Web Managed Switch**



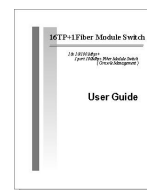
**Four Rubber Pads**



**Rack-mounted Kit**



**Power Cord**



**User Manual**

Compare the contents of your 24 10/100/1000TX plus 4 Mini-GBIC Web Managed Switch package with the standard checklist above. If any item is missing or damaged, please contact the local dealer for service.

# Hardware Description

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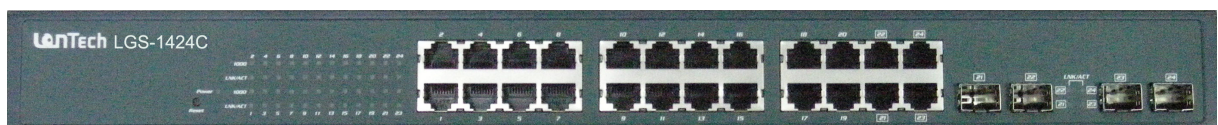
This section mainly describes the hardware of the 24 10/100/1000TX plus 4 Mini GBIC Web Managed Switch and gives a physical and functional overview on the certain switch.

## Physical Dimension

24 10/100/1000TX plus 4 Mini GBIC Web Managed Switch's physical dimensions is **440mm x 161mm x 44mm (Lx W x H)**.

## Front Panel

The Front Panel of the 24 10/100/1000TX plus 4 Mini GBIC Web Managed Switch consists of 24x 10/100/1000 Base-TX RJ-45 ports (Auto MDI/MDIX) and 4 Mini GBIC slots which can insert the Mini Gigabit Fiber module (optional). The LED Indicators are also located on the front panel of the switch.



The Front panel of 24 10/100/1000TX plus 4 Mini GBIC Web Managed Switch

- **RJ-45 Ports (Auto MDI/MDIX):** 24x 10/100/1000 N-way auto-sensing for 10Base-T or 100Base-TX or 1000Base-T connections.

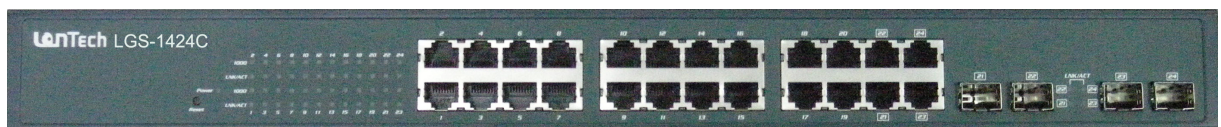
In general, **MDI** means connecting to another Hub or Switch while **MDIX** means connecting to a workstation or PC. Therefore, **Auto MDI/MDIX** would allow connecting to another Switch or workstation without changing non-crossover or crossover cabling.



- **4 MINI GBIC slot:** 4 slots for inserting the mini GBIC module that is optional.
- **Reset:** Press the reset button for 2~5 seconds to reboot the switch or over 5 seconds to load factory default and reboot the switch.

## LED Indicators

The LED Indicators display real-time information of systematic operation status. The following table provides descriptions of LED status and their meaning.



LED indicators

LED	Status	Description
<b>Power</b>	Green	Power On
	Off	Power is not connected
<b>LNK/ACT</b>	Green	The port is connecting with the device.
	Blink	The port is receiving or transmitting data.
	Off	No device attached.
<b>1000</b>	Green	In 1000Mbps connection speed
<b>LNK/ACT (Mini GBIC)</b>	Green	The port is connecting with the device.
	Blink	The port is receiving or transmitting data.
	Off	No device attached

The Description of LED Indicators

## Rear Panel

The 3-pronged power plug is located at the rear Panel of the 24 10/100/1000TX plus 4 Mini GBIC Web Managed Switch as shown in figure. The switch will work with AC in the range of 100-240V AC, 50-60Hz.



The Rear Panel of 24 10/100/1000TX plus 4 Mini GBIC Web Managed Switch

## Desktop Installation

Set the switch on a sufficiently large flat space with a power outlet nearby. The surface where you put the switch should be clean, smooth, level and sturdy. Make sure there is enough clearance around the switch to allow attachment of cables, power cord and allow air circulation.

### Attaching Rubber Pads

- A. Make sure mounting surface on the bottom of the switch is grease and dust free.
- B. Remove adhesive backing of Rubber Pads.
- C. Apply the Rubber Pads to each corner on the bottom of the switch and these footpads can prevent the switch from shock/vibration.

## Rack-mounted Installation

The 24 10/100/1000TX plus 4 Mini GBIC Web Managed Switch come with a rack-mounted kit and can be mounted in an EIA standard size/19-inch Rack. The

switch can be placed in a wiring closet with other equipment.

Perform the following steps to rack mount the switch:

1. Position one bracket to align with the holes on one side of the switch and secure it with the smaller bracket screws. Then attach the remaining bracket to the other side of the switch.
2. After attached mounting brackets, position the 24 10/100/1000TX plus 4 Mini GBIC Web Managed switch in the rack by lining up the holes in the brackets with the appropriate holes on the rack. Secure the switch to the rack with a screwdriver and the rack-mounting screws.

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**[NOTE]** For proper ventilation, allow about at least 4 inches (10 cm) of clearance on the front and 3.4 inches (8 cm) on the back of the Switch. This is especially important for enclosed rack installation.

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## Power On

Connect the power cord to the power socket on the rear panel of the switch. The other side of power cord connects to the power outlet. The internal power supply of the switch works with voltage range of AC in the 100-240VAC, frequency 50~60Hz. Check the power indicator on the front panel to see if power is properly supplied.

# Network Application

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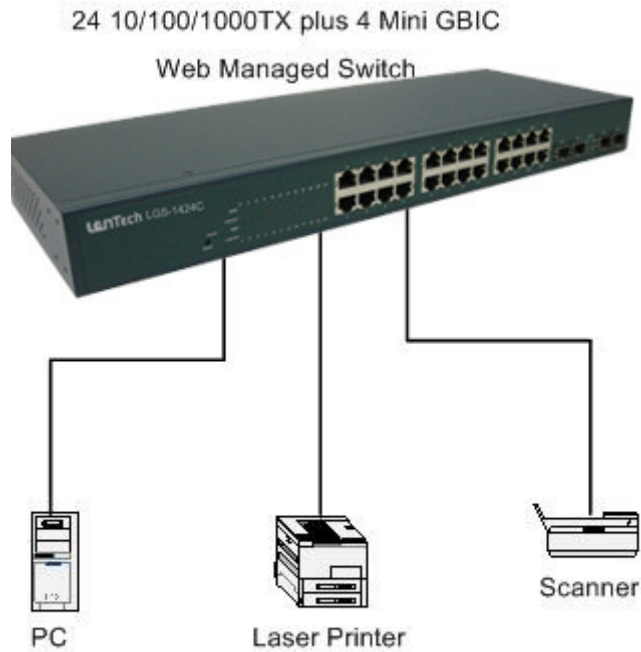
This section provides few samples of network topology in which the switch is used. In general, the 24 10/100/1000TX plus 4 Mini GBIC Web Managed Switch is designed as a segment switch. That is, with its large address table (8K MAC address) and high performance, it is ideal for interconnecting networking segments.

PC, workstations and servers can communicate each other by directly connecting with 24 10/100/1000TX plus 4 Mini GBIC Web Managed Switch. The switch automatically learns nodes address, which are subsequently used to filter and forward all traffic based on the destination address.

By using Uplink port, the switch can connect with another switch or hub to interconnect other small-switched workgroups to form a larger switched network. Meanwhile, you can also use fiber ports to connect switches.

## Small Workgroup

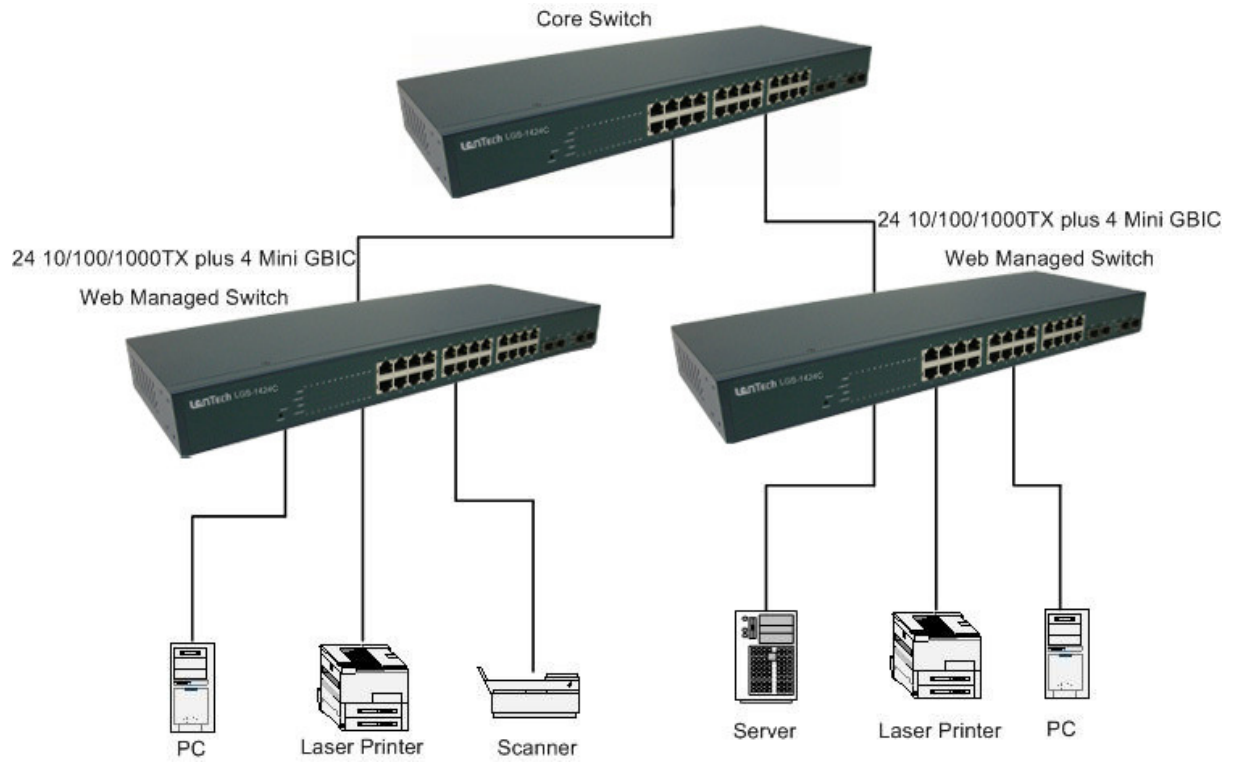
The 24 10/100/1000TX plus 4 Mini GBIC Web Managed Switch can be used as a standalone switch for personal computers, server and printer server which are directly connected to form a small workgroup.



## Segment Bridge

For enterprise networks where large data broadcasts are constantly processed, this switch is an ideal solution for department users to connect to the corporate backbone.

In the illustration below, two Ethernet switches with PCs, print server, and local server attached, are both connect to the switch. All the devices in this network can communicate with each other through the switch. Connecting servers to the switch allow other users to access the data on server.



# Web-Based Management

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This section introduces the configuration and functionality of the Web-Based management of the certain switch.

## About Web-based Management

On the CPU board of the switch there is an embedded HTML web site residing in flash memory, which offers advanced management features and allow users to manage the switch from anywhere in the network through a standard browser such as Microsoft Internet Explorer.

The Web-Based Management supports Internet Explorer 5.0. And, it is applied with Java Applets for reducing network bandwidth consumption, enhance access speed and present an easy viewing screen.

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**[NOTE]** By default, IE5.0 or later version does not allow Java Applets to activate sockets. In fact, the user has to explicitly modify the browser setting to enable Java Applets to operate network ports.

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## System Login

The default value as listed below:

- IP Address: **192.168.16.1**
- Subnet Mask: **255.255.255.0**
- Default Gateway: **192.168.16.254**
- Password: **root**

1. Launch the Internet Explorer
2. Key in “http://” + “IP Address of the 24 10/100/1000TX plus 4 Mini GBIC Web Managed Switch, ” and then press “**Enter**”
3. Login screen will appear right after
4. Key in the default password as “**root**”
5. Click  , and then configuration is ready to be set up



Main Interface

## System Configuration

Display system parameters information as listed below, and the other parameters of system can be configured as well.

- **MAC Address:** the unique hardware address assigned by manufacturer (default)
- **S/W Version:** the Software Version of Kernel
- **H/W Version:** the Hardware Version of Switch
- **Active IP Address:** Current IP Address
- **Active Subnet Mask:** Current IP Subnet Mask
- **Active Gateway:** Current Gateway



- **DHCP Server:** DHCP Server IP Address
- **Lease Time Left:** DHCP lease time. After 50% of the lease time has passed, the client/switch will attempt to renew the lease with the original DHCP server that it obtained the lease from using a DHCPREQUEST message. Any time the client/switch boots and the lease is 50% or more passed, the client/switch will attempt to renew the lease. At 87.5% of the lease completion, the client/switch will attempt to contact any DHCP server for a new lease.

### System Configuration

MAC Address	00-ff-38-ff-f2-34
SW Version	v1.02
HW Version	1.0
Active IP Address	192.168.16.1
Active Subnet Mask	255.255.255.0
Active Gateway	0.0.0.0
DHCP Server	0.0.0.0
Lease Time Left	0 secs

DHCP Enabled	<input type="checkbox"/>
Fallback IP Address	<input type="text" value="192.168.16.1"/>
Fallback Subnet Mask	<input type="text" value="255.255.255.0"/>
Fallback Gateway	<input type="text" value="0.0.0.0"/>
Management VLAN (1~4095)	<input type="text" value="1"/>
Name	<input type="text"/>
Password	<input type="text"/>
Inactivity Timeout (10~10000secs, 0secs means login forever)	<input type="text" value="0"/>

System Configuration Interface

- **DHCP Enable:** Enable DHCP Client Function
- **Fallback IP Address:** Assigning the Switch IP address. The default IP is 192.168.16.1
- **Fallback Subnet Mask:** Assigning the Switch IP Subnet Mask
- **Fallback Gateway:** Assigning the Switch Gateway. The default value is 192.168.16.254
- **Management VLAN:** It is used for Remote Management Security(in fact, the SNMP, and Web browse can be used to managed the switch from remote side only when the port of VLAN group ID is equal to the Management VLAN ID)
- **Name:** The name of the switch
- **Password:** Web GUI login password(The default password is root)
- **Inactivity Timeout:** timeout time for the web connection
- Click  to activate the configuration
- Or, Click  to reset the configuration before applying

## Port Configuration

Configure the Status of Ports

- **Link:** “Down” means “No Link”. User can select the link speed or auto speed which the system will auto detects the connecting speed
- **Mode:** Set the speed, full-duplex or half-duplex mode of the ports
- **Flow control:** Set Flow Control Function as “enable” or “disable” in Full Duplex mode
- **MaxFrame(1518 ~ 9600):** the Maximum Frame Size that in bytes from frames received on the port. Tagged frames are allowed to be 4 Bytes longer than the Maximum Frame size
- **Drop frames after excessive collisions:** When the collision packets over the limit, then the frame will be dropped

- Click  to apply the configuration
- Or, click  to reset the configuration before applying

**Port Configuration**

Port	Link	Mode	Flow Control	MaxFrame (1518-9600)
1	Down	Auto Speed	<input type="checkbox"/>	1518
2	100FDX	Auto Speed	<input type="checkbox"/>	1518
3	Down	Auto Speed	<input type="checkbox"/>	1518
4	100FDX	Auto Speed	<input type="checkbox"/>	1518
5	Down	Auto Speed	<input type="checkbox"/>	1518
6	Down	Auto Speed	<input type="checkbox"/>	1518
7	Down	Auto Speed	<input type="checkbox"/>	1518
8	Down	Auto Speed	<input type="checkbox"/>	1518
9	Down	Auto Speed	<input type="checkbox"/>	1518
10	Down	Auto Speed	<input type="checkbox"/>	1518
11	Down	Auto Speed	<input type="checkbox"/>	1518
12	Down	Auto Speed	<input type="checkbox"/>	1518
13	Down	Auto Speed	<input type="checkbox"/>	1518
14	Down	Auto Speed	<input type="checkbox"/>	1518
15	Down	Auto Speed	<input type="checkbox"/>	1518
16	Down	Auto Speed	<input type="checkbox"/>	1518
17	Down	Auto Speed	<input type="checkbox"/>	1518
18	Down	Auto Speed	<input type="checkbox"/>	1518
19	Down	Auto Speed	<input type="checkbox"/>	1518
20	Down	Auto Speed	<input type="checkbox"/>	1518
21	Down	Auto Speed	<input type="checkbox"/>	1518
22	Down	Auto Speed	<input type="checkbox"/>	1518
23	Down	Auto Speed	<input type="checkbox"/>	1518
24	Down	Auto Speed	<input type="checkbox"/>	1518

Drop frames after excessive collisions

**Combo Port 21 is Copper Port**  
**Combo Port 22 is Copper Port**  
**Combo Port 23 is Copper Port**  
**Combo Port 24 is Copper Port**

Port Configuration interface

# VLAN Setting

A Virtual LAN (VLAN) is a logical network grouping that limits the broadcast domain, which would allows user to isolate network traffic so only the members of VLAN will receive traffic from the same members of VLAN. Basically, creating a VLAN from a switch is logically equivalent of reconnecting a group of network devices to another Layer 2 switch. However, all the network devices are still plugged into the same switch physically.

- Assigning the VLAN ID by inputting a number (from 1~4095) into the VID text-box
- Grouping the members of VLAN by checking the check-box to make the selection
- Click **Apply** to bring up the configuration interface as below:

802.1Q Vlan Setting

Current Page: 1 Total Page:26

Vlan Entry No	Vlan ID/VID (1-4094)	Port1	Port2	Port3	Port4	Port5	Port6	Port7	Port8	Port9	Port10	Port11	Port12	Port13	Port14	Port15	Port16	Port17	Port18	Port19	Port20	Port21	Port22	Port23	Port24	Add All Ports	Clear All Ports	
1	VID 1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="button" value="add all"/>	<input type="button" value="clear all"/>
2	VID 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="add all"/>	<input type="button" value="clear all"/>
3	VID 3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="add all"/>	<input type="button" value="clear all"/>
4	VID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="add all"/>	<input type="button" value="clear all"/>
5	VID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="add all"/>	<input type="button" value="clear all"/>
6	VID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="add all"/>	<input type="button" value="clear all"/>
7	VID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="add all"/>	<input type="button" value="clear all"/>
8	VID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="add all"/>	<input type="button" value="clear all"/>
9	VID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="add all"/>	<input type="button" value="clear all"/>
10	VID	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="add all"/>	<input type="button" value="clear all"/>

Quick Search Vlan Entry, Vlan ID:

VLAN Setting interface

# VLAN Port Setting

Click **VLAN Port Setting** to bring up the configuration interface for adjusting the VID Setting

- **PVID:** Enter the Port VLAN ID
- **Awareness:**
  - **Enable:** Transmit to the PVID group that the same with the packets' VID.
  - **Disable:** Transmit to the PVID group that the same with the incoming port's PVID.
- **Frame Type:**
  - **Tag:** Only allow tagged frame pass the port.
  - **All:** Allow all type of frames pass through.
- Click  to apply the configuration
- Or, click  to reset the configuration before applying

## Vlan Port Setting

Port	PVID(1~4094)	Awareness	Frame Type
1	<input type="text" value="1"/>	Disable <input type="button" value="v"/>	All <input type="button" value="v"/>
2	<input type="text" value="1"/>	Disable <input type="button" value="v"/>	All <input type="button" value="v"/>
3	<input type="text" value="1"/>	Disable <input type="button" value="v"/>	All <input type="button" value="v"/>
4	<input type="text" value="1"/>	Disable <input type="button" value="v"/>	All <input type="button" value="v"/>
5	<input type="text" value="1"/>	Disable <input type="button" value="v"/>	All <input type="button" value="v"/>
6	<input type="text" value="1"/>	Disable <input type="button" value="v"/>	All <input type="button" value="v"/>
7	<input type="text" value="1"/>	Disable <input type="button" value="v"/>	All <input type="button" value="v"/>
8	<input type="text" value="1"/>	Disable <input type="button" value="v"/>	All <input type="button" value="v"/>
9	<input type="text" value="1"/>	Disable <input type="button" value="v"/>	All <input type="button" value="v"/>
10	<input type="text" value="1"/>	Disable <input type="button" value="v"/>	All <input type="button" value="v"/>
11	<input type="text" value="1"/>	Disable <input type="button" value="v"/>	All <input type="button" value="v"/>
12	<input type="text" value="1"/>	Disable <input type="button" value="v"/>	All <input type="button" value="v"/>
13	<input type="text" value="1"/>	Disable <input type="button" value="v"/>	All <input type="button" value="v"/>
14	<input type="text" value="1"/>	Disable <input type="button" value="v"/>	All <input type="button" value="v"/>
15	<input type="text" value="1"/>	Disable <input type="button" value="v"/>	All <input type="button" value="v"/>
16	<input type="text" value="1"/>	Disable <input type="button" value="v"/>	All <input type="button" value="v"/>
17	<input type="text" value="1"/>	Disable <input type="button" value="v"/>	All <input type="button" value="v"/>
18	<input type="text" value="1"/>	Disable <input type="button" value="v"/>	All <input type="button" value="v"/>
19	<input type="text" value="1"/>	Disable <input type="button" value="v"/>	All <input type="button" value="v"/>
20	<input type="text" value="1"/>	Disable <input type="button" value="v"/>	All <input type="button" value="v"/>
21	<input type="text" value="1"/>	Disable <input type="button" value="v"/>	All <input type="button" value="v"/>
22	<input type="text" value="1"/>	Disable <input type="button" value="v"/>	All <input type="button" value="v"/>
23	<input type="text" value="1"/>	Disable <input type="button" value="v"/>	All <input type="button" value="v"/>
24	<input type="text" value="1"/>	Disable <input type="button" value="v"/>	All <input type="button" value="v"/>

PVID can be set to 'none' used for trunk links. You can leave this value to none for setting PVID to none.

VLAN Port Setting interface

## Aggregation

Port trunk allows multiple links to be bundled together and act as a single physical link for increased throughput. It provides load balancing and redundancy of links in a switched inter-network. Actually, the link does not have an inherent total bandwidth equal to the sum of its component physical links. Traffic in a trunk is distributed across an individual link within the trunk in a deterministic method

that called a hash algorithm. Traffic pattern on the network should be considered carefully before applying it. When a proper hash algorithm is used, traffic is kind of randomly decided to be transmitted across either link within the trunk and load balancing will be seen.

- Select the group members( Normal means the port is not the trunk port)
- Click  to apply the configuration
- Or, click  to reset the configuration before applying

#### Aggregation/Trunking Configuration

Group\Port	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Normal	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Group 1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Group 2																								
Group 3																								
Group 4																								
Group 5																								
Group 6																								
Group 7																								
Group 8																								

Aggregation interface

## LACP Setting

The Link Aggregation Control Protocol (LACP) provides a standardized which means for exchanging information between Partner Systems on a link to allow their Link Aggregation Control instances to reach agreement on the identity of the Link Aggregation Group to which the link belongs, move the link to that Link Aggregation Group, and enable its transmission and reception functions in an

orderly manner. Link aggregation allow user grouping up to eight consecutive ports into a single dedicated connection. This feature can expand bandwidth to a device on the network. **LACP operation requires full-duplex mode**, more detail information refers to IEEE 802.3ad.

### LACP Port Configuration

Port	Protocol Enabled	Key Value
1	<input type="checkbox"/>	auto
2	<input type="checkbox"/>	auto
3	<input type="checkbox"/>	auto
4	<input type="checkbox"/>	auto
5	<input type="checkbox"/>	auto
6	<input type="checkbox"/>	auto
7	<input type="checkbox"/>	auto
8	<input type="checkbox"/>	auto
9	<input type="checkbox"/>	auto
10	<input type="checkbox"/>	auto
11	<input type="checkbox"/>	auto
12	<input type="checkbox"/>	auto
13	<input type="checkbox"/>	auto
14	<input type="checkbox"/>	auto
15	<input type="checkbox"/>	auto
16	<input type="checkbox"/>	auto
17	<input type="checkbox"/>	auto
18	<input type="checkbox"/>	auto
19	<input type="checkbox"/>	auto
20	<input type="checkbox"/>	auto
21	<input type="checkbox"/>	auto
22	<input type="checkbox"/>	auto
23	<input type="checkbox"/>	auto
24	<input type="checkbox"/>	auto

LACP Setting interface

- **Protocol Enable:** To enable the LACP protocol of the port
- **Key Value:** The LACP key determines which ports potentially can be



aggregated together

- Click  to apply the configuration
- Or, click  to reset the configuration before applying

## Rapid Spanning Tree

The Rapid Spanning Tree Protocol (RSTP) is an evolution of the Spanning Tree Protocol and provides the faster spanning tree convergence after the topology change. The system also supports STP and the system will auto detect the connected device that is running STP or RSTP protocol.

### System Configuration

- **System Priority:** The bridge with the lowest value has the highest priority and is selected as the root whenever the value is changed, the system must be rebooted for assigning the priority number of paths. The value must be multiple of 4096 according to the protocol standard rule.
- **Hello Time (1-10):** The scale of 1~10 sec will be set as a period of time that how often the switch broadcasts hello messages to other switches
- **Max Age (6-40):** The number of seconds (from 6~ 40) which determines the amount of time that protocol information received on a port is stored by the switch.
- **Forward Delay Time (4-30):** The number of seconds (from 4 ~ 30) which determines how long each of the listening and learning states will last before the port begins forwarding.
- **Force version:** Select the RSTP default protocol. Normal means RSTP protocol. Compat means compatible with STP protocol.

### RSTP System Configuration

System Priority	32768
Hello Time (1~10)	2
Max Age (6~40)	20
Forward Delay (4~30)	15
Force version	Normal

### RSTP Port Configuration

Port	Protocol Enabled	Edge	Path Cost(auto 1-200000000)
Aggregations	<input type="checkbox"/>		
1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	auto
2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	auto
3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	auto
4	<input type="checkbox"/>	<input checked="" type="checkbox"/>	auto
5	<input type="checkbox"/>	<input checked="" type="checkbox"/>	auto
6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	auto
7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	auto
8	<input type="checkbox"/>	<input checked="" type="checkbox"/>	auto
9	<input type="checkbox"/>	<input checked="" type="checkbox"/>	auto
10	<input type="checkbox"/>	<input checked="" type="checkbox"/>	auto
11	<input type="checkbox"/>	<input checked="" type="checkbox"/>	auto
12	<input type="checkbox"/>	<input checked="" type="checkbox"/>	auto
13	<input type="checkbox"/>	<input checked="" type="checkbox"/>	auto
14	<input type="checkbox"/>	<input checked="" type="checkbox"/>	auto
15	<input type="checkbox"/>	<input checked="" type="checkbox"/>	auto
16	<input type="checkbox"/>	<input checked="" type="checkbox"/>	auto
17	<input type="checkbox"/>	<input checked="" type="checkbox"/>	auto
18	<input type="checkbox"/>	<input checked="" type="checkbox"/>	auto
19	<input type="checkbox"/>	<input checked="" type="checkbox"/>	auto
20	<input type="checkbox"/>	<input checked="" type="checkbox"/>	auto
21	<input type="checkbox"/>	<input checked="" type="checkbox"/>	auto
22	<input type="checkbox"/>	<input checked="" type="checkbox"/>	auto
23	<input type="checkbox"/>	<input checked="" type="checkbox"/>	auto
24	<input type="checkbox"/>	<input checked="" type="checkbox"/>	auto

RSTP Configuration interface

## Port Configuration

- **Protocol Enable:** To Enable or disable the port protocol

- **Edge:** The port directly connected to end stations cannot create bridging loop in the network. To configure the port as an edge port, mark the port
- **Path Cost:** The cost of the path to the other bridge from this transmitting bridge at the specified port. Enter a number 1 through 200000000
- Click  to apply the configuration
- Or, click  to reset the configuration before applying

## 802.1X Configuration

802.1x is an IEEE authentication feature which allows a client connecting to a wireless access point or wired switch, however, prevents the client from gaining access to the Internet until it provides credentials, like a user name and password that are verified by a separated server.

- **Mode:** To disable or enable 802.1x protocol
- **RADIUS IP:** Set the Radius Server IP address
- **RADIUS UDP Port:** Set the UDP destination port for authentication requests to the specified Radius Server
- **RADIUS Secret:** Set an encryption key for use during authentication sessions with the specified radius server. This key must match the encryption key used on the Radius Server
- **Admin State:** Select the state of port
  - **Force Authorized:** The specified port is required to be held in the unauthorized state
  - **Force Unauthorized:** The specified port is required to be held in the authorized state
  - **Auto:** The specified port is set to the authorized or unauthorized state in accordance with the outcome of an authentication exchange between the Supplicant and the authentication server

## 802.1X Configuration

Mode:

RADIUS IP:

RADIUS UDP Port:

RADIUS Secret:

Port	Admin State	Port State			
1	Force Authorized	802.1X Disabled	<a href="#">Re-authenticate</a>	<a href="#">Force Reinitialize</a>	<a href="#">Statistics</a>
2	Force Authorized	802.1X Disabled	<a href="#">Re-authenticate</a>	<a href="#">Force Reinitialize</a>	<a href="#">Statistics</a>
3	Force Authorized	802.1X Disabled	<a href="#">Re-authenticate</a>	<a href="#">Force Reinitialize</a>	<a href="#">Statistics</a>
4	Force Authorized	802.1X Disabled	<a href="#">Re-authenticate</a>	<a href="#">Force Reinitialize</a>	<a href="#">Statistics</a>
5	Force Authorized	802.1X Disabled	<a href="#">Re-authenticate</a>	<a href="#">Force Reinitialize</a>	<a href="#">Statistics</a>
6	Force Authorized	802.1X Disabled	<a href="#">Re-authenticate</a>	<a href="#">Force Reinitialize</a>	<a href="#">Statistics</a>
7	Force Authorized	802.1X Disabled	<a href="#">Re-authenticate</a>	<a href="#">Force Reinitialize</a>	<a href="#">Statistics</a>
8	Force Authorized	802.1X Disabled	<a href="#">Re-authenticate</a>	<a href="#">Force Reinitialize</a>	<a href="#">Statistics</a>
9	Force Authorized	802.1X Disabled	<a href="#">Re-authenticate</a>	<a href="#">Force Reinitialize</a>	<a href="#">Statistics</a>
10	Force Authorized	802.1X Disabled	<a href="#">Re-authenticate</a>	<a href="#">Force Reinitialize</a>	<a href="#">Statistics</a>
11	Force Authorized	802.1X Disabled	<a href="#">Re-authenticate</a>	<a href="#">Force Reinitialize</a>	<a href="#">Statistics</a>
12	Force Authorized	802.1X Disabled	<a href="#">Re-authenticate</a>	<a href="#">Force Reinitialize</a>	<a href="#">Statistics</a>
13	Force Authorized	802.1X Disabled	<a href="#">Re-authenticate</a>	<a href="#">Force Reinitialize</a>	<a href="#">Statistics</a>
14	Force Authorized	802.1X Disabled	<a href="#">Re-authenticate</a>	<a href="#">Force Reinitialize</a>	<a href="#">Statistics</a>
15	Force Authorized	802.1X Disabled	<a href="#">Re-authenticate</a>	<a href="#">Force Reinitialize</a>	<a href="#">Statistics</a>
16	Force Authorized	802.1X Disabled	<a href="#">Re-authenticate</a>	<a href="#">Force Reinitialize</a>	<a href="#">Statistics</a>
17	Force Authorized	802.1X Disabled	<a href="#">Re-authenticate</a>	<a href="#">Force Reinitialize</a>	<a href="#">Statistics</a>
18	Force Authorized	802.1X Disabled	<a href="#">Re-authenticate</a>	<a href="#">Force Reinitialize</a>	<a href="#">Statistics</a>
19	Force Authorized	802.1X Disabled	<a href="#">Re-authenticate</a>	<a href="#">Force Reinitialize</a>	<a href="#">Statistics</a>
20	Force Authorized	802.1X Disabled	<a href="#">Re-authenticate</a>	<a href="#">Force Reinitialize</a>	<a href="#">Statistics</a>
21	Force Authorized	802.1X Disabled	<a href="#">Re-authenticate</a>	<a href="#">Force Reinitialize</a>	<a href="#">Statistics</a>
22	Force Authorized	802.1X Disabled	<a href="#">Re-authenticate</a>	<a href="#">Force Reinitialize</a>	<a href="#">Statistics</a>
23	Force Authorized	802.1X Disabled	<a href="#">Re-authenticate</a>	<a href="#">Force Reinitialize</a>	<a href="#">Statistics</a>
24	Force Authorized	802.1X Disabled	<a href="#">Re-authenticate</a>	<a href="#">Force Reinitialize</a>	<a href="#">Statistics</a>
			<a href="#">Re-authenticate All</a>	<a href="#">Force Reinitialize All</a>	

802.1X Configuration interface

- **Re-authenticate:** Restart authentication process for the port
- **Force Reinitialize:** Restart authentication process for the port
- **Statistics:** Click to view each port statistic

- **Re-authenticate All:** Restart authentication process for all the port
- **Force reinitialize All:** Restart authentication process for all the port
- Click  to apply the configuration
- Or, click  to reset the configuration before applying

## Parameters Configuration

- **Reauthentication Enable:** Enable the re-authentication mode
- **Reauthentication period (1~3600 seconds):** Set the period of time after which clients connected must be re-authenticated
- **EPA Timeout (1~255 seconds):** Set the period of time the switch waits for a supplicant response to an EAP request
- Click  to apply the configuration
- Or, click  to reset the configuration before applying

### 802.1X Parameters

Reauthentication Enabled	<input type="checkbox"/> Enabled
Reauthentication Period [1-3600 seconds]	<input type="text" value="3600"/>
EAP timeout [1 - 255 seconds]	<input type="text" value="30"/>

## IGMP Snooping

The Internet Group Management Protocol (IGMP) is an internal protocol of the Internet Protocol (IP) suite. IP manages multicast traffic by using switches, routers, and hosts that support IGMP. Enabling IGMP allows the ports to detect

IGMP queries and report packets and manage IP multicast traffic through the switch.

The switch support IP multicast that IGMP protocol can be enabled on switch then displays the IGMP snooping information. IP multicast addresses range from 224.0.0.0 through 239.255.255.255.

- **IGMP Enable:** To enable or disable IGMP function
- **Router Ports:** A static router port. It is a port that has a multicast router, which has a connection to the internet, attached to it. Selecting a router port will allow multicast packets coming from the router to be propagated through the network, as well as allowing multicast messages (IGMP) coming from the network to be propagated to the router. All IGMP Report packets will be forwarded to the router port, and IGMP queries (from the router port) will be flooded to all ports. All UDP multicast packets will be forwarded to the router port because routers do not send IGMP reports or implement IGMP snooping.
- **Unregistered IPMC Flooding Enable:** To enable unregistered IP multicast flooding
- **IGMP Snooping Enabled:** To enable or disable the IGMP protocol of VLAN group
- **Quick Search VLAN Entry, VLAN ID:** Enter the VLAN ID number to quick search the VLAN group.
- Click  to apply the configuration
- Or, click  to reset the configuration before applying

**Configuration**

- [System](#)
- [Ports](#)
- [VLANs](#)
- [Aggregation](#)
- [LACP](#)
- [RSTP](#)
- [802.1X](#)
- [IGMP Snooping](#)
- [Quality of Service](#)
- [Filter](#)
- [Rate Limit](#)
- [Mirror](#)

**Monitoring**

- [Statistics Overview](#)
- [Detailed Statistics](#)
- [LACP Status](#)
- [RSTP Status](#)
- [IGMP Status](#)

**Maintenance**

- [Warm Restart](#)
- [Factory Default](#)
- [Software Upload](#)
- [Configuration File Transfer](#)

**IGMP Configuration**

**IGMP Enabled**

**Router Ports**

1  2  3  4  5  6  7  8   
9  10  11  12  13  14  15  16   
17  18  19  20  21  22  23  24

**Unregistered IPMC Flooding enabled**

Current Page:1 Total Page:1

VLAN ID	IGMP Snooping Enabled
1	<input checked="" type="checkbox"/>

Quick Search Vlan Entry, Vlan ID:

IGMP Snooping interface

## QoS Setting

Configuring QoS mode of the port, per port priority, TOS and COS priority setting.

- **Mode:** Select the QoS mode – port, DSCP or vlantag
- **Port Priority:** select the priority level – low, normal, medium or high
- Click  to apply the configuration
- Click  to reset the configuration before applying

### QoS Configuration

Port	Mode	Port Priority
1	port	high
2	port	high
3	port	high
4	port	high
5	port	high
6	port	high
7	port	high
8	port	high
9	port	high
10	port	high
11	port	high
12	port	high
13	port	high
14	port	high
15	port	high
16	port	high
17	port	high
18	port	high
19	port	high
20	port	high
21	port	high
21	port	high
22	port	high
23	port	high
24	port	high

QoS Configuration interface

- Click  to enter VLAN tag priority configuration interface.  
Select the VLAN tap priority level 0~7
- Click  to apply the configuration
- Or, click  to reset the configuration before applying



### QoS Vlan Tag Priority Mapping

Port	ValnTag=0	ValnTag=1	ValnTag=2	ValnTag=3	ValnTag=4	ValnTag=5	ValnTag=6	ValnTag=7
1	normal	low	low	normal	medium	medium	high	high
2	normal	low	low	normal	medium	medium	high	high
3	normal	low	low	normal	medium	medium	high	high
4	normal	low	low	normal	medium	medium	high	high
5	normal	low	low	normal	medium	medium	high	high
6	normal	low	low	normal	medium	medium	high	high
7	normal	low	low	normal	medium	medium	high	high
8	normal	low	low	normal	medium	medium	high	high
9	normal	low	low	normal	medium	medium	high	high
10	normal	low	low	normal	medium	medium	high	high
11	normal	low	low	normal	medium	medium	high	high
12	normal	low	low	normal	medium	medium	high	high
13	normal	low	low	normal	medium	medium	high	high
14	normal	low	low	normal	medium	medium	high	high
15	normal	low	low	normal	medium	medium	high	high
16	normal	low	low	normal	medium	medium	high	high
17	normal	low	low	normal	medium	medium	high	high
18	normal	low	low	normal	medium	medium	high	high
19	normal	low	low	normal	medium	medium	high	high
20	normal	low	low	normal	medium	medium	high	high
21	normal	low	low	normal	medium	medium	high	high
22	normal	low	low	normal	medium	medium	high	high
23	normal	low	low	normal	medium	medium	high	high
24	normal	low	low	normal	medium	medium	high	high

Apply Refresh

QoS VLAN Tag Priority Mapping interface

- Click **DSCP Mapping** to enter TOS priority configuration interface
  - **DSCP [0- 63]:** the system provides 0~63 TOS priority level. When the IP packet is received, the system will check the TOS level value in the IP packet that has received. For example: user set the TOS level 25 is high. The port 1 is following the TOS priority policy. When the packet received by port 1, the system will check the TOS value of the received IP packet. If the TOS value of received IP packet is 25(priority = high), and then the packet priority will have highest priority

- **Priority:** select the priority level – high, medium, low or normal
- Click  to apply the configuration
- Or, press  to reset the configuration before applying

### QoS DSCP Mapping

DSCP [0-63]	Priority
<input type="text"/>	high <input type="button" value="v"/>
<input type="text"/>	high <input type="button" value="v"/>
<input type="text"/>	high <input type="button" value="v"/>
<input type="text"/>	high <input type="button" value="v"/>
<input type="text"/>	high <input type="button" value="v"/>
<input type="text"/>	high <input type="button" value="v"/>
<input type="text"/>	high <input type="button" value="v"/>
<b>All others</b>	high <input type="button" value="v"/>

QoS DSCP Mapping interface

## Filter Configuration

Filter the specific IP address on port that it can ensure the network security.

- **Mode:** Select the mode – DHCP or Static
  - ✓ **DHCP:** If the port is DHCP client enabling, the IP Address will automatically display in IP Address column
  - ✓ **Static:** Key in a specific IP Address and IP Mask for filtering
- **IP Address:** Key in the specific IP Address to filter
- **IP Mask:** Key in the IP Mask of the IP Address

- **DHCP Server Allowed:** Allowing DHCP server packet to pass through this port
- Click  to apply the configuration
- Or, press  to reset the configuration before applying

**Filter Configuration**

Port	Source IP Filter			DHCP Server Allowed
	Mode	IP Address	IP Mask	
1	Disabled			<input checked="" type="checkbox"/>
2	Disabled			<input checked="" type="checkbox"/>
3	Disabled			<input checked="" type="checkbox"/>
4	Disabled			<input checked="" type="checkbox"/>
5	Disabled			<input checked="" type="checkbox"/>
6	Disabled			<input checked="" type="checkbox"/>
7	Disabled			<input checked="" type="checkbox"/>
8	Disabled			<input checked="" type="checkbox"/>
9	Disabled			<input checked="" type="checkbox"/>
10	Disabled			<input checked="" type="checkbox"/>
11	Disabled			<input checked="" type="checkbox"/>
12	Disabled			<input checked="" type="checkbox"/>
13	Disabled			<input checked="" type="checkbox"/>
14	Disabled			<input checked="" type="checkbox"/>
15	Disabled			<input checked="" type="checkbox"/>
16	Disabled			<input checked="" type="checkbox"/>
17	Disabled			<input checked="" type="checkbox"/>
18	Disabled			<input checked="" type="checkbox"/>
19	Disabled			<input checked="" type="checkbox"/>
20	Disabled			<input checked="" type="checkbox"/>
21	Disabled			<input checked="" type="checkbox"/>
22	Disabled			<input checked="" type="checkbox"/>
23	Disabled			<input checked="" type="checkbox"/>
24	Disabled			<input checked="" type="checkbox"/>

Filter Configuration interface

## Rate Limiting

- **Storm Control:** The traffic storm control prevents LAN ports from being disrupted by a broadcast, multicast, or unicast traffic storm on physical

interfaces.

- ✓ **ICMP Rate:** Select the ICMP traffic storm control rate
- ✓ **Learn Frames Rate:** The learn frame rate is that the packet rate is learned and unicast. Learn Frames Rate is to find the Ethernet transfer rate but for the un-learn and flooding packets rate are no effect.
- ✓ **Broadcast Rate:** Select the broadcast traffic storm control rate
- ✓ **Multicast Rate:** Select the multicast traffic storm control rate
- ✓ **Flooded unicast Rate:** Select the unicast traffic rate
- **Policer:** Enter the port effective egress rate
- **Sharper:** Enter the port effective ingress rate
- Click  to apply the configuration
- Or, press  to reset the configuration before applying

### Rate Limit Configuration

Storm Control Number of frames per second	
ICMP Rate	No Limit ▾
Learn Frames Rate	No Limit ▾
Broadcast Rate	No Limit ▾
Multicast Rate	No Limit ▾
Flooded unicast Rate	No Limit ▾

Port	Policer	Shaper
1	No Limit ▾	No Limit ▾
2	No Limit ▾	No Limit ▾
3	No Limit ▾	No Limit ▾
4	No Limit ▾	No Limit ▾
5	No Limit ▾	No Limit ▾
6	No Limit ▾	No Limit ▾
7	No Limit ▾	No Limit ▾
8	No Limit ▾	No Limit ▾
9	No Limit ▾	No Limit ▾
10	No Limit ▾	No Limit ▾
11	No Limit ▾	No Limit ▾
12	No Limit ▾	No Limit ▾
13	No Limit ▾	No Limit ▾
14	No Limit ▾	No Limit ▾
15	No Limit ▾	No Limit ▾
16	No Limit ▾	No Limit ▾
17	No Limit ▾	No Limit ▾
18	No Limit ▾	No Limit ▾
19	No Limit ▾	No Limit ▾
20	No Limit ▾	No Limit ▾
21	No Limit ▾	No Limit ▾
22	No Limit ▾	No Limit ▾
23	No Limit ▾	No Limit ▾
24	No Limit ▾	No Limit ▾

Rate Limit Configuration interface

## Port Mirroring

The Port mirroring is a method for monitor traffic in switched networks. Traffic through ports can be monitored by one specific port. That is, traffic goes in or out monitored ports will be duplicated into analysis port.

- **Analysis Port:** It means mirror port can be used to see all monitor port traffic.  
( Mirror port can be connected to LAN analyzer or Netxray)
- **Monitor Port:** the ports which wants to be monitored. All monitor port traffic will be copied to analysis port. Maximum 23 monitor ports can be selected.
- Click  to apply the configuration
- Or, press  to reset the configuration before applying

### Port Mirroring

Analysis Port: <input type="text" value="Port 1"/>	
Monitor Ports	Monitor Rx
1	<input type="checkbox"/>
2	<input type="checkbox"/>
3	<input type="checkbox"/>
4	<input type="checkbox"/>
5	<input type="checkbox"/>
6	<input type="checkbox"/>
7	<input type="checkbox"/>
8	<input type="checkbox"/>
9	<input type="checkbox"/>
10	<input type="checkbox"/>
11	<input type="checkbox"/>
12	<input type="checkbox"/>
13	<input type="checkbox"/>
14	<input type="checkbox"/>
15	<input type="checkbox"/>
16	<input type="checkbox"/>
17	<input type="checkbox"/>
18	<input type="checkbox"/>
19	<input type="checkbox"/>
20	<input type="checkbox"/>
21	<input type="checkbox"/>
22	<input type="checkbox"/>
23	<input type="checkbox"/>
24	<input type="checkbox"/>

Port Mirroring Configuration interface

## Statistics Overview

The following information provides the current port statistic information

Press  button to clean all counts, and then click  to get the new setting information as below:

### Statistics Overview for all ports

Port	Tx Bytes	Tx Frames	Rx Bytes	Rx Frames	Tx Errors	Rx Errors
1	0	0	0	0	0	0
2	1459648	14996	80806389	692872	0	0
3	0	0	0	0	0	0
4	20566778	59671	1138597	14660	0	0
5	0	0	0	0	0	0
6	0	0	0	0	0	0
7	0	0	0	0	0	0
8	0	0	0	0	0	0
9	0	0	0	0	0	0
10	0	0	0	0	0	0
11	0	0	0	0	0	0
12	0	0	0	0	0	0
13	0	0	0	0	0	0
14	0	0	0	0	0	0
15	0	0	0	0	0	0
16	0	0	0	0	0	0
17	0	0	0	0	0	0
18	0	0	0	0	0	0
19	0	0	0	0	0	0
20	0	0	0	0	0	0
21	0	0	0	0	0	0
22	0	0	0	0	0	0
23	0	0	0	0	0	0
24	0	0	0	0	0	0

Statistics Overview interface

## Statistics Detail

The following information provides statistic detail information of statistic on each port, and simply selecting the port to viewing the statistic information.

Press  button to clean all counts, and then click  to get the new setting information as below:

### Statistics for Port 1

<a href="#">Port 1</a>	<a href="#">Port 2</a>	<a href="#">Port 3</a>	<a href="#">Port 4</a>	<a href="#">Port 5</a>	<a href="#">Port 6</a>	<a href="#">Port 7</a>	<a href="#">Port 8</a>
<a href="#">Port 9</a>	<a href="#">Port 10</a>	<a href="#">Port 11</a>	<a href="#">Port 12</a>	<a href="#">Port 13</a>	<a href="#">Port 14</a>	<a href="#">Port 15</a>	<a href="#">Port 16</a>
<a href="#">Port 17</a>	<a href="#">Port 18</a>	<a href="#">Port 19</a>	<a href="#">Port 20</a>	<a href="#">Port 21</a>	<a href="#">Port 22</a>	<a href="#">Port 23</a>	<a href="#">Port 24</a>
<b>Receive Total</b>				<b>Transmit Total</b>			
Rx Packets				0	Tx Packets	0	
Rx Octets				0	Tx Octets	0	
Rx High Priority Packets				-	Tx High Priority Packets	-	
Rx Low Priority Packets				-	Tx Low Priority Packets	-	
Rx Broadcast				-	Tx Broadcast	-	
Rx Multicast				-	Tx Multicast	-	
Rx Broad- and Multicast				0	Tx Broad- and Multicast	0	
Rx Error Packets				0	Tx Error Packets	0	
<b>Receive Size Counters</b>				<b>Transmit Size Counters</b>			
Rx 64 Bytes				-	Tx 64 Bytes	-	
Rx 65-127 Bytes				-	Tx 65-127 Bytes	-	
Rx 128-255 Bytes				-	Tx 128-255 Bytes	-	
Rx 256-511 Bytes				-	Tx 256-511 Bytes	-	
Rx 512-1023 Bytes				-	Tx 512-1023 Bytes	-	
Rx 1024- Bytes				-	Tx 1024- Bytes	-	
<b>Receive Error Counters</b>				<b>Transmit Error Counters</b>			
Rx CRC/Alignment				-	Tx Collisions	-	
Rx Undersize				-	Tx Drops	-	
Rx Oversize				-	Tx Overflow	-	
Rx Fragments				-			
Rx Jabber				-			
Rx Drops				-			

Statistics Detail interface

## LACP Status

When the LACP aggregator is setup, the related information will be shown as below:



**LACP Aggregation Overview**

Group/Port	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Normal	Down	Forwarding	Blocked	Blocked	Blocked	Blocked	Blocked	Blocked	Blocked	Blocked	Blocked	Blocked	Blocked	Blocked	Blocked	Blocked	Blocked	Blocked	Blocked	Blocked	Blocked	Blocked	Blocked	Blocked	Blocked

**Legend**

Down	Port link down
Blocked	Port Blocked by RSTP. Number is Partner port number if other switch has LACP enabled
Learning	Port Learning by RSTP
Forwarding	Port link up and forwarding frames
Forwarding	Port link up and forwarding by RSTP. Number is Partner port number if other switch has LACP enabled

**LACP Port Status**

Port	Protocol Active	Partner Port Number	Operational Port Key
1	no		
2	no		
3	no		
4	no		
5	no		
6	no		
7	no		
8	no		
9	no		
10	no		
11	no		
12	no		
13	no		
14	no		
15	no		
16	no		
17	no		
18	no		
19	no		
20	no		
21	no		
22	no		
23	no		
24	no		

Refresh

LACP Status interface

## Spanning Tree Status

Click **Refresh** to get the newest configuration information. The Rapid Spanning Tree Protocol information will display as below:

**RSTP VLAN Bridge Overview**

VLAN Id	Bridge Id	Hello Time	Max Age	Fwd Delay	Topology	Root Id
1	32769:00-ff-38-ff-f2-f2	2	20	15	Steady	This switch is Root!

**RSTP Port Status**

Port/Group	Vlan Id	Path Cost	Edge Port	P2p Port	Protocol	Port State
Port 1						Non-STP
Port 2						Non-STP
Port 3						Non-STP
Port 4						Non-STP
Port 5						Non-STP
Port 6						Non-STP
Port 7						Non-STP
Port 8						Non-STP
Port 9						Non-STP
Port 10						Non-STP
Port 11						Non-STP
Port 12						Non-STP
Port 13						Non-STP
Port 14						Non-STP
Port 15						Non-STP
Port 16						Non-STP
Port 17						Non-STP
Port 18						Non-STP
Port 19						Non-STP
Port 20						Non-STP
Port 21						Non-STP
Port 22						Non-STP
Port 23						Non-STP
Port 24						Non-STP

Refresh

RSTP Status interface

## IGMP Status

IGMP Snooping information will be shown as below:

### IGMP Status

Current Page:1 Total Page:1

VLAN ID	Querier	Queries transmitted	Queries received	v1 Reports	v2 Reports	v3 Reports	v2 Leaves
1	Idle	0	0	0	0	0	0
2	Idle	0	0	0	0	0	0

Quick Search Vlan Entry, Vlan ID:

IGMP Status interface

## Warm Restart

Reboot the switch in software reset. All the configurations will be reminded

Click  to restart the system

### Warm Restart

Are you sure you want to perform a Warm Restart?

System Restart interface

## Factory Default

Reset switch to default configuration

Click  to reset the all configuration to the default value

### Factory Default



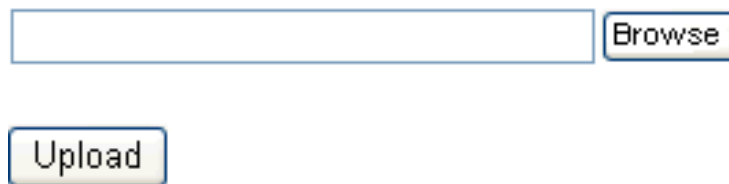
Factory Default interface

## Firmware Upload

The system provides the Web GUI firmware update function which would allow the user to update the switch firmware

Click  to locate the firmware and press  to update the firmware

### Software Upload



Firmware Upload interface

## Configuration File Transfer

User can restore configuration value through the WEB GUI

- Click **Browse** to locate the configuration value file
- And then, press **Upload** to restore the configuration value

## Configuration Upload

## Configuration Download

Configuration File Transfer interface

To backup the configuration value

- Click **Download**, and then follow the system instruction which will guide user to complete the configuration value download

# Troubleshooting

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This section is intended to help user to solve the most common problems on the 24 10/100/1000TX plus 4 Mini GBIC Web Managed Switch.

## Incorrect connections

The switch port can auto detect straight or crossover cable when the switch link with other Ethernet device. For the RJ-45 connector should use correct UTP or STP cable, 10/100Mbps port use 2 pairs twisted cable and Gigabit 1000T port use 4 pairs twisted cable. If the RJ-45 connector is not correct pin on right position then the link will fail. For fiber connection, please notice that fiber cable mode and fiber module should be match.

### ■ Faulty or loose cables

Look for loose or obviously faulty connections. If they appear to be OK, make sure the connections are snug. If that does not correct the problem, try a different cable.

### ■ Non-standard cables

Non-standard and miss-wired cables may cause numerous network collisions and other network problem, and can seriously impair network performance. A category-5 cable tester is a recommended tool for every 100Base-T network installation.

**RJ-45 ports:** use unshielded twisted-pair (UTP) or shield twisted-pair ( STP ) cable for RJ-45 connections: 100  $\Omega$  Category 3, 4 or 5 cable for 10Mbps

connections or 100  $\Omega$  Category 5 cable for 100Mbps connections. Also be sure that the length of any twisted-pair connection does not exceed 100 meters (328 feet). Gigabit port should use Cat-5 or cat-5e cable for 1000Mbps connections. The length does not exceed 100 meters.

## ■ Improper Network Topologies

It is important to make sure that user have a valid network topology. Common topology faults include excessive cable length and too many repeaters (hubs) between end nodes. In addition, user should make sure that network topology contains no data path loops. Between any two ends nodes, there should be only one active cabling path at any time. Data path loops will cause broadcast storms that will severely impact network performance.

## Diagnosing LED Indicators

The switch can be easily monitored through panel indicators to assist in identifying problems, which describes common problems you may encounter and where user can find possible solutions.

If the power indicator does turn on when the power cord is plugged in, user may have a problem with power outlet, or power cord. However, if the switch powers off after running for a while check for loose power connections, power losses or surges at power outlet. If the problem still cannot be resolved, contact the local dealer for assistance.

# Technical Specification

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This section provides the specifications of 24 10/100/1000TX plus 4 Mini GBIC Web Managed Switch and the following table lists these specifications.

<p><b>Standard</b></p>	<p>IEEE 802.3 10BASE-T Ethernet          IEEE 802.3u 100BASE-TX Fast Ethernet          IEEE 802.3ab 1000Base-T          IEEE 802.3z Gigabit Fiber          IEEE 802.3x Flow Control and Back-pressure          IEEE 802.1d Spanning Tree          IEEE 802.w Rapid Spanning Tree          IEEE 802.3ad Port trunk with LACP          IEEE 802.1p Class of Service          IEEE 802.1Q VLAN Tag</p>
<p><b>Network Cable</b></p>	<p>10BASE-T: 2-pair UTP/STP Cat. 3, 4, 5 cable          EIA/TIA-568 100-ohm (100m)          100BASE-TX: 2-pair UTP/STP CAT. 5 cable          EIA/TIA-568 100-ohm (100m)          Gigabit Copper: 4 pair UTP/STP CAT. 5 cable          EIA/TIA 568 100-ohm (100M)</p>
<p><b>LED Indicators</b></p>	<p>Per RJ-45 port: 1000 (green), Link/Activity (green)          Per MINI GBIC: Link/Activity (Green)          Per unit: Power</p>



<b>Connector</b>	Gigabit copper: 24 x RJ-45 with Auto-MDIX MINI GBIC: 4 x MINI GBIC socket (3.3v); shared with last 4-port RJ-45
<b>Switch architecture</b>	Store and forward switch architecture
<b>Jumbo packet</b>	Support 10Kbytes jumbo packet size
<b>Back-plane</b>	48Gbps, 71.42Mpps throughput @64bytes
<b>MAC address</b>	8K Mac with Auto Learning
<b>Memory Buffer</b>	500Kbytes
<b>Power Supply</b>	AC 100~240V, 50/60Hz
<b>Power Consumption (DC)</b>	AC: 65Watt (maximum) DC:19W(maximum)
<b>Dimensions</b>	440mm x 161mm x 44mm (L x W x H)
<b>Operation Temperature</b>	0°C to 45°C (32°F to 113°F)
<b>Operation Humidity</b>	10% to 90% (Non-condensing)
<b>EMI</b>	FCC Class A, CE
<b>Safety</b>	UL, cUL

# Appendix

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## Cables

The RJ-45 ports on the switch support automatic MDI/MDI-X operation, so you can use standard straight-through twisted-pair cables to connect to any other network device (PCs, servers, switches, routers, or hubs). Please refer to the following table for cable specifications.

### ■ Cable Types and Specifications

Cable	Type	Max. Length	Connector
10BASE-T	Cat. 3, 4, 5 100-ohm	UTP 100 m (328 ft)	RJ-45
100BASE-TX	Cat. 5 100-ohm UTP	100 m (328 ft)	RJ-45
100BASE-FX	50/125 or 62.5/125 micron core multimode fiber (MMF)	2 km (1.24 miles)	SC or ST

Cable specification table

## 100BASE-TX/10BASE-T Pin Assignments

With 100BASE-TX/10BASE-T cable, pins 1 and 2 are used for transmitting data, and pins 3 and 6 for receiving data.

### ■ RJ-45 Pin Assignments

Pin Number	Assignment
1	Tx+
2	Tx-
3	Rx+
6	Rx-

---

**[NOTE]** “+” and “-” signs represent the polarity of the wires that make up each

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wire pair.

All ports on this switch support automatic MDI/MDI-X operation, you can use straight-through cables for all network connections to PCs or servers, or to other switches or hubs. In straight-through cable, pins 1, 2, 3, and 6, at one end of the cable, are connected straight through to pins 1, 2, 3 and 6 at the other end of the cable. The table below shows the 10BASE-T/ 100BASE-TX MDI and MDI-X port pin outs.

<b>Pin MDI-X</b>	<b>Signal Name</b>	<b>MDI Signal Name</b>
1	Receive Data plus (RD+)	Transmit Data plus (TD+)
2	Receive Data minus (RD-)	Transmit Data minus (TD-)
3	Transmit Data plus (TD+)	Receive Data plus (RD+)
6	Transmit Data minus (TD-)	Receive Data minus (RD-)