PLANET
Networking & Communication

24-port + 3-slot Stackable Ethernet Switch

WGSW-2403

User's Manual

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Revision

PLANET 24-port + 3-slot Stackable Ethernet Switch User's Manual
FOR MODELS: WGSW-2403
Part No.: EM-WGSW2403

TABLE OF CONTENTS

Chapter 1 INTRODUCTION

1.1 Checklist

Check the contents of your package for following parts:

- WGSW-2403.
- CD-ROM.
- Quick Installation Guide
- Power cord.
- 19" rack-mount brackets.
- RS-232 cable.

If any of these pieces are missing or damaged, please contact your dealer immediately, if possible, retain the carton including the original packing material, and use them against to repack the product in case there is a need to return it to us for repair.

1.2 About the Switch

The WGSW-2403 comes with 24 10/100Base-TX auto-MDI/MDI-X ports, two slots for optional of 1000Base-SX, 1000Base-LX, 10/100/1000Base-T modules and a shared slot for a 100Base-FX module.   Each unit has a built-in management interface for configuring and monitoring through console port, telnet, web and SNMP.

The WGSW-2403 provides a switch stacking function to manage up to 8 switches using a single IP address.   Through its proprietary management bus using a standard RJ-45 cable, the distance between stacked switches can be up to 800m.   The management bus traffic is separated from the network ports, ensuring heavy network loading does not affect management tasks. Upto 208 Ethernet ports can be managed by a single IP address. The WGSW-2403 can also be stacked with PLANET's WGSW-14020 16G Switch and VC-1602 VDSL Switch, providing the flexibility for various applications.

The IEEE 802.1Q with VLAN tagging feature make logically separating nodes easier and up to 255 VLAN group are allowed on the WGSW-2403. Rate control is also supported to allow bandwidth allocation on a per-port basis. Two priority queues ensure critical applications get the bandwidth and priority they need.   IGMP snooping is also provided to prevent flooding of IP multicast traffic.

1.3 Features

- Complies with IEEE802.3 10Base-T, IEEE802.3u 100Base-TX, IEEE 802.3z 1000Base-SX/LX, IEEE 802.3ab 1000Base-T, IEEE 802.1D spanning Tree protocol, IEEE 802.3x flow control, IEEE 802.1Q VLAN, 802.1p priority queuing
- 24-port 10/100Mbps, two slots for 1000Base-T/SX/LX module and one shared slot for 100Base-FX port
- 8.8G switching fabric
- Provides 6k MAC address table and 384K bytes memory buffer
- Supports switch stackable management function, up to 8 devices and distance up to 800m with single IP

- **w** Rate control function is provided to restrict each port's bandwidth provision from 10%, 20% to 100%.
- **w** Support 802.1p QoS with two priority queues
- **w** Support 802.1Q tagged VLAN, up to 255 VLAN groups can be configured
- **w** Console, telnet, web and SNMP manageable
- **w** Support IGMP snooping
- **w** Port mirroring for dedicated port monitoring

1.4 Specifications

Product	24-port + 3-slot Stackable Ethernet Switch
Model	WGSW-2403
Network Ports	24 x RJ-45
Stack Ports	2 x RJ-45
Module slot	2 for 10/100/1000Base-T, 1000Base-SX and 1000Base-LX modules 1 for 100Base-FX modules, shared with port 1
Console	1 x RS-232 DB-9
Stack ID selection	Knob with 8 settings (0~7)
Transmission method	Store-and-forward
Switching Fabric	8.8G
MAC address table size	6k
Packet Buffer Memory	384K Bytes
LEDs	System: PWR, Master, Status Per port: Speed/LNK/ACT, FDX/COL Port Module: LNK/ACT Stack: LNK
Cables	10Base-T: 2-pair UTP Cat. 3,4,5 up to 100m 100Base-TX: 2-pair UTP Cat.5, up to 100m 1000Base-T: 4-pair UTP Cat 5, up to 100m 1000Base-SX: 50/125 and 62.5/125 fiber-optic cable, up to 550m 1000Base-LX: 9/125 fiber optic cable, up to 10km 50/125 and 62.5/125 fiber-optic cable, up to 550m
Rack Mount	19" rack mount, 1U height
Dimension	440 x 285 x 44 mm
Weight	3.6kg
Operating Environment	Temperature: 0~50 degree C (operating), -20~70 degree C (storage) Humidity: 0~90%, non-condensing
Power Supply	100~240VAC, 50~60Hz, auto-sensing
Power Consumption	40 Watts maximum / 136 BTU/hr maximum
EMC/EMI	FCC, CE
Management Interface	Web, Console, Telnet and SNMP
Protocols and Standards	IEEE 802.3 (Ethernet) IEEE 802.3u (Fast Ethernet) IEEE 802.3z/802.3ab (Gigabit Ethernet) IEEE 802.3x (flow control) IEEE 802.1D Spanning Tree IEEE 802.1Q VLAN tag

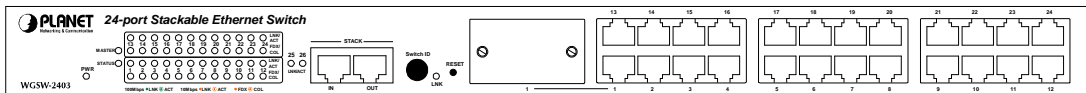|	IEEE 802.1p QoS RFC 768 UDP RFC 783 TFTP RFC 791 IP RFC 792 ICMP RFC 826 ARP RFC 854 Telnet RFC 2068 HTTP RFC 2236 IGMPv2
Network Management	RFC 1157 SNMP v1/v2 RFC 1123 MIB-2 RFC 1493 Bridge MIB Enterprise private MIB

Chapter 2 HARDWARE INSTALLATION

This section describes the hardware features and installation of these Switches. For easier management and control of the switch, familiarize yourself with its display indicators, and ports. Front panel illustrations in this chapter display the unit LED indicators. Before connecting any network device to the switch, read this chapter carefully.

Furthermore, there are six choices of different modules for expansion:

l   WGSW-D1GT: 10/100/1000Base-T module

l   WGSW-D1SX: 1000Base-SX module

l   WGSW-D1LX: 1000Base-LX module

l   WGSW-D1SC: 100Base-FX module (SC interface)

l   WGSW-D1ST: 100Base-FX module (ST interface)

l   WGSW-D1S15: 100Base-FX module (SC interface)

2.1 Front Panel

The unit front panel provides a simple interface monitoring the switch.

WGSW-2403 Switch front panel

LED indicators

PWR		Green	On: Power on
MASTER		Green	When this LED steady green, it means the device acts competent leading role (Master), an indispensable essential for system administrator to control and monitor whole system. At the time one member of the cluster disconnected or new member joined, the LED blinks. Soon, one and only one master will be raised. You can refer to "SWITCH ID" section below for relative information.
STATUS		Flashing Green	Run Time Error occurs
10/100 Mbps ports	LNK/ACT	Off	No Connection on the port
		Green	The port is connected at 100Mbps
		Flashing Green	There is traffic transverses the port
		Amber	The port is connected at 10Mbps
		Flashing Amber	There is traffic transverses the port

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	FDX/COL	Steady Amber	The port is connected at Full-Duplex mode
		Off	The port is connected at Half-Duplex mode. A collision occurs when two stations within a collision domain attempt to transmit data at the same time. Intermittent flashing amber of the collision LED is normal; the contending adapters resolve each collision by means of a wait-then-retransmit algorithm. Frequency of collisions is an indicator of heavy traffic on the network
		Flashing Amber	Collision happens on the port
Module	LNK/ACT	Green	When one slide-in module is well installed and functioning, the relevant one lights green
		Flashing Green	There is traffic transverses the port
STACK	LNK	Green	On: The switch is stacked to others Off: The switch is standalone or the stack link have problem

Stack ports

There are two stack ports on the front panel.   One is IN and the other is OUT.   When stacked, the IN port should connect to the other switch's OUT port and the OUT port should connect to other switch's IN out. You can just use normal Cat 5 or better cable with RJ-45 connector to stack. Only straight-through UTP/STP cable can be used. There is no Duplex Mode issue and the maximum distance between first and last switch is 800m.

SWITCH ID

Each switch on a stack must have a unique switch ID.   There are eight degrees (0~7) in the rotary switch. The switch with least switch ID will become master switch and the others become slave.   If master switch is fail or disconnected to the switch by stack port, the switch with least switch ID will become master.

Every device in the management stack should have a unique "Switch ID". In the meanwhile, a "Switch ID" which has been using by a device, reused by another, the management stack will fail.

Reset button

At the middle of front panel, the reset button is designed for reboot the switch without turn off and on the power.

10/100Mbps Ethernet ports

There are 24 10/100Mbps RJ-45 (copper) ports with one 100Mbps fiber optic slide-in slot. The slot is shared with port 1 which means if a fiber module is installed in this slot, the first RJ-45 port will be disabled.   The following pictures show the available module for this slot.
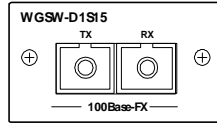

100Base-FX SC multi-mode fiber module

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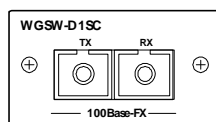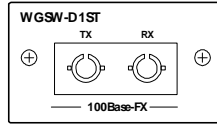
100Base-FX SC multi-mode fiber module

100Base-FX SC multi-mode fiber module

The auto-negotiation feature of the switch allows each port of the device running at one of the following operation modes:

Port	Media	Speed	Duplex Mode
10/100Mbps	100Mbps fiber optic (Alternative to copper port-1)	100Mbps	Full Duplex
			Half Duplex
	10/100Mbps RJ-45 (copper)	10Mbps	Full Duplex
			Half Duplex
		100Mbps	Full Duplex
			Half Duplex

All copper ports supports MDI/MDI-X automatically crossover capability that is the port can connect either the PC or hub without crossover cable adjustment.

Wiring for 10/100Mbps (Fiber Optic/Copper)

Following are the summaries of cabling required:

| Media	Speed	Wiring	Maximum Distance
10/100Mbps RJ-45 ports	10Mbps	Category 3,4,5 UTP/STP	100m
	100Mbps	Category 5 UTP/STP	100m
WGSW-D1SC, WGSW-D1ST	100Mbps	62.5/125 or 50/125µm multi-mode fiber optic	2km
WGSW-D1S15	100Mbps	9/125µm single-mode fiber optic	15km

If the port is connected but the relevant LED is dark, check the following items:

1. The switch and the connected device's power are on or not.

2. The connecting cable is good and with correct type.

3. The cable is firmly seated in its connectors in the switch and in the associated device.

4. The connecting device, including any network adapter is well installed and functioning.

5. Confirm the connection distance is implemented within the scope of operative without interference.

2.2 Rear Panel

The rear panel of the switch indicates an AC inlet power socket, which accepts input power from 100 to 240VAC, 50-60Hz, one RS-232 console port for setting up the switch via a connection to a terminal or PC using a terminal emulation program, and two slide-in slots for installing additional modules.
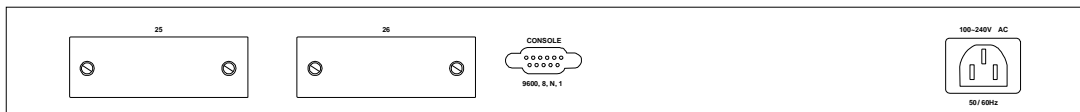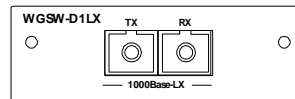

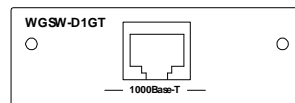WGSW-2403 Switch rear panel

Slide-in slots

The two slide-in slots on the rear panel are reserved for following optional gigabit modules. They can provide fat pipes for up linking to backbone or connecting to servers.
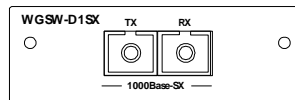
1000BASE-SX : WGSW-D1SX

1000BASE-LX : WGSW-D1LX

1000BASE-T : WGSW-D1GT

The following is the gigabit module operation and cabling required:

Media	Speed	Duplex Mode	Wiring	Distance
1000BASE-T	10Mbps	Full / Half	Category 3,4,5 UTP/STP	100m
	100Mbps	Full / Half	Category 5 UTP/STP	100m
	1000Mbps	Full	Category 5 UTP/STP	100m
1000BASE-SX	1000Mbps	Full	62.5/125 µm MMF	220m
			50/125 µm MMF	500m
1000BASE-LX	1000Mbps	Full	62.5/125 µm MMF	550m
			50/125 µm MMF	550m
			9/125 µm SMF	10km

NOTE: MMF-multimode fiber, SMF – Single mode fiber

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Console Port

The RS-232 console is an interface for connecting a terminal directly. Through the console port, it provides rich diagnostic information includes network statistics, link status and system setting. The operating mode of the console port is:

♦ DCE
♦ 9600 (Fix baud rate)
♦ n (No parity checking)
♦ 8 (8 Data bits)
♦ 1 (1 stop bit)
♦ None (No flow control)

You can use a normal RS-232 cable and connect to the console port on the device. After the connection, you can run any terminal emulation program (Hyper Terminal, Winterm, Telix, and so on) to enter the startup screen of the device.

Power Receptacle

For compatibility with electric service in most areas of the world, the switch's power supply automatically adjusts to line power in the range 100-240 VAC and 50-60 Hz.

Plug the female end of the power cord firmly into the receptacle on the rear panel of the switch. Plug the other end of the power cord into an electric service outlet then the power will be ready.

Power Notice:

1. The device is a power-required device, it means, it will not work till it is powered. If your networks should active all the time, please consider using UPS (Uninterrupted Power Supply) for your device. It will prevent you from network data loss or network downtime.

2. In some area, installing a surge suppression device may also help to protect your switch from being damaged by unregulated surge or current to the Switch or the power adapter.

2.3 Hardware Installation

This switch can be placed directly on your desktop, or mounted in a rack. If you install the device in a normal-standalone standard, the switch is an managed Switch, and users can immediately use most of the features simply by attaching the cables and turning the power on. In this case, any managerial proceedings are effective only in the range of the switch. After management stacking, you can enjoy the powerful management functions and control the whole system.

Desktop Installation

For desktop installation, the switch needs to put on a clean, flat desk or table close to a power outlet. Plug in all network cables and the power cord, then the system is ready.

Before installing the switch, you must ensure:
1. It is accessible and cables can be connected easily.

2. Cabling is away from:
   w Sources of electrical noise such as radios, transmitters and broadband amplifiers
   w Power lines and fluorescent lighting fixtures.
3. Keep water or moisture off.
4. Airflow around the unit and through the vents in the side of the case is great for heat radiation (company recommend that you provide a minimum of 25 mm clearance).

To prolong the operational life of your units:

1. Never stack unit more than eight sets high if freestanding.
2. Do not place objects on top of any unit or stack.
3. Do not obstruct any vents at the sides of the case.

Rack-mount Installation

The switch may standalone, or may be mounted in a standard 19-inch equipment rack. Rack mounting produces an orderly installation when you have a number of related network devices. The switch is supplied with rack mounting brackets and screws. These are used for rack mounting the unit.

Rack Mounting the Switch in the 19-inch rack:

1. Disconnect all cables from the switch before continuing.
2. Place the unit the right way up on a hard, flat surface with the front facing toward you.
3. Locate a mounting bracket over the mounting holes on one side of the unit.
4. Insert the screws and fully tighten with a suitable screwdriver.
5. Repeat the two previous steps for the other side of the unit.
6. Insert the unit into the 19" rack and secure with suitable screws (not provided).
7. Reconnect all cables.

Installing Network Cables

Station Connections -

Refer to the wiring statement of the previous section; connect each station with correct type of cables.

Switch-to-Switch Connections –

In making a switch-to-switch connection, use Gigabit ports to connect another switch or backbone is strongly recommended. The Gigabit ports provide the fat pipe to the server or backbone connectivity for boosting the total system performance. Refer to the wiring statement of the previous section; connect each station to the switch with correct type of cables.

Module Installation

The two slide-in slots on the rear panel are purposed for installing optional modules. They can be used as a network backbone or connect to a server. Follow the steps as described to install a module:

1. Power off the switch.
2. Removing the two screws on the face plate of slide-in slot with a flat-head screwdriver.

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3.   Push the module gently into the slot along the slide tracks.
4.   Ensuring that it firmly engages with the connector then tighten the screws to secure the module.
CAUTION: The slide-in slots are not hot swappable, power off the switch before installing modules.

2.4 Stack Installation

There are two RJ-45 ports on the front panel for proprietary management stack. Only straight-through UTP/STP cable can be used.

Plug one end of the cable in the "IN" port and the other end to the "OUT" port of next device. Repeat the step for every device in the stack cluster, then ending at last switch.

NOTE: Before management stacking, be sure of every device uses a unique "SWITCH ID", or the management stack will not work.   The switch with least SWITCH ID will become Master.   Only Master switch's management interface (console, telnet, web and SNMP) is accessible.

Please find the following picture for sample connection.   Please note the stack port is for management only.   For data packets to be transmitted between switches, you will still need to connect their network ports.

- 10 -
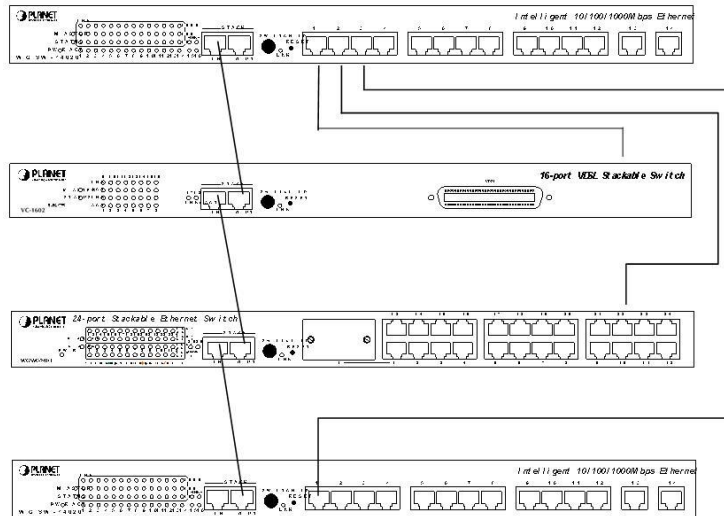
Chapter 3 CONSOLE AND TELNET MANAGEMENT

3.1 Connect To PC by RS-232 serial Cable

NOTE: If you have stacked several switches together, make sure you are working on Master switch (switch with least Switch ID). Other slave switches' management interface allows only viewing the configuration by "guest" account.

To configure the system, connect the provided serial cable to a COM port on a PC or notebook computer and to serial (console) port of the device. The console port of the device is DCE already, so that you can connect the console port directly through PC without the need of Null Modem.

A terminal program is required to make the software connection to the device. Windows' Hyper Terminal program may be a good choice. It can be accessed from the Start menu. Click START, then Programs, Accessories and then Hyper Terminal.

MS-DOS based terminal program such as PC-PLUS, PROCOMM, can also make the connection with the device built-in software. The COM port should be configured as:

- ♦ Baud   : 9600
- ♦ Parity   : None
- ♦ Data bits   : 8
- ♦ Stop bits   : 1
- ♦ Flow Control   : None

If you are using Windows 95/NT/98/2000/XP, launch "HyperTerminal", create a new connection, and adjust settings as below:
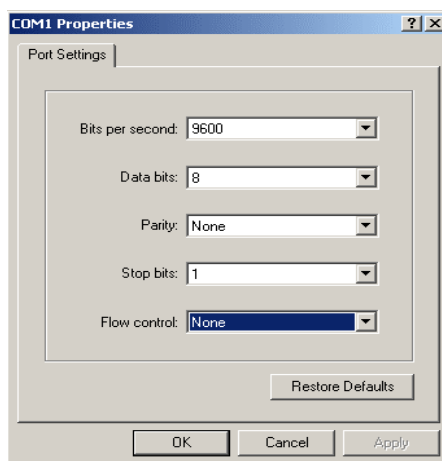
Please then power on the switch; launch the new terminal program you just set up. Press "Enter" key, then login screen appears. Please check chapter 3.3 for detail on console management.

3.2 Telnet

To access the switch through a Telnet session:

1. Be Sure of the switch is configured with an IP address and the switch is reachable from a PC.

2.   Start the Telnet program on a PC and connect to the switch.

The management interface is exactly the same with RS-232 console management except the "root" privilege is not supported.

3.3 Main Menu

After you enter the switch's console interface by RS-232 cable or telnet, the following page is shown.   Please enter username and password to access WGSW-2403.

```
PLANET WGSW-2403 Stackable Ethernet Switch
                                                UserLevel: NONE
==============================================================================
[Login]
 UserName :
```

There are three system default accounts for different privilege levels:

"root":   root can do any configuration includes changing password and enable/disable management capability via console port. The default password of root is "superuser". Note that this account is not workable on telnet and web management interface.

"admin"   admin can do any configuration except changing password. The default password of admin is "admin".

"guest":   guest can view the whole switch information only, moreover, access to Web management interface is not allowed. The default password is "guest".

Main menu appears after successfully login WGSW-2403. To enter any of the submenus, simply type the number after the command prompt.   When select further options, you may be asked for the device ID which you want to configure.   Please just input the SWITCH ID which you have configured on the switch front panel.

```
PLANET WGSW-2403 Stackable Ethernet Switch
                                                UserLevel: ADMIN
==============================================================================
[Main Menu]
 1. System Information
 2. Management Setup
 3. Device Control
 4. User Authentication
 5. System Utility
 6. Save Runtime Configuration
==============================================================================
<Press ESC key to logout>, or
Please input one value (1..6):_
```

The following table shows all the available options on the switch.   The management functions are exactly the same with web-based management interface but in text mode. For further operation, please refer to Chapter 4, " Web Management".

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Main menu	Submenu	Function
1. System Information	1. Topology Information	Show the Device ID, Hardware version, Boot-up version, POST version, runtime code version, agent status, device name and device location of each switch on the stack.
	2. System Information	Show detail system information of each switch including their hardware, software version, system up time, system contact, device name, device location and system management capabilities.
	3. System Configuration	Modify system contact, device name and device location of each switch on the stack.
2. Management Setup	1. Network Configuration	Configure each switch's IP address, subnet mask and default gateway.
	2. Console Port Status Display	Display the console port configuration, like baudrate, databits, parity, etc.
	3. SNMP Community Setup	Create, modify or delete SNMP community name, the IP address associated with the name and the access right. Up to 5 entries are supported.
	4. Trap Receiver Control	Create, modify or delete the community name, IP address and aging time of the trap receivers. Up to 5 receivers are supported.
	5. Management Features Control	Enable or disable web, telnet and SNMP management function of the switch. You can also change the http port number on this menu.
	6. Trap Filtering Setup	Define which events will trigger the trap on this menu.
3. Device Control	1. Port Status / Configuration	Show the status of each ports and configure each ports settings. It also allows you to configure each port's speed, duplex, flow control and bandwidth allocation..
	2. Address Table	Create, delete and display the MAC address entries of each port. You can also modify the aging time and search a specified MAC address on this menu.
	3. VLAN	Two VLAN modes are supported on this switch, 802.1Q VLAN and port group VLAN. Please select the VLAN mode first and then make further configuration. Please refer to section 4.9 for detail configuration available on this switch.
	4. Security	This function is reserved for future use.
	5. IGMP Snooping	Enable or disable the IGMP Snooping. You can also display the IP multicast registration table on this menu.

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	6. Mirror	Enable or disable the mirror function and choose the sniffer port and monitored port.
	7. Statistic Information	Show traffic information of each ports.
	8. Priority Tag	Define the 802.1p tag mapping and the service rule. Please refer to section 4.13 for detail.
	9. STA	Show the spanning tree algorithm status and configure its parameters.
	10. Port Aggregation	Enable or disable the port aggregation (port trunking) function on specified ports.
4. User Authentication		This menu allows you to configure the password of *root*, *admin* and *guest* account. Only *root* account has the right to enter this menu.
5. System Utility	1. System Restart	Restart the switch. Two options are available: cold start and warm start.
	2. Default Factory Reset	Reset the switch back to factory default settings.
	3. Timeout Interval Setup	Configure the telnet timeout interval.
	4. TFTP Download	Update the firmware through TFTP server.
	5. Local Transfer	Transfer the firmware from master switch to slave switch.
	6. Ping	Ping a IP to test the connection status.
	7. Search Location by Port Name	Input a port name to get the correspondence of Device ID and Port number.
6. Save Runtime Configuration		Save the configuration you have make on the switch.

CHAPTER 4 WEB MANAGEMENT

4.1 Start A Web Browser Session

The Web Interface of WGSW-2403 is coded by Java Applet and running on the Java^{TM} Virtual Machine (JVM) version 1.3.1 platform. You should configure the management station with an IP address and subnet mask compatible with WGSW-2403 for accessing it. Also, the management station should be well configured and connected to Internet for automatically downloading (upgrading) the suitable JVM through Internet from http://java.sun.com. Or you can download from http://java.sun.com/j2se/1.3/download.html and manually install it.

Note: Usually the newer Java^{TM} Virtual Machine is not backward compatible. JVM version 1.3.1 is strongly recommended to ensure properly operation.
The default network configurations are as follows:
> IP: 192.168.0.1
> Subnet Mask:255.255.255.0
> Default Gateway: 192.168.0.254

1. Activate a web browser and enter the IP address you have configured in the address field. A screen pops up and asks for username/password. Use system default users name "admin" and password "admin" (If you have configured a new password, input the new password) to access WGSW-2403.

2. After Login, the web management will start to download the java file for the switch.
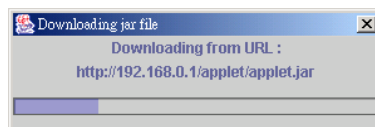
3. After the file download is completed, the following message is shown.   Please click "Continue" to enter the stack main page.
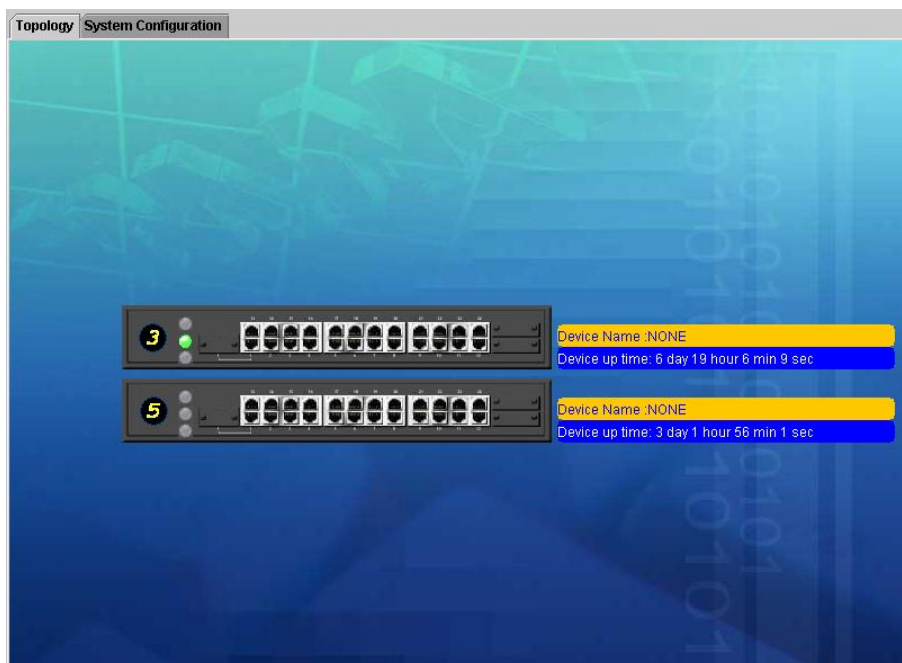
- 15 -
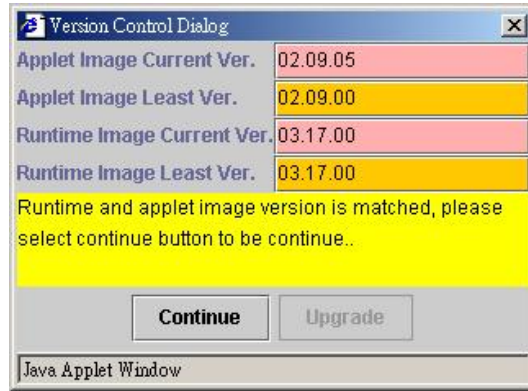
4.2 Stack Main Page

The stack main page contains two options:

Topology

This screen displays one or more switches of the management stack. Basic properties can be read by the screen, including Hardware characteristic, Device Name, Up time, Master and Slave relationship. Also, by mouse clicking listed items can enter for further operation.


System Configuration

If you are managing a Master or a Standalone device, the system configuration parameters are equal to parameters of Net Configuration and Device Information in **Device** tab. For further information, please refer to **Device** statement.

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4.3 Switch Main Page

Switch Main Page appears after you click one of the switch(es) on the topology page. There are 8 function button listed on top: Home, Save, Default, Reboot, Ping, Telnet, Contact, and Upgrade.


<Home>
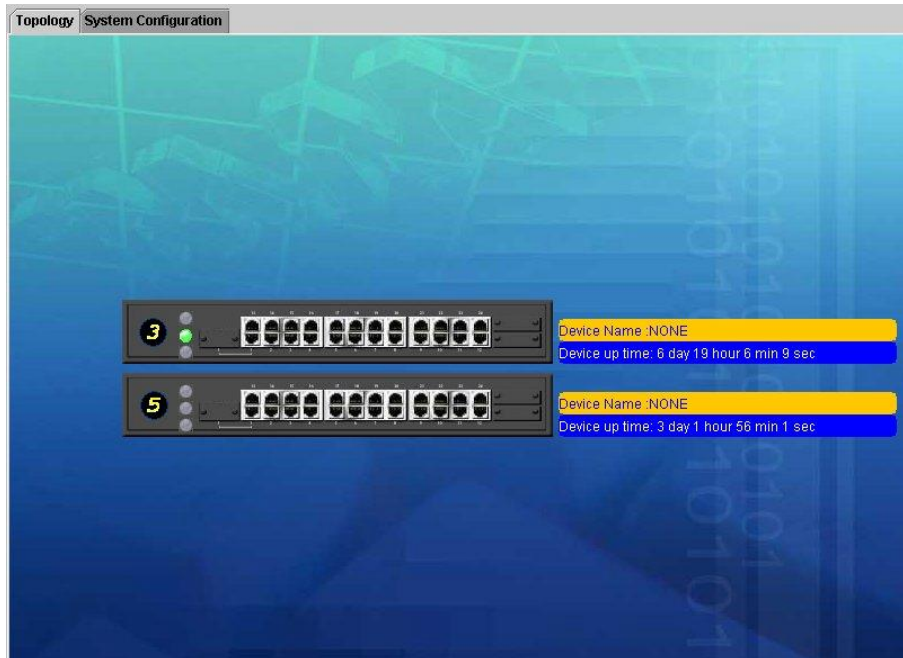
Shortcut to back to stack home page

<Save>

Save the current setting to **Non-volatile Memory**. The difference between **<Save>** and **<Apply>** is that *Apply* applies settings right away but saves the values in the system memory. Every time when switch reboots, system obtains system parameters from **Non-volatile Memory** you **<Saved>** before but not system memory.

Select the one(s) you want to save parameters, then click "Save" button to save it to **Non-volatile Memory**.

<Default>
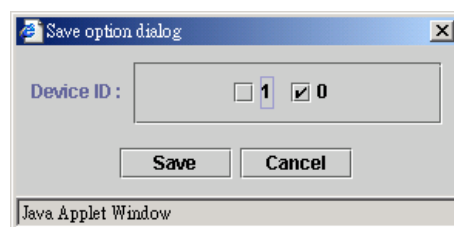
Make the switch(es) returning to factory default value. Select the switch and click "Default" button, the selected-switch(es) will return to initial value. If you want to clear the previous value in the **System Memory**, please **<Save>** it.
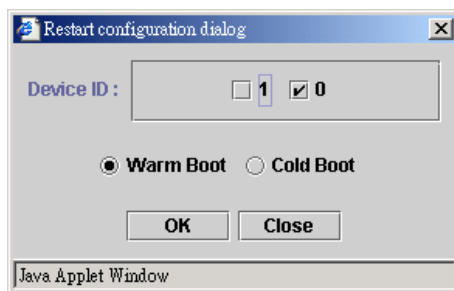
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<Reboot>
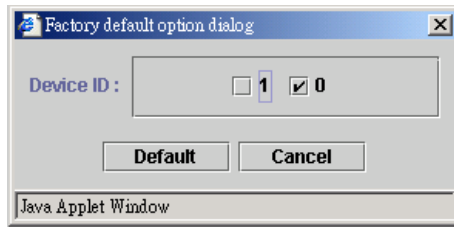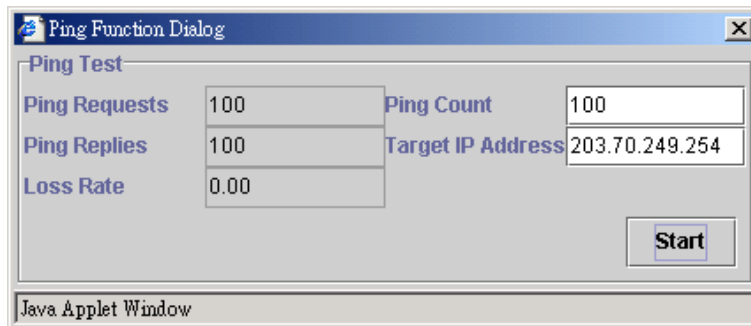
You can specify switch(es) and reboot it.

Warm Boot   Reboot the switch in a short time.
Cold Boot   Boot the switch and with fully Power On Self Test (POST). The system is completely checked but spends much time.

<Ping>

The **Ping** is a commonly used tool to detect the remote host or IP address exists or not. Moreover, network status also can be known by the ratio of packets Reply and Loss.
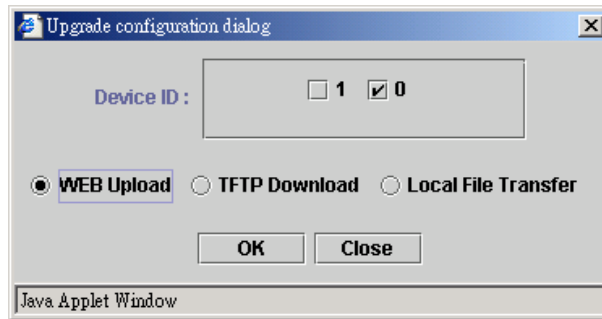

<Telnet>

By simply clicking the **<Telnet>** button, the Telnet program implements and displays login screen.

<Contact>

Contact PLANET technicians for technical support by E-Mail

<Upgrade>

You can select the device ID and click the upgrade method.   Please note the two or more device can be upgraded at the same time.

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WEB Upload

w　　Select Device ID and "WEB Upload" radio button then click OK.

w　　Specify the file path by clicking Browse button and click Start.

TFTP Download

1.　　Select Device ID and "TFTP Download" radio button then click OK.

2.　　Enter the TFTP server's IP address in Server IP field.

3.　　Enter file name in File Name field.

Click Start button to download the code and system update with it automatically
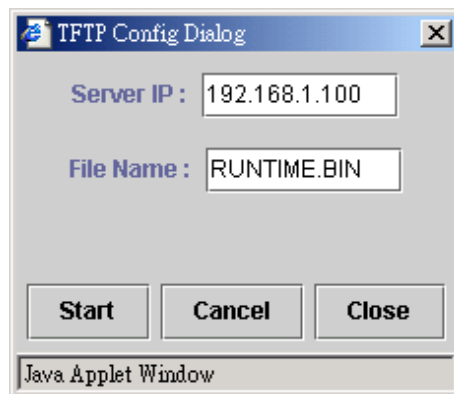
Local File Transfer

1.　　Select Device ID and "Local File Transfer" radio button then click OK.

2.　　Click "Application" or "Java Applet" radio button(Application - System firmware, Java Applet -- Web User Interface).

The system starting software synchronization from Master Device (That the synchronized hardware should be identical to Master Device)
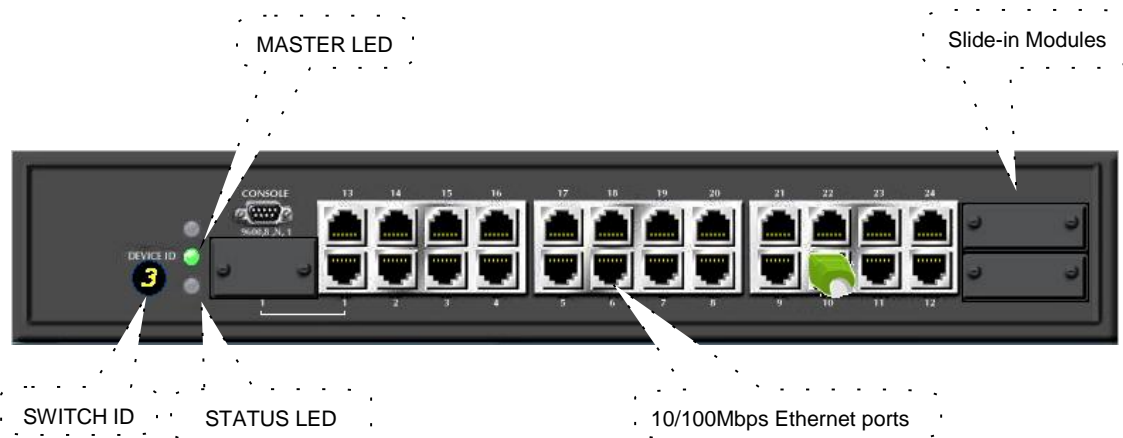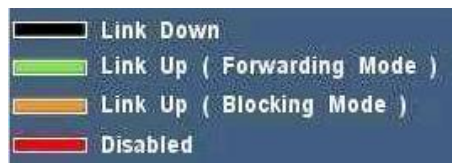
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Java Applet Window

Device

The shortcut to go to another member switch in the management stack.

4.4 Device Configuration

Panel Display

MASTER LED

Slide-in Modules

SWITCH ID   STATUS LED   10/100Mbps Ethernet ports

Port Status

Port Link Down (Black):   Port is not connected or attached device shuts down.

Port Link Up (Green):   Port links up and working correctly.

Port Link Up (Amber):   Port links up but in blocking mode.

Port Disabled (Red):   Port has been disabled.

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Network Configuration

IP Address: IP address of this device.

Subnet Mask: Subnet Mask of your network.

Gateway IP: IP address of Gateway.

Device Information

Name: Naming the system (optional).

Contact: Who the System administrator is (optional).

Location: Where the management stack locates (optional).

NOTE: The Network Configuration and Device Information of Master Device in the management stack will become system parameters automatically.

4.5 Topology Info

This page displays information about the switch(es), such as Device ID, Hardware version, Boot-Up version, POST version, Runtime version (Firmware version), JAVA Applet version (Web User Interface version), Device Name and Device Location. When management stack persist, by the Device ID, all the members are transparently listed.

Device ID	H/W. Ver	Boot-UP Ver	POST Ver.	Runtime Ver.	JAVA Applet Ver.	Agent Status	Device Name	Device Location
3	R1	2.02(1/13/2...	3.01(6/6/...	3.17(4/3/2003)	2.09(6/6/2003)	MASTER	NONE	NONE
5	R1	2.02(1/13/2...	3.01(6/6/...	3.17(4/3/2003)	2.09(6/6/2003)	SLAVE	NONE	NONE

4.6 Ports

Information

It is a ports' configurations summary table. Via the summary table, you can know status of each port clear at a glance, like *Link Up/Link Down, Enable/Disable, Link Speed, Duplex mode* and *Flow Control*.

Port	Name	Type	Link	Admin	Speed	Duplex	Flow Ctrl
1	N/A	100TX	Link Down	Enable	Auto	Auto	Disable
2	N/A	100TX	Link Down	Enable	Auto	Auto	Disable
3	N/A	100TX	Link Down	Enable	Auto	Auto	Disable
4	N/A	100TX	Link Down	Enable	Auto	Auto	Disable
5	N/A	100TX	Link Down	Enable	Auto	Auto	Disable
6	N/A	100TX	Link Down	Enable	Auto	Auto	Disable
7	N/A	100TX	Link Down	Enable	Auto	Auto	Disable
8	N/A	100TX	Link Down	Enable	Auto	Auto	Disable
9	N/A	100TX	Link Down	Enable	Auto	Auto	Disable
10	N/A	100TX	Link Up	Enable	100M	Full	Disable
11	N/A	100TX	Link Down	Enable	Auto	Auto	Disable
12	N/A	100TX	Link Down	Enable	Auto	Auto	Disable
13	N/A	100TX	Link Down	Enable	Auto	Auto	Disable
14	N/A	100TX	Link Down	Enable	Auto	Auto	Disable
15	N/A	100TX	Link Down	Enable	Auto	Auto	Disable
16	N/A	100TX	Link Down	Enable	Auto	Auto	Disable
17	N/A	100TX	Link Down	Enable	Auto	Auto	Disable
18	N/A	100TX	Link Down	Enable	Auto	Auto	Disable
19	N/A	100TX	Link Down	Enable	Auto	Auto	Disable
20	N/A	100TX	Link Down	Enable	Auto	Auto	Disable
21	N/A	100TX	Link Down	Enable	Auto	Auto	Disable
22	N/A	100TX	Link Down	Enable	Auto	Auto	Disable
23	N/A	100TX	Link Down	Enable	Auto	Auto	Disable
24	N/A	100TX	Link Down	Enable	Auto	Auto	Disable

NOTE: Also by simply clicking the port on the 'Panel Display', the port information screen pops up

Configuration

Port attributes can be setup in this page.

Setup Port Attributes

1. Click the "Name" column of the port. Enter a name for identification, like 'Richard'; and **press Enter**

2. Leave the "Admin" column 'Enable' value to make the port to be in operation or 'Disable' to pause it

3. Select Duplex mode---10Half/10Full; 100Half/100Full; 'Auto' for auto-negotiation and **1000Full auto-detection**

4. Select 'Enable' to take "Flow Control" effect

5. Click Apply button to apply settings

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NOTE: Also accomplished by simply mouse right-click the port on the 'Panel Display' then select 'Configuration', the configuration screen pops up.
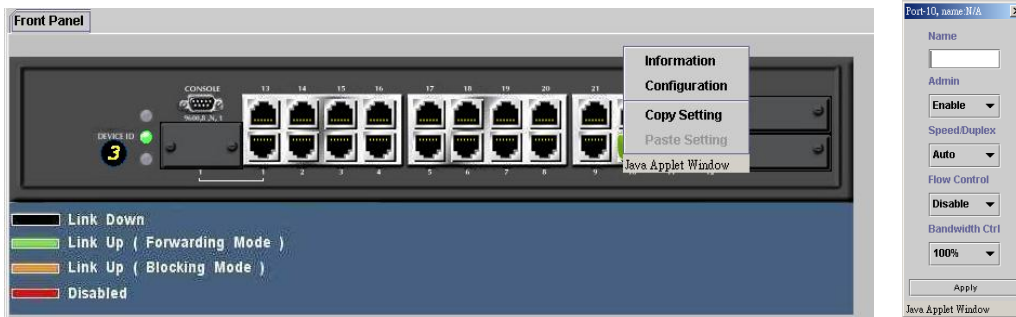
Duplicate Port Attributes

Click "Duplicate" button, the dialogue screen appears.
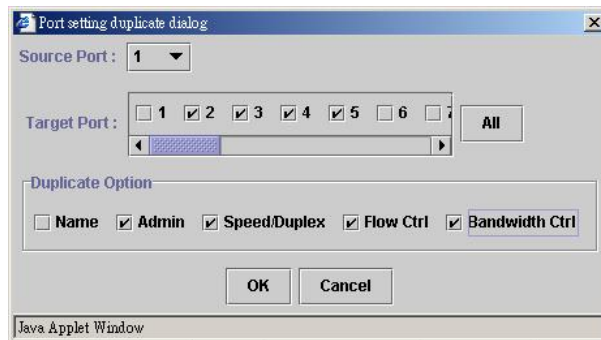
1. Select Source Port (for example Port 1).

2. Select Target Port, click ⟨ All ⟩ for select all (for example Port 2, 3, 4, 5).

3. Select the port attributes you want to duplicate.

4. Click ⟨ OK ⟩ to submit values.

5. Click ⟨Apply⟩ button to apply settings.

6. As the following result, port 1 is duplicated to port 2, 3, 4, 5 accompany with specified attributes.

NOTE: Also accomplished by simply mouse right-click the port on the 'Panel Display' then select 'Copy Setting' to duplicate port properties and select 'Past Setting' when point at destination port.

Statistic

The statistics function provides the following 3 pages for various traffic information of each port. There is a Clear button on the bottom of each page for you to clear the statistic data and recount again.

Ether Like Frame Types

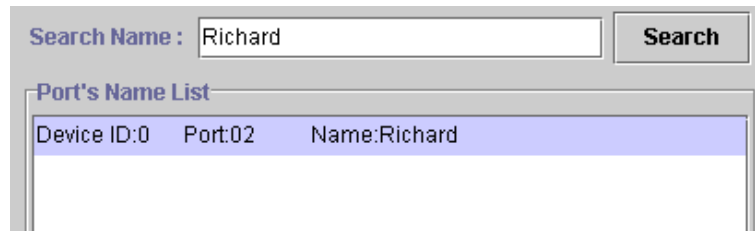|	
RX Bytes	Number of bytes received in good and bad frames
RX Frames	Number of good and bad packets received
RX crc_err	Number of CRC errors received
TX Byte	Number of bytes transmitted in good and bad frames
TX Frames	Number of good and bad packets transmitted
TX Collisions	Number of collisions on transmitted frames
TX drops	Frames dropped due to lack of receive buffer
TX underruns	Increments when packet transmission fails due to the inability of the interface to retrieve packets from the local packet buffer fast enough to transmit them onto the network

RX Good Frame Types

RX Bytes	Number of bytes received in good and bad frames
RX frames	Number of good and bad packets received
RX broadcasts	Number of good broadcasts
RX multicasts	Number of good multicasts
RX less 64_pkts	Number of short frames with invalid CRC (<64 bytes)
RX 65 to127_pkts	Number of 65 to 127-bytes frames in good and bad packets
RX 128to255_pkts	Number of 128 to 255-bytes frames in good and bad packets
RX 256to511_pkts	Number of 256 to 511-bytes frames in good and bad packets
RX 512to1023_pkts	Number of 512 to 1023-bytes frames in good and bad packets
RX 1024more_pkts	Number of 1024 to max-length-type frames in good and bad packets

RX Error Frame Types

RX alignment_err	Number of alignment errors received
RX crc_err	Number of CRC errors received
RX oversize_err	Number of long frames with valid CRC
RX undersize_err	Number of short frames with valid CRC
RX fragments_err	Number of short frames with invalid CRC
RX jabbers_err	Number of long frames with invalid CRC

Location Search

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A denominate port can be searched by its given name (Match whole word only).

4.7 Security

This is reserved for future use.

4.8 SNMP

Simple Network Management Protocol (SNMP) is a communication protocol for managing devices on a network. It is commonly used for network administrators to communicate with multiple devices (hub, switch, router ……) for configuring and monitoring while convenient for troubleshooting but no miscellaneous platform consideration.

The built-in SNMP is an agent, which watches the status of it self. The Network Management Station (A computer attached to network with SNMP management program well installed) can be used to access it.

Community

A valid entry of Community String and IP Address is for authentication to login to the SNMP agent for configuration. Moreover, the community capacity can up to 3 sets and only by the way of specified IP address here will be allowed to access the agent. One entry consist of IP address "0.0.0.0" will allow the ones who know the community string to access the agent (with Read-Only access right) without limitation.

To Add a community

1. Input a name as a community string for authentication in the "Community String" field (ex: administrator).
2. Enter the IP address in the "IP address" field you allow to access from (ex: 192.168.1.22)
3. Click the "Access Mode" combo box and select a authority (Read-Only / Read-Write)
4. Click <<Add button to add this entry.

To Remove a Community

1. Select the community you want to remove from the "Current" list
2. Click Remove>> button to remove it

To Modify a Community

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1. Select one community you want to modify in the "Current" column
2. The "New" column lists the corresponding values; please modify it
3. Click Modify button to update the entry

SNMP Community Capacity : 3

Current

Name:public	Mode:Read-Only	IP:0.0.
Name:private	Mode:Read-Write	IP:10.
Name:administrator	Mode:Read-Write	IP:

<< Add
Remove >>
Modify

New

Community String administrator
IP Address 10.10.0.22
Access Mode Read-Write ▼

Trap Manager

Trap Manager specifies the Network Management Stations (NMS) that will receive trap messages from the SNMP agent and can up to 5 entries. A Trap Manager entry with Aging Time "0" will never expire; and Aging Time "10" will expire when 10 minutes is up and no more trap messages the corresponding entry can receive.

To Add a Trap Manager

1. Input a name for authentication in the "Community String" field
   (ex: administrator).
2. Enter the IP address in the "IP address" field you allow to access from
   (ex: 192.168.1.22).
3. Enter a expiry time for this entry will be durable in minutes ("0" for never expires).
4. Click <<Add button to add the entry.

To Remove a Community

1. Select the community you want to remove from the "Current" list.
2. Click Remove>> button to remove it.

To Modify a Community

1. Select one community you want to modify in the "Current" column.
2. The "New" column lists the corresponding values; please modify it.
3. Click Modify button to update the entry.

To Test Trap Manager

Press Trigger test trap button, one test trap will be sent to all NMS that have been added to Trap Manager list.

Current

Name:NetAdmin	IP:10.10.14.123	Aging:0
Name:MIS	IP:10.10.14.125	Aging:0
Name:Alex	IP:10.10.14.126	Aging:0
Name:Richard	IP:10.10.14.188	Aging:120
Name:Maggie	IP:10.10.14.210	Aging:50

<< Add
Remove >>
Modify
Triger test trap

New

Community String Richard
IP Address 10.10.14.188
Aging Time 120

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Trap Filtering

Check the "Enable" boxes by mouse clicking to receive a notice when corresponding event occurs.

Option	Enable
Cold Boot	✔
Warm Boot	✔
Cluster Changed	✔
Link UP	✔
Link Down	✔
Device Inserted	✔
Device Removed	✔
Port Intrusion	✔
Flash Updated	✔
Test Only	✔
Console Login	✔
SNMP Authentication Failure	✔
STA Topology Change	✔
STA New Root	✔

4.9 VLAN

The VLAN is a group of ports that may spread around the network but communicate as though they belong to one subnet. By using VLAN, all ports can be reorganized into separate broadcast domains for security reasons and reduce bandwidth occupation instead of using routers to divide whole network into subnets. It produces cleaner network environment by reducing broadcast traffic and simplify network management by allowing you to move devices to another VLAN without changing physical connections.   The switch support 2 VLAN type: 802.1Q VLAN and Port Group VLAN.

802.1Q VLAN:

Before enabling 802.1Q VLAN, pay attention to:

w   All ports are default to VLAN 1 and assigned PVID 1.

w   Though you can configure VLAN group with VLAN ID from 1 to 4094.   Due to hardware's restriction, the maximum PVID supported on this switch is 255.

VLAN Static List

This screen is used to Add / Remove / Modify VLAN and up to 255 groups is supported on this switch. The VLAN groups that have been created are all listed here.

To create a new VLAN group

1.   Specify the name for the new VLAN group (VLAN name is only used for identification).

2.   Enter a number (VLAN ID) for the new VLAN group.   The VLAN ID can be set from 1 to 4094.

3.   Check the "Active" box to activate the VLAN or leave it blank and activate it afterward.

4.   Click <<Add button to create the new VLAN.

To remove a VLAN group

1.   Select a VLAN group you want to remove from the "Current" list.

2.   Click Remove>> button to remove it.

Attention:

1.   If a removed port is no longer belonged to any other group, it is temporarily disabled because no one can communicate with it.

2.   If one port's PVID is equal to this VLAN ID, removing this VLAN group will not allow until you change it.

To modify a VLAN group

1.   Select a VLAN group you want to modify from the current list

2.   Modify parameters in "New" column

3.   Click Modify button to submit the new parameters

VLAN Static Table

This screen is used to Add/Remove member ports of a VLAN.

To add member port

1.   Click the "VLAN ID" combo box and select a VLAN you want new ports to join in

2.   Select ports (press Shift/Ctrl key for selecting multi ports) in the "Non-Member" column

3.   Click <<Add button to join selected ports in

To remove member port

1.   Click the "VLAN ID" combo box and select a VLAN you want to remove ports

2.   Select ports (with Shift/Ctrl key to select multi ports) in the "Member" column

3.   Click Remove>> button to delete selected ports

NOTE:

1.   If a removed port is no longer belonged to any other group, it is temporarily disabled because no one can communicate with it.

2.   The port which is assigned a PVID and the PVID is equal to VLAN ID, removing the port will not allow until you change it.

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VLAN Port Configuration

When the VLAN-enabled switch receives an untagged packet, the packet will be sent to the port's default VLAN according to the PVID (port VLAN ID) of the receiving port.

Port	PVID	Ingress Filtering
1	1	Disable
2	1	Disable
3	1	Disable
4	1	Enable
5	1	Enable
6	1	Disable
7	1	Disable
8	1	Enable
9	1	Disable
10	1	Enable
11	1	Disable

To change the PVID

1. Double click the "PVID" column of a port.

2. Input a new VLAN ID (1~255).

3. Press **"Enter"** to submit the value.

4. Click Apply button to apply it.

NOTE:

1. All the ports are default as members of VLAN 1 and assigned PVID 1.

2. Though you can configure a VLAN group with VLAN ID from 1 to 4094, the supported PVID on this switch is only from 1 to 255.

3. The port which was assigned a PVID and the PVID is equal to VLAN ID, removing the port will not allow until you change it.

4. Automatically, a port will join the VLAN of its PVID, and if the VLAN does not exist, system will create it.

To Enable/Disable Ingress Filtering

When one packet comes in from Port X to VLAN Y, but Port X is not a member of VLAN Y:

Ingress Filter Enabled - The filter checks the packet and detects Port X does not belong to the VLAN Y, the Ingress Filter discards the packet.

Ingress Filter Disabled - All the packets destined to VLAN Y are all unobstructed.

Click the "Ingress Filtering" column of a port and select 'Enable' to activate Ingress Filter.

Port Group VLAN

The Port Group VLAN (Port-based VLAN) is concentrate on definite ports. The packets forwarding policies are based on destination MAC addresses or related ports by voluntary learning relationship of MAC addresses and its related ports.

- All Together

Click All Together button then all the ports of the switch will be added to VLAN group 1.

- All Independent

Click All Independent button then all the ports will be divided into separated subnets (totally 18 subnets).

Every port can belong to different Port Group VLANs simultaneously without limitation.

4.10 IGMP Snooping

Multicasting is widely used to support multi-media applications such as video conferencing. The multicasting simply broadcasts its services to the group of a network instead of establishing connections separately with every host that subscribed the services. With no Multicast Filtering-aware switches, a multicast server may floods broadcast-data overall the broadcast domain and wastes a lot of bandwidth.

The Internet Group Management Protocol (IGMP) snooping uses the protocol to make switches join/leave multicast group and interacts switches to optimize the network performance by monitoring the IGMP packets and forward to the ports containing multicast hosts or switches. This will efficiently reduce the multicast traffic rather than flooding overall network. IGMP snooping is more and more important especially when the multi-media demand is booming.

IGMP Configuration	
Admin Status	Disable ▼
	Enable
	Disable
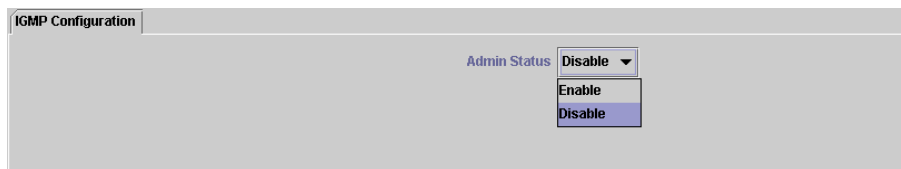
NOTE: As IGMP Snooping only operates under 802.1Q VLAN mode, please change VLAN mode from Port Group VLAN to 802.1Q VLAN before enabling IGMP Snooping.

4.11 Port Aggregation

Port Aggregation (Port Trunk) is used to increase the bandwidth of a switch-to-switch connection and backup. This switch provides 7 port aggregation groups, which consist of 4 ports and create bandwidth up to 800Mbps per group (the group 6 consists of 2 slide-in slots and creates bandwidth up to 4Gbps) at full duplex mode. Check the box of Aggregation Group in the Status Enable column and press "Apply" then the selected Aggregation Group is activated.

| Aggregation Gro...	Member Port	Status Enable
0	01;02;13;14	☑
1	03;04;15;16	☐
2	05;06;17;18	☐
3	07;08;19;20	☐
4	09;10;21;22	☐
5	11;12;23;24	☐
6	25;26	☑
Apply		

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However, before making connections between switches, pay attention to:

w   The ports at both ends of a Port Aggregation connection must be configured as Aggregation Ports.

w   The ports at both ends of a Port Aggregation connection must have the same port properties, including Speed, Duplex mode.

w   All the ports of a Port Aggregation must be treated as an integer when added to/deleted from a VLAN.

w   Spanning Tree Algorithm (STA) treats all the ports of a Port Aggregation as an integer.

w   Before connecting cables between switches, enable the Pot Aggregation to avoid looping.

w   Before disabling Port Aggregation, remove the connecting cables between switches to avoid looping.

w   Both two slide-in slots should use the identical modules (two coppers/two fibers) otherwise the Port Aggregation connection is invalid.

4.12 STA

The Spanning Tree Algorithm (STA) outlined in IEEE 802.1D can avoid network looping but coexist with linking backup. This feature permits STA-aware switches interact with each other. This can ensure only one route exists between any two devices on the network. If looping is detected (maybe implements on purpose for linking backup), looping ports will be blocked to discard additional route. If one using route fails, this Spanning Tree Algorithm automatically releases the blocking port and establishes connection with other devices.

Since a STA network has been established, all devices listen for Hello BPDUs (Bridge Protocol Data Units) sent from the Root Bridge. After the Max Age maximum time is up, the device supposes that the route to the Root Bridge is down. The devices initiate negotiations with each other to reconfigure the network for a valid topology.

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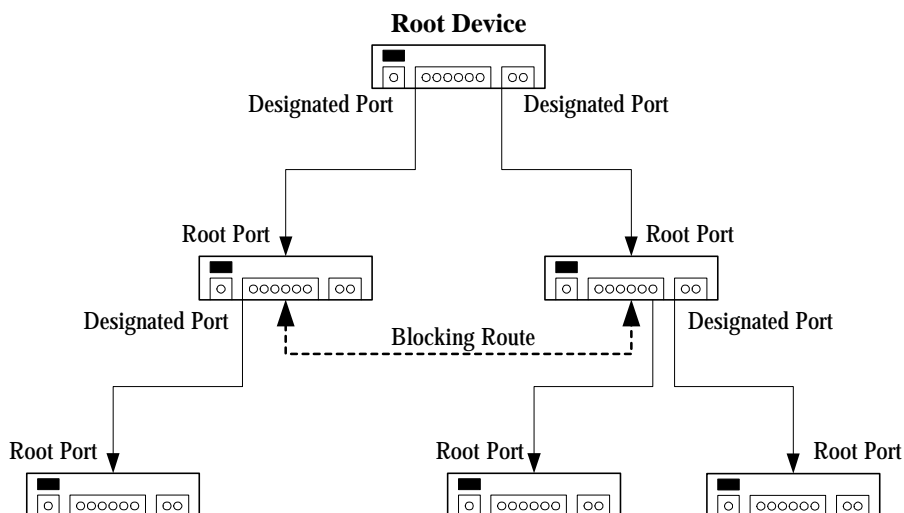
Information

This screen displays summaries of STA information. For further configuration, please go to next section.

Spanning Tree

Name	Value
STA Bridge Protocol	IEEE8021D
STA State	Enable
Designated Root	8000.00304F81A195
Bridge ID	8000.00304F111046
Root Port	13

Ports

Port	Status	Priority	Path Cost	Designated C...	Forward Tran...	Designate Bri...	Designate Port
1	FORWARDING	128	19	19	1	8000.200209...	1
2	BROKEN	128	19	0	0	8000.200209...	2
3	BROKEN	128	19	0	0	8000.200209...	3
4	BROKEN	128	19	0	0	8000.200209...	4
5	BROKEN	128	19	0	0	8000.200209...	5
6	BROKEN	128	19	0	0	8000.200209...	6
7	BROKEN	128	19	0	0	8000.200209...	7
8	BROKEN	128	19	0	0	8000.200209...	8
9	BROKEN	128	19	0	1	8000.200209...	9
10	BROKEN	128	19	0	1	8000.200209...	10
11	BROKEN	128	19	0	0	8000.200209...	11
12	BROKEN	128	19	0	0	8000.200209...	12
13	FORWARDING	128	19	0	1	8000.0001D5...	24

Refresh

Parameter	Description
STA State	Shows if STA is enabled on the switch and participated an STA compliant network.
Designated Root	The unique Bridge Identifier of the Bridge recorded as the Root in the Configuration BPDUs transmitted by the Designated Bridge for the segment to which the port is attached.
Bridged ID	The MAC address used by this bridge when it must be referred to in a unique fashion. It is recommended that this be the numerically smallest MAC address of all ports that belong to this bridge. However it is only required to be unique.
Root Port	The port number of the port which offers the lowest cost path from this bridge to the root bridge.
Max Age (6~40 sec)	The maximum age of Spanning Tree Protocol information learned from the network on any port before it is discarded, in units of a second. This is the actual value that this bridge is currently using.
Hello Time (1~10 sec)	The amount of time between the transmission of Configuration bridge PDUs by this node on any port when it is the root of the spanning tree or trying to become so, in units of a second. This is the actual value that this bridge is currently using.
Hold Time	This time value determines the interval length during which no more than two Configuration bridge PDUs shall be transmitted by this node, in units of a second.

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Forward Delay (4~30 sec)	This time value, measured in units of a second, controls how fast a port changes its spanning state when moving towards the Forwarding state. The value determines how long the port stays in each of the Listening and Learning states, which precede the Forwarding state. This value is also used, when a topology change has been detected and is underway, to age all dynamic entries in the Forwarding Database.
Root Path Cost	The cost of the path to the root device as seen from this bridge.
Configuration Changes	The total number of topology changes detected by this bridge since the management entity was last reset or initialized.
Last Topology Change	The time (in a second) since the last time a topology change was detected by the bridge entity.

Configuration

Parameter	Description
Usage	Enable/Disable this switch to join in/withdraw from a STA compliant network
Priority (1~65535)	Priority is a decisive key for selecting root device, root port, and designated port. The smaller number, the higher priority. The device with the highest priority becomes the STA root device. However, if all devices have the same priority, the device with the lowest MAC address will become the root device
Hello Time (1~10sec)	The amount of time between the transmission of Configuration bridge PDUs by this node on any port when it is the root of the spanning tree or trying to become so, in units of a second. This is the actual value that this bridge is currently using
Maximum Age (6~40sec)	The maximum age of Spanning Tree Protocol information learned from the network on any port before it is discarded, in units of a second. This is the actual value that this bridge is currently using
Forward Delay (4~30sec)	This time value, measured in units of a second, controls how fast a port changes its spanning state when moving towards the Forwarding state. The value determines how long the port stays in each of the Listening and Learning

|	
	states, which precede the Forwarding state. This value is also used, when a topology change has been detected and is underway, to age all dynamic entries in the Forwarding Database.

STA Port Configuration

Port	Priority	Path Cost	Fast Forward
1	128	19	Disable
2	128	19	Disable
3	128	19	Disable
4	128	19	Disable
5	128	19	Disable
6	128	19	Disable
7	128	19	Disable
8	128	19	Disable
9	128	19	Disable
10	128	19	Disable
11	128	19	Disable
12	128	19	Disable
13	128	19	Disable
14	128	19	Disable
15	128	19	Disable
16	128	19	Disable

Apply

Parameters	Description
Port	Port number of the port
Priority	The value of the priority field which is contained in the first (in network byte order) octet of the (2 octet long) Port ID.
Path Cost	The contribution of this port to the path cost of paths towards the spanning tree root, which include this port. 802.1D-1990 recommends that the default value of this parameter be in inverse proportion to the speed of the attached LAN.
Fast Forward	The device omits from the 4 steps (Blocking-Listening-Learning-Forwarding) to 3 steps (Blocking-Listening-Forwarding) for speeding up specified port to be running when STA topology has been changed.

4.13 Priority

This switch supports IEEE802.1p CoS with 2-level priority. There are 8 traffic classes and 8 Service Rules in the Priority Map. When one packet carries with priority-tag, which has specified a CoS (Class of Service) comes into the switch, the specified CoS tag will determine what priority (Low/High) will it get according to the Priority Map in the switch. The available Service Rules are:

FIFO	The first in packet, the first out packet (No priority)
1：1	Send 1 high priority packet, then 1 low priority packet
2：1	Send 2 high priority packets, then 1 low priority packet
3：1	Send 3 high priority packets, then 1 low priority packet
4：1	Send 4 high priority packets, then 1 low priority packet
5：1	Send 5 high priority packets, then 1 low priority packet
6：1	Send 6 high priority packets, then 1 low priority packet
7：1	Send 7 high priority packets, then 1 low priority packet
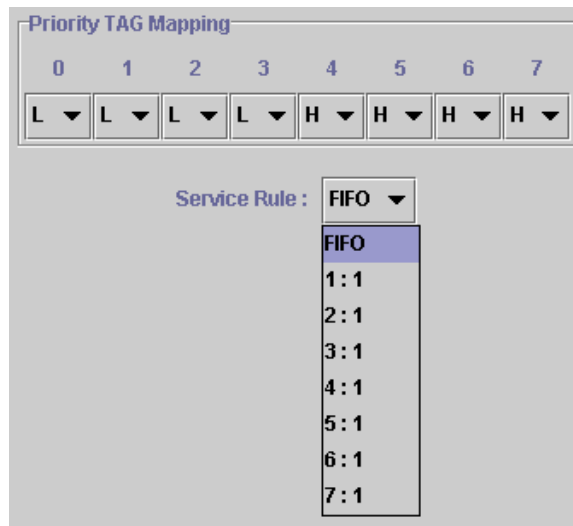
4.14 Address Table

The address table is the learning table, which is composed of many entries and is the most important base to do packet filtering and forwarding.

MAC Address List

Choose the port you preferred to view the address table and click "Refresh" button, the MAC address table will be list.

Configuration

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Dynamic Address Counts

Number of MAC addresses automatically learned by the current switch.

Static Address Counts

Number of MAC addresses manually added to the current switch.

To add a static address

1. Click the combo box and select a port, then the MAC address table of the port appears.

2. Fill in configuration value (VLAN ID, MAC address), then click "<<Add" button (Note that ports on the switch are all default to VLAN 1).

NOTE: The ports of Port Aggregation Group can not be added in Static Address table.

To remove a static address

1. Click the static address in the MAC address table of the port.

2. Click "Remove>>" button to remove it from MAC address table.

4.15 Mirror

Port mirror is used to mirror traffic from source port to a target port for analysis. Only 2 ports can be monitored (mirrored) simultaneously to 1 sniffer port (target port). (Note that the target port must be in the same VLAN as the source port).

1. Click "Active" radio button to activate port mirror.

2. Select 'Monitored Ports' (up to 2 ports).

3. Click 'Sniffer Port' combo box and select a sniffer port (target port) and click "Apply" to apply.

4. This figure describes port 2 and port 3 will be mirrored to port 11.

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CHAPTER 5 TROUBESHOOTING

This chapter contains information to help you solve problems. If WGSW-2403 is not functioning properly, make sure the Switch was set up according to instructions in this manual.

The port is connected but the port LED is not lit

Solution:

Check the following items:
1. The switch and the connected device's power are on or not.
2. The connecting cable is good and with correct type.
3. The cable is firmly seated in its connectors in the switch and in the associated device.
4. The connecting device, including any network adapter is well installed and functioning.

Some stations can not talk to other stations located on the other port

Solution:

1. Check the VLAN and PVID settings.
2. The address table may contain older information than of the address table of that node. Please power down to refresh the address information.

APPENDIX A

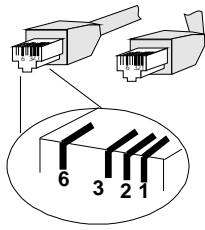## A.1 Switch's RJ-45 Pin Assignments

1000Mbps, 1000Base T

Contact	MDI	MDI-X
1	BI_DA+	BI_DB+
2	BI_DA-	BI_DB-
3	BI_DB+	BI_DA+
4	BI_DC+	BI_DD+
5	BI_DC-	BI_DD-
6	BI_DB-	BI_DA-
7	BI_DD+	BI_DC+
8	BI_DD-	BI_DC-

Implicit implementation of the crossover function within a twisted-pair cable, or at a wiring panel, while not expressly forbidden, is beyond the scope of this standard.

A.2 10/100Mbps, 10/100Base-TX

Contact	MDI	MDI-X
1	1	3
2	2	6
3	3	1
6	6	2

A.3 RJ-45 cable pin assignment

EM-WGSW2403

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