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GS700TPS Smart Switch Software Administration Manual

NETGEAR

NETGEAR, Inc.
350 East Plumeria Drive
San Jose, CA 95134 USA

June 2009
202-10489-01



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Manual abstract:

@@@in the United States and/or other countries. @@@@NETGEAR does not assume any liability that may occur due to the use or application of the product(s) or circuit layout(s) described herein. Information is subject to change without notice. Certificate of the Manufacturer/Importer It is hereby certified that the GS700TPS Gigabit Stackable PoE Smart Switch has been suppressed in accordance with the conditions set out in the BMPT-AmtsblVfg 243/1991 and Vfg 46/1992. The operation of some equipment (for example, test transmitters) in accordance with the regulations may, however, be subject to certain restrictions. Please refer to the notes in the operating instructions. The Federal Office for Telecommunications Approvals has been notified of the placing of this equipment on the market and has been granted the right to test the series for compliance with the regulations. Voluntary Control Council for Interference (VCCI) Statement This equipment is in the first category (information equipment to be used in commercial and/or industrial areas) and conforms to the standards set by the Voluntary Control Council for Interference by Data Processing Equipment and Electronic Office Machines that are aimed at preventing radio interference in commercial and/or industrial areas. Consequently, when this equipment is used in a residential area or in an adjacent area thereto, radio interference may be caused to equipment such as radios and TV receivers. Federal Communications Commission (FCC) Compliance Notice: Radio Frequency Notice This device complies with part 15 of the FCC Rules.

Operation is subject to the following two conditions: This device may not cause harmful interference. This device must accept any interference received, including interference that may cause undesired operation. NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be ii v1.0, June 2009 GS700TPS Smart Switch Software Administration Manual determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: · · · Reorient or relocate the receiving antenna. Increase the separation between the equipment and receiver. Connect the equipment into an outlet on a circuit different from that which the receiver is connected.

Consult the dealer or an experienced radio/TV technician for help. EU Statement of Compliance The NETGEAR GS700TPS Gigabit Stackable PoE Smart Switch is compliant with the following EU Council Directives: 89/336/EEC and LVD 73/23/EEC. Compliance is verified by testing to the following standards: EN55022 Class A, EN55024 and EN60950-1. Warning: This is a Class A product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take appropriate measures. Canadian Department of Communications Radio Interference Regulations This digital apparatus (NETGEAR GS700TPS Smart Switch) does not exceed the Class A limits for radio-noise emissions from digital apparatus as set out in the Radio Interference Regulations of the Canadian Department of Communications. Règlement sur le brouillage radioélectrique du ministère des Communications Cet appareil numérique (NETGEAR GS700TPS Smart Switch) respecte les limites de bruits radioélectriques visant les appareils numériques de classe A prescrites dans le Règlement sur le brouillage radioélectrique du ministère des Communications du Canada. Customer Support For assistance with installing and configuring your NETGEAR system or for questions or problems following installation: · · · Check the NETGEAR Web page at <http://www.NETGEAR.com/support> Call Technical Support in North America at 1-888-NETGEAR.

If you are outside North America, please refer to the phone numbers listed on the Support Information Card that was included with your switch. Email Technical Support at support@NETGEAR.com. Defective or damaged merchandise can be returned to your point-of-purchase representative. Internet/World Wide Web NETGEAR maintains a World Wide Web home page that you can access at the uniform resource locator (URL) <http://www.NETGEAR.com>. A direct connection to the Internet and a Web browser such as Internet Explorer or Netscape are required. iii v1.0, June 2009 FCC Requirements for Operation in the United States FCC Information to User: This product does not contain any user-serviceable components and is to be used with approved antennas only.

Any product changes or modifications will invalidate all applicable regulatory certifications and approvals FCC Guidelines for Human Exposure: This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. FCC Declaration Of Conformity: We, NETGEAR, Inc., 350 East Plumeria Drive, San Jose, CA 95134 declare under our sole responsibility that the model GS700TPS Gigabit Stackable PoE Smart Switch complies with Part 15 of FCC Rules.

Operation is subject to the following two conditions: a) This device may not cause harmful interference and b) This device must accept any interference received, including interference that may cause undesired operation." Product and Publication Details Model Number: Publication Date: Product Family:

Product Name: Home or Business Product: Language: Publication Part Number: Publication Version Number: GS700TPS June 2009 Smart Switch GS700TPS Gigabit Stackable PoE Smart Switch Business English 202-10489-01 1.0 iv v1.0, June 2009 Contents About This Manual Who Should Use this

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.....9-2 Appendix A Default Settings Index ix v1.0, June 2009 About This Manual The NETGEAR® GS700TPS Smart Switch Software Administration Manual describes how to install, configure, operate, and troubleshoot the GS700TPS Gigabit Stackable PoE Smart Switch using its included software. This book describes the software configuration procedures and explains the options available within those procedures. Who Should Use this Book The information in this manual is intended for readers with intermediate to advanced system management skills.

This document was created primarily for the system administrator who wishes to install and configure the GS700TPS Smart Switch in a network. This user guide assumes that the reader has a general understanding of switch platforms and a basic knowledge of Ethernet and networking concepts. To install this switch, it is not necessary to understand and use all of its capabilities. Once basic configuration is performed, the switch operates using the remaining factory default parameters. However, a greater level of configuration--anywhere from the basic up to the maximum possible--will allow your network the full benefit of the switch's features.

The web interface simplifies this configuration at all levels. How to Use This Book This document describes configuration commands for the GS700TPS Smart Switch software. The commands can all be accessed from the Web interface. Chapter 1, "Getting Started with Switch Management" describes how to use the SmartWizard Discovery utility to set up your switch so that you can communicate with it. Chapter 2, "Introduction to the Web Browser Interface" introduces the Web browser interface.

Chapter 3, "Managing System Settings" describes how to configure the System functions. Chapter 4, "Configuring Switching Settings" describes how to configure the Switching functions. Chapter 5, "Configuring QoS" describes how to configure QoS functions. x v1.0, June 2009 GS700TPS Smart Switch Software Administration Manual Chapter 6, "Managing Security" describes how to configure security. Chapter 7, "Monitoring the Switch" describes how to configure switch monitoring. Chapter 8, "Maintenance" describes the firmware upgrade procedure and reset functions. Chapter 9, "Online Help" describes how to obtain online help and support. Appendix A, "Default Settings" gives GS700TPS Smart Switch specifications and lists default feature values. Note: Refer to the product release notes for the GS700TPS Smart Switch Software application level code.

The release notes detail the platform specific functionality of the Switching, SNMP, Config, and Management packages. Conventions, Formats, and Scope The conventions, formats, and scope of this manual are described in the following paragraphs: · Typographical Conventions. This manual uses the following typographical conventions: *Italics* **Bold** `Fixed` *italics* **Emphasis**, books, CDs, file and server names, extensions User input, IP addresses, GUI screen text Command prompt, CLI text, code URL links · Formats. This manual uses the following formats to highlight special messages: Note: This format is used to highlight information of importance or special interest. Tip: This format is used to highlight a procedure that will save time or resources. Warning: Ignoring this type of note may result in a malfunction or damage to the equipment. xi v1.0, June 2009 GS700TPS Smart Switch Software Administration Manual Danger: This is a safety warning. Failure to take heed of this notice may result in personal injury or death. · Scope.

This manual is written for the GS700TPS Smart Switch according to these specifications: Product Version Manual Publication Date . GS700TPS Gigabit Stackable PoE Smart Switch June 2009 Note: Product updates are available on the NETGEAR, Inc. website at <http://www.netgear.com/support>.

How to Use This Manual The HTML version of this manual includes the following: · Buttons at a time. and for browsing forwards or backwards through the manual one page A button that displays the table of contents and a button. Double-click on a link in the table of contents or index to navigate directly to where the topic is described in the manual. A model. button to access the full NETGEAR, Inc.

online knowledge base for the product · Links to PDF versions of the full manual and individual chapters. xii v1.0, June 2009 GS700TPS Smart Switch Software Administration Manual How to Print this Manual To print this manual, select one of the following options: · Printing a Page from HTML. Each page in the HTML version of the manual is dedicated to a major topic. Select File > Print from the browser menu to print the page contents.



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0 June 2009 Description Product updated xiii v1.0, June 2009 Chapter 1 Getting Started with Switch Management This section provides an overview of switch management, including the methods you can choose to start managing your NETGEAR GS700TPS Gigabit Stackable PoE Smart Switch. It also leads you through the steps necessary to get started, using the SmartWizard Discovery utility. The section includes this information under the following menu options: · · · · · "System Requirements" "Switch Management Interface" "Network with a DHCP Server" "Network without a DHCP Server" "Web Access" "Additional Utilities" System Requirements The following hardware and software facilities are required to run the applications described in this manual: · Network facilities: Ethernet network with or without DHCP server as appropriate Ethernet cable to connect the switch to a PC For running the SmartWizard Discovery utility and local or remote Web Management: IBM-type PC with CD drive: RAM size and disk specification are not critical OS software: Microsoft Windows Vista, Windows XP, or Windows 2000 Desktop computer running Microsoft Internet Explorer 5.0 or later or Netscape Navigator 6.0 or later, or equivalent · 1-1 v1.0, June 2009 GS700TPS Smart Switch Software Administration Manual Note: For complete hardware installation instructions, refer to the GS700TPS Smart Switch Hardware Installation Manual included on your Resource CD, or go to <http://www.netgear.com/support>. Switch Management Interface Your NETGEAR GS700TPS Gigabit Stackable PoE Smart Switch contains an embedded web server and management software for managing and monitoring switch functions.

This switch operates as a simple switch without using the management software. The management software enables you to configure more advanced features, and consequently improve switch efficiency as well as overall network performance. Web-Based Management enables you to monitor, configure, and control your switch remotely using a common web browser, instead of having to use expensive and complicated SNMP software products. Simply by using your web browser, you can monitor the performance of your switch and optimize network configuration. Using your browser, for example, you can set up VLANs, traffic priority, and configure port trunking. In addition, NETGEAR provides the SmartWizard Discovery utility with this product. This program runs under Microsoft Windows XP or Windows 2000 and provides a "front end" that discovers the switches on your network segment. When you power up your switch for the first time, the SmartWizard Discovery utility enables you to configure its basic network parameters without prior knowledge of IP address or subnet mask. Following such configuration, this program leads you into the Web Management interface. Some features of the SmartWizard Discovery utility and Web Management interface are shown in the table below.

Getting Started with Switch Management v1.0, June 2009 1-2 GS700TPS Smart Switch Software Administration Manual Table 1-1. Switch Management Methods Management Method SmartWizard Discovery utility Features No IP address or subnet mask setup needed Discover all switches on the network User-friendly interface under Microsoft Windows Firmware upgrade capability Password change feature Provides entry to web configuration of switch Password protection Ideal for configuring the switch remotely Compatible with Internet Explorer and Netscape Navigator on any platform Extensive switch configuration possible Configuration backup and restore Can be accessed from any location via the switch's IP address Intuitive browser interface Most visually appealing Web browser interface For a more detailed discussion of the SmartWizard Discovery utility, continue with this section: "Network with a DHCP Server" or "Network without a DHCP Server". For a detailed discussion of the Web Browser Interface, see Chapter 2, "Introduction to the Web Browser Interface". Network with a DHCP Server To install the switch in a network with a DHCP server, proceed as follows: 1. Connect the GS700TPS Smart Switch to a DHCP network. 2. Power on the switch by connecting its AC-DC power adapter. 3. Install the SmartWizard Discovery utility, located on the switch installation CD, on your computer.

4. Start the SmartWizard Discovery utility. 1-3 Getting Started with Switch Management v1.0, June 2009 GS700TPS Smart Switch Software Administration Manual 5. Click Discover for the SmartWizard Discovery utility to find your GS700TPS Gigabit Stackable PoE Smart Switch. You should see a screen similar to that shown below. Figure 1-1 6. Note the displayed IP address assigned by the DHCP server. You will need this value to access the switch directly from a web browser (without using the SmartWizard Discovery utility). 7.

Select your switch by highlighting the name of the switch. Then click Web Access. The discovery utility displays a login window similar to the following: Figure 1-2 Getting Started with Switch Management v1.0, June 2009 1-4 GS700TPS Smart Switch Software Administration Manual 8. Use your web browser to manage your switch. The default password is password. Then use this screen to proceed to management of the switch covered in Chapter 2, "Introduction to the Web Browser Interface". Network without a DHCP Server This section describes how to set up your switch in a network without a DHCP server, and is divided into the following tasks: · · · Manually assign network parameters for your switch Configure the NIC settings on the host PC Log in to the web-based switch management utility Manually Assigning Network Parameters If your network has no DHCP service, you must assign a static IP address to your switch. You can also assign the switch a static IP address even if your network has DHCP service.



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Proceed as follows: 1.

Connect the GS700TPS Gigabit Stackable PoE Smart Switch to your existing network. 2. Power on the switch by plugging in the AC-DC power adapter. The default IP is 192.168.0.239. 3. Install the SmartWizard Discovery utility on your computer. The SmartWizard Discovery utility is located on the switch installation CD.

4. Start the SmartWizard Discovery utility. 5. Click Discover for the SmartWizard Discovery utility to find your GS700TPS Gigabit Stackable PoE Smart Switch. You should see a screen similar to that shown in Figure 1-1.

1-5 Getting Started with Switch Management v1.0, June 2009 GS700TPS Smart Switch Software Administration Manual 6. Click Configuration Setting. A screen similar to that shown below appears. Figure 1-3 7.

Select Disable to disable DHCP. 8. The default IP address is 192.168.0.239 and the default subnet mask is 255.255.255.0. If you want different values, enter the switch IP address, gateway IP address and subnet mask.

9. Type your password and click Set. Please ensure that your PC and the GS700TPS Gigabit Stackable PoE Smart Switch are in the same subnet. Note the settings for later use. Getting Started with Switch Management v1.0, June 2009 1-6 GS700TPS Smart Switch Software Administration Manual NIC Setting on the Host that Accesses the GS700TPS Gigabit Stackable PoE Smart Switch The settings of your Network Interface Card (NIC) under MS Windows OS are made with entries into Windows screens similar to the ones shown below. For comparison, the settings screens of the switch are also shown although they do not appear in the Windows view. Figure 1-4 You need Windows Administrator privileges to change these settings. 1. On your PC, access the MS Windows operating system TCP/IP Properties.

2. Set IP address and subnet mask appropriately. The subnet mask value is identical to that set in the switch. The PC IP address must be different from that of the switch but lie in the same subnet. 3.

Click Web Access in the SmartWizard Discovery utility to enable the management screens as described in the following section. 1-7 Getting Started with Switch Management v1.0, June 2009 GS700TPS Smart Switch Software Administration Manual Web Access For Web access, you can either: · Select Web Access using the SmartWizard Discovery utility (see "Network with a DHCP Server" or "Network without a DHCP Server"). Access the switch directly, without using the SmartWizard Discovery utility. You must work from the same network segment that contains the switch (i.e., the subnet mask values of switch and PC host must be the same) and you must point your browser using the switch IP address. If you used the SmartWizard Discovery utility to set up IP address and subnet mask, either with or without DHCP server, use that IP address in your browser window. If you are starting with an "out of the box" switch and are not using the SmartWizard Discovery utility, you must initially configure your host PC to be on a network segment to match the default parameters of the switch, which are: · IP address: 192.168.0.239 Subnet Mask: 255.255.255.0 You can change the network parameters to match those of your network (this procedure is described in Chapter 3, "Managing System Settings").

Your host PC network parameters must then be set to match your network. Clicking Web Access on the SmartWizard Discovery utility or accessing the switch directly displays the screen shown below. · Figure 1-5 Use this screen to proceed to management of the switch covered in Chapter 2, "Introduction to the Web Browser Interface". Getting Started with Switch Management v1.0, June 2009 1-8 GS700TPS Smart Switch Software Administration Manual Additional Utilities Alternatively, from the main screen shown on Figure 1-1 you can access these additional functions: · "Password Change" "Firmware Upgrade" Password Change You can set a new password of up to 20 ASCII characters. 1. Click Password Change from the Switch Setting section. The Password Change screen appears. You can set a new password.

You must enter the old and new passwords and confirm the new one. 2. Click Set to enable the new password. Firmware Upgrade The GS700TPS Smart Switch software is upgradeable, and enables your switch to take advantage of improvements and additional features as they become available. The upgrade procedure assumes that you have downloaded or otherwise obtained the firmware upgrade and that you have it available as a binary file on your computer. This procedure uses the TFTP protocol to implement the transfer from computer to switch. · Note: You can also upgrade the firmware using the Download menu of the switch (see "Download"). 1-9 Getting Started with Switch Management v1.0, June 2009 GS700TPS Smart Switch Software Administration Manual If you click Firmware Upgrade from the main screen (see Figure 1-1), after you have selected the switch to upgrade, the following screen appears:

Figure 1-6 1.

Enter the following values into the appropriate places in the form: · Product Assigned Firmware: The location of the new firmware. If you do not know the location, click Browse to locate the file. Upgrade Password: Enter your password; the default password is password. 2. Click Apply to apply the settings to the Upgrade Configuration. 3. Click Start Upgrade to begin loading the upgrade. The system software is automatically loaded to all stacking members. The Upgrade State field shows upgrading in progress. When the process is complete, the switch automatically reboots.

Exit Click Exit from the SmartWizard Discovery screen to close the SmartWizard Discovery utility. Getting Started with Switch Management v1.0, June 2009 1-10 Chapter 2 Introduction to the Web Browser Interface This section introduces the web browser interface that enables you to configure and manage your NETGEAR GS700TPS Gigabit Stackable PoE Smart Switch. Your GS700TPS Smart Switch provides a built-in browser interface that enables you to configure and manage it remotely using a standard Web browser such as Microsoft Internet Explorer or Netscape Navigator. Online Help is also provided for many of the basic functions and features of the switch. This section introduces the areas of the browser interface and includes the following topics: · "Logging Into the NETGEAR Home Screen" "Using the NETGEAR Web Management System Options" Logging Into the NETGEAR Home Screen Begin your overview of the GS700TPS Smart Switch browser interface by logging in: 1. Start the application by one of the following methods, as described in Chapter 1, "Getting Started with Switch Management": a. In the SmartWizard Discovery utility click Web Access. or b. In the web browser enter the switch's IP address and press Enter. The Login screen appears. Figure 2-1 2-1 v1.



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0, June 2009 GS700TPS Smart Switch Software Administration Manual 2. Enter the password (the factory default is password) and click Login. The home screen of the GS700TPS Smart Switch browser interface displays.

The Navigation Menu As shown below, logging in brings you to the view of the web browser interface. Figure 2-2 The NETGEAR GS700TPS web browser interface contains the following views: Main Navigation Area Located on the top of the NETGEAR GS700TPS web browser interface and marked as 1 in Figure 2-2. The Main Navigation Area includes Primary and Secondary Navigation Bars. The Primary Navigation Bar contains a list of the different features that can be configured including System, Switching, QoS, Security, Monitoring, Maintenance and Help. Each feature expands to a subset of features that can be configured as part of the Secondary Navigation Bar.

Left Navigation Tree Located on the left side of the NETGEAR GS700TPS web browser interface and marked as 2 in Figure 2-2. For each Secondary Navigation Feature the Left Navigation Tree contains a subset of features that can be expanded to display all the components. Work Area Located on the right side of the NETGEAR GS700TPS web browser interface and marked as 3 in Figure 2-2. The Work Area contains device tables, general device information, and configurable device parameters. Introduction to the Web Browser Interface v1.0, June 2009 2-2 GS700TPS Smart Switch Software Administration Manual For further description of the functions, refer to the appropriate section of this manual: Chapter 3, "Managing System Settings" describes how to configure the System functions. Chapter 4, "Configuring Switching Settings" describes how to configure the Switch functions. Chapter 5, "Configuring QoS" describes how to configure QoS functions. Chapter 6, "Managing Security" describes how to configure Security functions. Chapter 7, "Monitoring the Switch" describes how to configure Monitoring functions.

Chapter 8, "Maintenance" describes maintenance functions, such as firmware upgrade. Chapter 9, "Online Help" describes how to obtain online help and support. Using the NETGEAR Web Management System Options The GS700TPS web browser interface provides the following options: . . . Device Management Buttons Provides an explanation of the management buttons in the NETGEAR GS700TPS Smart Switch. Informational Services Provides access to informational services including technical support, online help and device information. Using Screen and Table Options Provides an explanation of specific GUI characteristics and tables for configuring the device. Device Management Buttons The NETGEAR GS700TPS Smart Switch web browser GUI management buttons allow network managers to easily configure the device from remote locations. The management buttons are shown below: Table 2-1. Device Management Buttons Button Name ADD APPLY CANCEL CLEAR ALL CLEAR ALL COUNTERS CLEAR LOGS Description Adds information to tables or information windows. Applies configured changes to the device. Cancels modifications to tables or information windows. Refreshes device information. Resets statistics counters. Clears logs. 2-3 Introduction to the Web Browser Interface v1.0, June 2009 GS700TPS Smart Switch Software Administration Manual Table 2-1.

Device Management Buttons Button Name CURRENT MEMBERS DELETE GO REFRESH TAGGED PORT MEMBERS TEST UNTAGGED PORT MEMBERS Description Displays current members of a VLAN. Deletes information from tables or information windows. Selects the specified interface. Refreshes the screen with current data. Displays tagged port members of a VLAN.

Tests copper cables. Displays untagged port members of a VLAN. Informational Services Informational services provide access to technical support, online help and device information and are displayed in the following topics: . . "Help Navigation Tab" "Accessing Device Information" Help Navigation Tab The Help Navigation Tab provides access to informational services including NETGEAR online support and an online user guide in PDF format. For a detailed description of how to access and use these functions, see Chapter 9, "Online Help". Accessing Device Information Each screen of the web browser interface contains a help file with configuration information relating to the selected screen. Introduction to the Web Browser Interface v1.0, June 2009 2-4 GS700TPS Smart Switch Software Administration Manual To access the help file for a screen: 1. Click the encircled red Question Mark icon, shown in the example below. Figure 2-3 Using Screen and Table Options The NETGEAR GS700TPS web browser interface contains screens and tables for configuring devices. This section describes the table options: "Selecting an Entry" "Adding an Entry" "Modifying an Entry" "Deleting an Entry" "Special Table Options" 2-5 Introduction to the Web Browser Interface v1.

0, June 2009 GS700TPS Smart Switch Software Administration Manual Selecting an Entry To select an entry: 1. Check the entry's Select box. The selected entry is highlighted and the information appears in the first row, which contains the editable fields. Figure 2-4 To select all entries: 1. Check the Select box in the first row to select all entries in the table. Fields that are unique are grayed out and displayed as read-only fields. Figure 2-5 Adding an Entry An entry may be added to the table by creating a new entry or by duplicating an existing entry. Introduction to the Web Browser Interface v1.0, June 2009 2-6 GS700TPS Smart Switch Software Administration Manual To add an entry by creating a new entry in the table: 1. Enter the fields for the new entry in the provided fields in the first row.

Figure 2-6 2. Click ADD to update the device. The new entry is displayed. Figure 2-7 Modifying an Entry An entry may be modified by editing its values in the first row. To modify an entry: 1.

Select the entry to be modified. Its contents are displayed in the first row. Figure 2-8 2. Modify the fields in the first row. 3.

Click APPLY to update the device. 2-7 Introduction to the Web Browser Interface v1.0, June 2009 GS700TPS Smart Switch Software Administration Manual Deleting an Entry To delete entries from a table: 1. Select the entries to be deleted. 2. Click DELETE to update the device. Special Table Options The NETGEAR web browser interface tables have a unique GUI design which includes the following options: . . . Gold Buttons Quick Boxes Interface View and Selection Gold Buttons Gold Buttons provide flexibility in viewing and configuring VLANs/LAGs on a port level. The following example displays gold button basic usage options.



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To view the LAG configuration of the ports of Unit 1: 1. Click anywhere on the Unit 1ports gold button.

The Unit 1 ports panel is displayed: Figure 2-9 2. Select the Unit 1 ports to be added as LAG members within the selected LAG by clicking on their respective boxes. 3. Click APPLY to update the device. Introduction to the Web Browser Interface v1.0, June 2009 2-8 GS700TPS Smart Switch Software Administration Manual Quick Boxes Quick Boxes provide users with flexibility in configuring VLANs for all ports (on a stacking unit level) or LAGs. Clicking on the quick box toggles between the various options that exist for this field. A quick box appears to the right of the arrow on the left-hand side of the gold button. The following example displays quick box basic usage options. To mark or unmark all Unit 1ports: 1.

Click on the quick box that appears to the left of the Unit 1 gold button. A T appears in the quick box. This sets all Unit 1ports as Tagged. 2. Click on the Unit 1 gold button to display the Unit 1 ports, which are now all Tagged.

Figure 2-10 3. Click again on the Unit 1 quick box, and a U appears in the quick box and in all the port boxes for Unit 1, marking the ports as untagged. Figure 2-11 4. Click again on the Unit 1 quick box, and the quick box and all the port boxes for Unit 1 appear blank, marking the ports as neither tagged nor untagged. 5.

You may click on individual port boxes to toggle their tagged/untagged status 2-9 Introduction to the Web Browser Interface v1.0, June 2009 GS700TPS Smart Switch Software Administration Manual Interface View and Selection A port or LAG interface may be selected from a table by using the interface selection row, located above the row of column headers. Clicking on the Unit No. or LAGS displays the ports in the unit or the LAGs: Figure 2-12 To display all ports in a stacking unit: 1. Click the unit number in the interface selection row. The screen displays a table of all ports in the selected stacking unit. To display all interfaces in all stacking units: 1. Click All in the interface selection row. A confirmation window opens. Figure 2-13 2.

Click OK. The screen displays a table of all interfaces in all stacking units. Introduction to the Web Browser Interface v1.0, June 2009 2-10 GS700TPS Smart Switch Software Administration Manual To display the LAG table: 1. Click LAGS in the interface selection row. The screen displays a table of all LAGs.

Figure 2-14 To select an interface: 1. Enter the number of the interface in the GO TO INTERFACE box. 2. Click GO to select the interface, as in the following example.

Figure 2-15 2-11 Introduction to the Web Browser Interface v1.0, June 2009 Chapter 3 Managing System Settings Using the System Settings Utility The navigation pane at the top of the web browser interface contains a System tab that enables you to manage your GS700TPS Smart Switch displaying configurable features under the following main menu options: "Management" "Device View" "Stacking" "PoE" "SNMP" "LLDP" The description that follows in this chapter describes configuring and managing system settings in the GS700TPS Smart Switch. Management The Management menu enables configuration of general device information, defining an IP and configuring system time. This section contains the following topics: . . . "System Information" "IP Configuration" "Time" System Information The System Information screen displays basic device information and allows network managers to define the System Name, System Location, System Contact, Idle Timeout, Unit Mode and Jumbo Frames. 3-1 v1.

0, June 2009 GS700TPS Smart Switch Software Administration Manual To configure system parameters: 1. Click System > Management > System Information. The System Information screen displays: Figure 3-1 The System Information screen contains the following fields: System Name Enter the user-defined device name. The field may contain 0-160 characters. System Location Enter the location where the system is currently running.

The field may contain 0-160 characters. System Contact Enter the name of the contact person. The field may contain 0-160 characters. System Object ID Displays the vendor's authoritative identification. Date & Time Displays the current date and local time. System Up Time Displays the amount of time since the most recent device reset. The system time is displayed in the following format: days, hours, minutes, seconds. For example, 41 days, 2 hours, 22 minutes, 15 seconds. 3-2 v1.0, June 2009 Managing System Settings GS700TPS Smart Switch Software Administration Manual · Idle Timeout Enter the amount of time (minutes) that elapses before an idle station is timed out.

Idle stations that are timed out must login to the system. The field range is 5 30 minutes. The field default value is 10 minutes. Base MAC Address Displays the MAC Address. If the device is in stack mode, the Base MAC Address of the master unit is displayed. Serial Number Displays the device serial number.

Unit Mode Indicates if the device is currently in standalone or stacking mode. Change Unit Mode To...

After Reset Toggle the device unit mode from the current value of Unit Mode to the value indicated by Stack or Standalone after resetting the device. Jumbo Frames Status Displays the Jumbo Frame status. Jumbo Frames After Reset Select the Jumbo Frame status. The possible field values are: Enable Enables Jumbo Frames. Disable Disables Jumbo Frames.

This is the default value. The Versions Table displays the following fields: Unit No. Displays the stacking member's current number. Possible values are 1-6. Model Name Displays the device model name.

Hardware Version Displays the installed device hardware version number. Boot Version Displays the current boot version running on the device. Software Version Displays the installed software version number. 2. Enter the System Name, System Location, System Contact and Idle Timeout in the provided fields.

3. If the displayed Unit Mode needs to be changed, check the Change Unit Mode box. 4. Select whether to enable or disable Jumbo Frames After Reset. 5.

Click APPLY to update the system settings. 6. If you selected the Change Unit Mode box, you must reset the device for the new unit mode setting to take effect. See "Reset" for detailed instructions on resetting the device. Managing System Settings v1.0, June 2009 3-3 GS700TPS Smart Switch Software Administration Manual IP Configuration The IP Configuration screen contains fields for assigning IP addresses.



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IP addresses are either defined as static or are retrieved using the Dynamic Host Configuration Protocol (DHCP). The DHCP assigns dynamic IP addresses to devices on a network. DHCP ensures that network devices can have a different IP address every time the device connects to the network. Note the following when configuring IP Addresses: · · If the device is accessed using SmartWizard Discovery, the IP address retrieved through DHCP is displayed.

If the device fails to retrieve an IP address through DHCP, the default IP address is 192.168.0.239. The IP Interface screen also contains information for defining default gateways and selecting a Management VLAN ID.

To define an IP interface: 1. Click System > Management > IP Configuration. The IP Configuration screen displays: Figure 3-2 The IP Configuration screen contains the following fields: · Get Dynamic IP from DHCP Server Enables the IP address to be configured automatically by the DHCP server. Selecting this field disables the IP Address, Subnet Mask, Gateway and Delete fields. This is the default value.

Static IP Address Enables the user to define a static IP address. IP Address Enter the static IP address used to manage the device. Subnet Mask Enter the IP address mask. Managing System Settings v1.0, June 2009 · · · 3-4 GS700TPS Smart Switch Software Administration Manual · Gateway Enter the default gateway IP address. The following option is available: Delete Deletes the default gateway IP address. · Management VLAN ID Select an existing VLAN to be defined as the management VLAN. By default, the default VLAN defined on the device is VLAN1. 2. Select the method of assigning the IP address by selecting either Get Dynamic IP from DHCP Server or Static IP Address.

3. If you selected Static IP Address, enter the IP Address, Subnet Mask and Gateway address. 4. Select a VLAN in the Management VLAN ID in the provided fields. 5. Click APPLY to update the system settings. Time The Time menu enables local system time or SNTP server configuration, and contains the following options: · · "Time Configuration" "SNTP Server Configuration" Time Configuration The Time Configuration screen contains information for defining both the local hardware clock and the external SNTP clock. If the system time is managed via an external SNTP clock, and the external SNTP clock fails, the system time reverts to the local hardware clock. To configure the local system time: 1. Click System > Management > Time > Time Configuration.

The Time Configuration screen displays: Figure 3-3 Managing System Settings v1.0, June 2009 3-5 GS700TPS Smart Switch Software Administration Manual The Time Configuration screen contains the following fields: · Clock Source Select the source used to set the system clock. The possible field values are: · · · Local Indicates system time is set locally. This is the default value. SNTP Indicates system time is set via an SNTP server.

The Date and Time fields are disabled once you select the SNTP server. Date Enter the local system date. The field format is DD/MMM/YY (Day/Month/Year). For example: 04/May/50 (May 4, 2050). Time Enter the local system time.

The field format is HH:MM:SS. For example: 21:15:03. Time Zone Offset Select the difference between Greenwich Mean Time (GMT) and local time. For example, the Time Zone Offset for Paris is GMT +1, while the Time Zone Offset for New York is GMT -5. 2. Select the Clock Source by selecting either Local or SNTP. 3. If you selected Local, then enter the local Date and Time in the provided fields. 4. Select the Time Zone Offset from the list.

5. Click APPLY to update the system settings. Note: If you selected SNTP, you must configure the SNTP servers. See "SNTP Server Configuration" for detailed instructions on configuring the SNTP servers. SNTP Server Configuration The SNTP Server Configuration screen allows network administrators to define primary and secondary SNTP servers. The system time is initially retrieved through the primary SNTP server. If the device is unable to retrieve the system time through the primary server, the device retrieves the system time from the secondary server. 3-6 v1.0, June 2009 Managing System Settings GS700TPS Smart Switch Software Administration Manual To configure SNTP servers: 1. Click System > Management > Time > SNTP Server Configuration.

The SNTP Server Configuration screen displays: Figure 3-4 The SNTP Server Configuration screen contains the following fields: · · · SNTP Server 1 Enter the primary SNTP server IP address. The Primary SNTP server is the first server used to retrieve the system time. Delete Removes the currently configured SNTP Server 1. SNTP Server 2 Enter the secondary SNTP server IP address. The Secondary SNTP server retrieves the system time if the Primary SNTP server becomes unavailable.

Delete Removes the currently configured SNTP Server 2. 2. Enter the SNTP Server 1 and SNTP Server 2 in the provided fields. 3. Click APPLY to update the system settings.

To remove SNTP servers: 1. Check the Delete box for each SNTP server that is to be removed. 2. Click APPLY to update the system settings. · Short-Reach State -- Displays the Short-Reach mode on the interface. The possible field values are: On -- Indicates that the Short-Reach mode is enabled. Off -- Indicates that the Short-Reach mode is disabled. Managing System Settings v1.0, June 2009 3-7 GS700TPS Smart Switch Software Administration Manual · Short-Reach Reason -- Displays the reason the port was not tested. Reasons may include that the LinkType is not supported, that the Link Speed is not supported or that the Port Link is down.

The possible field values are: LinkType -- Indicates the LinkType is not supported. LinkUp -- Indicates that a cable is not connected to the port. · Cable Length -- Displays the cable length tested. Device View The Device View menu displays the Device View screen, which provides a graphic representation of the device, including the port and LED statuses. To display the Device View screen: 1. Click System > Device View. The Device View screen displays: Figure 3-5 Stacking All stack members are accessed through a single IP address through which the stack is managed. Stacks are managed using: · · A Web-based Interface An SNMP Management Station The system supports up to six stacking members per stack to a maximum of 192 ports, or devices can operate as standalone systems. 3-8 v1.0, June 2009 Managing System Settings GS700TPS Smart Switch Software Administration Manual During the Stacking setup, one device is selected as the Stacking Master.

All other devices are named as stack members, and assigned a unique Unit ID.



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The Stack Master provides a Single point of control and management as well as a single interface in which to control and manage the stack. The device software is downloaded separately for each of the stack members. All units in the stack must be running the same software version. The Stacking Master maintains switch stacking and configuration.

The Stacking Master detects and reconfigures the ports with minimal operational impact in the event of: Unit Failure Inter-unit Stacking Link Failure Unit Insertion Removal of a Stacking Unit Operation Modes A stack unit can operate in one of the following modes: Standalone Indicates the device is operating as a single unit and is not connected in a stack. Stacking Master Manages the stacking configuration for all stack members. Secondary Master Operates as a backup to the Stacking Master. If the Stacking Master is no longer operating, the Secondary Master takes over the stack management. Stacking Member Indicates a device within the stacking topology.

The stacking member receives its device configuration from the Stacking Master. This section provides an introduction to the user interface and contains the following topics: "Understanding Stack Topology" "Stacking Ports" "Stacking Members and Unit No." "Removing and Replacing Stacking Members" "Inserting a Stacking Member" "Exchanging Stacking Members" "Switching the Stacking Master" "Stack Configuration and Management" Managing System Settings v1.0, June 2009 3-9 GS700TPS Smart Switch Software Administration Manual Understanding Stack Topology Stacked devices operate in a Ring or Chain topology. The Ring topology connects all stacked devices in a circle. Each stacked device accepts data and sends it to the device to which it is physically connected. The packet continues through the stack until it reaches the destination port. The system automatically discovers the optimal path by which to send traffic. A Chain topology connects stacking members from one to the next. This provides a single data path flow.

The stacking members linked in the middle of the chain are connected to the stacking member on either side of them. The members at the end of the chain only have one connection. Stacking Ring Topology One of the benefits of the Ring topology is that it offers redundancy in case the connections between two units fail, including the case where a unit in the stack fails. If a failure occurs in the stacking topology, the stack reverts to the Chain stacking topology. In the Chain topology, devices operate in a chain formation. The system automatically switches to a Stacking Failover topology without any system downtime. An SNMP message is automatically generated, but no stack management action is required. However, the stacking link or stacking member must be repaired to return to the Ring topology. After the stacking issues are resolved, the device can be reconnected to the stack without interruption and the Ring topology is restored. Stacking Ports The factory default of the device is stack mode.

Use the System Information screen to change the unit mode from Standalone to Stack mode. Two full-duplex stacking link up/down ports are available via HDMI connectors and provide 10 Gps throughput stacking capacity. Stacking Members and Unit No. Stacking Unit Numbers are essential to the stacking configuration. Unit No.

1 and Unit No. 2 are reserved for Master enabled units. Unit Numbers 3 to 6 can be defined for stack members. When the Master unit boots or when inserting or removing a stack member, the Master unit initiates a stacking discovering process. If two members are discovered with the same Unit No.

the stack continues to function. However, only the unit with the older join time joins the stack. A message is sent to the user, notifying that a unit failed to join the stack. 3-10 v1.0, June 2009 Managing System Settings GS700TPS Smart Switch Software Administration Manual Removing and Replacing Stacking

Members Stacking member 1 and stacking member 2 are Stacking Master enabled units. Unit Numbers 1 and 2 are designated as either Master Unit or Secondary Master Unit. The Stacking Master assignment is performed during the configuration process. One Master enabled stack member is elected Master, and the other Master enabled stack member is elected Secondary Master, according to the following decision process: If only one Stacking Master enabled unit is present, this is the stacking Master. If two Stacking Master enabled stacking members are present, and one has been manually configured as the Stacking Master, this is the Stacking Master. If two Master enabled units are present and neither has been manually configured as the Stacking Master, the one with the longer up time is elected Stacking Master.

If the two Master enabled stacking members are the same age, Unit 1 is elected Stacking Master. Two stacking members are considered the same age if they joined the stack within the same ten minute interval. For example, Stack member 2 is inserted in the first minute of a ten-minute cycle, and Stack member 1 is inserted in the fifth minute of the same cycle, the units are considered the same age. If there are two Master enabled units that are the same age, thus Unit 1 is elected master. The Stacking Master and the Secondary Master maintain a Warm Standby. The Warm Standby ensures that the Secondary Master takes over for the Stacking Master if a failure occurs. This guarantees that the stack continues to operate normally. During the Warm Standby, the Master and the Secondary Master are synchronized with the static configuration only. When the Stacking Master is configured, the Stacking Master must synchronize the Stacking Secondary Master. The Dynamic configuration is not saved, for example, dynamically learned MAC addresses are not saved.

Each port in the stack has a specific Unit No., port type, and port number, which are part of both the configuration commands and the configuration files. Configuration files are managed only from the device Stacking Master. This includes: Saving to the FLASH memory which retains its contents even after power is removed. Uploading Configuration files to an external TFTP Server Downloading Configuration files from an external TFTP Server Whenever a reboot occurs, topology discovery is performed, and the master learns all units in the stack.

Unit Numbers are saved in the unit and are learned through topology discovery. If a unit attempts to boot without a selected Master, and the unit is not operating in standalone mode, the unit does not boot. For example, if a stack member (Unit No. 3 - 6) is separated from the stack due Managing System Settings v1.0, June 2009 3-11 GS700TPS Smart Switch Software Administration Manual to a topology failure, the stacking member is no longer connected to the stack.



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The device can be booted, but it cannot be managed through the Stacking Master. The network manager can either reset the device defaults, or correct the topology failure, and then reconnect the unit to the stack. Configuration files are changed only through explicit user configuration. Configuration files are not automatically modified when: Units are added Units are removed Units are reassigned Unit Numbers Units toggle between Stacking Mode and Standalone Mode Each time the system reboots, the Startup Configuration file in the Master unit is used to configure the stack. If a stack member is removed from the stack, and then replaced with a unit with the same Unit No., the stack member is configured with the original device configuration. Only ports that are physically present are displayed in the GS700TPS web screens, and can be configured through the web management system. By default, Unit Numbers are assigned automatically. However, you can use the browser to assign a specific Unit No.; for example, the same Unit No.

as the unit which was recently removed. Inserting a Stacking Member When a stacking member is inserted into a running stack, it is automatically assigned a unit number. Note that a unit should not be powered up until it has been connected to the stack. If the user has already configured a Unit No. for the new unit, a Unit No. is not assigned automatically by the system. Exchanging Stacking Members If a stack member with the same Unit No. replaces an existing Unit No. with the same Unit No., the previous device configuration is applied to the inserted stack member.

If the new inserted device has either more than or less ports than the previous device, the relevant port configuration is applied to the new stack member. 3-12 v1.0, June 2009 Managing System Settings GS700TPS Smart Switch Software Administration Manual Switching the Stacking Master The Secondary Master replaces the Stacking Master if one of the following events occur: . . . The Stacking Master fails or is removed from the stack. Links from the Stacking Master to the stacking members fails. A soft switchover is performed via the web interface.

Switching between the Stacking Master and the Secondary Master results in a limited service loss. Any dynamic tables are relearned if a failure occurs. The Running Configuration file is synchronized between the Stacking Master and the Secondary Master and continues running on the Secondary Master. Stack Configuration and Management The Stacking menu contains the following options: . . "Basic" "Advanced" Basic The Stacking Basic menu contains the following option: . "Stack Configuration" Stack Configuration The Basic Stack Configuration screen allows network managers to define the stacking master election mode. A unique Unit Number (1-6) identifies a stack member.

The configuration is saved and managed by the Master unit. The stack configuration has the following default: . The stacking numbering method is set to auto-numbering. Managing System Settings v1.0, June 2009 3-13 GS700TPS Smart Switch Software Administration Manual To configure Basic stacking: 1. Click System > Stacking > Basic > Stack Configuration. The Basic Stack Configuration screen displays: Figure 3-6 The Basic Stack Configuration screen contains the following fields: . Master Election Select the mode by which the Stacking Master is elected. When the stack is powered up and completes the boot-up process, the Master unit is elected within 0.5 seconds. Master election is based on MAC address selection. The possible field values are: Automatically Indicates the Stacking Master is selected automatically by software.

Force Master Forces the selection of a Stacking Master. This causes the new Master unit to take control of the current configuration of the Stack. The old Master is reset and becomes the Secondary Master. Note that only Unit 1 or Unit 2 can be the Stacking Master. 2. Select the Master Election mode. 3. If you selected Force Master, select either 1 or 2 from the Unit Number list. 4. Click APPLY to update the device.

5. Reset the device for the new settings to take effect. See "Reset" for detailed instructions on resetting the device. 3-14 v1.0, June 2009 Managing System Settings GS700TPS Smart Switch Software Administration Manual Advanced The Stacking Advanced menu contains the following options: . . "Stack Configuration" "Stack Management" Stack Configuration The Advanced Stack Configuration screen allows network managers to define the stacking master election mode.

A unique Unit No. (1-6) identifies a stack member. The configuration is saved and managed by the master unit. The stack configuration has the following default . The stacking numbering method is set to auto-numbering. To configure Advanced stacking: 1.

Click System > Stacking > Advanced > Stack Configuration. The Advanced Stack Configuration screen displays: Figure 3-7 The Advanced Stack Configuration screen contains the following fields: . Master Election Select the mode by which the Stacking Master is elected. When the stack is powered up and completes the boot-up process, the Master unit is elected within 0.5 seconds. Master election may be based on Master preemptive mode, Master push button, or MAC address. The possible field values are: Automatically Indicates Stacking Master is selected automatically by software. Force Master Forces the selection of a Stacking Master. This causes the new Master unit to take control of the current configuration of the Stack. The old Master is reset and becomes the Secondary Master. Note that only Unit 1 or Unit 2 can be the Stacking Master.

Managing System Settings v1.0, June 2009 3-15 GS700TPS Smart Switch Software Administration Manual 2. Select the Master Election mode. 3. If you selected Force Master, select either 1 or 2 from the stack list. 4. Click APPLY to update the device. 5. Reset the device for the new settings to take effect. See "Reset" for detailed instructions on resetting the device.

Stack Management The Stack Management screen allows network managers to assign specific Unit numbers to stacking members or enable the software to automatically assign Unit numbers. Assignments take effect after reset. To configure Stack Management: 1. Click System > Stacking > Advanced > Stack Management. The Stack Management screen displays: Figure 3-8 The Stack Management screen contains the following fields: . . Unit No.

Displays the stacking member's current Unit number. Possible values are 1-6. Unit No. After Reset Select the stacking member's Unit number after the device is reset. The possible field values are: 1-6 Assigns the selected Unit number to the stacking member after the device is reset.



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