

# User's Guide

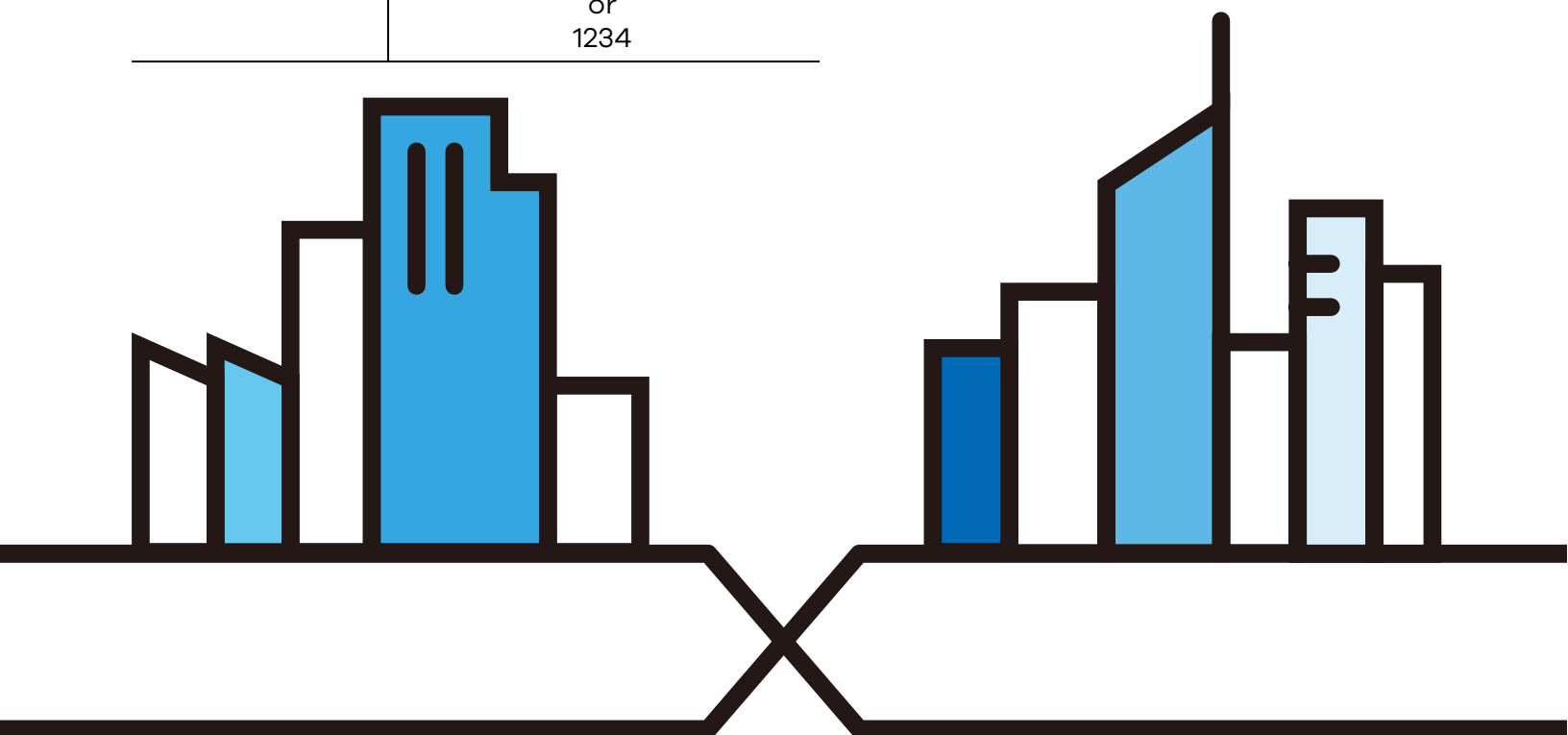
## NSW Series

NSW100-10P / NSW100-10 / NSW100-28P / NSW100-28 / NSW200-28P  
Nebula Cloud-Managed (PoE) Switch

### Default Login Details

|                |                                                                                  |
|----------------|----------------------------------------------------------------------------------|
| LAN IP Address | http://DHCP-assigned IP or<br>a configured static IP address                     |
| User name      | admin                                                                            |
| Password       | Assigned by the NCC when<br>the NSW is registered with the<br>NCC.<br>or<br>1234 |

Version 1.00 Edition 2, 04/2017



---

**IMPORTANT!**

**READ CAREFULLY BEFORE USE**

**KEEP THIS GUIDE FOR FUTURE REFERENCE**

This is a User's Guide for a system managing a series of products. Not all products support all features. Menushots and graphics in this book may differ slightly from what you see due to differences in release versions or your computer operating system. Every effort has been made to ensure that the information in this manual is accurate.

## Related Documentation

- Quick Start Guide

The Quick Start Guide shows how to connect the managed device, such as the Nebula AP, gateway or security gateway.

- Online Help

Click the help link for a description of the fields in the NSW menus.

- More Information

Go to [support.zyxel.com](http://support.zyxel.com) to find other information on the NSW.



# Contents Overview

|                                            |    |
|--------------------------------------------|----|
| User's Guide .....                         | 7  |
| Getting to Know Your NSW .....             | 8  |
| Hardware Installation and Connection ..... | 13 |
| Hardware Panels .....                      | 17 |
| Technical Reference .....                  | 24 |
| The Web Configurator .....                 | 25 |
| Status .....                               | 30 |
| Basic Setting .....                        | 32 |
| VLAN .....                                 | 42 |
| Maintenance .....                          | 49 |
| Diagnostic .....                           | 58 |
| Troubleshooting .....                      | 60 |

# Table of Contents

|                                                        |       |
|--------------------------------------------------------|-------|
| Contents Overview .....                                | 3     |
| Table of Contents.....                                 | 4     |
| <br>Part I: User's Guide.....                          | <br>7 |
| <br>Chapter 1                                          |       |
| Getting to Know Your NSW.....                          | 8     |
| 1.1 Introduction .....                                 | 8     |
| 1.1.1 Hardware Comparison .....                        | 8     |
| 1.1.2 Management .....                                 | 9     |
| 1.2 Applications .....                                 | 9     |
| 1.2.1 Backbone Application .....                       | 9     |
| 1.2.2 Bridging Example .....                           | 10    |
| 1.2.3 IEEE 802.1Q VLAN Application Examples .....      | 11    |
| 1.3 Ways to Manage the NSW .....                       | 11    |
| 1.4 Good Habits for Managing the NSW .....             | 12    |
| <br>Chapter 2                                          |       |
| Hardware Installation and Connection .....             | 13    |
| 2.1 Installation Scenarios .....                       | 13    |
| 2.2 Desktop Installation Procedure .....               | 13    |
| 2.3 Mounting the NSW on a Rack .....                   | 14    |
| 2.3.1 Rack-mounted Installation Requirements .....     | 14    |
| 2.3.2 Attaching the Mounting Brackets to the NSW ..... | 14    |
| 2.3.3 Mounting the NSW on a Rack .....                 | 15    |
| <br>Chapter 3                                          |       |
| Hardware Panels.....                                   | 17    |
| 3.1 Front Panel .....                                  | 17    |
| 3.1.1 Gigabit Ethernet Ports .....                     | 17    |
| 3.1.2 PoE .....                                        | 18    |
| 3.1.3 Combo Port .....                                 | 18    |
| 3.1.4 Transceiver Slots .....                          | 19    |
| 3.1.5 Console Port .....                               | 20    |
| 3.2 Rear Panel .....                                   | 21    |
| 3.2.1 Power Connector .....                            | 21    |
| 3.3 LEDs .....                                         | 22    |

|                                               |           |
|-----------------------------------------------|-----------|
| <b>Part II: Technical Reference .....</b>     | <b>24</b> |
| <b>Chapter 4</b>                              |           |
| <b>The Web Configurator.....</b>              | <b>25</b> |
| 4.1 Overview .....                            | 25        |
| 4.2 System Login .....                        | 25        |
| 4.3 The Status Screen .....                   | 26        |
| 4.4 Saving Your Configuration .....           | 27        |
| 4.5 Switch Lockout .....                      | 28        |
| 4.6 Resetting the NSW .....                   | 28        |
| 4.7 Logging Out of the Web Configurator ..... | 28        |
| 4.8 Help .....                                | 29        |
| <b>Chapter 5</b>                              |           |
| <b>Status.....</b>                            | <b>30</b> |
| 5.1 Status .....                              | 30        |
| <b>Chapter 6</b>                              |           |
| <b>Basic Setting .....</b>                    | <b>32</b> |
| 6.1 Overview .....                            | 32        |
| 6.1.1 What You Can Do .....                   | 32        |
| 6.2 System Information .....                  | 32        |
| 6.3 IP Setup for NSW100 Series .....          | 34        |
| 6.4 IP Setup for NSW200-28P .....             | 35        |
| 6.4.1 Management IP Address .....             | 35        |
| 6.4.2 IP Status Details .....                 | 36        |
| 6.4.3 IP Configurations .....                 | 37        |
| 6.5 Port Setup .....                          | 39        |
| 6.6 DNS .....                                 | 41        |
| <b>Chapter 7</b>                              |           |
| <b>VLAN.....</b>                              | <b>42</b> |
| 7.1 Overview .....                            | 42        |
| 7.1.1 What You Can Do .....                   | 42        |
| 7.2 VLAN Status .....                         | 42        |
| 7.2.1 VLAN Details .....                      | 43        |
| 7.3 VLAN Configuration .....                  | 44        |
| 7.4 Configure a Static VLAN .....             | 44        |
| 7.5 Configure VLAN Port Settings .....        | 46        |
| <b>Chapter 8</b>                              |           |
| <b>Maintenance .....</b>                      | <b>49</b> |
| 8.1 Overview .....                            | 49        |

|                                                  |           |
|--------------------------------------------------|-----------|
| 8.1.1 What You Can Do .....                      | 49        |
| 8.2 The Maintenance Screen .....                 | 49        |
| 8.2.1 Erase Running-Configuration .....          | 50        |
| 8.2.2 Save Configuration .....                   | 51        |
| 8.2.3 Reboot System .....                        | 51        |
| 8.3 Firmware Upgrade .....                       | 52        |
| 8.4 Restore a Configuration File .....           | 53        |
| 8.5 Backup a Configuration File .....            | 54        |
| 8.6 Tech-Support .....                           | 54        |
| 8.7 Technical Reference .....                    | 55        |
| 8.7.1 FTP Command Line .....                     | 55        |
| 8.7.2 Filename Conventions .....                 | 55        |
| 8.7.3 FTP Command Line Procedure .....           | 56        |
| 8.7.4 GUI-based FTP Clients .....                | 57        |
| <b>Chapter 9</b>                                 |           |
| <b>Diagnostic .....</b>                          | <b>58</b> |
| 9.1 Overview .....                               | 58        |
| 9.2 Diagnostic .....                             | 58        |
| <b>Chapter 10</b>                                |           |
| <b>Troubleshooting .....</b>                     | <b>60</b> |
| 10.1 Power, Hardware Connections, and LEDs ..... | 60        |
| 10.2 NSW Access and Login .....                  | 61        |
| 10.3 NSW Configuration .....                     | 62        |
| Appendix A Customer Support .....                | 63        |
| Appendix B Legal Information .....               | 69        |
| Index .....                                      | 75        |

---

# PART I

## User's Guide

---

# CHAPTER 1

## Getting to Know Your NSW

### 1.1 Introduction

This chapter introduces the main features and applications of the NSW. The NSW Series consists of the following models:

- NSW100-10P
- NSW100-10
- NSW100-28P
- NSW100-28
- NSW200-28P

#### 1.1.1 Hardware Comparison

The following is a hardware comparison table.

**Table 1** The NSW Series Comparison Table

| MODEL                                                                                                                                 | NSW100-10P                  | NSW100-10                    | NSW100-28P            | NSW100-28   | NSW200-28P                   |
|---------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|------------------------------|-----------------------|-------------|------------------------------|
| Total Port Number                                                                                                                     | 10                          | 10                           | 28                    | 28          | 28                           |
| 10/100/1000Base-T Port                                                                                                                | -                           | Ports 1-8                    | -                     | Ports 1-24  | -                            |
| 10/100/1000 Mbps PoE Port                                                                                                             | Ports 1-8                   | -                            | Ports 1-24            | -           | Ports 1-24                   |
| Combo Port <ul style="list-style-type: none"><li>• Gigabit Ports (Ethernet)</li><li>• Transceiver Slots (100/1000 Mbps SFP)</li></ul> | Ports 9-10                  | Ports 9-10                   | Ports 25-28           | Ports 25-28 | -                            |
| Transceiver Slot 1000 Mbps/10G (SFP+/DAC)                                                                                             | -                           | -                            | -                     | -           | Ports 25-28                  |
| Console Port                                                                                                                          | Default baud rate 115200bps | Default baud rate 115200 bps | -                     | -           | Default baud rate 115200 bps |
| PoE Maximum Power                                                                                                                     | 180W PoE power budget       | -                            | 375W PoE power budget | -           | 375W PoE power budget        |

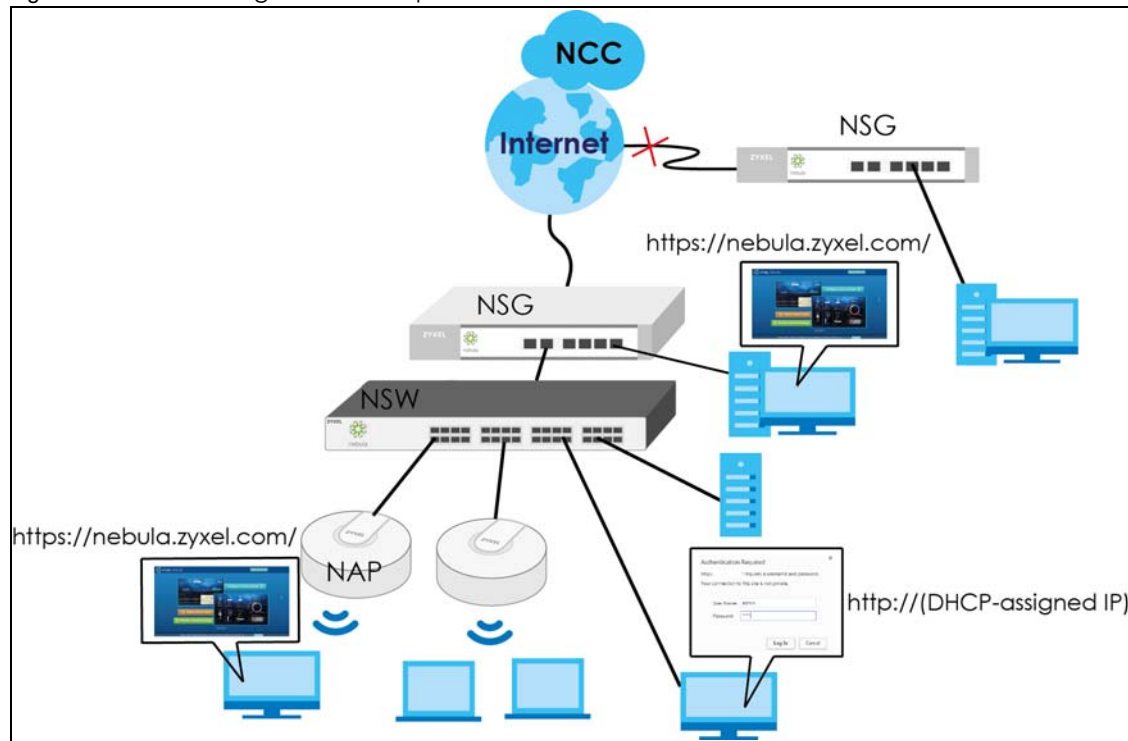
See the Quick Start Guide for how to make hardware connections.

## 1.1.2 Management

The NSW needs an IP address for it to be managed over the network. The factory default IP address is DHCP Client. To find the DHCP-assigned IP address, you must use the NCC, the ZON utility, or the console port.

The NSW is a Nebula cloud-managed (PoE) switch. It is managed and provisioned by the NCC (Nebula Control Center) when it is connected to the Internet and registered with the NCC.

Figure 1 NCC Management Example



You can check the system settings via the Web Configurator, the ZON (Zyxel One Network) utility and the console port.

## 1.2 Applications

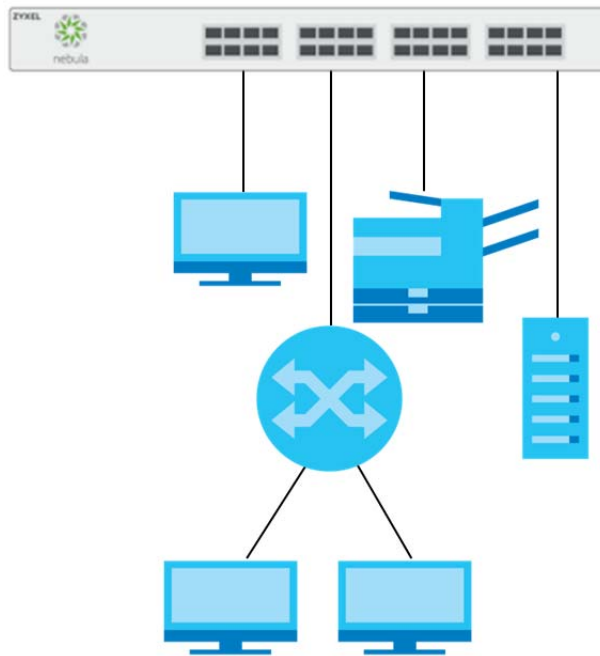
This section shows a few examples of using the NSW in various network environments.

### 1.2.1 Backbone Application

The NSW is an ideal solution for small networks where rapid growth can be expected in the near future. The NSW can be used standalone for a group of heavy traffic users. You can connect computers and servers directly to the NSW's port or connect other switches to the NSW.

In this example, all computers can share high-speed applications on the server. To expand the network, simply add more networking devices such as switches, routers, computers, print servers etc.

Figure 2 Backbone Application

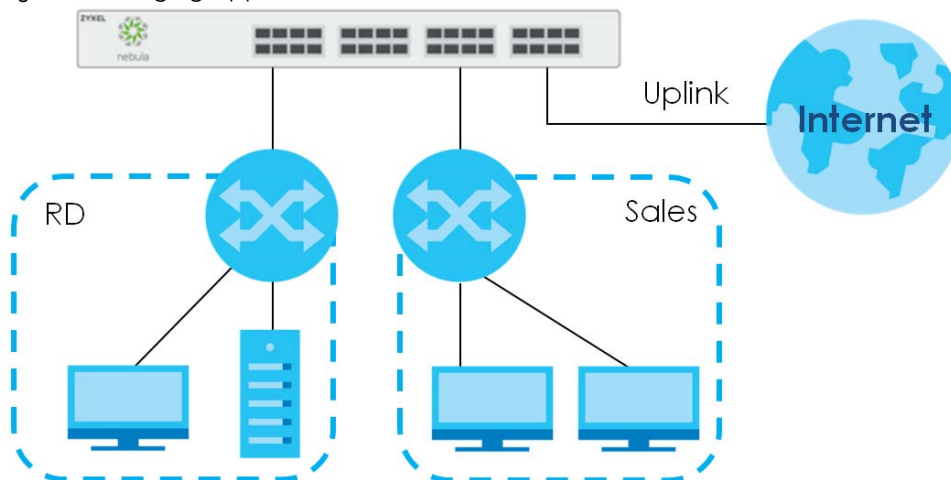


## 1.2.2 Bridging Example

In this example, the NSW connects different company departments (**RD** and **Sales**) to the corporate backbone. It can alleviate bandwidth contention and eliminate server and network bottlenecks. All users that need high bandwidth can connect to high-speed department servers via the NSW. You can provide a super-fast uplink connection by using a Gigabit Ethernet/mini-GBIC port on the NSW.

Moreover, the NSW eases supervision and maintenance by allowing network managers to centralize multiple servers at a single location.

Figure 3 Bridging Application



## 1.2.3 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.

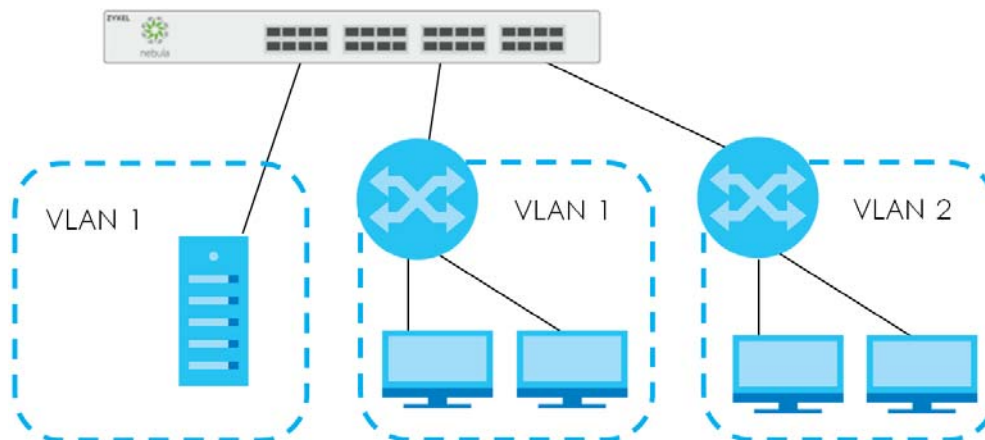
For more information on VLANs, refer to [Chapter 7 on page 42](#).

### 1.2.3.1 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



## 1.3 Ways to Manage the NSW

Use any of the following methods to manage the NSW.

- NCC. With the NCC, you can remotely manage and monitor the NSW through a cloud-based network management system. See the NCC User's Guide for detailed information about how to access the NCC and manage your NSW via the NCC.
- Web Configurator. This is recommended for everyday management of the NSW using a (supported) web browser. See [Chapter 4 on page 25](#).
- Command Line Interface. You can use commands to see the system settings.
- FTP. Use FTP for firmware upgrades and configuration backup/restore. See [Section 8.7.1 on page 55](#).

## 1.4 Good Habits for Managing the NSW

Do the following things regularly to make the NSW more secure and to manage the NSW more effectively.

- Change the NSW's password through the NCC occasionally. 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 NSW to its factory default settings. If you backed up an earlier configuration file, you would not have to totally re-configure the NSW. You could simply restore your last configuration.

# CHAPTER 2

## Hardware Installation and Connection

### 2.1 Installation Scenarios

This chapter shows you how to install and connect the NSW.

The NSW can be placed on a desktop or rack-mounted on a standard EIA rack. Use the rubber feet in a desktop installation and the brackets in a rack-mounted installation.

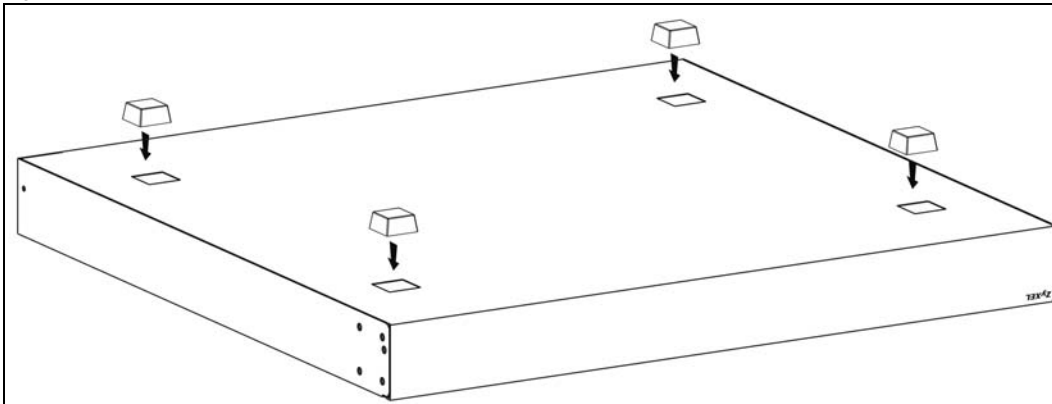
Note: For proper ventilation, allow at least 4 inches (10 cm) of clearance at the front and 3.4 inches (8 cm) at the back of the NSW. This is especially important for enclosed rack installations.

### 2.2 Desktop Installation Procedure

- 1 Make sure the NSW is clean and dry.
- 2 Set the NSW on a smooth, level surface strong enough to support the weight of the NSW and the connected cables. Make sure there is a power outlet nearby.
- 3 Make sure there is enough clearance around the NSW 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 NSW. These rubber feet help protect the NSW from shock or vibration and ensure space between devices when stacking.

Note: Do NOT block the ventilation holes.

Figure 5 Attaching Rubber Feet



## 2.3 Mounting the NSW on a Rack

The NSW can be mounted on an EIA standard size, 19-inch rack or in a wiring closet with other equipment.

Follow the steps below to mount your NSW on a standard EIA rack using a rack-mounting kit.

### 2.3.1 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.**

#### 2.3.1.1 Precautions

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

### 2.3.2 Attaching the Mounting Brackets to the NSW

- 1 Position a mounting bracket on one side of the NSW, lining up the four screw holes on the bracket with the screw holes on the side of the NSW.

Figure 6 Attaching the Mounting Brackets (NSW100-10P and NSW100-10)

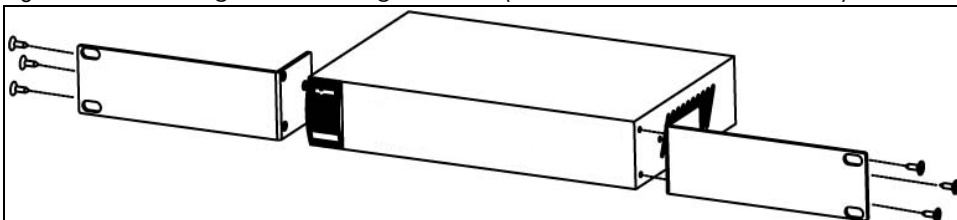
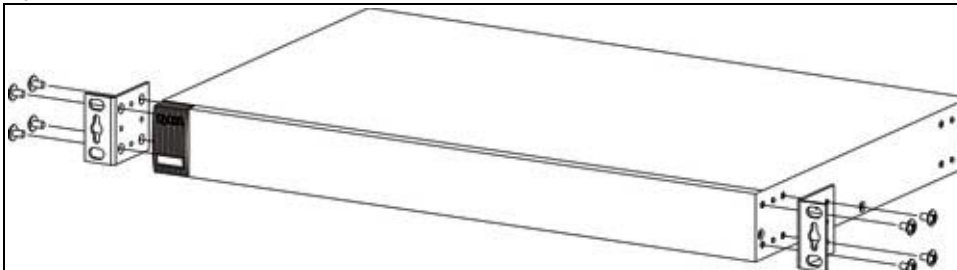


Figure 7 Attaching the Mounting Brackets (NSW100-28P, NSW100-28 and NSW200-28P)



- 2 Using a #2 Philips screwdriver, install the M3 flat head screws through the mounting bracket holes into the NSW.
- 3 Repeat steps 1 and 2 to install the second mounting bracket on the other side of the NSW.
- 4 You may now mount the NSW on a rack. Proceed to the next section.

### 2.3.3 Mounting the NSW on a Rack

- 1 Position a mounting bracket (that is already attached to the NSW) 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 8 Mounting the NSW on a Rack (NSW100-10P and NSW100-10)

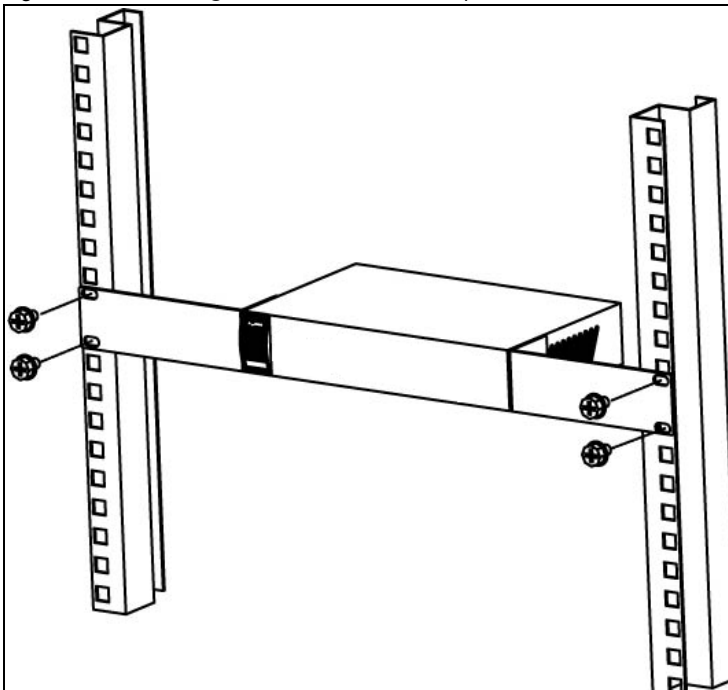
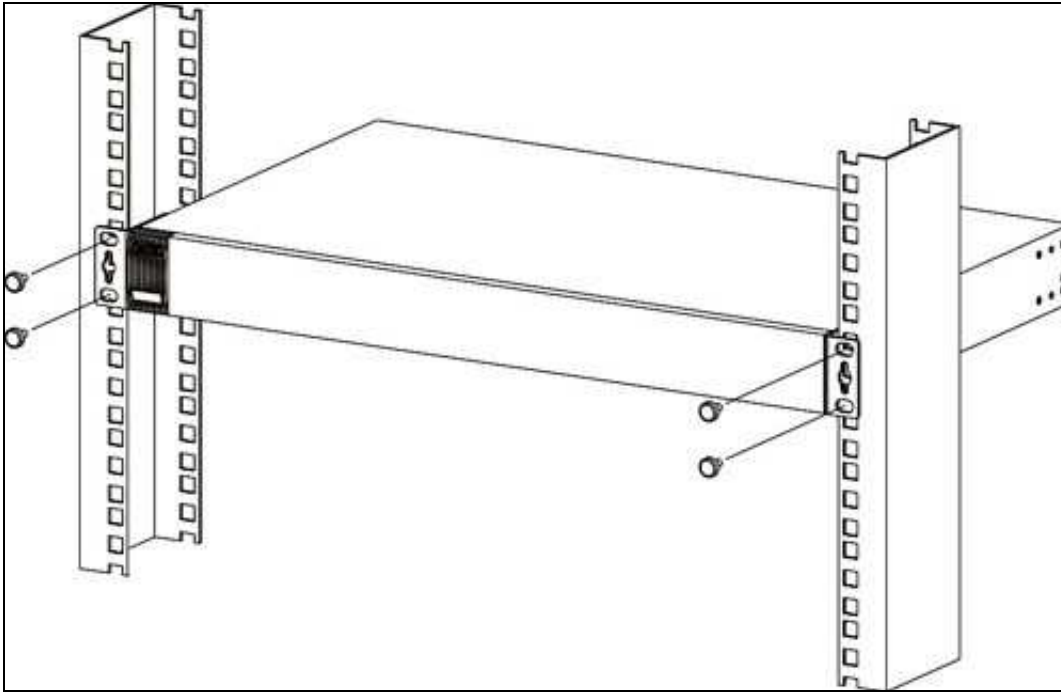


Figure 9 Mounting the NSW on a Rack (NSW100-28P, NSW100-28 and NSW200-28P)



- 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.

Note: Make sure you tighten all the four screws to prevent the NSW from getting slanted.

# CHAPTER 3

## Hardware Panels

This chapter describes the front panel and rear panel of the Switch and shows you how to make the hardware connections.

See [Table 1 on page 8](#), for detailed information about port features of the NSW Series.

### 3.1 Front Panel

The following figures show the front panels of the NSW.

Figure 10 Front Panel: NSW100-10P

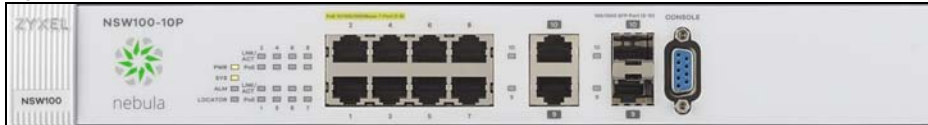


Figure 11 Front Panel: NSW100-10

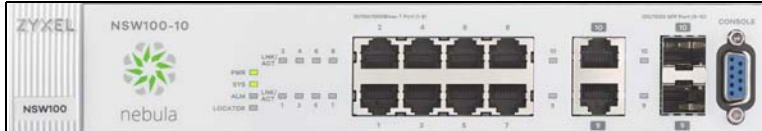


Figure 12 Front Panel: NSW100-28P

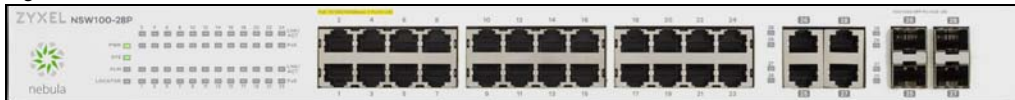


Figure 13 Front Panel: NSW100-28

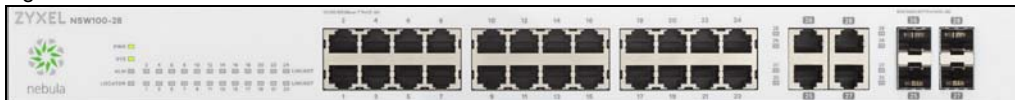


Figure 14 Front Panel: NSW200-28P



#### 3.1.1 Gigabit Ethernet Ports

See [Table 1 on page 8](#), for detailed information about port features of the NSW Series.

The NSW has 1000Base-T auto-negotiating, auto-crossover Ethernet ports. In 10/100/1000 Mbps Gigabit Ethernet, the speed can be 10 Mbps, 100 Mbps or 1000 Mbps. The duplex mode can be half duplex or full duplex.

An auto-negotiating port can detect and adjust to the optimum Ethernet speed (10/100/1000 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.

When auto-negotiation is turned on, an Ethernet 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 NSW determines the connection speed by detecting the signal on the cable and using half duplex mode. When the NSW's auto-negotiation is turned off, an Ethernet 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 Negotiation Settings

The factory default negotiation settings for the Gigabit ports on the NSW are:

- Speed: Auto
- Duplex: Auto
- Flow control: Off
- Link Aggregation: Disabled

### 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 PoE

The NSW supports both the IEEE 802.3af Power over Ethernet (PoE) and IEEE 802.3at Power over Ethernet (PoE) plus standards. The NSW is a Power Sourcing Equipment (PSE) because it provides a source of power via its Ethernet ports. Each device that receives power through an Ethernet port is a Powered Device (PD).

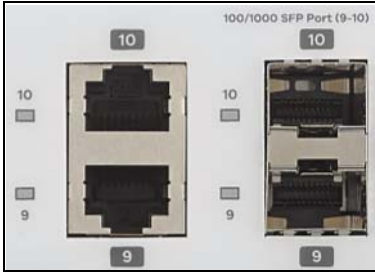
See [Table 1 on page 8](#) for detailed information about PoE maximum power of each model.

## 3.1.3 Combo Port

A combo port is for uplink connections. It consists of a Gigabit Ethernet port for Ethernet connection, and a transceiver slot for fiber connection. The fiber connection takes priority if the corresponding Gigabit port is also connected.

- 10/100/1000 Mbps Gigabit Ports - Connect these ports to high-bandwidth backbone network Ethernet switches using 1000BASE-T compatible Category 5/5e/6 copper cables.
- Transceiver Slots - Use SFP in these slots for connections to backbone Ethernet switches.

Figure 15 Combo Port Example: Gigabit Port and Transceiver Slot



### 3.1.4 Transceiver Slots

See [Section 3.1.3 on page 18](#), for more information about combo ports.

The transceiver slots are for Small Form-Factor Pluggable (SFP), SFP+ transceivers or DAC cable. The SFP+ (SFP Plus) and the DAC cable are enhanced versions of the SFP and support data rates of up to 10 Gbps. A transceiver is a single unit that houses a transmitter and a receiver. Use a transceiver or a DAC cable to connect a fiber-optic cable to the NSW. The NSW does not come with transceivers nor DAC cables. You must use transceivers or DAC cables 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 or the DAC cables while the NSW 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: 100/1000 Megabit per second (Mbps)
- Type: SFP+/DAC connection interface  
Connection speed: 1 or 10 Gigabit per second (Gbps)

**To avoid possible eye injury, do not look into an operating fiber-optic module's connectors.**

#### 3.1.4.1 Transceiver Installation

Use the following steps to install a mini-GBIC transceiver (SFP module).

- 1 Insert the transceiver into the slot with the exposed section of PCB board facing down.
- 2 Press the transceiver firmly until it clicks into place.
- 3 The NSW automatically detects the installed transceiver. Check the LEDs to verify that it is functioning properly.
- 4 Close the transceiver's latch (latch styles vary).
- 5 Connect the fiber optic cables to the transceiver.

Figure 16 Transceiver Installation Example

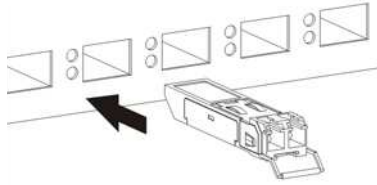
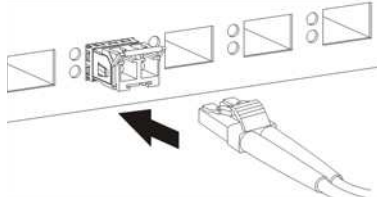


Figure 17 Connecting the Fiber Optic Cables



### 3.1.4.2 Transceiver Removal

Use the following steps to remove a mini-GBIC transceiver (SFP module).

- 1 Remove the fiber optic cables from the transceiver.
- 2 Open the transceiver's latch (latch styles vary).
- 3 Pull the transceiver out of the slot.

Figure 18 Removing the Fiber Optic Cables

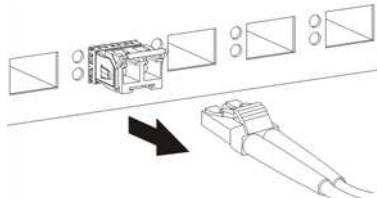


Figure 19 Opening the Transceiver's Latch Example

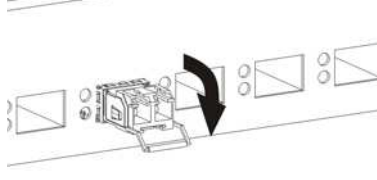
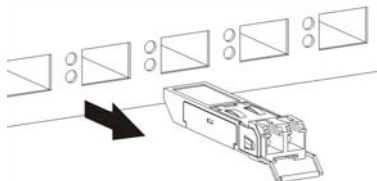


Figure 20 Transceiver Removal Example



### 3.1.5 Console Port

To see system settings, such as system information, VLAN status, etc., you can use a computer with terminal emulation software configured to the following parameters:

- VT100
- Terminal emulation
- 115200 bps (NSW200-28P) or 9600 bps (NSW100-10P)
- No parity, 8 data bits, 1 stop bit
- No flow control

Connect the male 9-pin end of the console cable to the console port of the NSW. Connect the female end to a serial port (COM1, COM2 or other COM port) of your computer.

## 3.2 Rear Panel

The following figures show the rear panels of the NSW.

Figure 21 Rear Panel: NSW100-10P



Figure 22 Rear Panel: NSW100-10

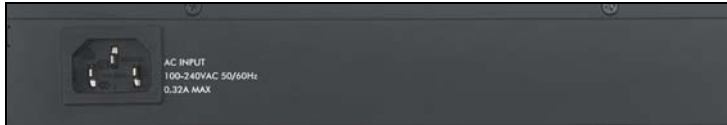


Figure 23 Rear Panel: NSW100-28P



Figure 24 Rear Panel: NSW100-28



Figure 25 Rear Panel: NSW200-28P



### 3.2.1 Power Connector

Note: Make sure you are using the correct power source as shown on the panel.

To connect power to the NSW, insert the female end of the power cord to the AC 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 (located on the side of the unit).

See [Chapter 10 on page 60](#) for information on the NSW's power supply requirements.

### 3.3 LEDs

After you connect the power to the NSW, view the LEDs to ensure proper functioning of the NSW and as an aid in troubleshooting.

Note: Please refer to Nebula Device Startup LED Guide, for more information about the system and locator LEDs when they light up at the same time.

The following table is for NSW100 Series.

Table 2 LED Descriptions for NSW100 Series

| LED                                                                          | COLOR | STATUS   | DESCRIPTION                                                                                                                                                                                             |
|------------------------------------------------------------------------------|-------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PWR                                                                          | Green | On       | The system is turned on.                                                                                                                                                                                |
|                                                                              |       | Off      | The system is off or has failed.                                                                                                                                                                        |
| SYS                                                                          | Green | On       | The system is on and functioning properly. The NSW can connect to the Nebula Control Center.                                                                                                            |
|                                                                              |       | Blinking | The system is rebooting and performing self-diagnostic tests.<br><br>If the system LED is blinking green with the alarm LED blinking red, it means the NSW cannot connect to the Nebula Control Center. |
|                                                                              |       | Off      | The power is off or the system is not ready/malfunctioning.                                                                                                                                             |
| ALM                                                                          | Red   | On       | The system is having a hardware failure, such as high device temperature, wrong voltage, or abnormal fan speed.                                                                                         |
|                                                                              |       | Blinking | If the alarm LED is blinking red with the system LED blinking green, it means the NSW cannot connect to the Nebula Control Center.                                                                      |
|                                                                              |       | Off      | The system is functioning normally.                                                                                                                                                                     |
| Locator                                                                      | Blue  | Blinking | Shows the actual location of the NSW between several devices in a rack. The default timer is 30 minutes when you are configuring the NSW.                                                               |
|                                                                              |       | Off      | The locator is not functioning or malfunctioning.                                                                                                                                                       |
| 10/100/1000Base-T Ports                                                      |       |          |                                                                                                                                                                                                         |
| 1-8 (NSW100-10P/NSW100-10)<br><br>1-24 (NSW100-28P/NSW100-28)<br><br>LNK/ACT | Green | On       | The link to a 10 Mbps or a 1000 Mbps Ethernet network is up.                                                                                                                                            |
|                                                                              |       | Blinking | The system is transmitting/receiving to/from a 10 Mbps or a 1000 Mbps Ethernet network.                                                                                                                 |
|                                                                              | Amber | On       | The link to a 100 Mbps Ethernet network is up.                                                                                                                                                          |
|                                                                              |       | Blinking | The system is transmitting/receiving to/from a 100 Mbps Ethernet network.                                                                                                                               |
|                                                                              |       | Off      | The Ethernet link is down.                                                                                                                                                                              |
| PoE 10/100/1000Base-T Ports                                                  |       |          |                                                                                                                                                                                                         |
| 1-8 (NSW100-10P)<br><br>1-24 (NSW100-28P)<br><br>PoE                         | Green | On       | Power supplied to all PoE Ethernet ports meets the IEEE 802.3at standard.                                                                                                                               |
|                                                                              | Amber | On       | Power supplied to all PoE Ethernet ports meets the IEEE 802.3af standard.                                                                                                                               |
|                                                                              |       | Off      | The PoE is off or the Ethernet link is down.                                                                                                                                                            |
| 100/1000 Mbps SFP Slots                                                      |       |          |                                                                                                                                                                                                         |

Table 2 LED Descriptions for NSW100 Series (continued)

| LED                          | COLOR | STATUS   | DESCRIPTION                                              |
|------------------------------|-------|----------|----------------------------------------------------------|
| 9-10 (NSW100-10P/NSW100-10)) | Green | On       | The port has a successful 1000 Mbps connection.          |
|                              |       | Blinking | The port is transmitting or receiving data at 1000 Mbps. |
| 25-28 (NSW100-28P/NSW100-28) | Amber | On       | The port has a successful 100 Mbps connection.           |
|                              |       | Blinking | The port is transmitting or receiving data at 100 Mbps.  |
| LNK/ACT                      |       | Off      | This link is disconnected.                               |

The following table is for NSW200-28P.

Table 3 LED Descriptions for NSW200-28P

| LED                         | COLOR | STATUS   | DESCRIPTION                                                                                                                               |
|-----------------------------|-------|----------|-------------------------------------------------------------------------------------------------------------------------------------------|
| PWR                         | Green | On       | The system is turned on.                                                                                                                  |
|                             |       | Off      | The system is off or has failed.                                                                                                          |
| SYS                         | Green | On       | The system is on and functioning properly. The NSW can connect to the Nebula Control Center.                                              |
|                             |       | Blinking | The system is rebooting and performing self-diagnostic tests.                                                                             |
|                             |       | Off      | The power is off or the system is not ready/malfunctioning.                                                                               |
| FAN                         | Green | On       | The fan is functioning properly.                                                                                                          |
|                             | Amber | On       | The fan is not functioning at a proper speed or malfunctioning.                                                                           |
| PoE MAX                     | Green | On       | PoE power usage is over 80 percent of the power supplied budget, but below 95 percent of the power supplied budget.                       |
|                             | Amber | On       | PoE power usage is more than 95 percent of the power supplied budget.                                                                     |
|                             |       | Off      | PoE power usage is below 80 percent of the power supplied budget.                                                                         |
| Locator                     | Blue  | Blinking | Shows the actual location of the NSW between several devices in a rack. The default timer is 30 minutes when you are configuring the NSW. |
|                             |       | Off      | The locator is not functioning or malfunctioning.                                                                                         |
| 10/100/1000Base-T Ports     |       |          |                                                                                                                                           |
| 1-24 LNK/ACT (Left)         | Green | On       | The link to a 10 Mbps or a 1000 Mbps Ethernet network is up.                                                                              |
|                             |       | Blinking | The system is transmitting/receiving to/from a 10 Mbps or a 1000 Mbps Ethernet network.                                                   |
|                             | Amber | On       | The link to a 100 Mbps Ethernet network is up.                                                                                            |
|                             |       | Blinking | The system is transmitting/receiving to/from a 100 Mbps Ethernet network.                                                                 |
|                             |       | Off      | The Ethernet link is down.                                                                                                                |
| PoE 10/100/1000Base-T Ports |       |          |                                                                                                                                           |
| 1-24 PoE (Right)            | Green | On       | Power supplied to all PoE Ethernet ports meets the IEEE 802.3at standard.                                                                 |
|                             | Amber | On       | Power supplied to all PoE Ethernet ports meets the IEEE 802.3af standard.                                                                 |
|                             |       | Off      | The PoE is off or the Ethernet link is down.                                                                                              |
| 1000 Mbps/10G SFP+ Slots    |       |          |                                                                                                                                           |
| 25-28 LNK/ACT               | Green | On       | The port has a successful 1000 Mbps connection.                                                                                           |
|                             |       | Blinking | The port is transmitting or receiving data at 1000 Mbps.                                                                                  |
|                             | Blue  | On       | The port has a successful 10 Gbps connection.                                                                                             |
|                             |       | Blinking | The port is transmitting or receiving data at 10 Gbps.                                                                                    |
|                             |       | Off      | This link is disconnected.                                                                                                                |

---

# PART II

## Technical Reference

---

# CHAPTER 4

## The Web Configurator

### 4.1 Overview

This section introduces the configuration and functions of the web configurator.

The screens are based on NSW200-28P.

The web configurator is an HTML-based management interface that allows easy NSW setup and management via Internet browser. Use Internet Explorer 9.0 and later versions, Mozilla Firefox 21 and later versions, Safari 6.0 and later versions or Google Chrome 26.0 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).

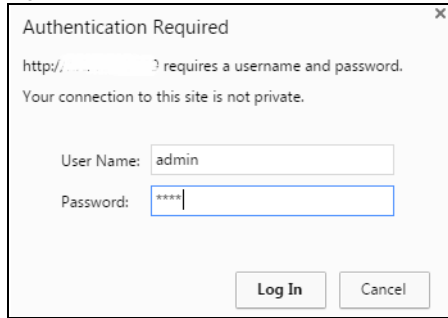
### 4.2 System Login

- 1 Start your web browser.
- 2 The NSW is a DHCP client by default. Type "http://DHCP-assigned IP" in the **Location** or **Address** field. Press [ENTER].

If the NSW is not connected to a DHCP server, type "http://" and the static IP address of the NSW in the **Location** or **Address** field. Press [ENTER]. Your computer must be in the same subnet in order to access this website address.

- 3 The login screen appears. The default username is **admin**. The associated default password is **assigned by the NCC** when the NSW is registered with the NCC or **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.

Figure 26 Web Configurator: Login



Authentication Required

http://... requires a username and password.  
Your connection to this site is not private.

User Name:

Password:

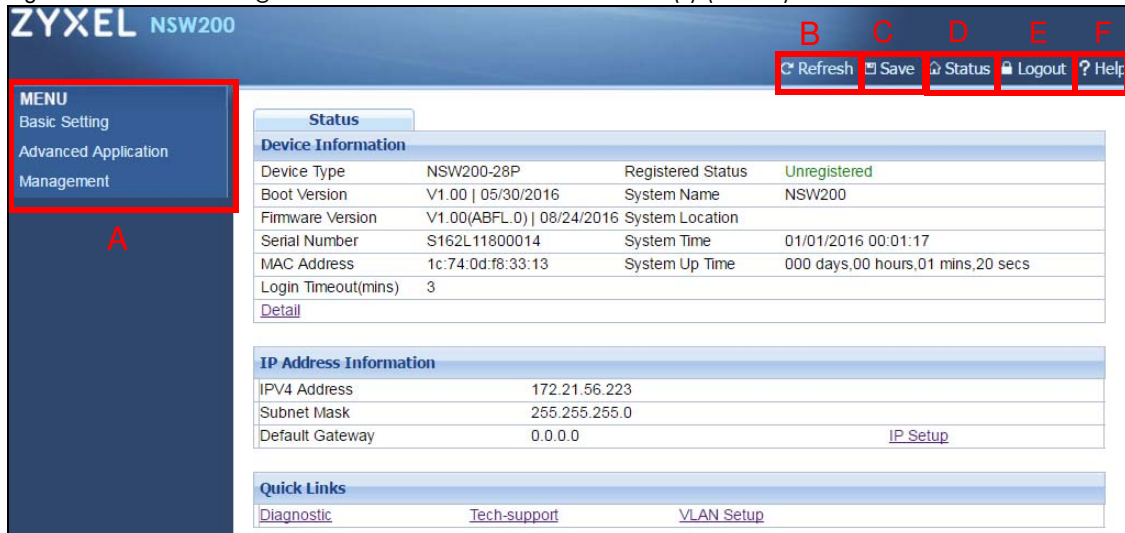
- 4 Click OK to view the first web configurator screen.

## 4.3 The Status Screen

The **Status** screen is the first screen that displays after you access the web configurator.

The following figure shows the navigating components of a web configurator screen.

Figure 27 Web Configurator Home Screen for PoE model(s) (Status)



**ZYXEL NSW200**

**MENU**

- Basic Setting
- Advanced Application
- Management

**Status**

**Device Information**

|                     |                            |                   |                                   |
|---------------------|----------------------------|-------------------|-----------------------------------|
| Device Type         | NSW200-28P                 | Registered Status | Unregistered                      |
| Boot Version        | V1.00   05/30/2016         | System Name       | NSW200                            |
| Firmware Version    | V1.00(ABFL.0)   08/24/2016 | System Location   |                                   |
| Serial Number       | S162L11800014              | System Time       | 01/01/2016 00:01:17               |
| MAC Address         | 1c:74:0d:f8:33:13          | System Up Time    | 000 days,00 hours,01 mins,20 secs |
| Login Timeout(mins) | 3                          |                   |                                   |

[Detail](#)

**IP Address Information**

|                 |               |
|-----------------|---------------|
| IPv4 Address    | 172.21.56.223 |
| Subnet Mask     | 255.255.255.0 |
| Default Gateway | 0.0.0.0       |

[IP Setup](#)

**Quick Links**

[Diagnostic](#) [Tech-support](#) [VLAN Setup](#)

**Navigation Bar:**

- [Refresh](#) (B)
- [Save](#) (C)
- [Status](#) (D)
- [Logout](#) (E)
- [Help](#) (F)

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, F - These are quick links which allow you to perform certain tasks no matter which screen you are currently working in.

B - Click this link to update the information in the screen you are viewing currently.

C - Click this link to save your configuration into the NSW's nonvolatile memory. Nonvolatile memory is the configuration of your NSW that stays the same even if the NSW's power is turned off.

D - Click this link to go to the status page of the NSW.

E - Click this link to log out of the web configurator.

F- Click this link to display web help pages. The help pages provide descriptions for each configuration screen.

The following table describes the links in the navigation panel. The navigation panel varies depending on the product model you use.

**Table 4** Navigation Panel Links

| LINK                                       | DESCRIPTION                                                                                                                                                             |
|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Basic Settings                             |                                                                                                                                                                         |
| System Info                                | This link takes you to a screen that displays general system information.                                                                                               |
| IP Setup                                   | This link takes you to a screen where you can configure the DHCP client, and a static IP address (IP address and subnet mask).                                          |
| Port Setup                                 | This link takes you to a screen where you can configure settings for individual NSW ports.                                                                              |
| DNS<br>(NSW200-28P only)                   | This link takes you to a screen where you can configure DNS (domain name server) IP addresses.                                                                          |
| Advanced Application                       |                                                                                                                                                                         |
| VLAN                                       | This link takes you to screens where you can configure port-based or 802.1Q VLAN. You can also configure a protocol based VLAN or a subnet based VLAN in these screens. |
| VLAN Status                                | This link takes you to a screen where you can view and search all VLAN groups.                                                                                          |
| VLAN Detail                                | This link takes you to a screen where you can view detailed port settings and status of the VLAN group.                                                                 |
| Static VLAN                                | This link takes you to a screen where you can configure and view 802.1Q VLAN parameters for the NSW.                                                                    |
| VLAN Port Setting                          | This link takes you to a screen where you can configure the static VLAN settings on a port.                                                                             |
| Management                                 |                                                                                                                                                                         |
| Maintenance                                | This link takes you to screens where you can perform firmware and configuration file maintenance as well as reboot the system.                                          |
| Firmware Upgrade                           | This link takes you to a screen where you can upload firmware to your device.                                                                                           |
| Restore Configuration/Backup Configuration | This link takes you to a screen where you can backup and restore your device's configuration (settings) or reset the factory default setting.                           |
| Tech-Support                               | This link takes you to a screen where you can log information of CPU utilization history, memory and Mbuf (Memory Buffer) log, and crash reports.                       |
| Diagnostic                                 | This link takes you to a screen where you can ping IP addresses, run traceroute, test port(s) and show the NSW's location.                                              |

## 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 NSW'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 NSW's storage that remains even if the NSW's power is turned off.

Note: Use the **Save** link when you are done with a configuration session.

## 4.5 Switch Lockout

You could block yourself (and all others) from managing the NSW 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 NSW.
- 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 NSW.
- 8 Change a service port number but forget it.

Note: Be careful not to lock yourself and others out of the NSW.

## 4.6 Resetting the NSW

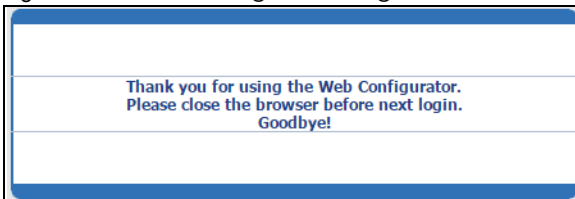
You can reset your NSW via the web configurator, or the reset button on the front panel according to the NSW you're using.

## 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.

You also have to log in with your password again, when the NSW times out.

Figure 28 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.

# CHAPTER 5

## Status

### 5.1 Status

The **Status** screen displays when you log into the NSW or click **Status** at the top right corner of the web configurator. The **Status** screen displays general device information, system status, and its IP addresses.

Figure 29 Status

| Status                     |                                          |                            |                                   |
|----------------------------|------------------------------------------|----------------------------|-----------------------------------|
| Device Information         |                                          |                            |                                   |
| Device Type                | NSW200-28P                               | Registered Status          | Unregistered                      |
| Boot Version               | V1.00   05/30/2016                       | System Name                | NSW200                            |
| Firmware Version           | V1.00(ABFL.0)b2_withConsole   07/01/2016 | System Location            |                                   |
| Serial Number              | S162L11800014                            | System Time                | 01/01/2016 00:37:36               |
| MAC Address                | 1c:74:0d:f8:33:13                        | System Up Time             | 000 days,00 hours,37 mins,39 secs |
| Login Timeout(mins)        | 3                                        |                            |                                   |
| <a href="#">Detail</a>     |                                          |                            |                                   |
| IP Address Information     |                                          |                            |                                   |
| IPv4 Address               | 0.0.0.0                                  |                            |                                   |
| Subnet Mask                | 0.0.0.0                                  |                            |                                   |
| Default Gateway            | 0.0.0.0                                  |                            | <a href="#">IP Setup</a>          |
| Quick Links                |                                          |                            |                                   |
| <a href="#">Diagnostic</a> | <a href="#">Tech-support</a>             | <a href="#">VLAN Setup</a> |                                   |

The following table describes the labels in this screen.

Table 5 Status

| LABEL              | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Device Information |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Device Type        | This field displays the model name of the NSW.                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Registered Status  | This field displays <b>Registered</b> when the NSW is registered with the Nebula Control Center and <b>Unregistered</b> when it is not. You can register the NSW in Nebula Control Center (preferable) or myZyxel.com. If you register the NSW in myZyxel.com but didn't create an organization in Nebula Control Center yet, then you will need to register the NSW in Nebula Control Center again. An unregistered NSW cannot be managed by Nebula Control Center. |
| Boot Version       | This field displays the version number and date of the boot module that is currently on the NSW.                                                                                                                                                                                                                                                                                                                                                                     |
| System Name        | This field displays the name used to identify the NSW on any network.                                                                                                                                                                                                                                                                                                                                                                                                |
| Firmware Version   | This field displays the version number and date of the firmware the NSW is currently running.                                                                                                                                                                                                                                                                                                                                                                        |
| System Location    | This field displays the location configured for the NSW in the Nebula Control Center.                                                                                                                                                                                                                                                                                                                                                                                |
| Serial Number      | This field displays the serial number of the NSW. The serial number is used for device tracking and control.                                                                                                                                                                                                                                                                                                                                                         |

Table 5 Status (continued)

| LABEL                  | DESCRIPTION                                                                                                                                                                                  |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| System Time            | This field displays the current date and time in the UAG. The format is mm-dd-yyyy hh:mm:ss.                                                                                                 |
| MAC Address            | This field displays the MAC addresses of the NSW.                                                                                                                                            |
| System Up Time         | This field displays how long the NSW has been running since it last restarted or was turned on.                                                                                              |
| Login Timeout          | This field displays how many minutes a management session can be left idle before the session times out. After it times out you have to log in with your password again.                     |
| Detail                 | Click this link to go to the <b>Basic Setting &gt; System Info</b> screen to check other detailed information, such as system resource usage and the NSW temperature, fan speeds or voltage. |
| IP Address Information |                                                                                                                                                                                              |
| IPv4 Address           | This field displays the NSW's current IPv4 address. 0.0.0.0 means no IP address is assigned.                                                                                                 |
| Subnet Mask            | This field displays the NSW's subnet mask. 0.0.0.0 means no subnet mask is assigned.                                                                                                         |
| Default Gateway        | This field displays the IP address of the NSW's default gateway. 0.0.0.0 means no gateway is assigned.                                                                                       |
| IP Setup               | Click the link to go to the <b>Basic Setting &gt; IP Setup</b> screen.                                                                                                                       |
| Quick Links            | This section provides the shortcut link to a specific configuration screen.                                                                                                                  |

# CHAPTER 6

## Basic Setting

### 6.1 Overview

This chapter describes how to configure the **System Info**, **IP Setup**, and **Port Setup** screens.

See [Table 4 on page 27](#) for menu differences of the NSW Series.

#### 6.1.1 What You Can Do

- Use the **System Info** screen ([Section 6.2 on page 32](#)) to check the firmware version number.
- Use the **IP Setup** screen ([Section 6.3 on page 34](#)) to configure the NSW IP address, default gateway device, and the management VLAN ID.

**Carefully manage the IP address of the NSW Series to ensure management connectivity with the NCC.**

- Use the **Port Setup** screen ([Section 6.5 on page 39](#)) to configure the NSW port settings.
- Use the **DNS** screen ([Section 6.6 on page 41](#)) to configure the default domain name server.

### 6.2 System Information

In the navigation panel, click **Basic Setting** > **System Info** to display the screen as shown. Use this screen to view general system information. You can check the firmware version number.

Figure 30 Basic Setting > System Info

System Info

|                   |                                         |
|-------------------|-----------------------------------------|
| System Name       | NSW200                                  |
| Product Model     | NSW200-28P                              |
| ZyNOS F/W Version | V1.00(ABFL.0)b2_withConsole   07/01/201 |
| Ethernet Address  | 1c:74:0d:f8:33:13                       |

CPU Utilization

|             |     |
|-------------|-----|
| Current (%) | 9.5 |
|-------------|-----|

Memory Utilization

| Name   | Total (byte) | Used (byte) | Utilization (%) |
|--------|--------------|-------------|-----------------|
| common | 24240384     | 14949200    | 61              |

Hardware Monitor

Temperature Unit C

| Temperature (C) | Current | MAX    | MIN    | Threshold | Status |
|-----------------|---------|--------|--------|-----------|--------|
| MAC             | 40.0    | 40.0   | 31.0   | 80.0      | Normal |
| BOARD           | 42.0    | 43.0   | 34.0   | 80.0      | Normal |
| PHY             | 40.0    | 40.0   | 31.0   | 80.0      | Normal |
| FAN Speed (RPM) | Current | MAX    | MIN    | Threshold | Status |
| FAN1            | 6545    | 6569   | 6428   | 500       | Normal |
| FAN2            | 6569    | 6601   | 6428   | 500       | Normal |
| FAN3            | 6474    | 6529   | 6330   | 500       | Normal |
| FAN4            | 6593    | 6633   | 6436   | 500       | Normal |
| Voltage (V)     | Current | MAX    | MIN    | Threshold | Status |
| 1.5V            | 1.503   | 1.503  | 1.503  | +/-5%     | Normal |
| 1.0V            | 1.001   | 1.001  | 1.001  | +/-6%     | Normal |
| 3.3V            | 3.308   | 3.308  | 3.291  | +/-6%     | Normal |
| 3.3V_CPLD       | 3.320   | 3.320  | 3.320  | +/-6%     | Normal |
| 12V             | 11.968  | 11.968 | 11.968 | +/-10%    | Normal |

The following table describes the labels in this screen.

Table 6 Basic Setting > System Info

| LABEL              | DESCRIPTION                                                                                                                                                                                             |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| System Name        | This field displays the descriptive name of the NSW for identification purposes.                                                                                                                        |
| Product Model      | This field displays the product model of the NSW. Use this information when searching for firmware upgrade or looking for other support information in the website.                                     |
| ZyNOS F/W Version  | This field displays the version number of the NSW 's current firmware including the date created.                                                                                                       |
| Ethernet Address   | This field refers to the Ethernet MAC (Media Access Control) address of the NSW.                                                                                                                        |
| CPU Utilization    | CPU utilization quantifies how busy the system is. Current (%) displays the current percentage of CPU utilization.                                                                                      |
| Memory Utilization | Memory utilization shows how much DRAM memory is available (Total (byte)) and in use (Used (byte)). It also displays the current percentage of memory utilization (Utilization (%)).                    |
| Hardware Monitor   |                                                                                                                                                                                                         |
| Temperature Unit   | The NSW has temperature sensors that are capable of detecting and reporting if the temperature rises above the threshold. You may choose the temperature unit (Centigrade or Fahrenheit) in this field. |

Table 6 Basic Setting &gt; System Info (continued)

| LABEL           | DESCRIPTION                                                                                                                                                                                                                                                                                                  |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Temperature     | <b>BOARD</b> , <b>MAC</b> and <b>PHY</b> refer to the location of the temperature sensors on the NSW printed circuit board.                                                                                                                                                                                  |
| Current         | This shows the current temperature at this sensor.                                                                                                                                                                                                                                                           |
| MAX             | This field displays the maximum temperature measured at this sensor.                                                                                                                                                                                                                                         |
| MIN             | This field displays the minimum temperature measured at this sensor.                                                                                                                                                                                                                                         |
| Threshold       | This field displays the upper temperature limit at this sensor.                                                                                                                                                                                                                                              |
| Status          | This field displays <b>Normal</b> for temperatures below the threshold and <b>Error</b> for those above.                                                                                                                                                                                                     |
| Fan Speed (RPM) | A properly functioning fan is an essential component (along with a sufficiently ventilated, cool operating environment) in order for the device to stay within the temperature threshold. Each fan has a sensor that is capable of detecting and reporting if the fan speed falls below the threshold shown. |
| Current         | This field displays this fan's current speed in Revolutions Per Minute (RPM).                                                                                                                                                                                                                                |
| MAX             | This field displays this fan's maximum speed measured in Revolutions Per Minute (RPM).                                                                                                                                                                                                                       |
| MIN             | This field displays this fan's minimum speed measured in Revolutions Per Minute (RPM). "<41" is displayed for speeds too small to measure (under 2000 RPM).                                                                                                                                                  |
| Threshold       | This field displays the minimum speed at which a normal fan should work.                                                                                                                                                                                                                                     |
| Status          | <b>Normal</b> indicates that this fan is functioning above the minimum speed. <b>Error</b> indicates that this fan is functioning below the minimum speed.                                                                                                                                                   |
| Voltage(V)      | The power supply for each voltage has a sensor that is capable of detecting and reporting if the voltage falls out of the tolerance range.                                                                                                                                                                   |
| Current         | This is the current voltage reading.                                                                                                                                                                                                                                                                         |
| MAX             | This field displays the maximum voltage measured at this point.                                                                                                                                                                                                                                              |
| MIN             | This field displays the minimum voltage measured at this point.                                                                                                                                                                                                                                              |
| Threshold       | This field displays the percentage tolerance of the voltage with which the NSW still works.                                                                                                                                                                                                                  |
| Status          | <b>Normal</b> indicates that the voltage is within an acceptable operating range at this point; otherwise <b>Error</b> is displayed.                                                                                                                                                                         |

## 6.3 IP Setup for NSW100 Series

Use the **IP Setup** screen to configure the NSW IP address, default gateway device, and the management VLAN ID. The default gateway specifies the IP address of the default gateway (next hop) for outgoing traffic.

Note: If you can access the NCC via the Internet, you may change the NSW static IP address via the NCC.

Use this screen to manage the IP address.

Figure 31 Basic Setting &gt; IP Setup (NSW100 Series)

The following table describes the labels in this screen.

Table 7 Basic Setting &gt; IP Setup (NSW100 Series)

| LABEL                         | DESCRIPTION                                                                                                                                                                                                                                                           |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Default Management IP Address |                                                                                                                                                                                                                                                                       |
| DHCP Client                   | Select this option if there is a DHCP server that can assign the NSW an IP address, subnet mask, a default gateway IP address and a domain name server IP address automatically.                                                                                      |
| Static IP Address             | Select this option if you don't have a DHCP server or if you wish to assign static IP address information to the NSW. You need to fill in the following fields when you select this option.                                                                           |
| IP Address                    | Enter the IP address of your NSW in dotted decimal notation.                                                                                                                                                                                                          |
| IP Subnet Mask                | Enter the IP subnet mask in dotted decimal notation, for example, 255.255.255.0.                                                                                                                                                                                      |
| Default Gateway               | Enter the default gateway of the Zyxel device.                                                                                                                                                                                                                        |
| Static Domain Name Server     | You can assign static domain name to its corresponding IP address. You need to fill in the following fields.                                                                                                                                                          |
| Preference 1-2                | Enter a domain name server IPv4 address in this field. 1 and 2 are the priority of the DNS server address.                                                                                                                                                            |
| VID                           | Enter the VLAN identification number.                                                                                                                                                                                                                                 |
| Apply                         | Click <b>Apply</b> to save your changes to the NSW's run-time memory. The NSW loses these changes if it is turned off or loses power, so use the Save link on the top navigation panel to save your changes to the non-volatile memory when you are done configuring. |
| Cancel                        | Click <b>Cancel</b> to reset the fields to your previous configuration.                                                                                                                                                                                               |

## 6.4 IP Setup for NSW200-28P

### 6.4.1 Management IP Address

The NSW needs an IP address for it to be managed over the network. The factory default IP address is DHCP Client. If there is not a DHCP server to assign the NSW an IP address, then you must give the NSW a static IP address. The subnet mask specifies the network number portion of an IP address.

Note: You must configure a VLAN first. Each VLAN can only have one management IP address.

Figure 32 Basic Setting > IP Setup

| IP Status |            |                | IP Configuration |        |       |         |
|-----------|------------|----------------|------------------|--------|-------|---------|
| Index     | IP Address | IP Subnet Mask | VID              | Type   | Renew | Release |
| 1         |            | 255.255.255.0  | 1                | Static |       |         |

The following table describes the labels in this screen.

Table 8 Basic Setting > IP Setup

| LABEL          | DESCRIPTION                                                                                                           |
|----------------|-----------------------------------------------------------------------------------------------------------------------|
| Index          | This field displays the index number of an entry.                                                                     |
| IP Address     | This field displays IP address of the NSW.                                                                            |
| IP Subnet Mask | This field displays the subnet mask of the NSW.                                                                       |
| VID            | This field displays the VLAN identification number of the NSW.                                                        |
| Type           | This shows whether this IP address is dynamically assigned from a DHCP server or manually assigned ( <b>Static</b> ). |
| Renew          | Click this to renew the dynamic IP address.                                                                           |
| Release        | Click this to release the dynamic IP address.                                                                         |

## 6.4.2 IP Status Details

Use this screen to view IP status details. Click a number in the **Index** column in the **IP Status** screen to display the screen as shown next.

Figure 33 Basic Setting > IP Setup > IP Status Details: Static

| IP Status Detail |               | IP Status |
|------------------|---------------|-----------|
| Type             | Static        |           |
| VID              | 1             |           |
| IP Address       | 192.168.1.1   |           |
| IP Subnet Mask   | 255.255.255.0 |           |

The following table describes the labels in this screen.

Table 9 Basic Setting > IP Setup > IP Status Details: Static

| LABEL          | DESCRIPTION                                                                                                                          |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Type           | This shows whether this IP address is dynamically assigned from a DHCP server or manually assigned ( <b>Static</b> or <b>DHCP</b> ). |
| VID            | This is the VLAN identification number.                                                                                              |
| IP Address     | This is the IP address of your NSW in dotted decimal notation.                                                                       |
| IP Subnet Mask | This is the IP subnet mask of your NSW in dotted decimal notation for example 255.255.255.0.                                         |

Figure 34 Basic Setting &gt; IP Setup &gt; IP Status Details: DHCP

| IP Status Detail |                | IP Status |
|------------------|----------------|-----------|
| Type             | DHCP           |           |
| VID              | 1              |           |
| IP Address       |                |           |
| IP Subnet Mask   | 255.255.255.0  |           |
| Lease Time       | 259200 seconds |           |
| Renew Time       | 129600 seconds |           |
| Rebind Time      | 226800 seconds |           |
| Lease Time Start |                |           |
| Lease Time End   |                |           |
| Default Gateway  |                |           |
| DNS Server       |                |           |
| DNS Server       |                |           |

The following table describes the labels in this screen.

Table 10 Basic Setting &gt; IP Setup &gt; IP Status Details: DHCP

| LABEL            | DESCRIPTION                                                                                                                                                                                   |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type             | This shows whether this IP address is dynamically assigned from a DHCP server or manually assigned (Static or DHCP).                                                                          |
| VID              | This is the VLAN identification number.                                                                                                                                                       |
| IP Address       | This is the IP address of your NSW in dotted decimal notation.                                                                                                                                |
| IP Subnet Mask   | This is the IP subnet mask of your NSW in dotted decimal notation for example 255.255.255.0.                                                                                                  |
| Lease Time       | This displays the length of time in seconds that this interface can use the current dynamic IP address from the DHCP server.                                                                  |
| Renew Time       | This displays the length of time from the lease start that the NSW will request to renew its current dynamic IP address from the DHCP server.                                                 |
| Rebind Time      | This displays the length of time from the lease start that the NSW will request to get any dynamic IP address from the DHCP server.                                                           |
| Lease Time Start | This displays the date and time that the current dynamic IP address assignment from the DHCP server began. You should configure date and time in <b>Basic Setting &gt; General Setup</b> .    |
| Lease Time End   | This displays the date and time that the current dynamic IP address assignment from the DHCP server will end. You should configure date and time in <b>Basic Setting &gt; General Setup</b> . |
| Default Gateway  | This displays the IP address of the default gateway assigned by the DHCP server. 0.0.0.0 means no gateway is assigned.                                                                        |
| DNS Server       | This displays the IP address of the primary and secondary DNS servers assigned by the DHCP server. 0.0.0.0 means no DNS server is assigned.                                                   |

### 6.4.3 IP Configurations

Use this screen to configure the default gateway device, and manage the IP address.

Figure 35 Basic Setting &gt; IP Setup &gt; IP Configuration

**IP Configuration** [IP Status](#)

Default Gateway:

[Apply] [Cancel]

**IP Interface**

IP Address: ☒ DHCP Client  
☐ Static IP Address

IP Address:   
IP Subnet Mask:

VID:

[Add] [Cancel]

| Index | IP Address    | IP Subnet Mask | VID | Type |                          |
|-------|---------------|----------------|-----|------|--------------------------|
| 1     | 255.255.255.0 | 255.255.255.0  | 1   | DHCP | <input type="checkbox"/> |

[Delete] [Cancel]

The following table describes the labels in this screen.

Table 11 Basic Setting &gt; IP Setup &gt; IP Configuration

| LABEL             | DESCRIPTION                                                                                                                                                                                                                                                                                           |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Default Gateway   | Type the IP address of the default outgoing gateway in dotted decimal notation, for example 192.168.1.254.                                                                                                                                                                                            |
| Apply             | Click <b>Apply</b> to save your changes to the NSW's run-time memory. The NSW loses these changes if it is turned off or loses power, so use the <b>Save</b> link on the top navigation panel to save your changes to the non-volatile memory when you are done configuring.                          |
| Cancel            | Click <b>Cancel</b> to reset the fields to your previous configuration.                                                                                                                                                                                                                               |
| IP Interface      |                                                                                                                                                                                                                                                                                                       |
| DHCP Client       | Select this option if you have a DHCP server that can assign the NSW an IP address, subnet mask, a default gateway IP address and a domain name server IP address automatically.                                                                                                                      |
| Static IP Address | Select this option if you don't have a DHCP server or if you wish to assign static IP address information to the NSW. You need to fill in the following fields when you select this option.                                                                                                           |
| IP Address        | Enter the IP address of your NSW in dotted decimal notation.                                                                                                                                                                                                                                          |
| IP Subnet Mask    | Enter the IP subnet mask in dotted decimal notation, for example, 255.255.255.0.                                                                                                                                                                                                                      |
| VID               | Enter the VLAN identification number.                                                                                                                                                                                                                                                                 |
| Add               | Click this to create a new entry.<br><br>This saves your changes to the NSW's run-time memory. The NSW loses these changes if it is turned off or loses power, so use the <b>Save</b> link on the top navigation panel to save your changes to the non-volatile memory when you are done configuring. |
| Cancel            | Click <b>Cancel</b> to reset the fields to your previous configuration.                                                                                                                                                                                                                               |
| Index             | This field displays the index number of an entry.                                                                                                                                                                                                                                                     |
| IP Address        | This field displays IP address of the NSW.                                                                                                                                                                                                                                                            |
| IP Subnet Mask    | This field displays the subnet mask of the NSW.                                                                                                                                                                                                                                                       |
| VID               | This field displays the VLAN identification number of the NSW.                                                                                                                                                                                                                                        |
| Type              | This field displays the type of IP address status.                                                                                                                                                                                                                                                    |

Table 11 Basic Setting &gt; IP Setup &gt; IP Configuration (continued)

| LABEL  | DESCRIPTION                                                                                                                             |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------|
|        | Select an entry's check box to select a specific entry. Otherwise, select the check box in the table heading row to select all entries. |
| Delete | Click <b>Delete</b> to remove the selected entry from the summary table.<br><br>Note: Deleting all IP subnets locks you out of the NSW. |
| Cancel | Click <b>Cancel</b> to clear the check boxes.                                                                                           |

## 6.5 Port Setup

Use this screen to configure the NSW port settings. Click **Basic Setting > Port Setup** in the navigation panel to display the configuration screen.

Figure 36 Basic Setting &gt; Port Setup

Port Setup

| Port | Active                              | Name | Type         | Speed / Duplex      | 802.1p Priority | Media Type |
|------|-------------------------------------|------|--------------|---------------------|-----------------|------------|
| *    | <input type="checkbox"/>            |      | -            | 10G / Full Duplex ▼ | 0 ▼             | sfp_plus ▼ |
| 1    | <input checked="" type="checkbox"/> |      | 10/100/1000M | Auto-1000M ▼        | 0 ▼             |            |
| 2    | <input checked="" type="checkbox"/> |      | 10/100/1000M | Auto-1000M ▼        | 0 ▼             |            |
| 3    | <input checked="" type="checkbox"/> |      | 10/100/1000M | Auto-1000M ▼        | 0 ▼             |            |
| 4    | <input checked="" type="checkbox"/> |      | 10/100/1000M | Auto-1000M ▼        | 0 ▼             |            |
| 5    | <input checked="" type="checkbox"/> |      | 10/100/1000M | Auto-1000M ▼        | 0 ▼             |            |
| 6    | <input checked="" type="checkbox"/> |      | 10/100/1000M | Auto-1000M ▼        | 0 ▼             |            |
| 7    | <input checked="" type="checkbox"/> |      | 10/100/1000M | Auto-1000M ▼        | 0 ▼             |            |
| 8    | <input checked="" type="checkbox"/> |      | 10/100/1000M | Auto-1000M ▼        | 0 ▼             |            |
| 9    | <input checked="" type="checkbox"/> |      | 10/100/1000M | Auto-1000M ▼        | 0 ▼             |            |
| 10   | <input checked="" type="checkbox"/> |      | 10/100/1000M | Auto-1000M ▼        | 0 ▼             |            |
| 11   | <input checked="" type="checkbox"/> |      | 10/100/1000M | Auto-1000M ▼        | 0 ▼             |            |
| 12   | <input checked="" type="checkbox"/> |      | 10/100/1000M | Auto-1000M ▼        | 0 ▼             |            |
| 13   | <input checked="" type="checkbox"/> |      | 10/100/1000M | Auto-1000M ▼        | 0 ▼             |            |
| 14   | <input checked="" type="checkbox"/> |      | 10/100/1000M | Auto-1000M ▼        | 0 ▼             |            |
| 15   | <input checked="" type="checkbox"/> |      | 10/100/1000M | Auto-1000M ▼        | 0 ▼             |            |
| 16   | <input checked="" type="checkbox"/> |      | 10/100/1000M | Auto-1000M ▼        | 0 ▼             |            |
| 17   | <input checked="" type="checkbox"/> |      | 10/100/1000M | Auto-1000M ▼        | 0 ▼             |            |
| 18   | <input checked="" type="checkbox"/> |      | 10/100/1000M | Auto-1000M ▼        | 0 ▼             |            |
| 19   | <input checked="" type="checkbox"/> |      | 10/100/1000M | Auto-1000M ▼        | 0 ▼             |            |
| 20   | <input checked="" type="checkbox"/> |      | 10/100/1000M | Auto-1000M ▼        | 0 ▼             |            |
| 21   | <input checked="" type="checkbox"/> |      | 10/100/1000M | Auto-1000M ▼        | 0 ▼             |            |
| 22   | <input checked="" type="checkbox"/> |      | 10/100/1000M | Auto-1000M ▼        | 0 ▼             |            |
| 23   | <input checked="" type="checkbox"/> |      | 10/100/1000M | Auto-1000M ▼        | 0 ▼             |            |
| 24   | <input checked="" type="checkbox"/> |      | 10/100/1000M | Auto-1000M ▼        | 0 ▼             |            |
| 25   | <input checked="" type="checkbox"/> |      | 1000M/10G    | 10G / Full Duplex ▼ | 0 ▼             | sfp_plus ▼ |
| 26   | <input checked="" type="checkbox"/> |      | 1000M/10G    | 10G / Full Duplex ▼ | 0 ▼             | sfp_plus ▼ |
| 27   | <input checked="" type="checkbox"/> |      | 1000M/10G    | 10G / Full Duplex ▼ | 0 ▼             | sfp_plus ▼ |
| 28   | <input checked="" type="checkbox"/> |      | 1000M/10G    | 10G / Full Duplex ▼ | 0 ▼             | sfp_plus ▼ |

Apply

Cancel

The following table describes the labels in this screen.

Table 12 Basic Setting > Port Setup

| LABEL                           | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Port                            | This is the port index number.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| *                               | <p>Settings in this row apply to all ports.</p> <p>Use this row only if you want to make some settings the same for all ports. Use this row first to set the common settings and then make adjustments on a port-by-port basis.</p> <p>Note: Changes in this row are copied to all the ports as soon as you make them.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Active                          | Select this check box to enable a port. The factory default for all ports is enabled. A port must be enabled for data transmission to occur.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Name                            | <p>Enter a descriptive name that identifies this port. You can enter up to 64 alpha-numerical characters.</p> <p>Note: Due to space limitation, the port name may be truncated in some web configurator screens.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Type                            | This field displays the capacity that the port can support.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Speed/Duplex                    | <p>Select the speed and the duplex mode of the Ethernet connection on this port. Choices are Auto-1000M, 10M/ Half Duplex, 10M/ Full Duplex, 100M/ Half Duplex, 100M/ Full Duplex and 1000M/ Full Duplex (Gigabit connections only). 10G port choices are 1000M/ Full Duplex and 10G/ Full Duplex.</p> <p>Selecting Auto-1000M (auto-negotiation) allows one port to negotiate with a peer port automatically to obtain the connection speed (of up to 1000M) and duplex mode that both ends support. When auto-negotiation is turned on, a port on the NSW negotiates with the peer automatically to determine the connection speed and duplex mode. If the peer port does not support auto-negotiation or turns off this feature, the NSW determines the connection speed by detecting the signal on the cable and using half duplex mode. When the NSW's auto-negotiation is turned off, a 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 port are the same in order to connect.</p>                                                                                                                                                   |
| 802.1p Priority                 | <p>This priority value is added to incoming frames without a (802.1p) priority queue tag.</p> <p>The following descriptions are based on the traffic types defined in the IEEE 802.1d standard (which incorporates the 802.1p).</p> <ul style="list-style-type: none"> <li>• Level 7: Typically used for network control traffic such as router configuration messages.</li> <li>• Level 6: Typically used for voice traffic that is especially sensitive to jitter (jitter is the variations in delay).</li> <li>• Level 5: Typically used for video that consumes high bandwidth and is sensitive to jitter.</li> <li>• Level 4: Typically used for controlled load, latency-sensitive traffic such as SNA (Systems Network Architecture) transactions.</li> <li>• Level 3: Typically used for "excellent effort" or better than best effort and would include important business traffic that can tolerate some delay.</li> <li>• Level 2: This is for "spare bandwidth".</li> <li>• Level 1: This is typically used for non-critical "background" traffic such as bulk transfers that are allowed but that should not affect other applications and users.</li> <li>• Level 0: Typically used for best-effort traffic.</li> </ul> |
| Media Type<br>(NSW200-28P only) | <p>You can insert either an SFP+ transceiver or an SFP+ Direct Attach Copper (DAC) cable into the 10 Gigabit interface of the NSW. An SFP+ Direct Attach Copper (DAC) is an SFP+ housing that has no optical module but uses a fixed-length passive copper cable assembly, which reduces cost and power significantly.</p> <p>Select the media type (<code>sfp_plus</code> or <code>dac 10g</code>) of the SFP+ module that is attached to the 10 Gigabit interface.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

Table 12 Basic Setting &gt; Port Setup (continued)

| LABEL  | DESCRIPTION                                                                                                                                                                                                                                                                  |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Apply  | Click <b>Apply</b> to save your changes to the NSW's run-time memory. The NSW loses these changes if it is turned off or loses power, so use the <b>Save</b> link on the top navigation panel to save your changes to the non-volatile memory when you are done configuring. |
| Cancel | Click <b>Cancel</b> to begin configuring this screen afresh.                                                                                                                                                                                                                 |

## 6.6 DNS

DNS (Domain Name System) is for mapping a domain name to its corresponding IP address and vice versa. Use the DNS screen to configure and view the default DNS servers on the NSW.

Figure 37 Basic Setting &gt; DNS

| Preference | Server Address |
|------------|----------------|
| 1          | 8.8.8.8        |
| 2          | 4.4.4.4        |

Apply Cancel

| Index | Server Address | Source |
|-------|----------------|--------|
| 1     | 8.8.8.8        | Static |
| 2     | 4.4.4.4        | Static |

The following table describes the labels in this screen.

Table 13 Basic Setting &gt; DNS

| LABEL                     | DESCRIPTION                                                                                                                                                                                                                                                                 |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Static Domain Name Server |                                                                                                                                                                                                                                                                             |
| Preference                | This is the priority of the DNS server address.                                                                                                                                                                                                                             |
| Server Address            | Enter a domain name server IPv6/IPv4 address in order to be able to use a domain name instead of an IP address.                                                                                                                                                             |
| Apply                     | Click <b>Apply</b> to save your changes to the NSW's run-time memory. The NSW loses these changes if it is turned off or loses power, so use the <b>Save</b> link on the top navigation panel to save your changes to the nonvolatile memory when you are done configuring. |
| Cancel                    | Click <b>Cancel</b> to reset the fields to your previous configuration.                                                                                                                                                                                                     |
| Domain Name Server Table  |                                                                                                                                                                                                                                                                             |
| Index                     | This field displays priority of the DNS server address.                                                                                                                                                                                                                     |
| Server Address            | This field displays the IP address of the DNS server.                                                                                                                                                                                                                       |
| Source                    | This field displays whether the DNS server address is configured manually ( <b>Static</b> ) or obtained automatically using DHCP/DHCPv6 ( <b>Dynamic</b> ).                                                                                                                 |

# CHAPTER 7

## VLAN

### 7.1 Overview

This chapter shows you how to view status and settings of VLAN groups as well as configuring static VLAN and port-based VLANs.

#### 7.1.1 What You Can Do

- Use the **VLAN Status** screen ([Section 7.2 on page 42](#)) to view and search all VLAN groups.
- Use the **VLAN Detail** screen ([Section 7.2.1 on page 43](#)) to view detailed port settings and status of the VLAN group.
- Use the **Static VLAN** screen ([Section 7.4 on page 44](#)) to configure and view 802.1Q VLAN parameters for the NSW.
- Use the **VLAN Port Setting** screen ([Section 7.5 on page 46](#)) to configure the static VLAN (IEEE 802.1Q) settings on a port.

### 7.2 VLAN Status

Use this screen to view and search all VLAN groups. Click **Advanced Application > VLAN** from the navigation panel to display the **VLAN Status** screen as shown next.

Figure 38 Advanced Application > VLAN: VLAN Status

The screenshot shows the 'VLAN Status' screen. At the top, there are two tabs: 'VLAN Status' (selected) and 'VLAN Configuration'. Below the tabs is a search section labeled 'VLAN Search by VID' with a text input field and a 'Search' button. Below the search section, it says 'The Number of VLAN: 1.' followed by a table. The table has four columns: 'Index', 'VID', 'Elapsed Time', and 'Status'. There is one row with the following data: Index 1, VID 1, Elapsed Time 0:34:59, and Status Static. At the bottom, there is a 'Change Pages' section with 'Previous' and 'Next' buttons.

| Index | VID | Elapsed Time | Status |
|-------|-----|--------------|--------|
| 1     | 1   | 0:34:59      | Static |

The following table describes the labels in this screen.

Table 14 Advanced Application > VLAN: VLAN Status

| LABEL                        | DESCRIPTION                                                                                                                                                                                                                                   |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| VLAN Search by VID           | Enter an existing VLAN ID number(s) (separated by a comma) and click <b>Search</b> to display only the specified VLAN(s) in the list below.<br><br>Leave this field blank and click <b>Search</b> to display all VLANs configured on the NSW. |
| The Number of VLAN           | This is the number of VLANs configured on the NSW.                                                                                                                                                                                            |
| The Number of Search Results | This is the number of VLANs that match the searching criteria and display in the list below.<br><br>This field displays only when you use the <b>Search</b> button to look for certain VLANs.                                                 |
| Index                        | This is the VLAN index number. Click on an index number to view more VLAN details.                                                                                                                                                            |
| VID                          | This is the VLAN identification number that was configured in the <b>Static VLAN</b> screen.                                                                                                                                                  |
| Elapsed Time                 | This field shows how long it has been since a normal VLAN was registered or a static VLAN was set up.                                                                                                                                         |
| Status                       | This field shows how this VLAN was added to the NSW.<br><br><b>Static</b> : added as a permanent entry                                                                                                                                        |
| Change Pages                 | Click <b>Previous</b> or <b>Next</b> to show the previous/next screen if all status information cannot be seen in one screen.                                                                                                                 |

## 7.2.1 VLAN Details

Use this screen to view detailed port settings and status of the VLAN group. Click on an index number in the **VLAN Status** screen to display VLAN details.

Figure 39 Advanced Application > VLAN > VLAN Detail

| VLAN Detail |             |   |   |   |    |    |    |    |    |    |    |    |    | <a href="#">VLAN Status</a> |        |
|-------------|-------------|---|---|---|----|----|----|----|----|----|----|----|----|-----------------------------|--------|
| VID         | Port Number |   |   |   |    |    |    |    |    |    |    |    |    | Elapsed Time                | Status |
|             | 2           | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 |                             |        |
|             | 1           | 3 | 5 | 7 | 9  | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 25 |                             |        |
| 1           | U           | U | U | U | U  | U  | U  | U  | U  | U  | U  | U  | U  | 0:30:23                     | Static |
|             | U           | U | U | U | U  | U  | U  | U  | U  | U  | U  | U  | U  |                             |        |

The following table describes the labels in this screen.

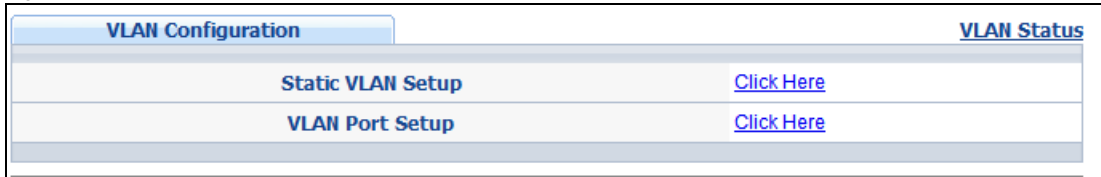
Table 15 Advanced Application > VLAN > VLAN Detail

| LABEL        | DESCRIPTION                                                                                                                                                                             |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| VLAN Status  | Click this to go to the <b>VLAN Status</b> screen.                                                                                                                                      |
| VID          | This is the VLAN identification number that was configured in the <b>Static VLAN</b> screen.                                                                                            |
| Port Number  | This column displays the ports that are participating in a VLAN. A tagged port is marked as T, an untagged port is marked as U and ports not participating in a VLAN are marked as "-". |
| Elapsed Time | This field shows how long it has been since a normal VLAN was registered or a static VLAN was set up.                                                                                   |
| Status       | This field shows how this VLAN was added to the NSW.<br><br><b>Static</b> : added as a permanent entry                                                                                  |

## 7.3 VLAN Configuration

Use this screen to view IEEE 802.1Q VLAN parameters for the NSW. Click **Advanced Application > VLAN > VLAN Configuration** to see the following screen.

Figure 40 Advanced Application > VLAN > VLAN Configuration



The following table describes the labels in the above screen.

Table 16 Advanced Application > VLAN > VLAN Configuration

| LABEL             | DESCRIPTION                                                                |
|-------------------|----------------------------------------------------------------------------|
| Static VLAN Setup | Click <a href="#">Click Here</a> to configure the Static VLAN for the NSW. |
| VLAN Port Setup   | Click <a href="#">Click Here</a> to configure the VLAN Port for the NSW.   |

## 7.4 Configure a Static VLAN

Use a static VLAN to decide whether an incoming frame on a port should be

- sent to a VLAN group as normal depending on its VLAN tag.
- sent to a group whether it has a VLAN tag or not.
- blocked from a VLAN group regardless of its VLAN tag.

You can also tag all outgoing frames (that were previously untagged) from a port with the specified VID.

Use this screen to configure a static VLAN for the NSW. Click the **Static VLAN Setup** link in the **VLAN Configuration** screen to display the screen as shown next.

Figure 41 Advanced Application &gt; VLAN &gt; VLAN Configuration &gt; Static VLAN Setup

Static VLAN

VLAN Configuration

ACTIVE

☐

Name

VLAN Group ID

| Port | Control                                                             | Tagging                                        |
|------|---------------------------------------------------------------------|------------------------------------------------|
| *    | Normal                                                              | <input checked="" type="checkbox"/> Tx Tagging |
| 1    | <input checked="" type="radio"/> Normal <input type="radio"/> Fixed | <input checked="" type="checkbox"/> Tx Tagging |
| 2    | <input checked="" type="radio"/> Normal <input type="radio"/> Fixed | <input checked="" type="checkbox"/> Tx Tagging |
| 3    | <input checked="" type="radio"/> Normal <input type="radio"/> Fixed | <input checked="" type="checkbox"/> Tx Tagging |
| 4    | <input checked="" type="radio"/> Normal <input type="radio"/> Fixed | <input checked="" type="checkbox"/> Tx Tagging |
| 5    | <input checked="" type="radio"/> Normal <input type="radio"/> Fixed | <input checked="" type="checkbox"/> Tx Tagging |
| 6    | <input checked="" type="radio"/> Normal <input type="radio"/> Fixed | <input checked="" type="checkbox"/> Tx Tagging |
| 7    | <input checked="" type="radio"/> Normal <input type="radio"/> Fixed | <input checked="" type="checkbox"/> Tx Tagging |
| 8    | <input checked="" type="radio"/> Normal <input type="radio"/> Fixed | <input checked="" type="checkbox"/> Tx Tagging |
| 9    | <input checked="" type="radio"/> Normal <input type="radio"/> Fixed | <input checked="" type="checkbox"/> Tx Tagging |
| 10   | <input checked="" type="radio"/> Normal <input type="radio"/> Fixed | <input checked="" type="checkbox"/> Tx Tagging |
| 11   | <input checked="" type="radio"/> Normal <input type="radio"/> Fixed | <input checked="" type="checkbox"/> Tx Tagging |
| 12   | <input checked="" type="radio"/> Normal <input type="radio"/> Fixed | <input checked="" type="checkbox"/> Tx Tagging |
| 13   | <input checked="" type="radio"/> Normal <input type="radio"/> Fixed | <input checked="" type="checkbox"/> Tx Tagging |
| 14   | <input checked="" type="radio"/> Normal <input type="radio"/> Fixed | <input checked="" type="checkbox"/> Tx Tagging |
| 15   | <input checked="" type="radio"/> Normal <input type="radio"/> Fixed | <input checked="" type="checkbox"/> Tx Tagging |
| 16   | <input checked="" type="radio"/> Normal <input type="radio"/> Fixed | <input checked="" type="checkbox"/> Tx Tagging |
| 17   | <input checked="" type="radio"/> Normal <input type="radio"/> Fixed | <input checked="" type="checkbox"/> Tx Tagging |
| 18   | <input checked="" type="radio"/> Normal <input type="radio"/> Fixed | <input checked="" type="checkbox"/> Tx Tagging |
| 19   | <input checked="" type="radio"/> Normal <input type="radio"/> Fixed | <input checked="" type="checkbox"/> Tx Tagging |
| 20   | <input checked="" type="radio"/> Normal <input type="radio"/> Fixed | <input checked="" type="checkbox"/> Tx Tagging |
| 21   | <input checked="" type="radio"/> Normal <input type="radio"/> Fixed | <input checked="" type="checkbox"/> Tx Tagging |
| 22   | <input checked="" type="radio"/> Normal <input type="radio"/> Fixed | <input checked="" type="checkbox"/> Tx Tagging |
| 23   | <input checked="" type="radio"/> Normal <input type="radio"/> Fixed | <input checked="" type="checkbox"/> Tx Tagging |
| 24   | <input checked="" type="radio"/> Normal <input type="radio"/> Fixed | <input checked="" type="checkbox"/> Tx Tagging |
| 25   | <input checked="" type="radio"/> Normal <input type="radio"/> Fixed | <input checked="" type="checkbox"/> Tx Tagging |
| 26   | <input checked="" type="radio"/> Normal <input type="radio"/> Fixed | <input checked="" type="checkbox"/> Tx Tagging |
| 27   | <input checked="" type="radio"/> Normal <input type="radio"/> Fixed | <input checked="" type="checkbox"/> Tx Tagging |
| 28   | <input checked="" type="radio"/> Normal <input type="radio"/> Fixed | <input checked="" type="checkbox"/> Tx Tagging |

Add

Cancel

Clear

| VID | Active | Name |
|-----|--------|------|
| 1   | Yes    | 1    |

Delete

Cancel

The following table describes the related labels in this screen.

Table 17 Advanced Application > VLAN > VLAN Configuration > Static VLAN Setup

| LABEL         | DESCRIPTION                                                                                                                                                                                                                                                                                                                |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ACTIVE        | Select this check box to activate the VLAN settings.                                                                                                                                                                                                                                                                       |
| Name          | Enter a descriptive name for the VLAN group for identification purposes. This name consists of up to 64 printable characters. Spaces are allowed.                                                                                                                                                                          |
| VLAN Group ID | Enter the VLAN ID for this static entry; the valid range is between 1 and 4094.                                                                                                                                                                                                                                            |
| Port          | The port number identifies the port you are configuring.                                                                                                                                                                                                                                                                   |
| *             | <p>Settings in this row apply to all ports.</p> <p>Use this row only if you want to make some settings the same for all ports. Use this row first to set the common settings and then make adjustments on a port-by-port basis.</p> <p>Note: Changes in this row are copied to all the ports as soon as you make them.</p> |
| Control       | <p>Select <b>Normal</b> for the port to dynamically join this VLAN group using GVRP. This is the default selection.</p> <p>Select <b>Fixed</b> for the port to be a permanent member of this VLAN group.</p>                                                                                                               |
| Tagging       | Select <b>TX Tagging</b> if you want the port to tag all outgoing frames transmitted with this VLAN Group ID.                                                                                                                                                                                                              |
| Add           | Click <b>Add</b> to save your changes to the NSW's run-time memory. The NSW loses these changes if it is turned off or loses power, so use the <b>Save</b> link on the top-right of the Web Configurator to save your changes to the non-volatile memory when you are done configuring.                                    |
| Cancel        | Click <b>Cancel</b> to change the fields back to their last saved values.                                                                                                                                                                                                                                                  |
| Clear         | Click <b>Clear</b> to start configuring the screen again.                                                                                                                                                                                                                                                                  |
| VID           | This field displays the ID number of the VLAN group. Click the number to edit the VLAN settings.                                                                                                                                                                                                                           |
| Active        | This field indicates whether the VLAN settings are enabled ( <b>Yes</b> ) or disabled ( <b>No</b> ).                                                                                                                                                                                                                       |
| Name          | This field displays the descriptive name for this VLAN group.                                                                                                                                                                                                                                                              |
|               | Select an entry's check box to select a specific entry. Otherwise, select the check box in the table heading row to select all entries.                                                                                                                                                                                    |
| Delete        | Click <b>Delete</b> to remove the selected entry from the summary table.                                                                                                                                                                                                                                                   |
| Cancel        | Click <b>Cancel</b> to clear the check boxes.                                                                                                                                                                                                                                                                              |

## 7.5 Configure VLAN Port Settings

Use the VLAN Port Setup screen to configure the static VLAN settings on a port. Click the **VLAN Port Setup** link in the VLAN Configuration screen.

Figure 42 Advanced Application &gt; VLAN &gt; VLAN Configuration &gt; VLAN Port Setup

| VLAN Port Setting |      | VLAN Configuration       |
|-------------------|------|--------------------------|
| Port              | PVID | VLAN Trunking            |
| *                 |      | <input type="checkbox"/> |
| 1                 | 1    | <input type="checkbox"/> |
| 2                 | 1    | <input type="checkbox"/> |
| 3                 | 1    | <input type="checkbox"/> |
| 4                 | 1    | <input type="checkbox"/> |
| 5                 | 1    | <input type="checkbox"/> |
| 6                 | 1    | <input type="checkbox"/> |
| 7                 | 1    | <input type="checkbox"/> |
| 8                 | 1    | <input type="checkbox"/> |
| 9                 | 1    | <input type="checkbox"/> |
| 10                | 1    | <input type="checkbox"/> |
| 11                | 1    | <input type="checkbox"/> |
| 12                | 1    | <input type="checkbox"/> |
| 13                | 1    | <input type="checkbox"/> |
| 14                | 1    | <input type="checkbox"/> |
| 15                | 1    | <input type="checkbox"/> |
| 16                | 1    | <input type="checkbox"/> |
| 17                | 1    | <input type="checkbox"/> |
| 18                | 1    | <input type="checkbox"/> |
| 19                | 1    | <input type="checkbox"/> |
| 20                | 1    | <input type="checkbox"/> |
| 21                | 1    | <input type="checkbox"/> |
| 22                | 1    | <input type="checkbox"/> |
| 23                | 1    | <input type="checkbox"/> |
| 24                | 1    | <input type="checkbox"/> |
| 25                | 1    | <input type="checkbox"/> |
| 26                | 1    | <input type="checkbox"/> |
| 27                | 1    | <input type="checkbox"/> |
| 28                | 1    | <input type="checkbox"/> |

The following table describes the labels in this screen.

Table 18 Advanced Application &gt; VLAN &gt; VLAN Configuration&gt; VLAN Port Setup

| LABEL | DESCRIPTION                                                                                                                                                                                                                                                                                                                |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Port  | This field displays the port number.                                                                                                                                                                                                                                                                                       |
| *     | <p>Settings in this row apply to all ports.</p> <p>Use this row only if you want to make some settings the same for all ports. Use this row first to set the common settings and then make adjustments on a port-by-port basis.</p> <p>Note: Changes in this row are copied to all the ports as soon as you make them.</p> |
| PVID  | <p>A PVID (Port VLAN ID) is a tag that adds to incoming untagged frames received on a port so that the frames are forwarded to the VLAN group that the tag defines.</p> <p>Enter a number between 1 and 4094 as the port VLAN ID.</p>                                                                                      |

Table 18 Advanced Application &gt; VLAN &gt; VLAN Configuration&gt; VLAN Port Setup

| LABEL         | DESCRIPTION                                                                                                                                                                                                                                                                  |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| VLAN Trunking | Enable <b>VLAN Trunking</b> on ports connected to other switches or routers (but not ports directly connected to end users) to allow frames belonging to unknown VLAN groups to pass through the NSW.                                                                        |
| Apply         | Click <b>Apply</b> to save your changes to the NSW's run-time memory. The NSW loses these changes if it is turned off or loses power, so use the <b>Save</b> link on the top navigation panel to save your changes to the non-volatile memory when you are done configuring. |
| Cancel        | Click <b>Cancel</b> to begin configuring this screen afresh.                                                                                                                                                                                                                 |

# CHAPTER 8

## Maintenance

### 8.1 Overview

This chapter explains how to configure the screens that let you maintain the firmware and configuration files.

#### 8.1.1 What You Can Do

- Use the Maintenance screen ([Section 8.2 on page 49](#)) to erase running configuration, save a configuration file or restart the NSW.
- Use the Firmware Upgrade screen ([Section 8.3 on page 52](#)) to upload the latest firmware.
- Use the Restore Configuration screen ([Section 8.4 on page 53](#)) to upload a stored device configuration file.
- Use the Backup Configuration screen ([Section 8.5 on page 54](#)) to save your configurations for later use.
- Use the Tech-Support screen ([Section 8.6 on page 54](#)) to create reports for customer support if there are problems with the NSW.

### 8.2 The Maintenance Screen

Use this screen to manage firmware and your configuration files. Click **Management > Maintenance** in the navigation panel to open the following screen.

Figure 43 Management > Maintenance

| Maintenance                 |                                                                                      |
|-----------------------------|--------------------------------------------------------------------------------------|
| Current: Configuration 1    |                                                                                      |
| Firmware Upgrade            | <a href="#">Click Here</a>                                                           |
| Restore Configuration       | <a href="#">Click Here</a>                                                           |
| Backup Configuration        | <a href="#">Click Here</a>                                                           |
| Erase Running-Configuration | <a href="#">Click Here</a>                                                           |
| Save Configuration          | <a href="#">Config 1</a> <a href="#">Config 2</a>                                    |
| Reboot System               | <a href="#">Config 1</a> <a href="#">Config 2</a><br><a href="#">Factory Default</a> |
| Tech-Support                | <a href="#">Click here</a>                                                           |

The following table describes the labels in this screen.

Table 19 Management > Maintenance

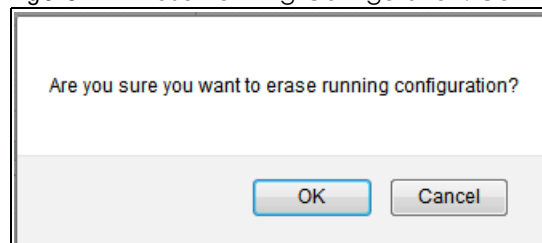
| LABEL                       | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Current                     | This field displays which configuration (Configuration 1 or Configuration 2) is currently operating on the NSW.                                                                                                                                                                                                                                                                                |
| Firmware Upgrade            | Click Click Here to go to the Firmware Upgrade screen.                                                                                                                                                                                                                                                                                                                                         |
| Restore Configuration       | Click Click Here to go to the Restore Configuration screen.                                                                                                                                                                                                                                                                                                                                    |
| Backup Configuration        | Click Click Here to go to the Backup Configuration screen.                                                                                                                                                                                                                                                                                                                                     |
| Erase Running-Configuration | Click Click Here to remove the running configuration on the NSW. The username, password, system logs and memory logs are not removed.                                                                                                                                                                                                                                                          |
| Save Configuration          | Click Config 1 to save the current configuration settings to Configuration 1 on the NSW.<br>Click Config 2 to save the current configuration settings to Configuration 2 on the NSW.                                                                                                                                                                                                           |
| Reboot System               | Click Config 1 to reboot the system and load Configuration 1 on the NSW.<br>Click Config 2 to reboot the system and load Configuration 2 on the NSW.<br>Click Factory Default to reboot the system and load the default configuration settings on the NSW.<br><br>Note: Make sure to click the <b>Save</b> button in any screen to save your settings to the current configuration on the NSW. |
| Tech-Support                | Click Click Here to see the Tech-Support screen. You can set CPU and memory thresholds for log reports and download related log reports for issue analysis. Log reports include CPU history and utilization, crash and memory.                                                                                                                                                                 |

## 8.2.1 Erase Running-Configuration

Follow the steps below to remove the running configuration on the NSW. Unlike when you reset the NSW to the factory defaults, the username, password, system logs and memory logs are not removed.

- 1 In the Maintenance screen, click the Click Here button next to Erase Running-Configuration to clear all NSW configuration information you configured.
- 2 Click OK to remove the running configuration on the NSW.

Figure 44 Erase Running-Configuration: Confirmation



- 3 In the web configurator, click the Save button in the top of the screen to make the changes take effect.

## 8.2.2 Save Configuration

Click **Config 1** to save the current configuration settings permanently to **Configuration 1** on the NSW.

Click **Config 2** to save the current configuration settings permanently to **Configuration 2** on the NSW.

Alternatively, click **Save** on the top right-hand corner in any screen to save the configuration changes to the current configuration.

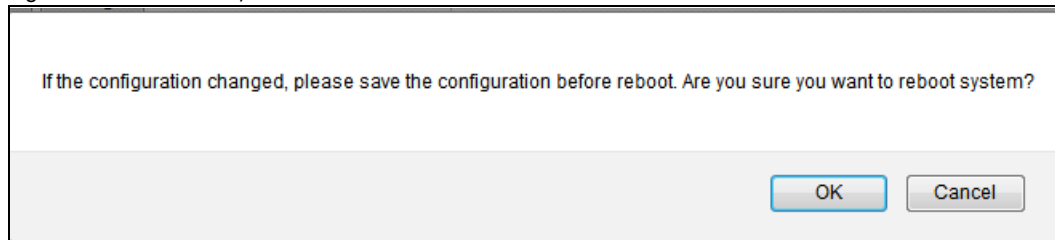
Note: Clicking the **Apply** or **Add** button does NOT save the changes permanently. All unsaved changes are erased after you reboot the NSW.

## 8.2.3 Reboot System

**Reboot System** allows you to restart the NSW without physically turning the power off. It also allows you to load configuration one (**Config 1**), configuration two (**Config 2**) or the factory default configuration when you reboot. Follow the steps below to reboot the NSW.

- 1 In the Maintenance screen, click the **Config 1** button next to **Reboot System** to reboot and load configuration one. The following screen displays.

Figure 45 Reboot System: Confirmation

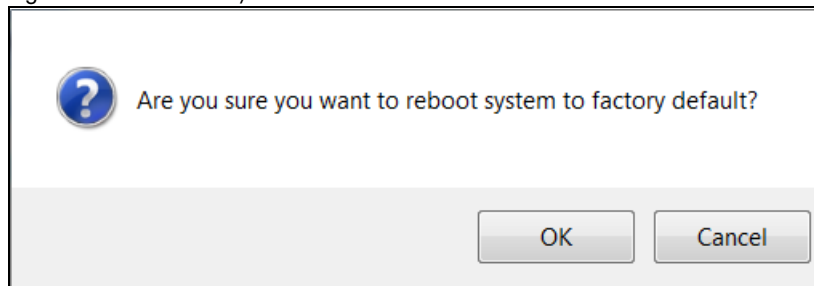


- 2 Click OK again and then wait for the NSW to restart. This takes up to two minutes. This does not affect the NSW's configuration.

Click **Config 2** and follow steps 1 to 2 to reboot and load configuration two on the NSW.

Click **Factory Default** and follow steps 1 to 2 to reboot and load default configuration settings on the NSW.

Figure 46 Reboot System: Confirmation



## 8.3 Firmware Upgrade

Use the screen to upgrade your NSW to the latest firmware. The NSW supports dual firmware images, **Firmware 1** and **Firmware 2**. Use this screen to specify which image is updated when firmware is uploaded using the web configurator and to specify which image is loaded when the NSW starts up.

Make sure you have downloaded (and unzipped) the correct model firmware and version to your computer before uploading to the device.

**Be sure to upload the correct model firmware as uploading the wrong model firmware may damage your device.**

Click **Management > Maintenance > Firmware Upgrade** to view the screen as shown next.

Figure 47 Management > Maintenance > Firmware Upgrade

| Firmware Upgrade |            | Maintenance                              |  |
|------------------|------------|------------------------------------------|--|
| Name             |            | Version                                  |  |
| NSW200-28P       | Running    | V1.00(ABFL.0)b2_withConsole   07/01/2016 |  |
|                  | Firmware 1 | V1.00(ABFL.0)b2_withConsole   07/01/2016 |  |
|                  | Firmware 2 | V1.00(ABFL.0)b2_withConsole   07/01/2016 |  |

|                    |              |
|--------------------|--------------|
| Current Boot Image | Firmware 1   |
| Config Boot Image  | Firmware 1 ▼ |

Apply Cancel

To upgrade the internal switch firmware, browse the location of the binary (.BIN) file and click Upgrade button.

|              |           |             |                |
|--------------|-----------|-------------|----------------|
| Firmware 1 ▼ | File Path | Choose File | No file chosen |
|--------------|-----------|-------------|----------------|

Upgrade

Type the path and file name of the firmware file you wish to upload to the NSW in the **File Path** text box or click **Browse** to locate it. You must restart the NSW (manually or use **Reboot System**) to apply the new firmware immediately. Firmware upgrades are only applied after a reboot. Click **Upgrade** to load the new firmware.

After the firmware upgrade process is complete, see **Basic Setting > System Info** to verify your current firmware version number.

Table 20 Management > Maintenance > Firmware Upgrade

| LABEL              | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name               | This is the name of the NSW that you're configuring.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Version            | The NSW has two firmware sets, <b>Firmware 1</b> and <b>Firmware 2</b> , residing in flash. <ul style="list-style-type: none"> <li><b>Running</b> shows the version number (and model code) and MM/DD/YYYY creation date of the firmware currently in use on the NSW (<b>Firmware 1</b> or <b>Firmware 2</b>). The firmware information is also displayed at System Information in Basic Settings.</li> <li><b>Firmware 1</b> shows its version number (and model code) and MM/DD/YYYY creation date.</li> <li><b>Firmware 2</b> shows its version number (and model code) and MM/DD/YYYY creation date.</li> </ul> |
| Current Boot Image | This displays which firmware is currently in use on the NSW ( <b>Firmware 1</b> or <b>Firmware 2</b> ).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Config Boot Image  | Select which firmware ( <b>Firmware 1</b> or <b>Firmware 2</b> ) should load, click <b>Apply</b> and reboot the NSW to see changes, you will also see changes in the <b>Current Boot Image</b> field above as well.                                                                                                                                                                                                                                                                                                                                                                                                 |
| Apply              | Click <b>Apply</b> to save your changes to the NSW's run-time memory. The NSW loses these changes if it is turned off or loses power, so use the <b>Save</b> link on the top navigation panel to save your changes to the non-volatile memory when you are done configuring.                                                                                                                                                                                                                                                                                                                                        |
| Cancel             | Click <b>Cancel</b> to begin configuring this screen afresh.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Firmware           | Choose to upload the new firmware to (Firmware) 1 or (Firmware) 2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| File Path          | Type the path and file name of the firmware file you wish to upload to the NSW in the <b>File Path</b> text box or click <b>Browse</b> to locate it.                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Upgrade            | Click <b>Upgrade</b> to load the new firmware. Firmware upgrades are only applied after a reboot. To reboot, go to <b>Management &gt; Maintenance &gt; Reboot System</b> and click <b>Config 1</b> , <b>Config 2</b> or <b>Factory Default</b> ( <b>Config 1</b> , <b>Config 2</b> and <b>Factory Default</b> are the configuration files you want the NSW to use when it restarts).                                                                                                                                                                                                                                |

## 8.4 Restore a Configuration File

Use this screen to restore a previously saved configuration from your computer to the NSW.

Figure 48 Management > Maintenance > Restore Configuration

Type the path and file name of the configuration file you wish to restore in the **File Path** text box or click **Browse** to locate it. After you have specified the file, click **Restore**. "config" is the name of the configuration file on the NSW, so your backup configuration file is automatically renamed when you restore using this screen.

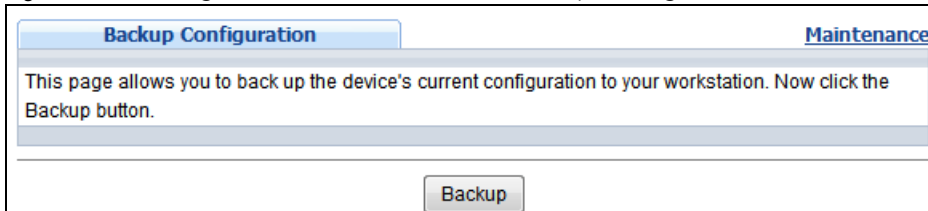
## 8.5 Backup a Configuration File

Use this screen to save and store your current device settings.

Backing up your NSW configurations allows you to create various “snap shots” of your device from which you may restore at a later date.

Back up your current NSW configuration to a computer using the **Backup Configuration** screen.

Figure 49 Management > Maintenance > Backup Configuration



Follow the steps below to back up the current NSW configuration to your computer in this screen.

- 1 Click **Backup**.
- 2 If the current configuration file is open and/or downloaded to your computer automatically, you can click **File > Save As** to save the file to a specific place.

If a dialog box pops up asking whether you want to open or save the file, click **Save** or **Save File** to download it to the default downloads folder on your computer. If a **Save As** screen displays after you click **Save** or **Save File**, choose a location to save the file on your computer from the **Save in** drop-down list box and type a descriptive name for it in the **File name** list box. Click **Save** to save the configuration file to your computer.

## 8.6 Tech-Support

The Tech-Support feature is a log enhancement tool that logs useful information such as CPU utilization history, memory and Mbuf (Memory Buffer) log and crash reports for issue analysis by customer support should you have difficulty with your NSW.

Click **Management > Maintenance > Tech-Support** to see the following screen.

Figure 50 Management > Maintenance > Tech-Support



You may need WordPad or similar software to see the log report correctly. The table below describes the fields in the above screen.

Table 21 Management > Maintenance > Tech-Support

| LABEL          | DESCRIPTION                                                                                                                                                                                          |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| All            | Click <b>Download</b> to see all the log report and system status. This log report is stored in flash memory. If the All log report is too large, you can download the log reports separately below. |
| Crash          | Click <b>Download</b> to see the crash log report. The log will include information of the last crash and is stored in flash memory.                                                                 |
| CPU history    | Click <b>Download</b> to see the CPU history log report. The 7-days log is stored in RAM and you will need to save it, otherwise it will be lost when the NSW is shutdown or during power outage.    |
| Memory Section | Click <b>Download</b> to see the memory section log report. This log report is stored in flash memory.                                                                                               |
| Mbuf           | Click <b>Download</b> to see the Mbuf (Memory Buffer) log report. The log includes Mbuf over threshold information. This log report is stored in flash (permanent) memory.                           |
| ROM            | Click <b>Download</b> to see the Read Only Memory (ROM) log report. This report is stored in flash memory.                                                                                           |

## 8.7 Technical Reference

This section provides technical background information on the topics discussed in this chapter.

### 8.7.1 FTP Command Line

This section shows some examples of uploading to or downloading files from the NSW using FTP commands. First, understand the filename conventions.

### 8.7.2 Filename Conventions

The configuration file (also known as the romfile or ROM) contains the factory default settings in the screens such as password, NSW setup, IP Setup, and so on. Once you have customized the NSW's settings, they can be saved back to your computer under a filename of your choosing.

ZyNOS (Zyxel Network Operating System sometimes referred to as the "ras" file) is the system firmware and has a "bin" filename extension.

Table 22 Filename Conventions

| FILE TYPE          | INTERNAL NAME | EXTERNAL NAME | DESCRIPTION                                                                                                                                                                                                                                          |
|--------------------|---------------|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Configuration File | config        | *.cfg         | This is the configuration filename on the NSW. Uploading the config file replaces the specified configuration file system, including your NSW configurations, system-related data (including the default password), the error log and the trace log. |
| Firmware           | ras           | *.bin         | This is the generic name for the ZyNOS firmware on the NSW.                                                                                                                                                                                          |

### 8.7.2.1 Example FTP Commands

```
ftp> put firmware.bin ras
```

This is a sample FTP session showing the transfer of the computer file "firmware.bin" to the NSW.

```
ftp> get config config.cfg
```

This is a sample FTP session saving the current configuration to a file called "config.cfg" on your computer.

If your (T)FTP client does not allow you to have a destination filename different than the source, you will need to rename them as the NSW only recognizes "config" and "ras". Be sure you keep unaltered copies of both files for later use.

**Be sure to upload the correct model firmware as uploading the wrong model firmware may damage your device.**

### 8.7.3 FTP Command Line Procedure

- 1 Launch the FTP client on your computer.
- 2 Enter open, followed by a space and the IP address of your NSW.
- 3 Press [ENTER] when prompted for a username.
- 4 Enter your password as requested (the default is "assigned by the NCC" when the NSW is registered with the NCC or "1234").
- 5 Enter bin to set transfer mode to binary.
- 6 Use put to transfer files from the computer to the NSW, for example, put firmware.bin ras transfers the firmware on your computer (firmware.bin) to the NSW and renames it to "ras". Similarly, put config.cfg config transfers the configuration file on your computer (config.cfg) to the NSW and renames it to "config". Likewise get config config.cfg transfers the configuration file on the NSW to your computer and renames it to "config.cfg". See [Table 22 on page 55](#) for more information on filename conventions.
- 7 Enter quit to exit the ftp prompt.

## 8.7.4 GUI-based FTP Clients

The following table describes some of the commands that you may see in GUI-based FTP clients.

General Commands for GUI-based FTP Clients

| COMMAND                  | DESCRIPTION                                                                                                                                                                                                                                                                                           |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Host Address             | Enter the address of the host server.                                                                                                                                                                                                                                                                 |
| Login Type               | Anonymous.<br><br>This is when a user I.D. and password is automatically supplied to the server for anonymous access. Anonymous logins will work only if your ISP or service administrator has enabled this option.<br><br>Normal.<br><br>The server requires a unique User ID and Password to login. |
| Transfer Type            | Transfer files in either ASCII (plain text format) or in binary mode. Configuration and firmware files should be transferred in binary mode.                                                                                                                                                          |
| Initial Remote Directory | Specify the default remote directory (path).                                                                                                                                                                                                                                                          |
| Initial Local Directory  | Specify the default local directory (path).                                                                                                                                                                                                                                                           |

# CHAPTER 9

## Diagnostic

### 9.1 Overview

This chapter explains the **Diagnostic** screen. You can use this screen to help you identify problems.

### 9.2 Diagnostic

Click **Management > Diagnostic** in the navigation panel to open this screen. Use this screen to ping IP addresses, run a traceroute, perform port tests or show the NSW's location between devices.

Figure 51 Management > Diagnostic

The screenshot shows the 'Diagnostic' screen with a tab labeled 'Diagnostic' and a sub-tab '- Info -'. Below this, there are two main sections: 'Ping Test' and 'Trace Route Test'. The 'Ping Test' section includes a dropdown for 'IPv4' (set to '-'), a 'Count' input field (set to '3'), and an 'IP Address/Host Name' input field. A 'Ping' button is located to the right of the input field. The 'Trace Route Test' section includes a dropdown for 'IPv4' (set to '-'), a 'TTL' input field (set to '30'), a 'Wait Time' input field (set to '2') followed by 'Seconds', a 'Queries' input field (set to '3'), and an 'IP Address/Host Name' input field. A 'Trace Route' button is located to the right of the input field.

The following table describes the labels in this screen.

Table 23 Management > Diagnostic

| LABEL                        | DESCRIPTION                                                                                                                                                                                                                   |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ping Test                    |                                                                                                                                                                                                                               |
| IPv4<br>(NSW100 Series only) | Select this option if you want to ping an IPv4 address, and select vlan to specify the ID number of the VLAN to which the Switch is to send ping requests. Otherwise, select - to send ping requests to all VLANs on the NSW. |

Table 23 Management &gt; Diagnostic (continued)

| LABEL                     | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                               |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Count                     | Enter the number of ICMP Echo Request (ping) messages the NSW continuously sends.                                                                                                                                                                                                                                                                                         |
| IP Address/Host Name      | <p>Type the IP address or host name of a device that you want to ping in order to test a connection.</p> <p>Click <b>Ping</b> to have the NSW ping the IP address.</p>                                                                                                                                                                                                    |
| Trace Route Test          |                                                                                                                                                                                                                                                                                                                                                                           |
| IPv4 (NSW100 Series only) | <p>Select this option if you want to trace the route packets take to a device with an IPv4 address, and select <b>vlan</b> to specify the ID number of the VLAN on which the NSW traces the path. Otherwise, select - to trace the path on any VLAN.</p> <p>The device to which you want to run a traceroute must belong to the VLAN you specify here.</p>                |
| TTL                       | Enter the Time To Live (TTL) value for the ICMP Echo Request packets. This is to set the maximum number of the hops (routers) a packet can travel through. Each router along the path will decrement the TTL value by one and forward the packets. When the TTL value becomes zero and the destination is not found, the router drops the packets and informs the sender. |
| Wait Time                 | Specify how many seconds the NSW waits for a response to a probe before running another traceroute.                                                                                                                                                                                                                                                                       |
| Queries                   | Specify how many times the NSW performs the traceroute function.                                                                                                                                                                                                                                                                                                          |
| IP Address/Host Name      | <p>Enter the IP address or host name of a device to which you want to perform a traceroute.</p> <p>Click <b>Trace Route</b> to have the NSW perform the traceroute function. This determines the path a packet takes to the specified device.</p>                                                                                                                         |

# CHAPTER 10

## Troubleshooting

This chapter offers some suggestions to solve problems you might encounter. The potential problems are divided into the following categories.

- [Power, Hardware Connections, and LEDs](#)
- [NSW Access and Login](#)
- [NSW Configuration](#)

### 10.1 Power, Hardware Connections, and LEDs

---

[The NSW does not turn on. None of the LEDs turn on.](#)

---

- 1 Make sure you are using the power adaptor or cord included with the NSW.
- 2 Make sure the power adaptor or cord is connected to the NSW and plugged in to an appropriate power source. Make sure the power source is turned on.
- 3 Disconnect and re-connect the power adaptor or cord to the NSW.
- 4 If the problem continues, contact the vendor.

---

[One of the LEDs does not behave as expected.](#)

---

- 1 Make sure you understand the normal behavior of the LED. See [Section 3.3 on page 22](#).
- 2 Check the hardware connections. See [Section 10.1 on page 60](#).
- 3 Inspect your cables for damage. Contact the vendor to replace any damaged cables.
- 4 Disconnect and re-connect the power adaptor or cord to the NSW.
- 5 If the problem continues, contact the vendor.

## 10.2 NSW Access and Login

---

I forgot the IP address for the NSW.

---

- 1 The default IP address is [http://DHCP-assigned IP](#).
- 2 Use the NCC, the ZON utility, or the console port to find the IP address.
- 3 If you're using the console port, use the command line "show ip" to find the IP address.

---

I forgot the username and/or password.

---

- 1 The default username is admin and the default password is assigned by the NCC when the NSW is registered with the NCC or 1234.
- 2 If this does not work, you have to reset the device to its factory defaults. See [Section 4.6 on page 28](#).

---

I cannot see or access the Login screen in the web configurator.

---

- 1 Make sure you are using the correct IP address.
  - The default IP address is [http://DHCP-assigned IP](#).
  - If you changed the IP address, use the new IP address.
  - If you changed the IP address and have forgotten it, see the troubleshooting suggestions for [I forgot the IP address for the NSW](#).
- 2 Check the hardware connections, and make sure the LEDs are behaving as expected. See [Section 3.3 on page 22](#).
- 3 Make sure your Internet browser does not block pop-up windows and has JavaScripts and Java enabled.
- 4 Make sure your computer is in the same subnet as the NSW. (If you know that there are routers between your computer and the NSW, skip this step.)
- 5 Reset the device to its factory defaults, and try to access the NSW with the default IP address. See [Section 4.6 on page 28](#).
- 6 If the problem continues, contact the vendor.

---

I can see the Login screen, but I cannot log in to the NSW.

---

- 1 Make sure you have entered the user name and password correctly. The default user name is admin, and the default password is assigned by the NCC when the NSW is registered with the NCC or 1234. These fields are case-sensitive, so make sure [Caps Lock] is not on.
- 2 Disconnect and re-connect the cord to the NSW.
- 3 If this does not work, you have to reset the device to its factory defaults. See [Section 4.6 on page 28](#).

---

### Pop-up Windows, JavaScripts and Java Permissions

---

In order to use the web configurator you need to allow:

- Web browser pop-up windows from your device.
- JavaScripts (enabled by default).
- Java permissions (enabled by default).

## 10.3 NSW Configuration

---

### I cannot access the NCC portal.

---

- Check that you are using the correct URL:
  - NCC: <https://nebula.zyxel.com/>
- Make sure your computer's Ethernet card is installed and functioning properly.
- Check that you have Internet access. In your computer, click **Start, (All) Programs, Accessories** and then **Command Prompt**. In the **Command Prompt** window, type 'ping' followed by a website such as 'zyxel.com'. If you get a reply try to ping 'nebula.zyxel.com'.
- Make sure you are using the correct web browser. Browsers supported are:
  - Firefox 21 or later
  - Chrome 26.0 or later
  - IE 10 or later
  - Internet Explorer 9.0 or later
  - Safari 6.0 or later

---

### I cannot log into the NCC portal.

---

- Open your web browser and go to <https://portal.myzyxel.com>. Sign in with the correct email and password. Click **Not a Member Yet** if you don't have a myZyxel.com account and create an account.
- Then go to <https://nebula.zyxel.com> using a supported web browser.

# APPENDIX A

## Customer Support

In the event of problems that cannot be solved by using this manual, you should contact your vendor. If you cannot contact your vendor, then contact a Zyxel office for the region in which you bought the device.

See <http://www.zyxel.com/homepage.shtml> and also [http://www.zyxel.com/about\\_zyxel/zyxel\\_worldwide.shtml](http://www.zyxel.com/about_zyxel/zyxel_worldwide.shtml) for the latest information.

Please have the following information ready when you contact an office.

### Required Information

- Product model and serial number.
- Warranty Information.
- Date that you received your device.
- Brief description of the problem and the steps you took to solve it.

### Corporate Headquarters (Worldwide)

#### Taiwan

- Zyxel Communications Corporation
- <http://www.zyxel.com>

### Asia

#### China

- Zyxel Communications (Shanghai) Corp.
- Zyxel Communications (Beijing) Corp.
- Zyxel Communications (Tianjin) Corp.
- <http://www.zyxel.cn>

#### India

- Zyxel Technology India Pvt Ltd
- <http://www.zyxel.in>

#### Kazakhstan

- Zyxel Kazakhstan
- <http://www.zyxel.kz>

## **Korea**

- Zyxel Korea Corp.
- <http://www.zyxel.kr>

## **Malaysia**

- Zyxel Malaysia Sdn Bhd.
- <http://www.zyxel.com.my>

## **Pakistan**

- Zyxel Pakistan (Pvt.) Ltd.
- <http://www.zyxel.com.pk>

## **Philippines**

- Zyxel Philippines
- <http://www.zyxel.com.ph>

## **Singapore**

- Zyxel Singapore Pte Ltd.
- <http://www.zyxel.com.sg>

## **Taiwan**

- Zyxel Communications Corporation
- <http://www.zyxel.com/tw/zh/>

## **Thailand**

- Zyxel Thailand Co., Ltd
- <http://www.zyxel.co.th>

## **Vietnam**

- Zyxel Communications Corporation-Vietnam Office
- <http://www.zyxel.com/vn/vi>

## **Europe**

### **Austria**

- Zyxel Deutschland GmbH
- <http://www.zyxel.de>

### **Belarus**

- Zyxel BY
- <http://www.zyxel.by>

## Belgium

- Zyxel Communications B.V.
- <http://www.zyxel.com/be/nl/>
- <http://www.zyxel.com/be/fr/>

## Bulgaria

- Zyxel България
- <http://www.zyxel.com/bg/bg/>

## Czech Republic

- Zyxel Communications Czech s.r.o
- <http://www.zyxel.cz>

## Denmark

- Zyxel Communications A/S
- <http://www.zyxel.dk>

## Estonia

- Zyxel Estonia
- <http://www.zyxel.com/ee/et/>

## Finland

- Zyxel Communications
- <http://www.zyxel.fi>

## France

- Zyxel France
- <http://www.zyxel.fr>

## Germany

- Zyxel Deutschland GmbH
- <http://www.zyxel.de>

## Hungary

- Zyxel Hungary & SEE
- <http://www.zyxel.hu>

## Italy

- Zyxel Communications Italy
- <http://www.zyxel.it/>

## Latvia

- Zyxel Latvia
- <http://www.zyxel.com/lv/lv/homepage.shtml>

## Lithuania

- Zyxel Lithuania
- <http://www.zyxel.com/lt/lt/homepage.shtml>

## Netherlands

- Zyxel Benelux
- <http://www.zyxel.nl>

## Norway

- Zyxel Communications
- <http://www.zyxel.no>

## Poland

- Zyxel Communications Poland
- <http://www.zyxel.pl>

## Romania

- Zyxel Romania
- <http://www.zyxel.com/ro/ro>

## Russia

- Zyxel Russia
- <http://www.zyxel.ru>

## Slovakia

- Zyxel Communications Czech s.r.o. organizacna zlozka
- <http://www.zyxel.sk>

## Spain

- Zyxel Communications ES Ltd
- <http://www.zyxel.es>

## Sweden

- Zyxel Communications
- <http://www.zyxel.se>

## Switzerland

- Studerus AG

- <http://www.zyxel.ch/>

## **Turkey**

- Zyxel Turkey A.S.
- <http://www.zyxel.com.tr>

## **UK**

- Zyxel Communications UK Ltd.
- <http://www.zyxel.co.uk>

## **Ukraine**

- Zyxel Ukraine
- <http://www.ua.zyxel.com>

## **Latin America**

### **Argentina**

- Zyxel Communication Corporation
- <http://www.zyxel.com/ec/es/>

### **Brazil**

- Zyxel Communications Brasil Ltda.
- <https://www.zyxel.com/br/pt/>

### **Ecuador**

- Zyxel Communication Corporation
- <http://www.zyxel.com/ec/es/>

## **Middle East**

### **Israel**

- Zyxel Communication Corporation
- <http://il.zyxel.com/homepage.shtml>

### **Middle East**

- Zyxel Communication Corporation
- <http://www.zyxel.com/me/en/>

## North America

### USA

- Zyxel Communications, Inc. - North America Headquarters
- <http://www.zyxel.com/us/en/>

## Oceania

### Australia

- Zyxel Communications Corporation
- <http://www.zyxel.com/au/en/>

## Africa

### South Africa

- Nology (Pty) Ltd.
- <http://www.zyxel.co.za>

# APPENDIX B

## Legal Information

### Copyright

Copyright © 2017 by Zyxel Communications Corporation.

The contents of this publication may not be reproduced in any part or as a whole, transcribed, stored in a retrieval system, translated into any language, or transmitted in any form or by any means, electronic, mechanical, magnetic, optical, chemical, photocopying, manual, or otherwise, without the prior written permission of Zyxel Communications Corporation.

Published by Zyxel Communications Corporation. All rights reserved.

### Disclaimer

Zyxel does not assume any liability arising out of the application or use of any products, or software described herein. Neither does it convey any license under its patent rights nor the patent rights of others. Zyxel further reserves the right to make changes in any products described herein without notice. This publication is subject to change without notice.

### Regulatory Notice and Statement

#### United States of America



The following information applies if you use the product within USA area.

#### Federal Communications Commission (FCC) EMC Statement

- This device complies with Part 15 of FCC rules. Operation is subject to the following two conditions:
  - (1) This device may not cause harmful interference.
  - (2) This device must accept any interference received, including interference that may cause undesired operations.
- Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
- 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 when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

#### Canada

The following information applies if you use the product within Canada area.

#### Industry Canada ICES statement

CAN ICES-3 (A)/NMB-3(A)

#### European Union



The following information applies if you use the product within the European Union.

#### CE EMC statement

WARNING: This equipment is compliant with Class A of EN55032. In a residential environment this equipment may cause radio interference.

## List of National Codes

| COUNTRY        | ISO 3166 2 LETTER CODE | COUNTRY        | ISO 3166 2 LETTER CODE |
|----------------|------------------------|----------------|------------------------|
| Austria        | AT                     | Liechtenstein  | LI                     |
| Belgium        | BE                     | Lithuania      | LT                     |
| Bulgaria       | BG                     | Luxembourg     | LU                     |
| Croatia        | HR                     | Malta          | MT                     |
| Cyprus         | CY                     | Netherlands    | NL                     |
| Czech Republic | CZ                     | Norway         | NO                     |
| Denmark        | DK                     | Poland         | PL                     |
| Estonia        | EE                     | Portugal       | PT                     |
| Finland        | FI                     | Romania        | RO                     |
| France         | FR                     | Serbia         | RS                     |
| Germany        | DE                     | Slovakia       | SK                     |
| Greece         | GR                     | Slovenia       | SI                     |
| Hungary        | HU                     | Spain          | ES                     |
| Iceland        | IS                     | Sweden         | SE                     |
| Ireland        | IE                     | Switzerland    | CH                     |
| Italy          | IT                     | Turkey         | TR                     |
| Latvia         | LV                     | United Kingdom | GB                     |

## Safety Warnings

- To avoid possible eye injury, do NOT look into an operating fiber-optic module's connector.
- 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 obstruct the device ventilation slots as insufficient airflow may harm your device. For example, do not place the device in an enclosed space such as a box or on a very soft surface such as a bed or sofa.
- 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.
- Do not remove the plug and connect it to a power outlet by itself; always attach the plug to the power adaptor first before connecting it to a power outlet.
- 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.
- Please use the provided or designated connection cables/power cables/ adaptors. Connect it to the right supply voltage (for example, 110V AC in North America or 230V AC in Europe). If the power adaptor or cord is damaged, it might cause electrocution. Remove it from the device and the power source, repairing the power adapter or cord is prohibited. 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.
- Caution: Risk of explosion if battery is replaced by an incorrect type, dispose of used batteries according to the instruction. Dispose them at the applicable collection point for the recycling of electrical and electronic device. For detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the store where you purchased the product.
- Use ONLY power wires of the appropriate wire gauge for your device. Connect it to a power supply of the correct voltage.
- Fuse Warning! Replace a fuse only with a fuse of the same type and rating.
- The POE (Power over Ethernet) devices that supply or receive power and their connected Ethernet cables must all be completely indoors.
- The following warning statements apply, where the disconnect device is not incorporated in the device or where the plug on the power supply cord is intended to serve as the disconnect device,
  - For permanently connected devices, a readily accessible disconnect device shall be incorporated external to the device;
  - For pluggable devices, the socket-outlet shall be installed near the device and shall be easily accessible.
- This device must be grounded. Never defeat the ground conductor or operate the device in the absence of a suitably installed ground conductor. Contact the appropriate electrical inspection authority or an electrician if you are uncertain that suitable grounding is available.
- When connecting or disconnecting power to hot-pluggable power supplies, if offered with your system, observe the following guidelines:
  - Install the power supply before connecting the power cable to the power supply.
  - Unplug the power cable before removing the power supply.
  - If the system has multiple sources of power, disconnect power from the system by unplugging all power cables from the power supply.
- CLASS 1 LASER PRODUCT (for products with mini-GBIC slots or laser products, such as fiber-optic transceiver and GPON products).
- PRODUCT COMPLIES WITH 21 CFR 1040.10 AND 1040.11. (for products with mini-GBIC slots or laser products, such as fiber-optic transceiver and GPON products)
- APPAREIL À LASER DE CLASS 1 (for products with mini-GBIC slots or laser products, such as fiber-optic transceiver and GPON products).
- PRODUIT CONFORME SELON 21 CFR 1040.10 ET 1040.11. (for products with mini-GBIC slots or laser products, such as fiber-optic transceiver and GPON products)

## Environment Statement

### European Union - Disposal and Recycling Information

The symbol below means that according to local regulations your product and/or its battery shall be disposed of separately from domestic waste. If this product is end of life, take it to a recycling station designated by local authorities. At the time of disposal, the separate collection of your product and/or its battery will help save natural resources and ensure that the environment is sustainable development.

Die folgende Symbol bedeutet, dass Ihr Produkt und/oder seine Batterie gemäß den örtlichen Bestimmungen getrennt vom Hausmüll entsorgt werden muss. Wenden Sie sich an eine Recyclingstation, wenn dieses Produkt das Ende seiner Lebensdauer erreicht hat. Zum Zeitpunkt der Entsorgung wird die getrennte Sammlung von Produkt und/oder seiner Batterie dazu beitragen, natürliche Ressourcen zu sparen und die Umwelt und die menschliche Gesundheit zu schützen.

El símbolo de abajo indica que según las regulaciones locales, su producto y/o su batería deberán depositarse como basura separada de la doméstica. Cuando este producto alcance el final de su vida útil, llévelo a un punto limpio. Cuando llegue el momento de desechar el producto, la recogida por separado éste y/o su batería ayudará a salvar los recursos naturales y a proteger la salud humana y medioambiental.

Le symbole ci-dessous signifie que selon les réglementations locales votre produit et/ou sa batterie doivent être éliminés séparément des ordures ménagères. Lorsque ce produit atteint sa fin de vie, amenez-le à un centre de recyclage. Au moment de la mise au rebut, la collecte séparée de votre produit et/ou de sa batterie aidera à économiser les ressources naturelles et protéger l'environnement et la santé humaine.

Il simbolo sotto significa che secondo i regolamenti locali il vostro prodotto e/o batteria deve essere smaltito separatamente dai rifiuti domestici. Quando questo prodotto raggiunge la fine della vita di servizio portarlo a una stazione di riciclaggio. Al momento dello smaltimento, la raccolta separata del vostro prodotto e/o della sua batteria aiuta a risparmiare risorse naturali e a proteggere l'ambiente e la salute umana.

Symbolen innebär att enligt lokal lagstiftning ska produkten och/eller dess batteri kastas separat från hushållsavfallet. När den här produkten når slutet av sin livslängd ska du ta den till en återvinningsstation. Vid tiden för kasseringen bidrar du till en bättre miljö och mänsklig hälsa genom att göra dig av med den på ett återvinningsställe.



## Environmental Product Declaration

| Български (Bulgarian)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Čeština (Czech)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Dansk (Danish)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Deutsch (German)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Екологична продуктова декларация</b><br><b>RoHS</b> Директива 2011/65/EC<br><b>WEEE</b> Директива 2012/19/EC<br><b>PPW</b> Директива 94/62/EC<br><b>REACH</b> РЕГЛАМЕНТ (ЕО) № 1907/2006<br><br>Име/ : Richard Hsu / Quality Management<br>подпис : Division Senior Manager<br>Дата (dd/mm/yyyy): 01/10/2014<br>                                                                      | <b>Environmentální prohlášení o produktu</b><br><b>RoHS</b> Směrnice 2011/65/EU<br><b>WEEE</b> Směrnice 2012/19/EU<br><b>PPW</b> Směrnice 94/62/ES<br><b>REACH</b> Nařízení (ES) č. 1907/2006<br><br>Jméno/ : Richard Hsu / Quality Management<br>titul : Division Senior Manager<br>Podpis : Datum (dd/mm/yyyy): 01/10/2014<br>                                           | <b>Miljøvaredeklaration</b><br><b>RoHS</b> Direktiv 2011/65/EU<br><b>WEEE</b> Direktiv 2012/19/EU<br><b>PPW</b> Direktiv 94/62/EF<br><b>REACH</b> Forordning (EF) nr. 1907/2006<br><br>Navn/ : Richard Hsu / Quality Management<br>titel : Division Senior Manager<br>Underskrift : Dato (dd/mm/åååå): 01/10/2014<br>                                                                | <b>Produkt-Umweltdeklaration</b><br><b>RoHS</b> Richtlinie 2011/65/EU<br><b>WEEE</b> Richtlinie 2012/19/EU<br><b>PPW</b> Richtlinie 94/62/EG<br><b>REACH</b> VERORDNUNG (EG) Nr. 1907/2006<br><br>Name/ : Richard Hsu / Quality Management<br>titel : Division Senior Manager<br>Unterschrift : Datum (gg/mm/jj): 2014/10/01<br>                                                  |
| <b>Eesti keel (Estonian)</b><br><b>Toote keskkonnadeklaratsioon</b><br><b>RoHS</b> Direktiiv 2011/65/EL<br><b>WEEE</b> Direktiiv 2012/19/EU<br><b>PPW</b> Direktiiv 94/62/EU<br><b>REACH</b> MÄÄRUS (EÜ) nr 1907/2006<br><br>Nimil/ : Richard Hsu / Quality Management<br>pealkiri : Division Senior Manager<br>Allkiri : Kuupäev (pp/kk/aaaa): 01/10/2014<br>                           | <b>English</b><br><b>Environmental product declaration</b><br><b>RoHS</b> Directive 2011/65/EU<br><b>WEEE</b> Directive 2012/19/EU<br><b>PPW</b> Directive 94/62/EC<br><b>REACH</b> Regulation (EC) No 1907/2006<br><br>Name/ : Richard Hsu / Quality Management<br>title : Division Senior Manager<br>Signature : Date (dd/mm/yyyy): 01/10/2014<br>                       | <b>Español (Spanish)</b><br><b>Declaraciones Ambientales de Producto</b><br><b>RoHS</b> Directiva 2011/65/UE<br><b>WEEE</b> Directiva 2012/19/UE<br><b>PPW</b> Directiva 94/62/CE<br><b>REACH</b> REGLAMENTO (CE) nº 1907/2006<br><br>Nombre/ : Richard Hsu / Quality Management<br>título : Division Senior Manager<br>Firma : Fecha (aaaa/mm/dd): 2014/10/01<br>                   | <b>Français (French)</b><br><b>Profil environnemental de produit</b><br><b>RoHS</b> Directive 2011/65/UE<br><b>WEEE</b> Directive 2012/19/UE<br><b>PPW</b> Directive 94/62/CE<br><b>REACH</b> REGLEMENT (CE) N° 1907/2006<br><br>Nom/ : Richard Hsu / Quality Management<br>titre : Division Senior Manager<br>Signature : Date (aaaa/mm/jj): 2014/10/01<br>                      |
| <b>Hrvatski (Croatian)</b><br><b>Deklaraciju o zbrinjavanju proizvoda</b><br><b>RoHS</b> Direktiva 2011/65/EU<br><b>WEEE</b> Direktiva 2012/19/EU<br><b>PPW</b> Direktiva 94/62/EZ<br><b>REACH</b> Uredbe (EZ) br. 1907/2006<br><br>Ime/ : Richard Hsu / Quality Management<br>naslov : Division Senior Manager<br>Potpis : Datum (dd/mm/yyyy): 01/10/2014<br>                         | <b>Italiano (Italian)</b><br><b>Dichiarazione ambientale di prodotto</b><br><b>RoHS</b> Direttiva 2011/65/UE<br><b>WEEE</b> Direttiva 2012/19/UE<br><b>PPW</b> Direttiva 94/62/CE<br><b>REACH</b> REGOLAMENTO (CE) n. 1907/2006<br><br>Nome/ : Richard Hsu / Quality Management<br>titolo : Division Senior Manager<br>Firma : Data (aaaa/mm/gg): 2014/10/01<br>         | <b>Latviešu valoda (Latvian)</b><br><b>Produkta vides ietekmējuma deklarācija</b><br><b>RoHS</b> Direktīva 2011/65/ES<br><b>WEEE</b> Direktīva 2012/19/ES<br><b>PPW</b> Direktīva 94/62/EK<br><b>REACH</b> Regula (EK) Nr. 1907/2006<br><br>Nosaukums : Richard Hsu / Quality Management<br>a/ tituls : Division Senior Manager<br>Paraksts : Datums (dd/mm/gggg): 01/10/2014<br>  | <b>Lietuvių kalba (Lithuanian)</b><br><b>Aplinkosauginę gaminių deklaraciją</b><br><b>RoHS</b> Direktyva 2011/65/ES<br><b>WEEE</b> Direktyva 2012/19/ES<br><b>PPW</b> Direktyva 94/62/EB<br><b>REACH</b> REGLAMENTAS (EB) Nr. 1907/2006<br><br>Vardas/ : Richard Hsu / Quality Management<br>titulas : Division Senior Manager<br>Parašas : Data (aaaa/mm/mmm): 01/10/2014<br>  |
| <b>Magyar (Hungarian)</b><br><b>Környezetvédelmi terméknyilatkozatot</b><br><b>RoHS</b> 2011/65/EU irányelve<br><b>WEEE</b> 2012/19/EU irányelve<br><b>PPW</b> 94/62/EK irányelve<br><b>REACH</b> 1907/2006/EK Rendelet<br><br>Név/ : Richard Hsu / Quality Management<br>cím : Division Senior Manager<br>Aláírás : Dátum (éééé/hh/nn): 2014/10/01<br>                              | <b>Maltese (Maltese)</b><br><b>Dikjarazzjoni Ambjentali dwar il-Prodott</b><br><b>RoHS</b> Direttiva 2011/65/UE<br><b>WEEE</b> Direttiva 2012/19/UE<br><b>PPW</b> Direttiva 94/62/KE<br><b>REACH</b> REGOLAMENTO (KE) NRU 1907/2006<br><br>Isem/ : Richard Hsu / Quality Management<br>titolu : Division Senior Manager<br>Firma : Data (ssss/xx/jj): 2014/10/01<br>   | <b>Nederlands (Dutch)</b><br><b>Milieuproduktverklaring</b><br><b>RoHS</b> Richtlijn 2011/65/EU<br><b>WEEE</b> Richtlijn 2012/19/EU<br><b>PPW</b> Richtlijn 94/62/EG<br><b>REACH</b> Verordening (EG) nr. 1907/2006<br><br>Naam/ : Richard Hsu / Quality Management<br>titel : Division Senior Manager<br>Handtekening : Datum (dd/mm/jaar): 01/10/2014<br>                      | <b>Polski (Polish)</b><br><b>Deklarację środowiskową produktu</b><br><b>RoHS</b> Dyrektywa 2011/65/UE<br><b>WEEE</b> Dyrektywa 2012/19/UE<br><b>PPW</b> Dyrektywa 94/62/WE<br><b>REACH</b> Rozporządzenie (WE) nr 1907/2006<br><br>Nazwisko : Richard Hsu / Quality Management<br>tytuł : Division Senior Manager<br>Podpis : Data (rrr/mm/vdd): 2014/10/01<br>               |
| <b>Português (Portuguese)</b><br><b>Declaração ambiental do produto</b><br><b>RoHS</b> Directiva 2011/65/UE<br><b>WEEE</b> Directiva 2012/19/UE<br><b>PPW</b> Directiva 94/62/CE<br><b>REACH</b> Regulamento (CE) n.º 1907/2006<br><br>Nome/ : Richard Hsu / Quality Management<br>título : Division Senior Manager<br>Assinatura : Data (dd/mm/aaaa): 01/10/2014<br>                | <b>Română (Romanian)</b><br><b>Declarație de mediu privind produsele</b><br><b>RoHS</b> Directiva 2011/65/UE<br><b>WEEE</b> Directiva 2012/19/UE<br><b>PPW</b> Directiva 94/62/CE<br><b>REACH</b> REGULAMENTUL (CE) NR 907/2006<br><br>Numele/ : Richard Hsu / Quality Management<br>titlu : Division Senior Manager<br>Semnătura : Data (zz/ll/aaaa): 01/10/2014<br>  | <b>Slovenčina (Slovak)</b><br><b>Vyhlasenie o environmentálnom výrobku</b><br><b>RoHS</b> Smernica 2011/65/EU<br><b>WEEE</b> Smernica 2012/19/EU<br><b>PPW</b> Smernica 94/62/ES<br><b>REACH</b> Nariadenie (ES) č. 1907/2006<br><br>Meno/ : Richard Hsu / Quality Management<br>titul : Division Senior Manager<br>Podpis : Dátum (dd/mm/yyyy): 01/10/2014<br>                  | <b>Slovenščina (Slovene)</b><br><b>Okoljsko deklaracijo izdelka</b><br><b>RoHS</b> Direktiva 2011/65/EU<br><b>WEEE</b> Direktiva 2012/19/EU<br><b>PPW</b> Direktiva 94/62/ES<br><b>REACH</b> Uredba (ES) št. 1907/2006<br><br>Ime/ : Richard Hsu / Quality Management<br>naziv : Division Senior Manager<br>Podpis : Datum (dd/mm/llll): 01/10/2014<br>                       |
| <b>Suomi (Finnish)</b><br><b>Standardiin perustuva ympäristötutusteloste</b><br><b>RoHS</b> Direktiivi 2011/65/EU<br><b>WEEE</b> Direktiivi 2012/19/EU<br><b>PPW</b> Direktiivi 94/62/EY<br><b>REACH</b> ASETUS (EY) N:o 1907/2006<br><br>Nimil/ : Richard Hsu / Quality Management<br>otsikko : Division Senior Manager<br>Allekirjoitus : Päivämäärä (pp/kk/vvvv): 01/10/2014<br>  | <b>Svenska (Swedish)</b><br><b>Miljöproduktdeklaration</b><br><b>RoHS</b> Direktiv 2011/65/EU<br><b>WEEE</b> Direktiv 2012/19/EU<br><b>PPW</b> Direktiv 94/62/EG<br><b>REACH</b> Förordning (EG) nr 1907/2006<br><br>Namn/ : Richard Hsu / Quality Management<br>titel : Division Senior Manager<br>Namnteckning : Datum (dd/mm/åååå): 01/10/2014<br>                  | <b>Ελληνικά (Greek)</b><br><b>Περιβαλλοντική δήλωση προϊόντος</b><br><b>RoHS</b> Οδηγία 2011/65/ΕΕ<br><b>WEEE</b> Οδηγία 2012/19/ΕΕ<br><b>PPW</b> Οδηγία 94/62/ΕΚ<br><b>REACH</b> Κανονισμός (ΕΚ) αριθ. 1907/2006<br><br>Άννομα/ : Richard Hsu / Quality Management<br>τίτλος : Division Senior Manager<br>Υπογραφή : Ημερομηνία (ηη/μμ/εεεε): 01/10/2014<br>                    | <b>Norsk (Norwegian)</b><br><b>Miljødeklarasjon</b><br><b>RoHS</b> Direktiv 2011/65/EU<br><b>WEEE</b> Direktiv 2012/19/EU<br><b>PPW</b> Direktiv 94/62/EF<br><b>REACH</b> Forordning (EF) nr. 1907/2006<br><br>Navn/ : Richard Hsu / Quality Management<br>tittel : Division Senior Manager<br>Signatur : Dato (dd/mm/åååå): 01/10/2014<br>                                   |

## 台灣

### 警告使用者：

- 這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。」

### 安全警告 - 為了您的安全，請先閱讀以下警告及指示：

- 請勿將此產品接近水、火焰或放置在高溫的環境。
- 避免設備接觸
  - 任何液體 - 切勿讓設備接觸水、雨水、高濕度、污水腐蝕性的液體或其他水份。
  - 灰塵及污物 - 切勿接觸灰塵、污物、沙土、食物或其他不適合的材料。
- 雷雨天氣時，不要安裝，使用或維修此設備。有遭受電擊的風險。
- 切勿重摔或撞擊設備，並勿使用不正確的電源變壓器。
- 若接上不正確的電源變壓器會有爆炸的風險。。
- 請勿隨意更換產品內的電池。
- 如果更換不正確之電池型式，會有爆炸的風險，請依製造商說明書處理使用過之電池。
- 請將廢電池丟棄在適當的電器或電子設備回收處。
- 請勿將設備解體。
- 請勿阻礙設備的散熱孔，空氣對流不足將會造成設備損害。
- 請插在正確的電壓供給插座（如：北美 / 台灣電壓 110V AC，歐洲是 230V AC）。
- 假若電源變壓器或電源變壓器的纜線損壞，請從插座拔除，若您還繼續插電使用，會有觸電死亡的風險。
- 請勿試圖修理電源變壓器或電源變壓器的纜線，若有毀損，請直接聯絡您購買的店家，購買一個新的電源變壓器。
- 請勿將此設備安裝於室外，此設備僅適合放置於室內。
- 請勿隨一般垃圾丟棄。
- 請參閱產品背貼上的設備額定功率。
- 請參考產品型錄或是彩盒上的作業溫度。
- 設備必須接地，接地導線不允許被破壞或沒有適當安裝接地導線，如果不確定接地方式是否符合要求可聯繫相應的電氣檢驗機構檢驗。
- 如果您提供的系統中有提供熱插拔電源，連接或斷開電源請遵循以下指導原則
  - 先連接電源線至設備連，再連接電源。
  - 先斷開電源再拔除連接至設備的電源線。
  - 如果系統有多個電源，需拔除所有連接至電源的電源線再關閉設備電源。
- 產品沒有斷電裝置或者採用電源線的插頭視為斷電裝置的一部分，以下警語將適用：
  - 對永久連接之設備，在設備外部須安裝可觸及之斷電裝置；
  - 對插接式之設備，插座必須接近安裝之地點而且是易於觸及的。

## About the Symbols

Various symbols are used in this product to ensure correct usage, to prevent danger to the user and others, and to prevent property damage. The meaning of these symbols are described below. It is important that you read these descriptions thoroughly and fully understand the contents.

### Explanation of the Symbols

| SYMBOL                                                                              | EXPLANATION                                                                                                                                                    |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | Alternating current (AC):<br>AC is an electric current in which the flow of electric charge periodically reverses direction.                                   |
|  | Direct current (DC):<br>DC is the unidirectional flow or movement of electric charge carriers.                                                                 |
|  | Earth; ground:<br>A wiring terminal intended for connection of a Protective Earthing Conductor.                                                                |
|  | Class II equipment:<br>The method of protection against electric shock in the case of class II equipment is either double insulation or reinforced insulation. |

## Viewing Certifications

Go to <http://www.zyxel.com> to view this product's documentation and certifications.

## Zyxel Limited Warranty

Zyxel warrants to the original end user (purchaser) that this product is free from any defects in material or workmanship for a specific period (the Warranty Period) from the date of purchase. The Warranty Period varies by region. Check with your vendor and/or the authorized Zyxel local

distributor for details about the Warranty Period of this product. During the warranty period, and upon proof of purchase, should the product have indications of failure due to faulty workmanship and/or materials, Zyxel will, at its discretion, repair or replace the defective products or components without charge for either parts or labor, and to whatever extent it shall deem necessary to restore the product or components to proper operating condition. Any replacement will consist of a new or re-manufactured functionally equivalent product of equal or higher value, and will be solely at the discretion of Zyxel. This warranty shall not apply if the product has been modified, misused, tampered with, damaged by an act of God, or subjected to abnormal working conditions.

### Note

Repair or replacement, as provided under this warranty, is the exclusive remedy of the purchaser. This warranty is in lieu of all other warranties, express or implied, including any implied warranty of merchantability or fitness for a particular use or purpose. Zyxel shall in no event be held liable for indirect or consequential damages of any kind to the purchaser.

To obtain the services of this warranty, contact your vendor. You may also refer to the warranty policy for the region in which you bought the device at [http://www.zyxel.com/web/support\\_warranty\\_info.php](http://www.zyxel.com/web/support_warranty_info.php).

## Registration

Register your product online to receive e-mail notices of firmware upgrades and information at [www.zyxel.com](http://www.zyxel.com) for global products, or at [www.us.zyxel.com](http://www.us.zyxel.com) for North American products.

## Trademarks

ZyNOS (Zyxel Network Operating System) and ZON (Zyxel One Network) are registered trademarks of Zyxel Communications, Inc. Other trademarks mentioned in this publication are used for identification purposes only and may be properties of their respective owners.

## Open Source Licenses

This product contains in part some free software distributed under GPL license terms and/or GPL like licenses. Open source licenses are provided with the firmware package. You can download the latest firmware at [www.zyxel.com](http://www.zyxel.com). To obtain the source code covered under those Licenses, please contact [support@zyxel.com.tw](mailto:support@zyxel.com.tw) to get it.

# Index

## Numbers

802.1P priority [40](#)

## A

applications  
  backbone [9](#)  
  bridging [10](#)  
  IEEE 802.1Q VLAN [11](#)  
auto-crossover [18](#)

## B

back up, configuration file [54](#)  
basic settings [32](#)

## C

certifications  
  viewing [73](#)  
CNC  
  portal [62](#)  
configuration  
  change running config [51](#)  
  saving [27](#)  
configuration file  
  backup [54](#)  
  restore [53](#)  
  saving [51](#)  
console port [20](#)  
contact information [63](#)  
copyright [69](#)  
customer support [63](#)

## D

default Ethernet settings [18](#)  
default IP [9](#), [35](#)  
diagnostics [58](#)  
  ping [58](#)  
disclaimer [69](#)  
DNS [41](#)  
DNS (Domain Name System) [41](#)  
Domain Name System [41](#)  
dual firmware images [52](#)

## E

Ethernet MAC [33](#)

## F

FCC interference statement [69](#)  
file transfer using FTP  
  command example [56](#)  
filename convention, configuration  
  configuration  
    file names [55](#)  
firmware [33](#)  
  upgrade [52](#)  
front panel [17](#)  
FTP [55](#)  
  file transfer procedure [56](#)

## G

getting help [29](#)  
Gigabit ports [17](#)

## H

hardware installation [13](#)  
hardware monitor [33](#)  
hardware overview [17](#)

## I

installation  
    desktop [13](#)  
    precautions [14](#)  
    rack-mounting [14](#)  
    transceivers [19](#)  
installation scenarios [13](#)  
IP address [36, 37](#)  
IP setup [34](#)  
IP subnet mask [36, 37](#)

## L

LEDs [22](#)  
lockout [28](#)  
login [25](#)

## M

MAC [33](#)  
MAC (Media Access Control) [33](#)  
MAC address [33](#)  
maintenance  
    configuration backup [54](#)  
    firmware [52](#)  
    restoring configuration [53](#)  
maintenance [49](#)  
    current configuration [50](#)  
    main screen [50](#)  
management IP address [35, 36, 37](#)  
managing the device  
    good habits [12](#)  
    using FTP. See FTP. [11](#)  
    using Telnet. See command interface. [11](#)

using the command interface. See command interface. [11](#)

MDIX (Media Dependent Interface Crossover) [18](#)  
Media Access Control [33](#)  
mounting brackets [14](#)

## N

network applications [9](#)

## P

ping, test connection [58](#)  
port setup [39](#)  
port VLAN ID, see PVID [47](#)  
ports  
    speed/duplex [40](#)  
power  
    voltage [34](#)  
power connector [21](#)  
power status [34](#)  
product registration [74](#)

## R

rack-mounting [14](#)  
rear panel connections [21](#)  
reboot  
    load configuration [51](#)  
reboot system [51](#)  
registration  
    product [74](#)  
resetting [28, 50](#)  
    to factory default settings [50](#)  
restoring configuration [28, 53](#)  
rubber feet [13](#)  
running configuration [50](#)  
    erase [50](#)  
    reset [50](#)

## S

- save configuration [27, 51](#)
- Small Form-factor Pluggable (SFP) [19](#)
- static VLAN [44](#)
  - control [46](#)
  - tagging [46](#)
- status [26, 30](#)
  - power [34](#)
  - VLAN [42](#)
- switch lockout [28](#)
- switch reset [28](#)
- system information [32](#)
- system reboot [51](#)

## T

- Tech-Support [54](#)
  - log enhancement [54](#)
- temperature indicator [34](#)
- terminal emulation [20, 21](#)
- trademarks [74](#)
- transceiver MultiSource Agreement (MSA) [19](#)
- transceivers [19](#)
  - installation [19](#)
  - removal [20](#)

## U

- user name [25](#)
  - default [25](#)

## V

- ventilation holes [13](#)
- VID [35, 38, 43](#)
- VLAN
  - number of VLANs [43](#)
  - port number [43](#)
  - port settings [46](#)
  - PVID [47](#)
  - static VLAN [44](#)

- status [42, 43](#)
- trunking [48](#)
- VLAN number [35, 36, 37, 38](#)
- VLAN trunking [48](#)
- VT100 [21](#)

## W

- warranty [73](#)
  - note [74](#)
- web configurator
  - getting help [29](#)
  - home [26](#)
  - login [25](#)
  - logout [28](#)

## Z

- ZyNOS (ZyXEL Network Operating System) [55](#)