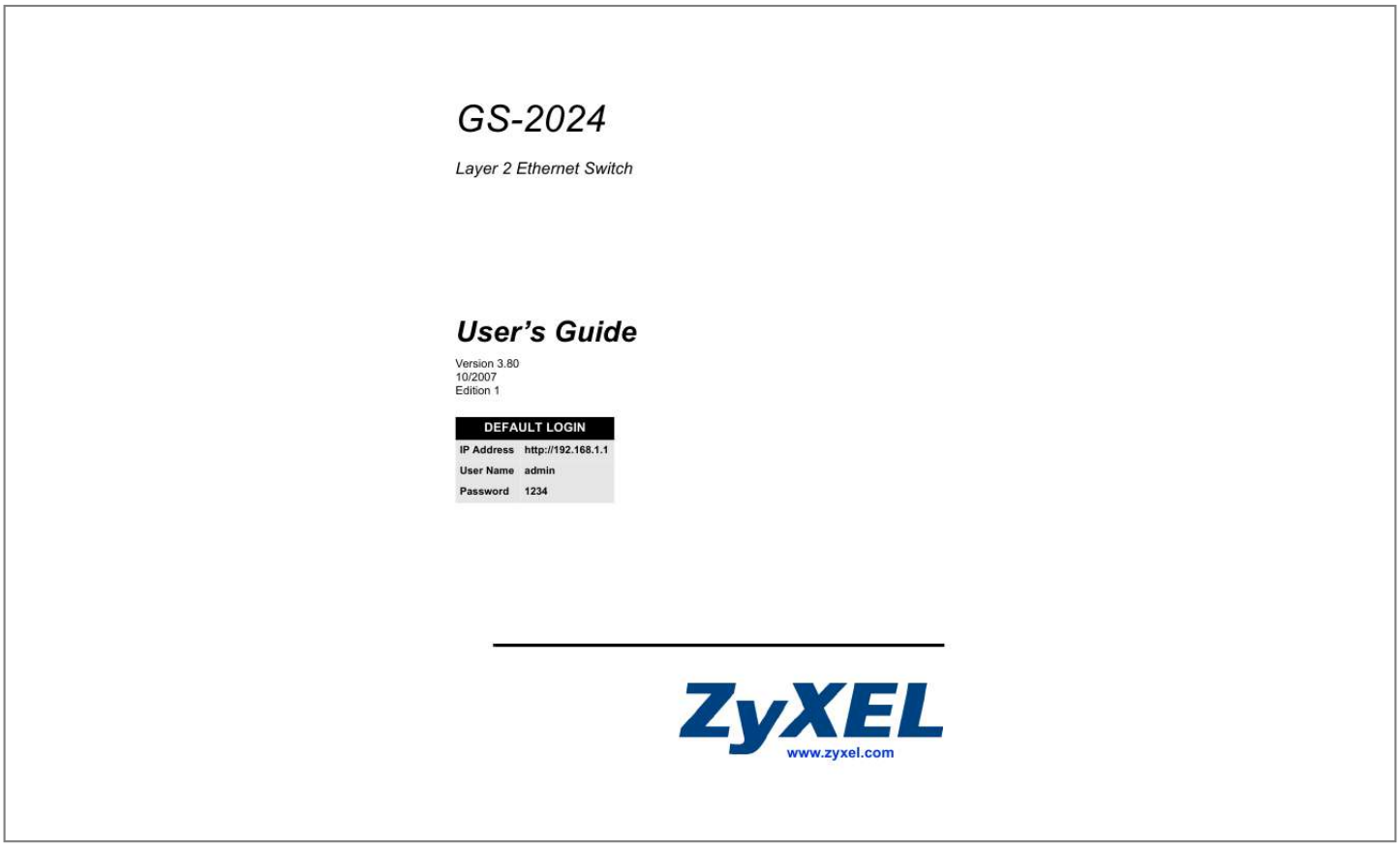

GS-2024

Layer 2 Ethernet Switch

User's Guide

Version 3.80
10/2007
Edition 1

DEFAULT LOGIN	
IP Address	http://192.168.1.1
User Name	admin
Password	1234

ZyXEL
www.zyxel.com

Manual abstract:

Send all User Guide-related comments, questions or suggestions for improvement to the following address, or use e-mail instead. Thank you! The Technical Writing Team, ZyXEL Communications Corp., 6 Innovation Road II, Science-Based Industrial Park, Hsinchu, 300, Taiwan. E-mail: techwriters@zyxel.com.tw GS-2024 User's Guide 3 Document Conventions Document Conventions Warnings and Notes These are how warnings and notes are shown in this User's Guide. Warnings tell you about things that could harm you or your device. Notes tell you other important information (for example, other things you may need to configure or helpful tips) or recommendations. Syntax Conventions · The XGS-4528F may be referred to as the "Switch", the "device", the "system" or the "product" in this User's Guide. · Product labels, screen names, field labels and field choices are all in bold font.
· A key stroke is denoted by square brackets and uppercase text, for example, [ENTER] means the "enter" or "return" key on your keyboard. · "Enter" means for you to type one or more characters and then press the [ENTER] key. "Select" or "choose" means for you to use one of the predefined choices. · A right angle bracket (>) within a screen name denotes a mouse click. For example, Maintenance > Log > Log Setting means you first click Maintenance in the navigation panel, then the Log sub menu and finally the Log Setting tab to get to that screen.
· Units of measurement may denote the "metric" value or the "scientific" value. For example, "k" for kilo may denote "1000" or "1024", "M" for mega may denote "1000000" or "1048576" and so on. 4 GS-2024 User's Guide Document Conventions Icons Used in Figures Figures in this User's Guide may use the following generic icons. The Switch icon is not an exact representation of your device. The Switch Computer Notebook computer Server DSLAM Firewall Telephone Switch Router GS-2024 User's Guide 5 Safety Warnings Safety Warnings For your safety, be sure to read and follow all warning notices and instructions.
· Do NOT use this product near water, for example, in a wet basement or near a swimming pool. · Do NOT expose your device to dampness, dust or corrosive liquids. · Do NOT store things on the device. · Do NOT install, use, or service this device during a thunderstorm. There is a remote risk of electric shock from lightning. · Connect ONLY suitable accessories to the device. · Do NOT open the device or unit. Opening or removing covers can expose you to dangerous high voltage points or other risks. ONLY qualified service personnel should service or disassemble this device. Please contact your vendor for further information.

· Make sure to connect the cables to the correct ports. · Place connecting cables carefully so that no one will step on them or stumble over them. · Always disconnect all cables from this device before servicing or disassembling. · Use ONLY an appropriate power adaptor or cord for your device. Connect it to the right supply voltage (for example, 110V AC in North America or 230V AC in Europe). · Do NOT allow anything to rest on the power adaptor or cord and do NOT place the product where anyone can walk on the power adaptor or cord. · Do NOT use the device if the power adaptor or cord is damaged as it might cause electrocution. · If the power adaptor or cord is damaged, remove it from the device and the power source. · Do NOT attempt to repair the power adaptor or cord. Contact your local vendor to order a new one.
· Do not use the device outside, and make sure all the connections are indoors. There is a remote risk of electric shock from lightning. · Do NOT obstruct the device ventilation slots, as insufficient airflow may harm your device. 6 GS-2024 User's Guide Safety Warnings This product is recyclable. Dispose of it properly.
GS-2024 User's Guide 7 Safety Warnings 8 GS-2024 User's Guide Contents Overview Contents Overview Introduction .....
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.... 27 Getting to Know Your Switch .
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.....

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.....
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.....
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.....
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.....
.....
.....
.....

..... 181 25.3.4 Configuring SNMP 25.3.5 Configuring SNMP Trap Group 25.
3.6 Setting Up Login Accounts 25.4 SSH Overview ...
.....
.....

.....
.....
.....
.....

.....
.....
.....
.....

.....
.....
.....
.....

..... 189 25.5 How SSH works ....
.....
.....
.....

.....
.....
.....
.....

.....
.....
.....
.....

.....
.....
.....
..... 189 25.6 SSH Implementation on the Switch ..

.....
.....
.....
.....

.....
.....
.....
.....

.....
.....
.... 190 25.

Moreover, the current LAN structure can be retained as all ports can freely communicate with each other. Figure 3 High Performance Switched Workgroup Application 30 GS-2024 User's Guide Chapter 1 Getting to Know Your Switch 1.1.

4 IEEE 802.1Q VLAN Application Examples A VLAN (Virtual Local Area Network) allows a physical network to be partitioned into multiple logical networks. Stations on a logical network belong to one group. A station can belong to more than one group. With VLAN, a station cannot directly talk to or hear from stations that are not in the same group(s) unless such traffic first goes through a router.

For more information on VLANs, refer to Chapter 8 on page 77. 1.1.4.1 Tag-based VLAN Example Ports in the same VLAN group share the same frame broadcast domain thus increase network performance through reduced broadcast traffic.

VLAN groups can be modified at any time by adding, moving or changing ports without any re-cabling. Shared resources such as a server can be used by all ports in the same VLAN as the server. In the following figure only ports that need access to the server need to be part of VLAN 1. Ports can belong to other VLAN groups too. Figure 4 Shared Server Using VLAN Example 1.2 Ways to Manage the Switch Use any of the following methods to manage the Switch. · Web Configurator. This is recommended for everyday management of the Switch using a (supported) web browser. See Chapter 4 on page 45. · Command Line Interface.

Line commands offer an alternative to the Web Configurator and may be necessary to configure advanced features. See the CLI Reference Guide. · FTP. Use File Transfer Protocol for firmware upgrades and configuration backup/restore. See Section 24.8 on page 177. · SNMP. The device can be monitored and/or managed by an SNMP manager. See Section 25.3 on page 180.

GS-2024 User's Guide 31 Chapter 1 Getting to Know Your Switch 1.3 Good Habits for Managing the Switch Do the following things regularly to make the Switch more secure and to manage the Switch more effectively. · Change the password. Use a password that's not easy to guess and that consists of different types of characters, such as numbers and letters. · Write down the password and put it in a safe place.

· Back up the configuration (and make sure you know how to restore it). Restoring an earlier working configuration may be useful if the device becomes unstable or even crashes. If you forget your password, you will have to reset the Switch to its factory default settings. If you backed up an earlier configuration file, you would not have to totally re-configure the Switch. You could simply restore your last configuration.

32 GS-2024 User's Guide CHAPTER This chapter shows you how to install and connect the Switch. 2 Hardware Installation and Connection 2.1 Freestanding Installation 1 Make sure the Switch is clean and dry. 2 Set the Switch on a smooth, level surface strong enough to support the weight of the Switch and the connected cables. Make sure there is a power outlet nearby. 3 Make sure there is enough clearance around the Switch to allow air circulation and the attachment of cables and the power cord. 4 Remove the adhesive backing from the rubber feet. 5 Attach the rubber feet to each corner on the bottom of the Switch. These rubber feet help protect the Switch from shock or vibration and ensure space between devices when stacking. Figure 5 Attaching Rubber Feet Do NOT block the ventilation holes.

Leave space between devices when stacking. GS-2024 User's Guide 33 Chapter 2 Hardware Installation and Connection For proper ventilation, allow at least 4 inches (10 cm) of clearance at the front and 3.4 inches (8 cm) at the back of the Switch. This is especially important for enclosed rack installations. 2.2 Mounting the Switch on a Rack This section lists the rack mounting requirements and precautions and describes the installation steps. 2.2.1 Rack-mounted Installation Requirements · Two mounting brackets. · Eight M3 flat head screws and a #2 Philips screwdriver.

· Four M5 flat head screws and a #2 Philips screwdriver. Failure to use the proper screws may damage the unit. 2.2.1.

1 Precautions · Make sure the rack will safely support the combined weight of all the equipment it contains. · Make sure the position of the Switch does not make the rack unstable or top-heavy. Take all necessary precautions to anchor the rack securely before installing the unit. 2.2.

2 Attaching the Mounting Brackets to the Switch 1 Position a mounting bracket on one side of the Switch, lining up the four screw holes on the bracket with the screw holes on the side of the Switch. Figure 6 Attaching the Mounting Brackets 2 Using a #2 Philips screwdriver, install the M3 flat head screws through the mounting bracket holes into the Switch. 34 GS-2024 User's Guide Chapter 2 Hardware Installation and Connection 3 Repeat steps 1 and 2 to install the second mounting bracket on the other side of the Switch. 4 You may now mount the Switch on a rack. Proceed to the next section. 2.2.3 Mounting the Switch on a Rack 1 Position a mounting bracket (that is already attached to the Switch) on one side of the rack, lining up the two screw holes on the bracket with the screw holes on the side of the rack. Figure 7 Mounting the Switch on a Rack 2 Using a #2 Philips screwdriver, install the M5 flat head screws through the mounting bracket holes into the rack. 3 Repeat steps 1 and 2 to attach the second mounting bracket on the other side of the rack.

GS-2024 User's Guide 35 Chapter 2 Hardware Installation and Connection 36 GS-2024 User's Guide CHAPTER 3 Hardware Overview This chapter describes the front panel and rear panel of the Switch and shows you how to make the hardware connections. 3.1 Front Panel Connections The figure below shows the front panel of the Switch. Figure 8 Front Panel Console Port LEDs 100/1000 Mbps Ethernet Ports Management Port Dual Personality Interfaces The following table describes the port labels on the front panel. Table 1 Front Panel Connections LABEL 22 100/1000 Mbps RJ-45 Ethernet Ports 2 Dual Personality Interfaces DESCRIPTION Connect these Ethernet ports to high-bandwidth backbone network Ethernet switches or use them to daisy-chain other switches. Each interface has one 1000Base-T copper RJ-45 port and one mini-GBIC (Gigabit Interface Converter) fiber port, with one port active at a time. · 2 1000Base-T Ports: Connect these ports to high-bandwidth backbone network Ethernet switches using Category 5/5e/6 1000Base-T Ethernet cables. 2 Mini-GBIC Ports: Use Small Form-Factor Pluggable (SFP) transceivers in these ports for 1000Base-X fiber-optic connections to backbone Ethernet switches. · Console Port Management Port The console port is for local configuration of the Switch. Connect to a computer using an RJ-45 Ethernet cable for local configuration of the Switch.

GS-2024 User's Guide 37 Chapter 3 Hardware Overview 3.1.1 1000Base-T Ports The Switch has 24 1000Base-T auto-negotiating, auto-crossover Ethernet ports. In 100/1000 Mbps Gigabit Ethernet, the speed can be 100 Mbps or 1000 Mbps. The duplex mode can be both half or full duplex at 100 Mbps and full duplex only at 1000 Mbps.

An auto-negotiating port can detect and adjust to the optimum Ethernet speed (100/1000 Mbps) and duplex mode (full duplex or half duplex) of the connected device. An auto-crossover (auto-MDI/MDI-X) port automatically works with a straight-through or crossover Ethernet cable. Two of the 1000Base-T Ethernet ports are paired with a mini-GBIC slot to create a dual personality interface. The Switch uses up to one connection for each mini-GBIC and 1000Base-T Ethernet pair. The mini-GBIC slots have priority over the Gigabit ports.

This means that if a mini-GBIC slot and the corresponding Gigabit port are connected at the same time, the Gigabit port will be disabled. When auto-negotiation is turned on, a Gigabit port negotiates with the peer automatically to determine the connection speed and duplex mode. If the peer Ethernet port does not support auto-negotiation or turns off this feature, the Switch determines the connection speed by detecting the signal on the cable and using half duplex mode. When the Switch's autonegotiation is turned off, a Gigabit port uses the pre-configured speed and duplex mode when making a connection, thus requiring you to make sure that the settings of the peer Ethernet port are the same in order to connect. 3.1.1.1 Default Ethernet Settings The factory default negotiation settings for the Ethernet ports on the Switch are: · · · · Speed: Auto Duplex: Auto Flow control: Off Link aggregation: Off 3.1.1.

2 Auto-crossover All ports are auto-crossover, that is auto-MDIX ports (Media Dependent Interface Crossover), so you may use either a straight-through Ethernet cable or crossover Ethernet cable for all Gigabit port connections. Auto-crossover ports automatically sense whether they need to function as crossover or straight ports, so crossover cables can connect both computers and switches/hubs. 3.1.2 Dual Personality Interfaces Dual Personality interfaces comprise 1000Base-T/mini-GBIC combo ports. For each interface you can connect either to the 1000Base-T port or the mini-GBIC port. The mini-GBIC ports have priority over the 1000Base-T ports. This means that if a mini-GBIC port and the corresponding 1000Base-T port are connected at the same time, the 1000Base-T port will be disabled. 38 GS-2024 User's Guide Chapter 3 Hardware Overview 3.1.

2.1 Mini-GBIC Slots These are slots for Small Form-Factor Pluggable (SFP) transceivers. A transceiver is a single unit that houses a transmitter and a receiver. Use a transceiver to connect a fiber-optic cable to the Switch. The Switch does not come with transceivers.

You must use transceivers that comply with the Small Form-Factor Pluggable (SFP) Transceiver MultiSource Agreement (MSA). See the SFF committee's INF-8074i specification Rev 1.0 for details. You can change transceivers while the Switch is operating. You can use different transceivers to connect to Ethernet switches with different types of fiber-optic connectors.

· Type: SFP connection interface · Connection speed: 1 Gigabit per second (Gbps) To avoid possible eye injury, do not look into an operating fiber-optic module's connectors. 3.1.2.1.1 Transceiver Installation Use the following steps to install a mini GBIC transceiver (SFP or XFP module). 1 Insert the transceiver into the slot with the exposed section of PCB board facing down. Figure 9 Transceiver Installation Example 2 Press the transceiver firmly until it clicks into place. 3 The Switch automatically detects the installed transceiver. Check the LEDs to verify that it is functioning properly.

Figure 10 Installed Transceiver 3.1.2.1.2 Transceiver Removal Use the following steps to remove a mini GBIC transceiver (SFP module). 1 Open the transceiver's latch (latch styles vary). GS-2024 User's Guide 39 Chapter 3 Hardware Overview Figure 11 Opening the Transceiver's Latch Example 2 Pull the transceiver out of the slot. Figure 12 Transceiver Removal Example 3.1.3 Console Port For local management, you can use a computer with terminal emulation software configured to the following parameters: · · · · VT100 terminal emulation 9600 bps No parity, 8 data bits, 1 stop bit No flow control Connect the male 9-pin end of the RS-232 console cable to the console port of the Switch.

Connect the female end to a serial port (COM1, COM2 or other COM port) of your computer. 3.1.4 Management Port The MGMT (management) port is used for local management. Connect directly to this port using an Ethernet cable.

You can configure the Switch via Telnet or the web configurator. The default IP address of the management port is 192.168.0.1 with a subnet mask of 255. 255.255.0. 3.2 Rear Panel The following figure shows the rear panel of the Switch. 40 GS-2024 User's Guide Chapter 3 Hardware Overview Figure 13 Rear Panel 3.2.1 Power Connector Make sure you are using the correct power source as shown on the panel. Make sure you are using the correct power source as shown on the panel. To connect the power to the Switch, insert the female end of power cord to the power receptacle on the rear panel.

Connect the other end of the supplied power cord to a power outlet. Make sure that no objects obstruct the airflow of the fans. 3.3 LEDs After you connect the power to the Switch, view the LEDs to ensure proper functioning of the Switch and as an aid in troubleshooting. Table 2 LED Descriptions LED PWR SYS COLOR Green Green STATUS On Off Blinking On Off ALM Red On Off Gigabit Ports LNK/ACT Green Amber Blinking On Blinking On Off FDX Amber On Off Mini-GBIC Slots LNK Green On Off The link to this port is up. The link to this port is not connected. The system is transmitting/receiving to/from an Ethernet network. The link to a 10/1000 Mbps Ethernet network is up. The system is transmitting/receiving to/from an Ethernet network. The link to a 100 Mbps Ethernet network is up.

The link to an Ethernet network is down. The Gigabit port is negotiating in full-duplex mode. The Gigabit port is negotiating in half-duplex mode. DESCRIPTION The system is turned on. The system is off.

The system is rebooting and performing self-diagnostic tests. The system is on and functioning properly. The power is off or the system is not ready or is malfunctioning. There is a hardware failure. The system is functioning normally.

GS-2024 User's Guide 41 Chapter 3 Hardware Overview Table 2 LED Descriptions (continued) LED ACT MGMT 10 Green Blinking On Off 100 Amber Blinking On Off The system is transmitting/receiving to/from an Ethernet device. The port is connected at 10Mbps. The port is not connected at 10Mbps or to an Ethernet device.

The system is transmitting/receiving to/from an Ethernet device. The port is connected at 100Mbps. The port is not connected at 100Mbps or to an Ethernet device. COLOR Green STATUS Blinking DESCRIPTION This port is receiving or transmitting data. 42 GS-2024 User's Guide PART II Basic Configuration The Web Configurator (45) Initial Setup Example (53) System Status and Port Statistics (57) Basic Setting (63) 43 44 CHAPTER This section introduces the configuration and functions of the web configurator. 4 The Web Configurator 4.1 Introduction The web configurator is an HTML-based management interface that allows easy Switch setup and management via Internet browser.

Use Internet Explorer 6.0 and later or Netscape Navigator 7.0 and later versions. The recommended screen resolution is 1024 by 768 pixels. In order to use the web configurator you need to allow: · Web browser pop-up windows from your device. Web pop-up blocking is enabled by default in Windows XP SP (Service Pack) 2. · JavaScript (enabled by default). · Java permissions (enabled by default). 4.2 System Login 1 Start your web browser.
2 Type "http://" and the IP address of the Switch (for example, the default is 192.168.1.1) in the Location or Address field. Press [ENTER].
3 The login screen appears. The default username is admin and associated default password is 1234. The date and time display as shown if you have not configured a time server nor manually entered a time and date in the General Setup screen. GS-2024 User's Guide 45 Chapter 4 The Web Configurator Figure 14 Web Configurator: Login 4 Click OK to view the first web configurator screen. 4.
3 The Status Screen The Status screen is the first screen that displays when you access the web configurator. The following figure shows the navigating components of a web configurator screen. Figure 15 Web Configurator Home Screen (Status) B C DE A A - Click the menu items to open submenu links, and then click on a submenu link to open the screen in the main window. B, C, D, E - These are quick links which allow you to perform certain tasks no matter which screen you are currently working in. 46 GS-2024 User's Guide Chapter 4 The Web Configurator B - Click this link to save your configuration into the Switch's nonvolatile memory. Nonvolatile memory is saved in the configuration file from which the Switch booted from and it stays the same even if the Switch's power is turned off. See Section 24.3 on page 174 for information on saving your settings to a specific configuration file. C - Click this link to go to the status page of the Switch. D - Click this link to log out of the web configurator.

E - Click this link to display web help pages. The help pages provide descriptions for all of the configuration screens. In the navigation panel, click a main link to reveal a list of submenu links. Table 3 Navigation Panel Sub-links Overview BASIC SETTING ADVANCED APPLICATION IP APPLICATION MANAGEMENT GS-2024 User's Guide 47 Chapter 4 The Web Configurator The following table lists the various web configurator screens within the sub-links. Table 4 Web Configurator Screen Sub-links Details BASIC SETTING ADVANCED APPLICATION System Info General Setup Switch Setup IP Setup Port Setup VLAN Status VLAN Port Setting Static VLAN VLAN Detail Static MAC Forwarding Spanning Tree Protocol Status Spanning Tree Configuration Rapid Spanning Tree Protocol Multiple Spanning Tree Protocol Bandwidth Control Broadcast Storm Control Mirroring Link Aggregation Status Link Aggregation Setting - Link Aggregation Control Protocol Port Authentication 802.1x Port Security Queuing Method Multicast Status Multicast Setting - IGMP Snooping VLAN - IGMP Filtering Profile - MVR -- Group Configuration Authentication and Accounting RADIUS Server Setup TACACS+ Server Setup Auth and Acct Setup Loop Guard IP APPLICATION Static Routing DiffServ DHCP Status DHCP Relay VLAN Setting MANAGEMENT Maintenance Firmware Upgrade Restore Configuration Backup Configuration Access Control SNMP - Trap Group Logins Service Access Control Remote Management Diagnostic Syslog Setup Syslog Server Setup Clustering Management Status Clustering Management Configuration MAC Table ARP Table Configure Clone The following table describes the links in the navigation panel. Table 5 Navigation Panel Links LINK Basic Settings System Info General Setup Switch Setup IP Setup This link takes you to a screen that displays general system and hardware monitoring information. This link takes you to a screen where you can configure general identification information and time settings for the Switch. This link takes you to a screen where you can set up global Switch parameters such as VLAN type, MAC address learning, GARP and priority queues. This link takes you to a screen where you can configure the IP address, subnet mask (necessary for Switch management) and DNS (domain name server) and set up to 64 IP routing domains.
This link takes you to screens where you can configure speed, flow control and priority settings for individual Switch ports. DESCRIPTION Port Setup Advanced Application 48 GS-2024 User's Guide Chapter 4 The Web Configurator Table 5 Navigation Panel Links (continued) LINK VLAN Static MAC Forwarding Spanning Tree Protocol Bandwidth Control Broadcast Storm Control Mirroring DESCRIPTION This link takes you to screens where you can configure port-based or 802.1Q VLAN (depending on what you configured in the Switch Setup menu). This link takes you to screens where you can configure static MAC addresses for a port. These static MAC addresses do not age out.
This link takes you to screens where you can configure the RSTP/MSTP to prevent network loops. This link takes you to screens where you can cap the maximum bandwidth allowed from specified source(s) to specified destination(s). This link takes you to a screen to set up broadcast filters. This link takes you to screens where you can copy traffic from one port to another port in order that you can examine the traffic from the first port without interference. Link Aggregation This link takes you to screen where you can logically aggregate physical links to form one logical, higher-bandwidth link.
Port Authentication Port Security Queuing Method Multicast Auth and Acct This link takes you to a screen where you can configure IEEE 802.1x port authentication as well as MAC authentication for clients communicating via the Switch. This link takes you to a screen where you can activate MAC address learning. This link takes you to a screen where you can configure queuing with associated queue weights for each port. This link takes you to screen where you can configure various multicast features and create multicast VLANs. This link takes you to screens where you can configure authentication and accounting services via external servers. The external servers can be either RADIUS (Remote Authentication Dial-In User Service) or TACACS+ (Terminal Access Controller Access-Control System Plus).

This link takes you to a screen where you can configure protection against network loops that occur on the edge of your network. This link takes you to a screen where you can configure static routes. A static route defines how the Switch should forward traffic by configuring the TCP/IP parameters manually.

This link takes you to screens where you can enable DiffServ and set DSCP-toIEEE802.1p mappings. This link takes you to screens where you can configure the DHCP settings. This link takes you to screens where you can perform firmware and configuration file maintenance as well as reboot the system. This link takes you to screens where you can change the system login password and configure SNMP and remote management. This link takes you to screens where you can view system logs and can test port(s). This link takes you to screens where you can setup system logs and a system log server. This link takes you to a screen where you can configure clustering management and view its status. This link takes you to a screen where you can view the MAC address and VLAN ID of a device attach to a port. You can also view what kind of device it is.

Loop Guard IP Application Static Route DiffServ DHCP Management Maintenance Access Control Diagnostic Syslog Cluster Management MAC Table GS-2024 User's Guide 49 Chapter 4 The Web Configurator Table 5 Navigation Panel Links (continued) LINK ARP Table Configure Clone DESCRIPTION This link takes you to a screen where you can view the MAC address IP address resolution table. This link takes you to a screen where you can copy attributes of one port to (an)other port(s). 4.3.1 Change Your Password After you log in for the first time, it is recommended you change the default administrator password.

Click Management > Access Control > Logins to display the next screen. Figure 16 Change Administrator Login Password 4.4 Saving Your Configuration When you are done modifying the settings in a screen, click Apply to save your changes back to the run-time memory. Settings in the run-time memory are lost when the Switch's power is turned off. Click the Save link in the upper right hand corner of the web configurator to save your configuration to nonvolatile memory.

Nonvolatile memory refers to the Switch's storage that remains even if the Switch's power is turned off. Use the Save link when you are done with a configuration session. 50 GS-2024 User's Guide Chapter 4 The Web Configurator 4.5 Switch Lockout You could block yourself (and all others) from using in-band-management (managing through the data ports) if you do one of the following: 1 Delete the management VLAN (default is VLAN 1). 2 Delete all port-based VLANs with the CPU port as a member. The "CPU port" is the management port of the Switch. 3 Filter all traffic to the CPU port. 4 Disable all ports. 5 Misconfigure the text configuration file. 6 Forget the password and/or IP address.

7 Prevent all services from accessing the Switch. 8 Change a service port number but forget it. Be careful not to lock yourself and others out of the Switch. If you do lock yourself out, try using out-of-band management (via the management port) to configure the Switch. 4.6 Resetting the Switch If you lock yourself (and others) from the Switch or forget the administrator password, you will need to reload the factory-default configuration file or reset the Switch back to the factory defaults. 4.6.1 Reload the Configuration File Uploading the factory-default configuration file replaces the current configuration file with the factory-default configuration file. This means that you will lose all previous configurations and the speed of the console port will be reset to the default of 9600 bps with 8 data bit, no parity, one stop bit and flow control set to none.

The password will also be reset to "1234" and the IP address to 192.168.1.1. To upload the configuration file, do the following: 1 Connect to the console port using a computer with terminal emulation software.

See Section 3.2 on page 40 for details. 2 Disconnect and reconnect the Switch's power to begin a session. When you reconnect the Switch's power, you will see the initial screen. 3 When you see the message "Press any key to enter Debug Mode within 3 seconds .

.." press any key to enter debug mode. 4 Type atlc after the "Enter Debug Mode" message. 5 Wait for the "Starting XMODEM upload" message before activating XMODEM upload on your terminal. 6 After a configuration file upload, type atgo to restart the Switch. GS-2024 User's Guide 51 Chapter 4 The Web Configurator Figure 17 Resetting the Switch: Via the Console Port Bootbase Version: V0.6 | 05/18/2004 15:28:28 AM:Size = 32 Mbytes DRAM POST: Testing: 32768K OK DRAM Test SUCCESS ! FLASH: Intel 32M ZyNOS Version: V3.60(LT.0)b3 | 06/21/2005 17:00:44 Press any key to enter debug mode within 3 seconds.

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. Enter Debug Mode ras> atlc Starting XMODEM upload (CRC mode).... CCCCCCCCCCCCCCC Total 262144 bytes received. Erasing.. ..

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.. OK ras> atgo The Switch is now reinitialized with a default configuration file including the default password of "1234". 4.7 Logging Out of the Web Configurator Click Logout in a screen to exit the web configurator.

You have to log in with your password again after you log out. This is recommended after you finish a management session for security reasons. Figure 18 Web Configurator: Logout Screen 4.8 Help The web configurator's online help has descriptions of individual screens and some supplementary information. Click the Help link from a web configurator screen to view an online help description of that screen.

52 GS-2024 User's Guide CHAPTER This chapter shows how to set up the switch for an example network. 5 Initial Setup Example 5.1 Overview The following lists the configuration steps for the initial setup: · Create a VLAN · Set port VLAN ID · Configure the switch IP management address 5.1.1 Creating a VLAN VLANs confine broadcast frames to the VLAN group in which the port(s) belongs. You can do this with port-based VLAN or tagged static VLAN with fixed port members. In this example, you want to configure port 10 as a member of VLAN 2. Figure 19 Initial Setup Network Example: VLAN 1 Click Advanced Application and VLAN in the navigation panel and click the Static VLAN link. GS-2024 User's Guide 53 Chapter 5 Initial Setup Example 2 In the Static VLAN screen, select ACTIVE, enter a descriptive name in the Name field and enter 2 in the VLAN Group ID field for the VLAN2 network. The VLAN

Group ID field in this screen and the VID field in the IP Setup screen refer to the same VLAN ID.

3 Since the VLAN2 network is connected to port 10 on the switch, select Fixed to configure port 10 to be a permanent member of the VLAN only. 4 To ensure that VLAN-unaware devices (such as computers and hubs) can receive frames properly, clear the TX Tagging check box to set the switch to remove VLAN tags before sending.

5 Click Add to save the settings. 5.1.2 Setting Port VID Use PVID to add a tag to incoming untagged frames received on that port so that the frames are forwarded to the VLAN group that the tag defines. In the example network, configure 2 as the port VID on port 10 so that any untagged frames received on that port get sent to VLAN 2. Figure 20 Initial Setup Network Example: Port VID 54 GS-2024 User's Guide Chapter 5 Initial Setup Example 1 Click Advanced Applications and VLAN in the navigation panel. Then click the VLAN Port Setting link. 2 Enter 2 in the PVID field for port 10 and click Apply to save the settings.

5.1.3 Configuring Switch Management IP Address The default management IP address of the switch is 192.168.1.

1. You can configure another IP address in a different subnet for management purposes. The following figure shows an example. Figure 21 Initial Setup Example: Management IP Address 1 Connect your computer to any Ethernet port on the switch. Make sure your computer is in the same subnet as the switch. 2 Open your web browser and enter 192.168.1.1 (the default IP address) in the address bar to access the web configurator. See Section 4.2 on page 45 for more information. GS-2024 User's Guide 55 Chapter 5 Initial Setup Example 3 Click Basic Setting and IP Setup in the navigation panel. 4 Configure the related fields in the IP Setup screen. For the VLAN2 network, enter 192.168.

2.1 as the IP address and 255.255.255.0 as the subnet mask. 5 In the VID field, enter the ID of the VLAN group to which you want this management IP address to belong. This is the same as the VLAN ID you configure in the Static VLAN screen. 6 Click Add. 56 GS-2024 User's Guide CHAPTER 6 System Status and Port Statistics This chapter describes the system status (web configurator home page) and port details screens. 6.

1 Overview The home screen of the web configurator displays a port statistical summary with links to each port showing statistical details. 6.2 Port Status Summary To view the port statistics, click Status in all web configurator screens to display the Status screen as shown next. Figure 22 Status The following table describes the labels in this screen. Table 6 Status LABEL Port Name DESCRIPTION This identifies the Ethernet port.

Click a port number to display the Port Details screen (refer to Figure 23 on page 59). This is the name you assigned to this port in the Basic Setting > Port Setup screen. GS-2024 User's Guide 57 Chapter 6 System Status and Port Statistics Table 6 Status (continued) LABEL Link DESCRIPTION This field displays the speed (either 10M for 10 Mbps, 100M for 100 Mbps, 1000M for 1000 Mbps, and 10G for 10 Gbps) and the duplex (F for full duplex or H for half). It also shows the cable type (Copper or SFP) for the combo ports. If STP (Spanning Tree Protocol) is enabled, this field displays the STP state of the port.

(See Section 10.1.3 on page 92 for more information.) If STP is disabled, this field displays FORWARDING if the link is up, otherwise, it displays STOP. This fields displays whether LACP (Link Aggregation Control Protocol) has been enabled on the port. This field shows the number of transmitted frames on this port. This field shows the number of received frames on this port. This field shows the number of received errors on this port. This field shows the transmission speed of data sent on this port in kilobytes per second. This field shows the transmission speed of data received on this port in kilobytes per second.

This field shows the total amount of time in hours, minutes and seconds the port has been up. Type a port number, select Port and then click Clear Counter to erase the recorded statistical information for that port, or select Any to clear statistics for all ports. State LACP TxPkts RxPkts Errors Tx KB/s Rx KB/s Up Time Clear Counter 6.2.1 Status: Port Details Click a number in the Port column in the Status screen to display individual port statistics. Use this screen to check status and detailed performance data about an individual port on the Switch. 58 GS-2024 User's Guide Chapter 6 System Status and Port Statistics Figure 23 Status: Port Details The following table describes the labels in this screen. Table 7 Status > Port Details LABEL Port Info Port NO. Name Link This field displays the port number you are viewing. This field displays the name of the port.

This field displays the speed (either 10M for 10Mbps, 100M for 100Mbpsl, 1000M for 1000 Mbps, and 10G for 10 Gbps) and the duplex (F for full duplex or H for half duplex). It also shows the cable type (Copper or Fiber). If STP (Spanning Tree Protocol) is enabled, this field displays the STP state of the port. (See Section 10.1.

3 on page 92 for more information.) If STP is disabled, this field displays FORWARDING if the link is up, otherwise, it displays STOP. This field shows if LACP is enabled on this port or not. This field shows the number of transmitted frames on this port This field shows the number of received frames on this port This field shows the number of received errors on this port. This field shows the transmission speed of data sent on this port in kilobytes per second. DESCRIPTION State LACP TxPkts RxPkts Errors Tx KB/s GS-2024 User's Guide 59 Chapter 6 System Status and Port Statistics Table 7 Status > Port Details (continued) LABEL Rx KB/s Up Time DESCRIPTION This field shows the transmission speed of data received on this port in kilobytes per second. This field shows the total amount of time the connection has been up. Tx Packet The following fields display detailed information about packets transmitted. TX Packets Multicast Broadcast Pause Tagged This field shows the number of good packets (unicast, multicast and broadcast) transmitted. This field shows the number of good multicast packets transmitted. This field shows the number of good broadcast packets transmitted. This field shows the number of 802.3x Pause packets transmitted. This field shows the number of packets with VLAN tags transmitted. Rx Packet The following fields display detailed information about packets received.

RX Packets Multicast Broadcast Pause Control This field shows the number of good packets (unicast, multicast and broadcast) received. This field shows the number of good multicast packets received. This field shows the number of good broadcast packets received. This field shows the number of 802.3x Pause packets received. This field shows the number of control packets received (including those with CRC error) but it does not include the 802.3x Pause packets. TX Collision The following fields display information on collisions while transmitting. Single Multiple Excessive This is a count of successfully transmitted packets for which transmission is inhibited by exactly one collision. This is a count of successfully transmitted packets for which transmission was inhibited by more than one collision.

This is a count of packets for which transmission failed due to excessive collisions.