**ZYXEL**

Your Networking Ally

User's Guide

NSW Series

Nebula Cloud-Managed (PoE) Switch

Default Login Details	
LAN IP Address	http://DHCP-assigned IP or a configured static IP address
User name	admin
Password	Assigned by the NCC when the NSW is registered with the NCC. or 1234
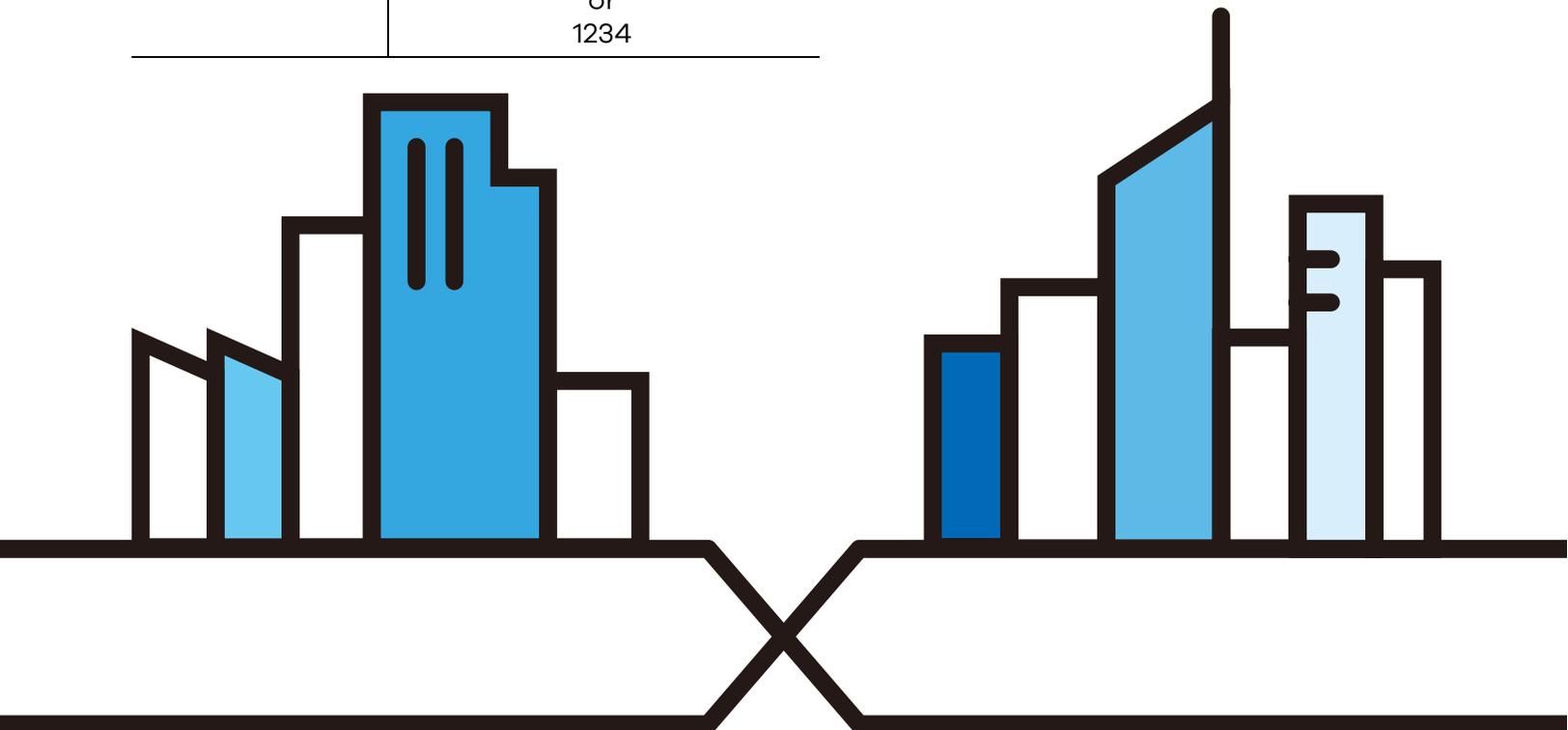
IMPORTANT!

READ CAREFULLY BEFORE USE.

KEEP THIS GUIDE FOR FUTURE REFERENCE.

This is a User's Guide for a series of products. Not all products support all features. Screenshots and graphics in this book may differ slightly from what you see due to differences in your product firmware 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 NSW and register it with the Nebula Control Center.

- Online Help

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

- Nebula Control Center User's Guide

  This User's Guide shows how to manage the NSW devices remotely. Most features of these devices can be managed through Nebula Control Center.

- More Information

  Go to **support.zyxel.com** to find other information on the NSW.

Warnings and Notes

These are how warnings and notes are shown in this guide.

Warnings tell you about things that could harm you or your device.

Note: Notes tell you other important information (for example, other things you may need to configure or helpful tips) or recommendations.

Syntax Conventions

- All models in this series may be referred to as the "NSW" in this guide.
- Product labels, screen names, field labels and field choices are all in **bold** font.

A right angle bracket (>) within a screen name denotes a mouse click. For example, **Advanced Application** > **VLAN** > **VLAN Configuration** means you first click **Advanced Application** in the navigation panel, then the **VLAN** sub menu, and finally **VLAN Configuration** to get to that screen.

Icons Used in Figures

Figures in this user guide may use the following generic icons. The NSW icon is not an exact representation of your device.

NSW	NAP	NSG
Switch	WiFi	Server
Internet	Network Cloud	Printer
Desktop Computer	Laptop	
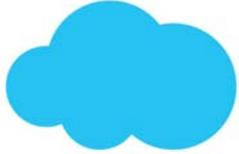
Table of Contents

PART I
User's Guide

CHAPTER 1
Introduction

1.1 Overview

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

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 • Gigabit Ports (Ethernet) • Transceiver Slots (100/1000 Mbps SFP)	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.

1.2 Management

The NSW is a Nebula cloud-managed (PoE) switch. The NSW is managed and provisioned automatically by the Nebula Control Center (NCC) when it has connected to the Internet and has been registered to a site and organization.

Use the web configurator if you are having problems with accessing the NCC. Use this to change the IP address, VLAN, and port settings, perform ping or traceroute, or download log files to diagnose the problem.

The factory default IP address is **DHCP Client**. To find the DHCP-assigned IP address, you must use the ZON utility or the console port if your model has a console port (see Table 1 on page 8).

Figure 1   NCC Management Example
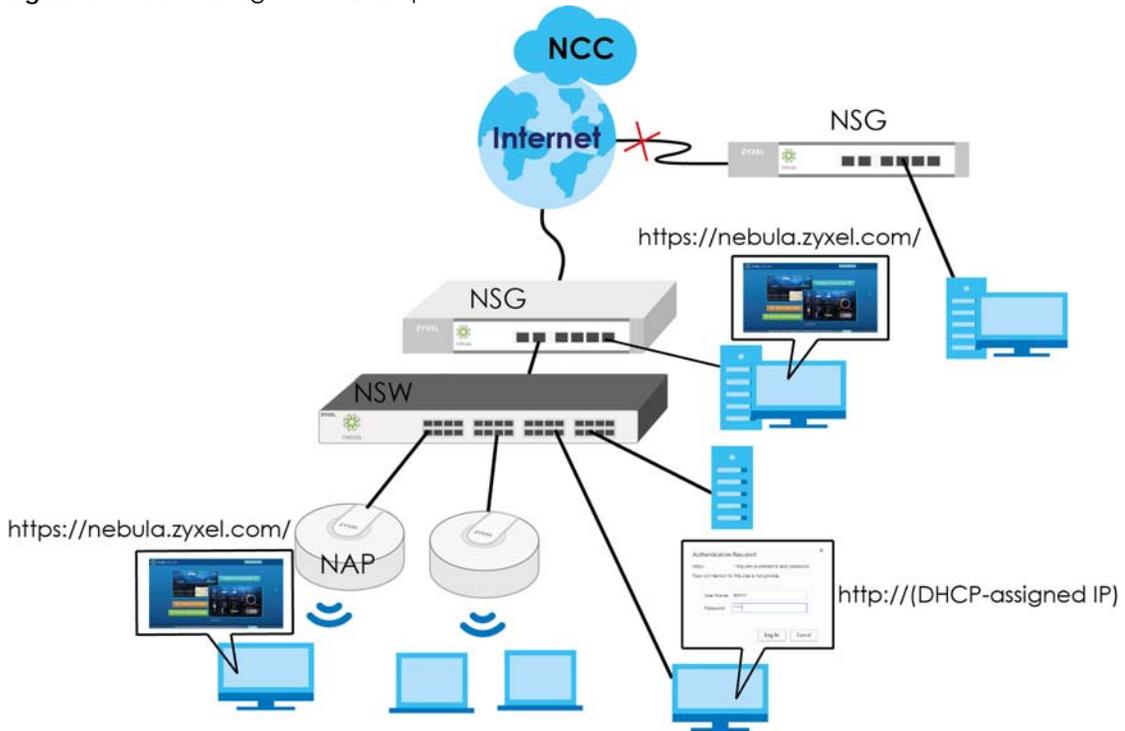
You can check the system settings via the Web Configurator, the ZON (Zyxel One Network) utility and the console port.

1.3 Applications

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

1.3.1 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
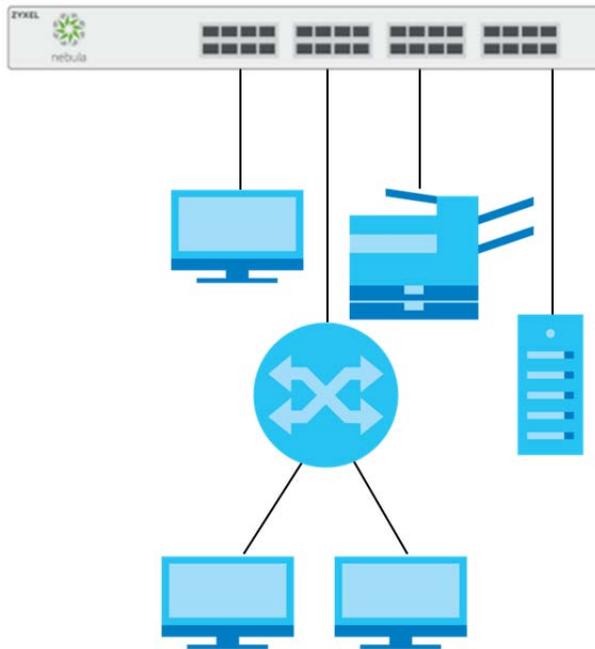
1.3.2 Bridging Example

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
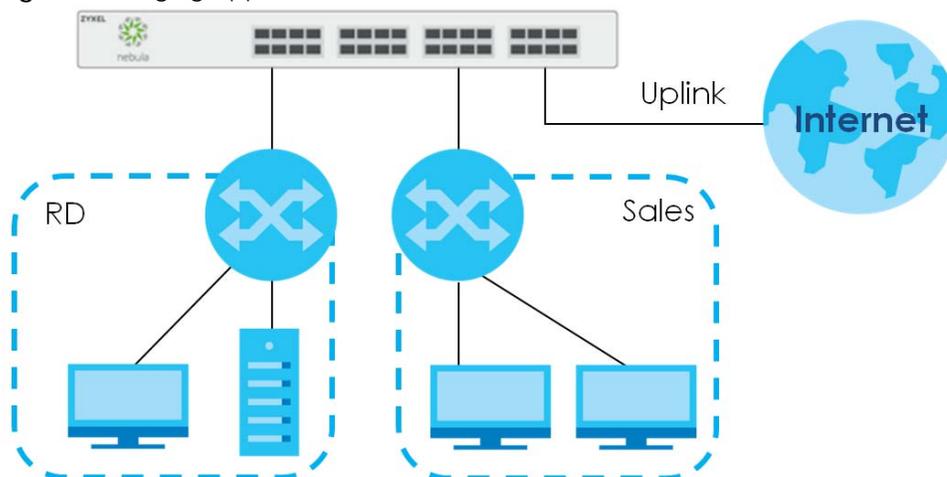
1.3.3 IEEE 802.1Q VLAN Application Examples

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 .

1.3.3.1 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
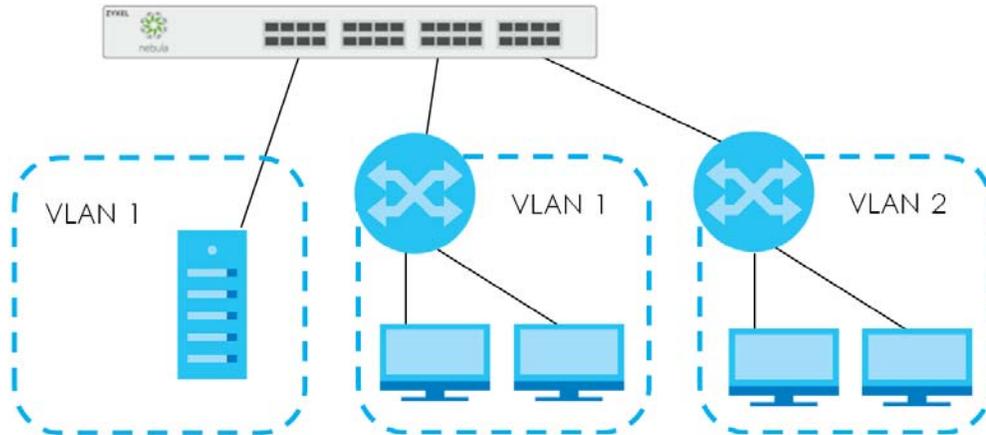
1.4 Ways to Manage the NSW

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. Use this to troubleshoot the NSW if it cannot connect to the NCC. Manage some basic NSW settings using a (supported) web browser. See .
- FTP. Use FTP for firmware upgrades. See .

1.5 Good Habits for Managing the NSW

Do the following things 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.

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
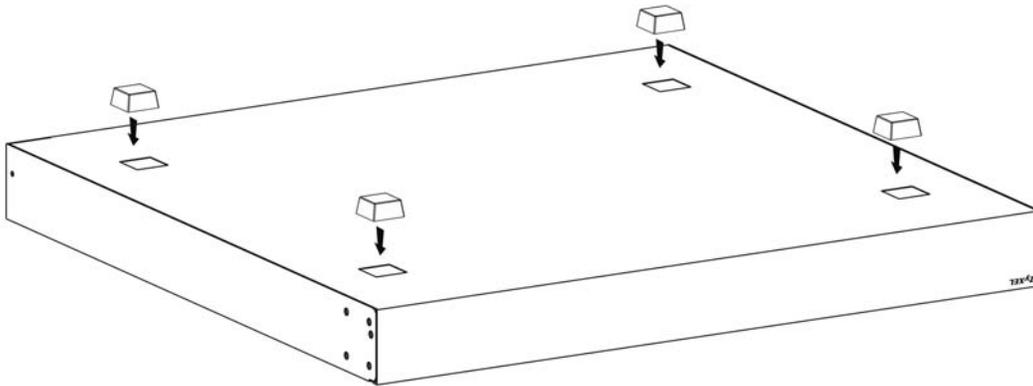
2.3 Mounting the NSW on a Rack

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.

<div style="color:red; text-align:center; font-weight:bold">Failure to use the proper screws may damage the unit.</div>

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)
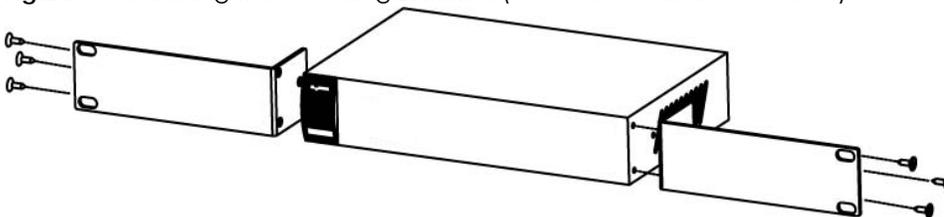
Figure 7   Attaching the Mounting Brackets (NSW100-28P, NSW100-28 and NSW200-28P)
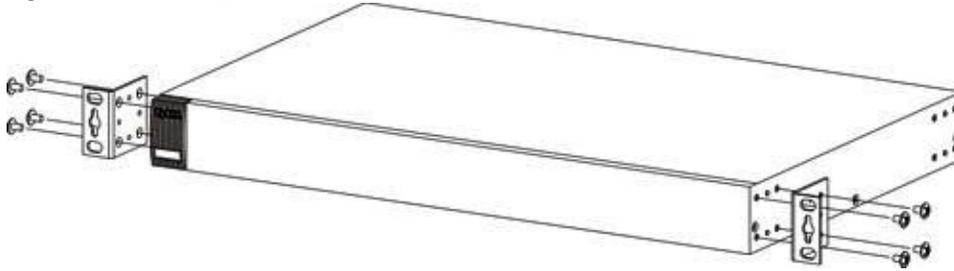
2   Using a #2 Philips screwdriver, install the M3 flat head screws through the mounting bracket holes into the NSW.

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)
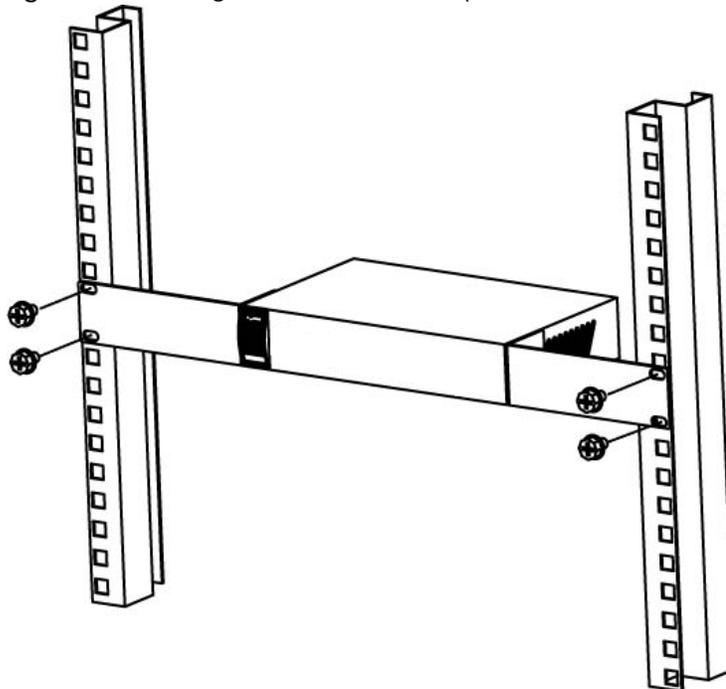
Figure 9   Mounting the NSW on a Rack (NSW100-28P, NSW100-28 and NSW200-28P)
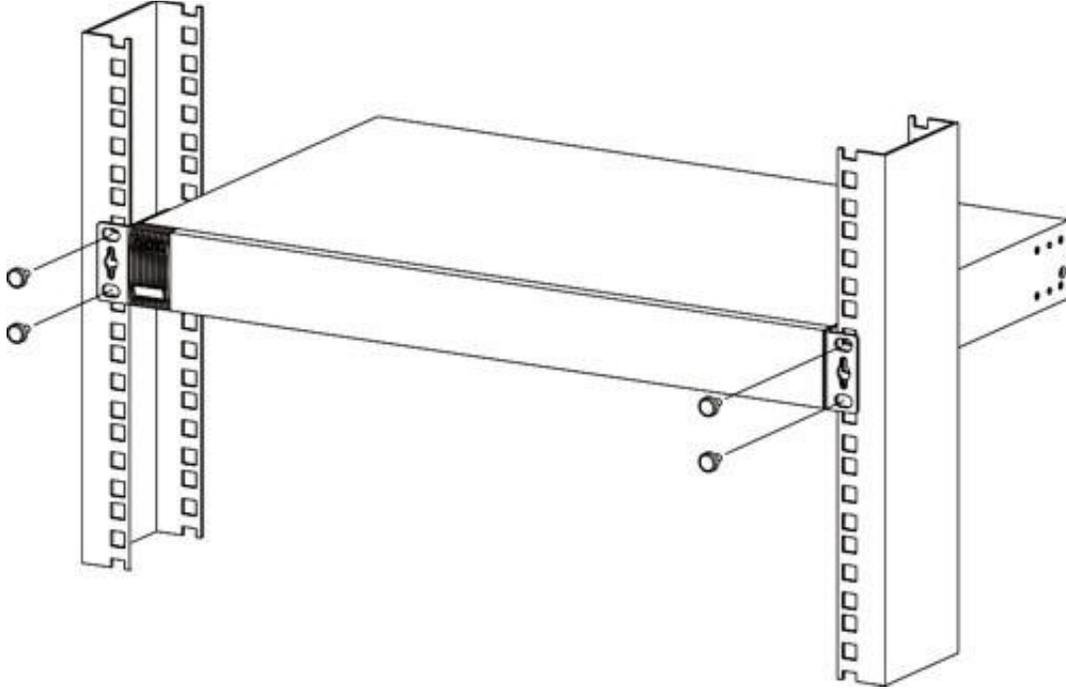
2   Using a #2 Philips screwdriver, install the M5 flat head screws through the mounting bracket holes into the rack.

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.

2.4 Wall Mounting (NSW100-10 only)

The next table summarizes wall mounting specifications.

Table 2   Wall Mounting Information

Distance between holes	135mm
Masonry Plug	two
3.5mm self-tapping screw	two

Do the following to attach your NSW to a wall.

Insecure mounting may damage the device or cause injury. ZyXEL is not responsible for damages incurred by insecure wall-mounting.

1   Screw the two screws provided with your NSW into the wall 135 mm apart (see Figure 10 on page 17). See Figure 11 on page 18 for the size of screws to use.

Do not screw the screws all the way in to the wall; leave a small gap between the head of the screw and the wall.

The gap must be big enough for the screw heads to slide into the screw slots and the connection cables to run down the back of the NSW.

Note: Make sure the screws are securely fixed to the wall and strong enough to hold the weight of the NSW with the connection cables.

2   Align the holes on the back of the NSW with the screws on the wall. Hang the NSW on the screws.

Figure 10   Wall-mounting Example
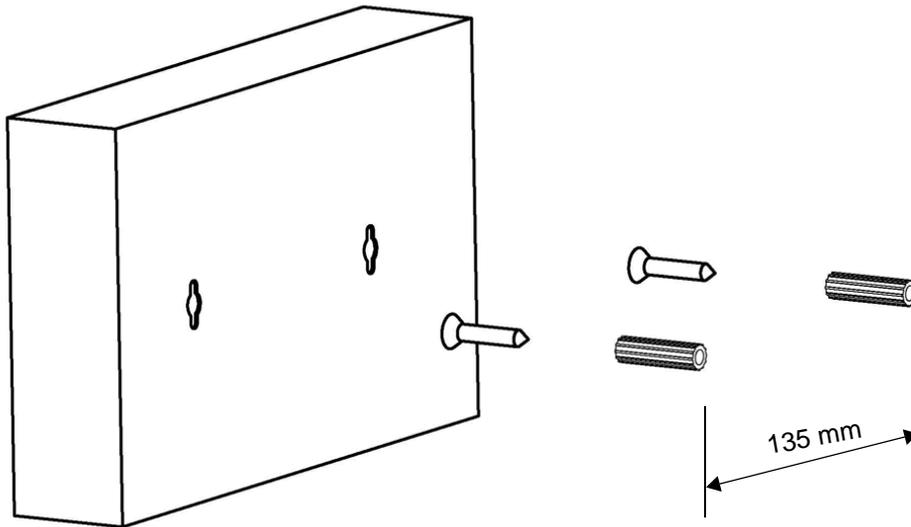
The NSW should be wall-mounted horizontally. The NSW's side panels with ventilation slots should not be facing up or down as this position is less safe.

The following are dimensions of a self-tapping screw and masonry plug used for wall mounting. All measurements are in millimeters (mm).

Figure 11   Masonry Plug and 3.5 mm Self-Tapping Screw
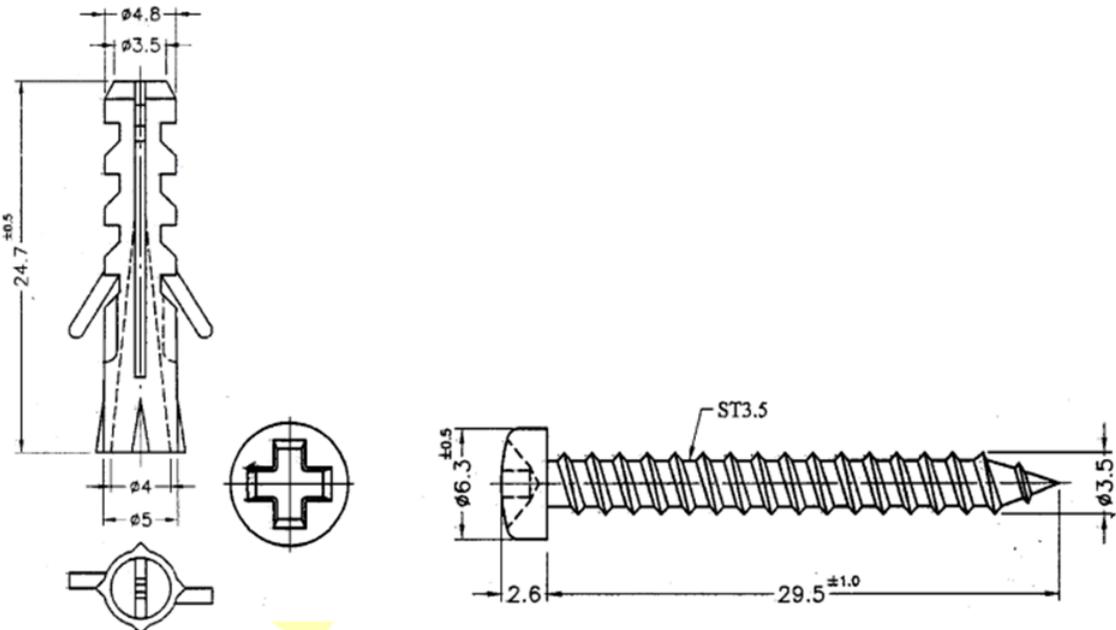
Hardware Panels

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 12   Front Panel: NSW100-10P
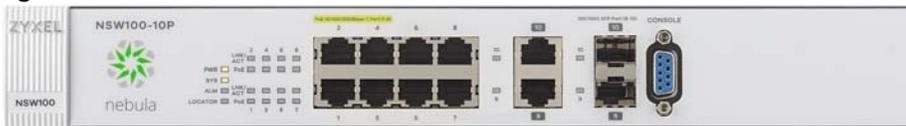
Figure 13   Front Panel: NSW100-10
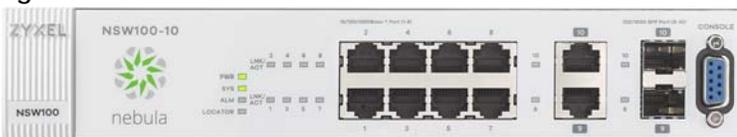
Figure 14   Front Panel: NSW100-28P
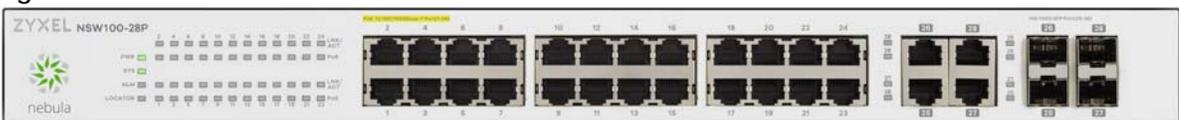
Figure 15   Front Panel: NSW100-28
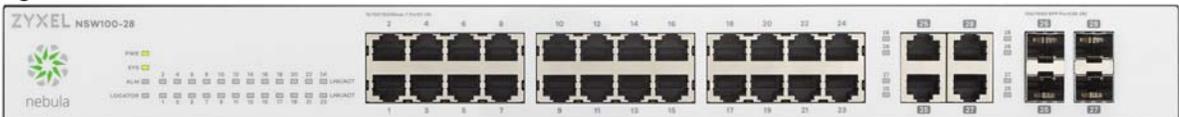
Figure 16   Front Panel: NSW200-28P
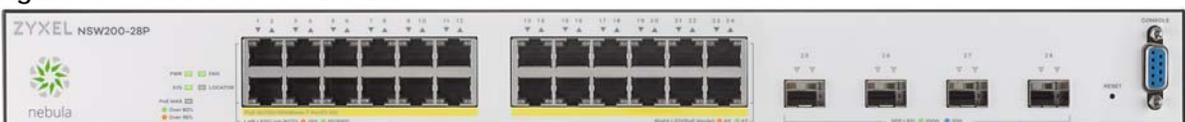
3.1.1 Gigabit Ethernet Ports

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 17   Combo Port Example: Gigabit Port and Transceiver Slot
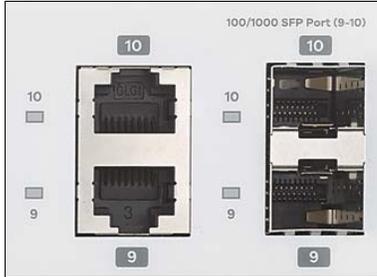
3.1.4 Transceiver Slots

See , 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 18   Transceiver Installation Example
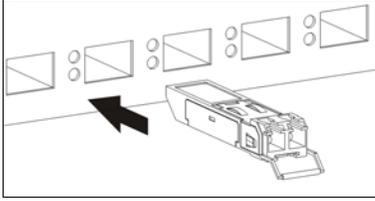
Figure 19   Connecting the Fiber Optic Cables
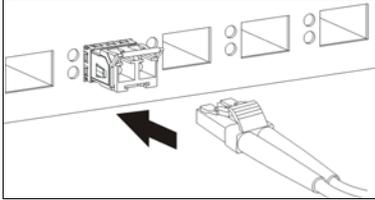
3.1.4.2 Transceiver Removal

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 20   Removing the Fiber Optic Cables
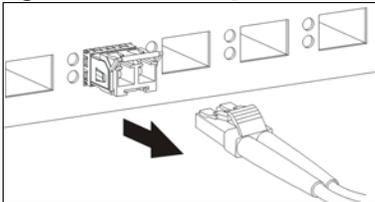
Figure 21   Opening the Transceiver's Latch Example
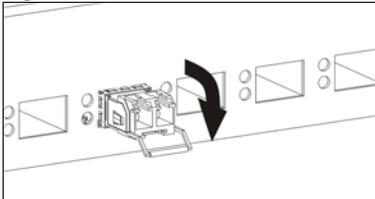
Figure 22   Transceiver Removal Example
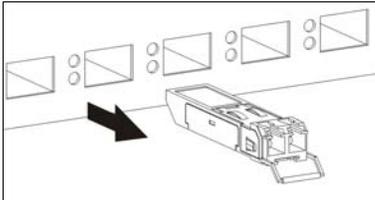
3.2 Rear Panel

The following figures show the rear panels of the NSW.

Figure 23   Rear Panel: NSW100-10P

Figure 24   Rear Panel: NSW100-10

Figure 25   Rear Panel: NSW100-28P

Figure 26   Rear Panel: NSW100-28

Figure 27   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 for information on the NSW's power supply requirements.

3.2.2 Kensington Lock

The NSW200-28P comes with a Kensington Lock to secure your device. The Kensington lock is the small, metal-reinforced, oval hole beside a padlock icon with a letter "K".

Attach a lock-and-cable from the Kensington lock to a permanent object, such as a pole, to secure the Zyxel Device in place and prevent theft.

3.2.3 Grounding (NSW200-28P)

Grounding is a safety measure to have unused electricity return to the ground. It prevents damage to the NSW and protects you from electrocution.

1 Remove the M4 ground screw from the NSW's rear panel.

2 Secure a green/yellow ground cable (16AWG or smaller) to the NSW's rear panel using the M4 ground screw.

3 Attach the other end of the cable to the ground, either to the same ground electrode as the rack you installed the device on or to the main grounding electrode of the building.

Follow your country's regulations and safety instructions to electrically ground the device properly.

If you are uncertain that suitable grounding is available, contact the appropriate electrical inspection authority or an electrician.

Note: Qualified service personnel must confirm that the building's protective earthing terminal is a valid terminal.

Warning! Connect the ground cable before you connect any other cable or wiring.

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 3   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.
			If the system LED is blinking green with the alarm LED blinking red, it means the NSW cannot connect to the Nebula Control Center.
			If the system LED is blinking green while the Locator LED is a steady blue, the NSW is not registered to the Nebula Control Center.
		Off	The power is off or the system is not ready/malfunctioning.

Table 3   LED Descriptions for NSW100 Series (continued)

LED	COLOR	STATUS	DESCRIPTION
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	On	The NSW is undergoing firmware upgrade.
			If the system LED (SYS) is blinking green while the Locator LED is a steady blue, the NSW is not registered to the Nebula Control Center.
		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) 1-24 (NSW100-28P/NSW100-28) 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) 1-24 (NSW100-28P) 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			
9-10 (NSW100-10P/NSW100-10)) 25-28 (NSW100-28P/NSW100-28) LNK/ACT	Green	On	The port has a successful 1000 Mbps connection.
		Blinking	The port is transmitting or receiving data at 1000 Mbps.
	Amber	On	The port has a successful 100 Mbps connection.
		Blinking	The port is transmitting or receiving data at 100 Mbps.
		Off	This link is disconnected.

The following table is for NSW200-28P.

Table 4   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.

Table 4   LED Descriptions for NSW200-28P (continued)

LED	COLOR	STATUS	DESCRIPTION
SYS	Green	On	The system is on and functioning properly. The NSW can connect to the Nebula Control Center.
			If the system LED is blinking green while the Locator LED is a steady blue, the NSW is not registered to the Nebula Control Center.
		Blinking	The system is rebooting and performing self-diagnostic tests.
	Green/Red	Blinking	If the system LED is blinking green and red, it means the NSW cannot connect to the Nebula Control Center.
		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	On	The NSW is undergoing firmware upgrade.
			If the system LED (SYS) is blinking green while the Locator LED is a steady blue, the NSW is not registered to the Nebula Control Center.
		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. If the NSW cannot connect to the NCC, use the web configurator to manage some basic settings to allow it to reconnect with the NCC.

Note: Once the device reconnects to the NCC, the NCC will send a configuration file to the NSW and overwrite any changes made through the web configurator.

Most screens are based on NSW100-10P.

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 cannot connect to the DHCP server, the address will be "http://192.168.1.1".

If the NSW is configured to use a static IP, 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 28 Web Configurator: Login

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

4.3 The Status Screen

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

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

Figure 29 Web Configurator Home Screen for PoE model(s) (Status)

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**, **G** - 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.

G - Click this link to go to the Nebula Cloud Platform at https://nebula.zyxel.com.

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

Table 5   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.
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.
Erase Running-Configuration	Use this to remove the running configuration of the device. This does not remove the username, password, system logs and memory logs.
Save Configuration	Use this to save your current configuration settings on one of two configuration files.
Reboot System	Use this to reboot the system and select which configuration you want to use. You can restore factory default settings upon reboot.
Firmware Upgrade	This link takes you to a screen where you can upload firmware to your device.
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 Forget the password and/or IP address.

3 Prevent all services from accessing the NSW.

4 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 30   Web Configurator: Logout Screen
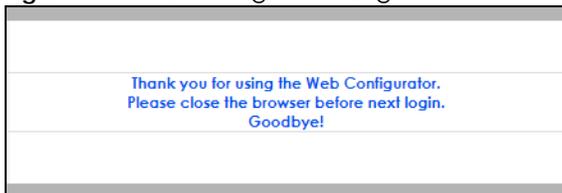
4.8 Help

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.

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 31 Status

Status			
Device Information			
Device Type	NSW100-10P	System Name	NSW100
Boot Version	V1.00	08/19/2016	System Location	
Firmware Version	V3.00(ABGO.0)preb2	10/29/2018	System Time	10/29/2018 05:57:57
Serial Number	xxxxxxxxxxxxxxx	System Up Time	000 days,00 hours,01 mins,24 secs
MAC Address	xx:xx:xx:xx:xx:01	Login Timeout(mins)	3
Cloud Connection Status	Unregistered		
Detail			
IP Address Information			
IPV4 Address	xx.xx.xx.25		
Subnet Mask	255.255.255.0		
Default Gateway	xx.xx.xx.4	IP Setup	
Quick Links			
Diagnostic	Tech-support	VLAN Setup	

The following table describes the labels in this screen.

Table 6   Status

LABEL	DESCRIPTION
Device Information	
Device Type	This field displays the model name of the NSW.
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.
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.

Table 6   Status (continued)

LABEL	DESCRIPTION
Cloud Connection Status	This field displays the registration and connection status between the NSW and the NCC. **Connected** - The NSW is registered with and connected to the NCC. **Disconnected -** The NSW is not connected to the NCC. **Unregistered** - The NSW is not registered with the NCC.
Detail	Click this link to go to the **Basic Setting > System Info** 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 **Basic Setting > IP Setup** screen.
Quick Links	This section provides shortcut links to a specific configuration screens.

CHAPTER 6
Basic Setting

6.1 Overview

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

See Table 5 on page 30 for menu differences of the NSW Series.

6.1.1 What You Can Do

- Use the **System Info** screen (Section 6.2 on page 34) to check the firmware version number.
- Use the **IP Setup** screen (Section 6.3 on page 36) 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 6.4 on page 37) to configure the NSW port settings.

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 32 Basic Setting > System Info

The following table describes the labels in this screen.

Table 7   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.
Temperature	**BOARD, MAC** and **PHY** refer to the location of the temperature sensors on the NSW printed circuit board.
Current	This shows the current temperature at this sensor.

Table 7   Basic Setting > System Info   (continued)

LABEL	DESCRIPTION
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 **Normal** for temperatures below the threshold and **Error** 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	**Normal** indicates that this fan is functioning above the minimum speed. **Error** 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	**Normal** indicates that the voltage is within an acceptable operating range at this point; otherwise **Error** is displayed.

6.3 IP Setup

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. Configure them so that the NSW can access the Internet through the gateway/ router in the network. Once the NSW can connect to the Internet, it can be managed by the NCC after registration.

Figure 33   Basic Setting > IP Setup

The following table describes the labels in this screen.

Table 8   Basic Setting > IP Setup

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.
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 **Apply** 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 **Cancel** to reset the fields to your previous configuration.

6.4 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 34 Basic Setting > Port Setup

The following table describes the labels in this screen.

Table 9   Basic Setting > Port Setup

LABEL	DESCRIPTION
Port	This is the port index number.
*	Settings in this row apply to all ports. 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. Note: Changes in this row are copied to all the ports as soon as you make them.
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	Enter a descriptive name that identifies this port. You can enter up to 64 alpha-numerical characters. Note: Due to space limitation, the port name may be truncated in some web configurator screens.

Table 9   Basic Setting > Port Setup (continued)

LABEL	DESCRIPTION
Type	This field displays the capacity that the port can support.
Speed/Duplex	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 **Auto-1000M**, **1000M/Full Duplex** and **10G/Full Duplex**. 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.
802.1p Priority	This priority value is added to incoming frames without a (802.1p) priority queue tag. The following descriptions are based on the traffic types defined in the IEEE 802.1d standard (which incorporates the 802.1p). • Level 7: Typically used for network control traffic such as router configuration messages. • Level 6: Typically used for voice traffic that is especially sensitive to jitter (jitter is the variations in delay). • Level 5: Typically used for video that consumes high bandwidth and is sensitive to jitter. • Level 4: Typically used for controlled load, latency-sensitive traffic such as SNA (Systems Network Architecture) transactions. • Level 3: Typically used for "excellent effort" or better than best effort and would include important business traffic that can tolerate some delay. • Level 2: This is for "spare bandwidth". • 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. • Level 0: Typically used for best-effort traffic.
Media Type (NSW200-28P only)	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. Select the media type (**sfp_plus** or **dac10g**) of the SFP+ module that is attached to the 10 Gigabit interface.
Apply	Click **Apply** 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 **Cancel** to begin configuring this screen afresh.

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 40) to view and search all VLAN groups.
- Use the **VLAN Detail** screen (Section 7.2.1 on page 41) to view detailed port settings and status of the VLAN group.
- Use the **Static VLAN** screen (Section 7.4 on page 42) to configure and view 802.1Q VLAN parameters for the NSW.
- Use the **VLAN Port Setting** screen (Section 7.5 on page 44) 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 35 Advanced Application > VLAN: VLAN Status
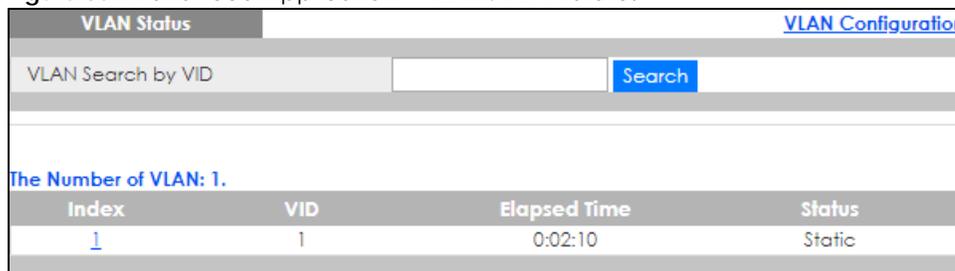
The following table describes the labels in this screen.

Table 10   Advanced Application > VLAN: VLAN Status

LABEL	DESCRIPTION
VLAN Search by VID	Enter an existing VLAN ID number(s) (separated by a comma) and click **Search** to display only the specified VLAN(s) in the list below. Leave this field blank and click **Search** to display all VLANs configured on the NSW.
The Number of VLAN	This is the number of VLANs configured on the NSW.

Table 10   Advanced Application > VLAN: VLAN Status (continued)

LABEL	DESCRIPTION
The Number of Search Results	This is the number of VLANs that match the searching criteria and display in the list below. This field displays only when you use the **Search** 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 **Static VLAN** 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. **Static**: added as a permanent entry
Change Pages	Click **Previous** or **Next** 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 36   Advanced Application > VLAN > VLAN Detail

The following table describes the labels in this screen.

Table 11   Advanced Application > VLAN > VLAN Detail

LABEL	DESCRIPTION
VLAN Status	Click this to go to the **VLAN Status** screen.
VID	This is the VLAN identification number that was configured in the **Static VLAN** 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. **Static**: 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 37   Advanced Application > VLAN > VLAN Configuration

The following table describes the labels in the above screen.

Table 12   Advanced Application > VLAN > VLAN Configuration

LABEL	DESCRIPTION
Static VLAN Setup	Click **Click Here** to configure the Static VLAN for the NSW.
VLAN Port Setup	Click **Click Here** 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 38   Advanced Application > VLAN > VLAN Configuration > Static VLAN Setup

The following table describes the related labels in this screen.

Table 13   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.
*	Settings in this row apply to all ports.
	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.
	Note: Changes in this row are copied to all the ports as soon as you make them.
Control	Select **Normal** for the port to dynamically join this VLAN group using GVRP. This is the default selection.
	Select **Fixed** for the port to be a permanent member of this VLAN group.
Tagging	Select **TX Tagging** if you want the port to tag all outgoing frames transmitted with this VLAN Group ID.

Table 13   Advanced Application > VLAN > VLAN Configuration > Static VLAN Setup (continued)

LABEL	DESCRIPTION
Add	Click **Add** 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-right of the Web Configurator to save your changes to the non-volatile memory when you are done configuring.
Cancel	Click **Cancel** to change the fields back to their last saved values.
Clear	Click **Clear** 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 (**Yes**) or disabled (**No**).
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 **Delete** to remove the selected entry from the summary table.
Cancel	Click **Cancel** to clear the check boxes.

7.5 Configure VLAN Port Setting

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 39   Advanced Application > VLAN > VLAN Configuration > VLAN Port Setup

The following table describes the labels in this screen.

Table 14   Advanced Application > VLAN > VLAN Configuration> VLAN Port Setup

LABEL	DESCRIPTION
Port	This field displays the port number.
*	Settings in this row apply to all ports. 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. Note: Changes in this row are copied to all the ports as soon as you make them.
PVID	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. Enter a number between 1 and 4094 as the port VLAN ID.
VLAN Trunking	Enable **VLAN Trunking** 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 **Apply** 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 **Cancel** to begin configuring this screen afresh.

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 46) to erase running configuration, save a configuration file or restart the NSW.
- Use the **Firmware Upgrade** screen (Section 8.3 on page 48) to upload the latest firmware.
- Use the **Tech-Support** screen (Section 8.4 on page 50) 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 40 Management > Maintenance

The following table describes the labels in this screen.

Table 15   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.
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.

Table 15   Management > Maintenance (continued)

LABEL	DESCRIPTION
Save Configuration	Click **Config 1** to save the current configuration settings to **Configuration 1** on the NSW.
	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.
	Click **Config 2** to reboot the system and load **Configuration 2** on the NSW.
	Click **Factory Default** to reboot the system and load the default configuration settings on the NSW.
	Note: Make sure to click the **Save** 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 saved.

2   Click **OK** to remove the running configuration on the NSW.

Figure 41   Erase Running-Configuration: Confirmation
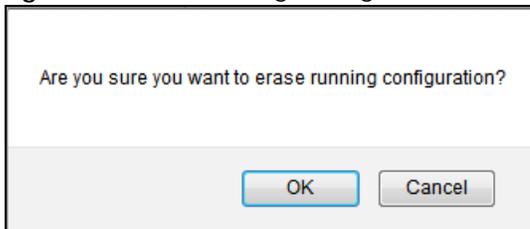
3   In the web configurator, click the Save button in the top of the screen to make the changes take effect.

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 42   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 43   Reboot System: Confirmation
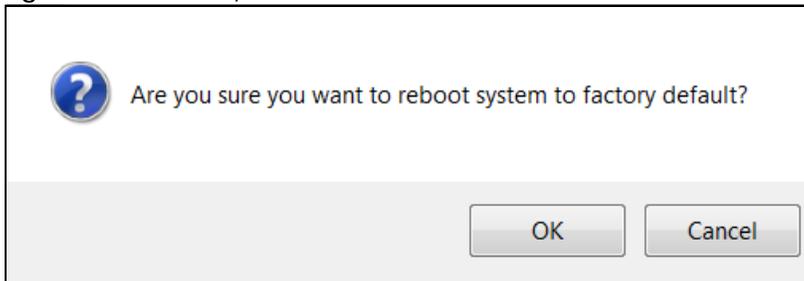
8.3 Firmware Upgrade

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.

Note: If the device is registered to a site in the NCC and its firmware is not up-to-date, the device firmware will be upgraded according to the device-specific schedule or the site-wide schedule configured in the NCC.

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 44   Management > Maintenance > Firmware 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 16   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, **Firmware 1** and **Firmware 2**, residing in flash. • **Running** shows the version number (and model code) and MM/DD/YYYY creation date of the firmware currently in use on the NSW (**Firmware 1** or **Firmware 2**). The firmware information is also displayed at System Information in Basic Settings. • **Firmware 1** shows its version number (and model code) and MM/DD/YYYY creation date. • **Firmware 2** shows its version number (and model code) and MM/DD/YYYY creation date.
Current Boot Image	This displays which firmware is currently in use on the NSW (**Firmware 1** or **Firmware 2**).
Config Boot Image	Select which firmware (**Firmware 1** or **Firmware 2**) should load, click **Apply** and reboot the NSW to see changes, you will also see changes in the **Current Boot Image** field above as well.
Apply	Click **Apply** 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 **Cancel** to begin configuring this screen afresh.
Firmware	Choose to upload the new firmware to (Firmware) **1** or (Firmware) **2**.

Table 16   Management > Maintenance > Firmware Upgrade

LABEL	DESCRIPTION
File Path	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.
Upgrade	Click **Upgrade** to load the new firmware. Firmware upgrades are only applied after a reboot. To reboot, go to **Management > Maintenance > Reboot System** and click **Config 1**, **Config 2** or **Factory Default** (**Config 1**, **Config 2** and **Factory Default** are the configuration files you want the NSW to use when it restarts).

8.4 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 45   Management > Maintenance > Tech-Support
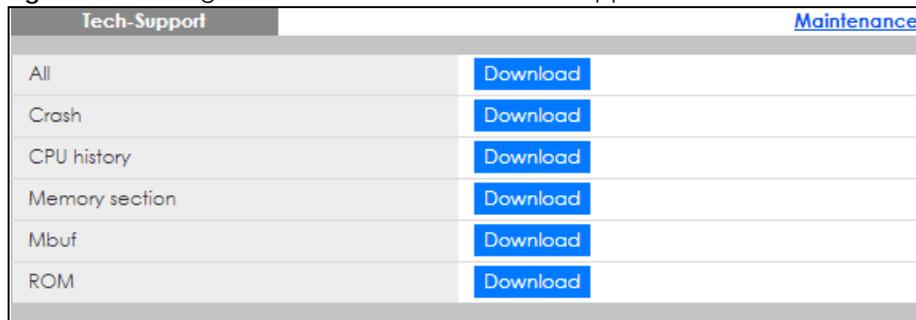
You may need WordPad or similar software to see the log report correctly. The table below describes the fields in the above screen.

Table 17   Management > Maintenance > Tech-Support

LABEL	DESCRIPTION
All	Click **Download** 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 **Download** to see the crash log report. The log will include information of the last crash and is stored in flash memory.
CPU history	Click **Download** 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 **Download** to see the memory section log report. This log report is stored in flash memory.
Mbuf	Click **Download** 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 **Download** to see the Read Only Memory (ROM) log report. This report is stored in flash memory.

8.5 Technical Reference

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

8.5.1 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.

8.5.2 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 18   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.

8.5.2.1 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.

8.5.3 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 18 on page 51 for more information on filename conventions.

7 Enter `quit` to exit the ftp prompt.

8.5.4 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.
	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.
	Normal.
	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 or run a traceroute.

Figure 46   Management > Diagnostic

The following table describes the labels in this screen.

Table 19   Management > Diagnostic

LABEL	DESCRIPTION
Ping Test	
IPv4 (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.
Count	Enter the number of ICMP Echo Request (ping) messages the NSW continuously sends.
IP Address/Host Name	Type the IP address or host name of a device that you want to ping in order to test a connection. Click **Ping** to have the NSW ping the IP address.
Trace Route Test	

Table 19   Management > Diagnostic (continued)

LABEL	DESCRIPTION
IPv4 (NSW100 Series only)	Select this option if you want to trace the route packets take to a device with an IPv4 address, and select **vlan** to specify the ID number of the VLAN on which the NSW traces the path. Otherwise, select **-** to trace the path on any VLAN. The device to which you want to run a traceroute must belong to the VLAN you specify here.
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	Enter the IP address or host name of a device to which you want to perform a traceroute. Click **Trace Route** to have the NSW perform the traceroute function. This determines the path a packet takes to the specified device.

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 24.

2 Check the hardware connections. See Section 10.1 on page 55.

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 31.

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 the NSW cannot connect to the DHCP server, it will use "192.168.1.1" as the IP address.
- 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 24.

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 31.

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 31.

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* 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

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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.

Innovation, Science and Economic Development 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 by qualified service personnel. 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.
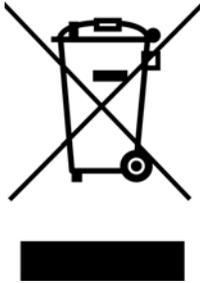
台灣

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、食物或其他不合適的材料。
- 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): AC is an electric current in which the flow of electric charge periodically reverses direction.
	Direct current (DC): DC if the unidirectional flow or movement of electric charge carriers.
	Earth; ground: A wiring terminal intended for connection of a Protective Earthing Conductor.
	Class II equipment: 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.

Registration

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

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