



LGT616A
LGT616A-JP

16-Port Gigabit Web Smart Switch

**This Web Smart switch provides sixteen
10-/100-/1000-Mbps ports.**

Supports Gigabit speed on all ports.



**Customer
Support
Information**

Order toll-free in the U.S.: Call 877-877-BBOX (outside U.S. call 724-746-5500)
FREE technical support 24 hours a day, 7 days a week: Call 724-746-5500 or fax
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FEDERAL COMMUNICATIONS COMMISSION and INDUSTRY CANADA RADIO FREQUENCY INTERFERENCE STATEMENTS

Class B Digital Device. This equipment has been tested and found to comply with the limits for a Class B computing device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. This equipment generates, uses, and can radiate radio frequency energy, and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. If this equipment does cause harmful interference to radio or telephone reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult an experienced radio/TV technician for help.

CAUTION:

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

To meet FCC requirements, shielded cables and power cords are required to connect this device to a personal computer or other Class B certified device.

This digital apparatus does not exceed the Class B limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de classe B prescrites dans le Règlement sur le brouillage radioélectrique publié par Industrie Canada.

Normas Oficiales Mexicanas (NOM)
Electrical Safety Statement
INSTRUCCIONES DE SEGURIDAD

1. Todas las instrucciones de seguridad y operación deberán ser leídas antes de que el aparato eléctrico sea operado.
2. Las instrucciones de seguridad y operación deberán ser guardadas para referencia futura.
3. Todas las advertencias en el aparato eléctrico y en sus instrucciones de operación deben ser respetadas.
4. Todas las instrucciones de operación y uso deben ser seguidas.
5. El aparato eléctrico no deberá ser usado cerca del agua—por ejemplo, cerca de la tina de baño, lavabo, sótano mojado o cerca de una alberca, etc.
6. El aparato eléctrico debe ser usado únicamente con carritos o pedestales que sean recomendados por el fabricante.
7. El aparato eléctrico debe ser montado a la pared o al techo sólo como sea recomendado por el fabricante.
8. Servicio—El usuario no debe intentar dar servicio al equipo eléctrico más allá lo descrito en las instrucciones de operación. Todo otro servicio deberá ser referido a personal de servicio calificado.
9. El aparato eléctrico debe ser situado de tal manera que su posición no interfiera su uso. La colocación del aparato eléctrico sobre una cama, sofá, alfombra o superficie similar puede bloquea la ventilación, no se debe colocar en libreros o gabinetes que impidan el flujo de aire por los orificios de ventilación.
10. El equipo eléctrico deber ser situado fuera del alcance de fuentes de calor como radiadores, registros de calor, estufas u otros aparatos (incluyendo amplificadores) que producen calor.
11. El aparato eléctrico deberá ser conectado a una fuente de poder sólo del tipo descrito en el instructivo de operación, o como se indique en el aparato.

12. Precaución debe ser tomada de tal manera que la tierra física y la polarización del equipo no sea eliminada.
13. Los cables de la fuente de poder deben ser guiados de tal manera que no sean pisados ni pellizcados por objetos colocados sobre o contra ellos, poniendo particular atención a los contactos y receptáculos donde salen del aparato.
14. El equipo eléctrico debe ser limpiado únicamente de acuerdo a las recomendaciones del fabricante.
15. En caso de existir, una antena externa deberá ser localizada lejos de las líneas de energía.
16. El cable de corriente deberá ser desconectado del cuando el equipo no sea usado por un largo periodo de tiempo.
17. Cuidado debe ser tomado de tal manera que objetos líquidos no sean derramados sobre la cubierta u orificios de ventilación.
18. Servicio por personal calificado deberá ser provisto cuando:
 - A: El cable de poder o el contacto ha sido dañado; u
 - B: Objetos han caído o líquido ha sido derramado dentro del aparato; o
 - C: El aparato ha sido expuesto a la lluvia; o
 - D: El aparato parece no operar normalmente o muestra un cambio en su desempeño; o
 - E: El aparato ha sido tirado o su cubierta ha sido dañada.

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UL Warning

This equipment is designed for building installation and is not intended to be connected to exposed (outside plant) networks, including campus environments, and the switch is to be connected only to PoE networks without routing to the outside plant.

Disclaimer

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1. Specifications	
Buffer Memory	512 KB
Compliance	CE, FCC Class A
Filtering/Forwarding Rate	1000-Mbps port: 1,488,000 pps; 100-Mbps port: 148,800 pps; 10-Mbps port: 14,880 pps
Jumbo Frames	9.6 KB
MAC Address	8 K
Smart Features	• Number of Ports: 16 x 10/100/1000M RJ-45 Port on the Rear • MAC Address: 8 K Buffer • Memory: 512 KB • Jumbo Frame: 9.6 KB • Transmission Method: Store and Forward • VLAN: 16 • Tagged VLAN: 16 • VLAN ID: 1–4094 • Trunk Groups: 8 • Quality of Service: up to 8 queues • IGMP Snooping • LACP • Management: Port Mirroring, Password-protected Access, Port Settings, Web-base Management, Graphic User Interface
Standards	IEEE 802.3 10BASE-T, IEEE 802.3u 100BASE-TX, IEEE 802.ab 1000BASE-T, IEEE 802.3z 1000BaseSX/LX, IEEE 802.3x Full-duplex and Flow Control, IEEE 802.1Q VLAN, IEEE 802.3ad Link Aggregation, IEEE 802.3az Energy Efficient Ethernet (EEE), IEEE 802.1p Class of Service, Priority Protocols

Transmission Media	10BASE-T CAT3, 4, 5 UTP/STP; 100BASE-TX CAT5 UTP/STP; 1000BASE-T CAT 5E UTP/STP
Connectors	(16) RJ-45, (1) power connector
Indicators	Per Port LEDs: 10/100M Link/Act; 1000M Link/Act (Green On/Quick Blinking); System: On— Power On (Amber)
Power	Internal power supply: Input Voltage: 100–240 VAC, 50-60 Hz; Input Power/Watts: 15 watts (max.)
Temperature Tolerance	Operating: +32 to +122° F (0 to +50° C); Storage: -4 to +194° F (-20 to +90° C)
Operating Humidity	10 to 90% relative humidity (non-condensing)
Size	1.73"H x 13"W x 8.27"D (4.4 x 33 x 21 cm)
Weight	4.4 lb. (2 kg) unit

2. Overview

2.1 Introduction

The 16-Port Gigabit Web Smart Switch provides sixteen 10-/100-/1000-Mbps ports. It is designed for easy installation and enables high performance in an environment where traffic on the network and the number of users increase continuously. With the newest Gigabit chipset, this 19" Gigabit Ethernet switch fully supports the highest speed without any problems, even when running full-duplex fully loaded.

The switch also provides automatic crossover detection on each port, making it easy to uplink to another switch without using a crossover cable.

This rackmountable switch is specifically designed for medium to large workgroups. It provides smooth network migration and makes it easy to increase network capacity.

2.2 Features

- Supports real-time status (link, speed, duplex) of each port.
- Supports port setting for enable or disable operation (the first port can't be disabled).
- Includes port setting for N-Way or force mode operation.
- Features Broadcast Storm Protection.
- Enables Port-based VLAN.
- Supports priority queues for QoS.
- Complies with IEEE 802.3 Ethernet, IEEE 802.3u Fast Ethernet, and IEEE 802.3ab Gigabit Ethernet standards.
- 16 ports autonegotiate speeds of 10, 100, and 1000 Mbps.
- 19" rackmountable.
- Provides non-blocking and non-head of line blocking full wire-speed forwarding.
- Store-and-forward operation support.
- Supports 9.6 KB jumbo frames.
- Provides 8K MAC addresses.
- Supports broadcast storm filtering.

Chapter 2: Overview

- All ports provide autonegotiation and Auto MDI/MDI-X functions.
- Supports flow control: Backpressure for half-duplex and IEEE 802.3x for full-duplex mode.
- Smart plug and play.

2.3 What's Included

Your package should contain the following items. If anything is missing or damaged, contact Black Box Technical Support at 724-746-5500 or info@blackbox.com.

- (1) 16-Port Gigabit Web Smart Switch
- (1) U.S. power cord
- This user's manual in PDF format on CD-ROM
- (1) rackmount kit: (2) brackets, (8) screws

2.4 Hardware Description

Figures 2-1 and 2-2 show the front and back panels of the 16-Port Gigabit Web Smart Switch. Table 2-1 describes its components.

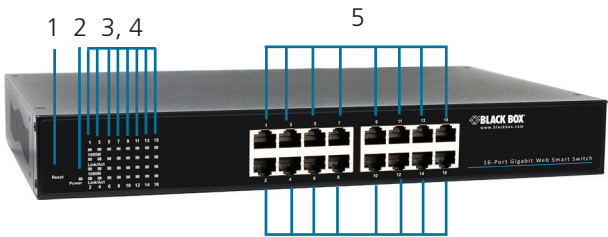


Figure 2-1. Front panel.



Figure 2-2. Back panel.

Table 2-1. 16-Port Web Smart Gigabit Ethernet Switch components.

Number	Component	Description
1	(1) Reset button	Press to Reset the switch to its factory defaults.
2	(1) Power LED	Lights when power to the unit is on.
3	(16) 1000M LEDs	Light when a port is operating at 1000 Mbps.
4	(16) LINK/ACT LEDs	Light solid when link is up, blink when data is present, and are off when there is no link.
5	(16) RJ-45 connectors	Connect to 10/100/1000 devices.
6	Air vents	Maintain proper airflow.
7	Power on/off switch	Switches the power to the unit on or off.
8	Power receptacle	Links 90–260-VAC, 50-60-Hz, 20-W internal power supply to power outlet

Chapter 3: Configuration

3. Configuration

Follow these steps to configure the Web Smart switch.

Step 1: Use a twisted-pair cable to connect this switch to your PC.

Step 2: Set your PC's IP to 192.168.2.xx.

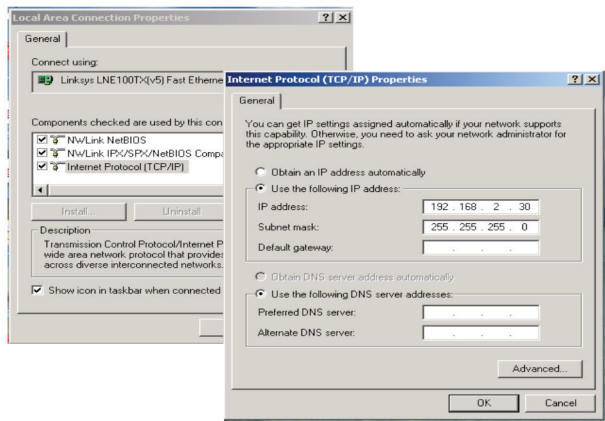


Figure 3-1. IP screen.

Step 3: Open a Web browser (for example, Internet Explorer®...) and go to `http:// 192.168.2.1`.

You will see the login screen shown in Figure 3-2.

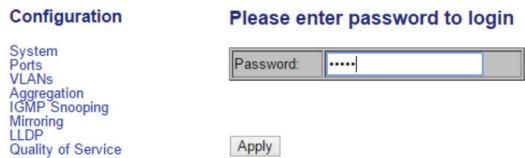


Figure 3-2. Login screen.

Key in the password and click “OK” to log in.

Password: admin

After logging in, the switch is ready for configuration.

Step 4: On the home page, select the configuration by clicking the icon:

- Configuration
- Monitoring
- Maintenance
- Logout

3.1 Configuration: System Configuration

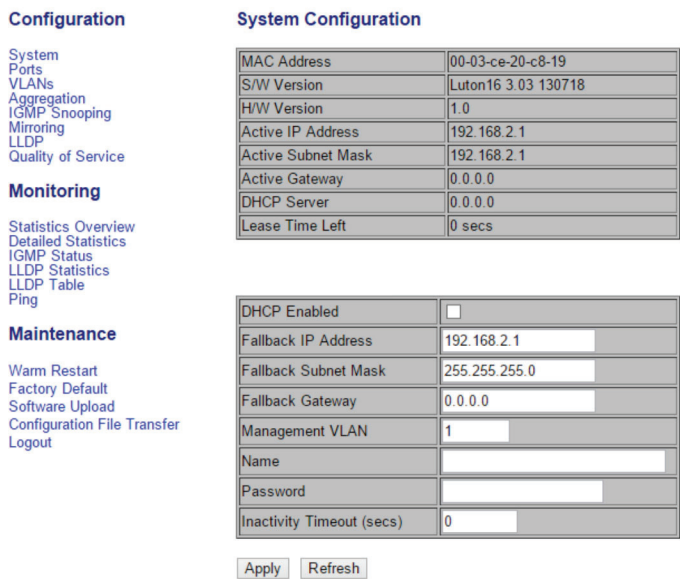


Figure 3-3. System Configuration screen.

This will show system status, such as: MAC address, system firmware version, and other system information.

Chapter 3: Configuration

You can change the user name, the password, and IP address, then click “Apply” to confirm the new change.

Next, you must reset the switch by turning it off and turning it on to take the new user name, the password, and IP address.

3.2 Configuration: Port Configuration

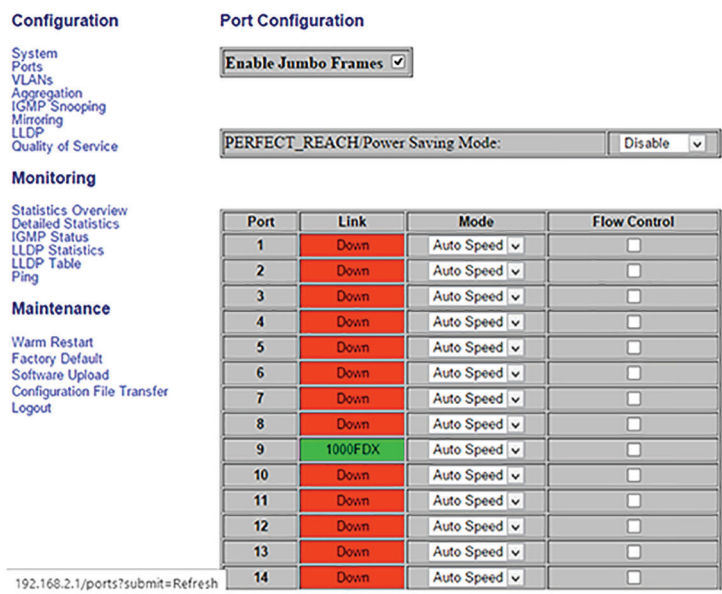


Figure 3-4. Port Configuration screen.

You can enable or disable jumbo frames by clicking the checkbox.

Configure the modes listed below for the port number you select:

- Auto speed
- Enable/disable port
- 10M/100M/1000M
- Full/half-duplex
- Enable/disable flow control

3.3 Configuration: VLAN Configuration

Configuration: VLAN Configuration

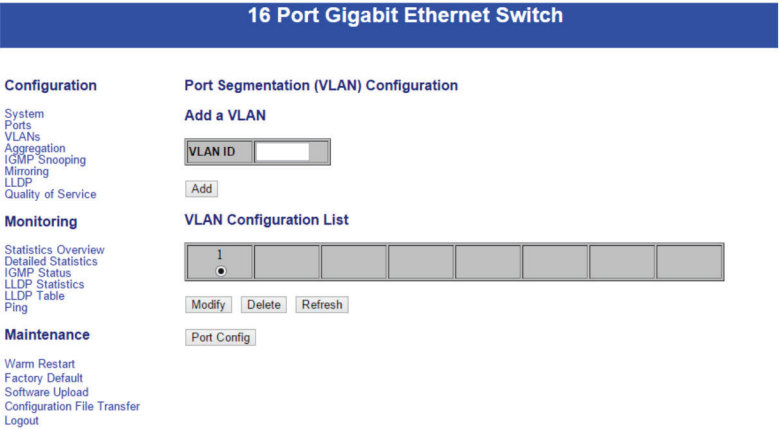


Figure 3-5. VLAN Configuration screen.

There are 16 VLAN groups.

Select and add a group into “VLAN ID” and then click the port number that you want to put into the selected VLAN group.

3.4 Configuration: Aggregation/Trunk Configuration

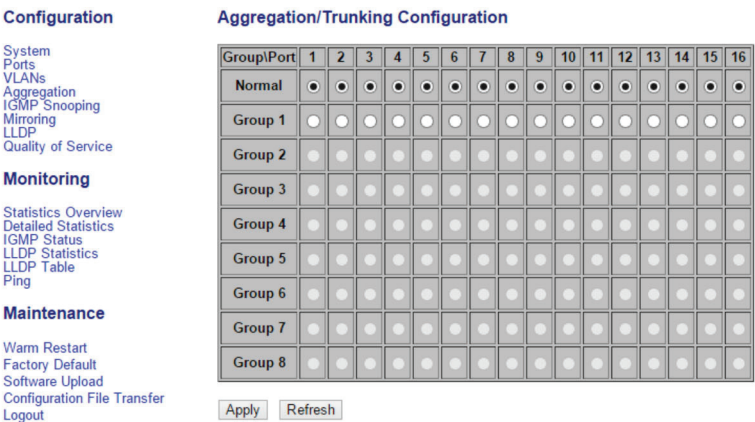


Figure 3-6. Aggregation/Trunk Configuration screen.

Chapter 3: Configuration

Set up port trunk groups and then click the port number you want to include into the same group.

There are eight groups to choose from, and the maximum number of ports for one group is 16.

3.5 Configuration: IGMP Configuration

Configuration

System
Ports
VLANs
Aggregation
IGMP Snooping
Mirroring
LLDP
Quality of Service

Monitoring

Statistics Overview
Detailed Statistics
IGMP Status
LLDP Statistics
LLDP Table
Ping

Maintenance

Warm Restart
Factory Default
Software Upload
Configuration File Transfer
Logout

IGMP Configuration

IGMP Enabled ☐

Router Ports
1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐
9 ☐ 10 ☐ 11 ☐ 12 ☐ 13 ☐ 14 ☐ 15 ☐ 16 ☐

Unregistered IPMC Flooding enabled ☒

VLAN ID	IGMP Snooping Enabled	IGMP Querying Enabled
0	☒	☒
0	☒	☒
0	☒	☒
0	☒	☒
0	☒	☒
0	☒	☒
0	☐	☐
0	☐	☐
1	☒	☒

Apply Refresh

Figure 3-7. IGMP Configuration screen.

You can enable or disable IGMP by clicking the checkbox.
Select the port number for which you want to configure the mode.

3.6 Configuration: Port Mirror Configuration

Configuration

System

Ports

VLANs

Aggregation

IGMP Snooping

Mirroring

LLDP

Quality of Service

Monitoring

Statistics Overview

Detailed Statistics

IGMP Status

LLDP Statistics

LLDP Table

Ping

Maintenance

Warm Restart

Factory Default

Software Upload

Configuration File Transfer

Logout

Mirroring Configuration

Port	Mirror Source
1	☐
2	☐
3	☐
4	☐
5	☐
6	☐
7	☐
8	☐
9	☐
10	☐
11	☐
12	☐
13	☐
14	☐
15	☐
16	☐

Mirror Port

1

▼

Apply

Refresh

Figure 3-8. Port Mirror Configuration screen.

Port mirroring is used to mirror the traffic from the source port to the destination port.

Select the destination port from Port 1 to Port 16, and then select the source port by clicking the port’s checkbox.

3.7 Configuration: LLDP

Configuration

System

Ports

VLANs

Aggregation

IGMP Snooping

Mirroring

LLDP

Quality of Service

Monitoring

Statistics Overview

Detailed Statistics

IGMP Status

LLDP Statistics

LLDP Table

Ping

Maintenance

Warm Restart

Factory Default

Software Upload

Configuration File Transfer

Logout

LLDP Configuration

Transmitted TLVs	
Port Description	☒
System Name	☒
System Description	☒
System Capabilities	☒
Management Address	☒

Parameters	
Tx Interval	10
Tx Hold	4
Tx Delay	2
Reinit Delay	2

Port	LLDP State
1	Rx and Tx
2	Rx and Tx
3	Rx and Tx
4	Rx and Tx
5	Rx and Tx
6	Rx and Tx
7	Rx and Tx
8	Rx and Tx

Figure 3-9. LLDP Configuration screen.

3.8 Configuration: QoS Configuration

Configuration

System

Ports

VLANs

Aggregation

IGMP Snooping

Mirroring

LLDP

Quality of Service

Monitoring

Statistics Overview

Detailed Statistics

IGMP Status

LLDP Statistics

LLDP Table

Ping

Maintenance

Warm Restart

Factory Default

Software Upload

Configuration File Transfer

Logout

QoS Configuration

QoS Mode

QoS Disabled

QoS Disabled

802.1p

DSCP

APPLY

CANCEL

Figure 3-10. QoS Configuration screen.

You can enable or disable QoS by clicking the checkbox.
If you enable QoS, you can select the class of service for each port.

4. Monitoring

4.1 Monitoring: Statistics Overview for All Ports

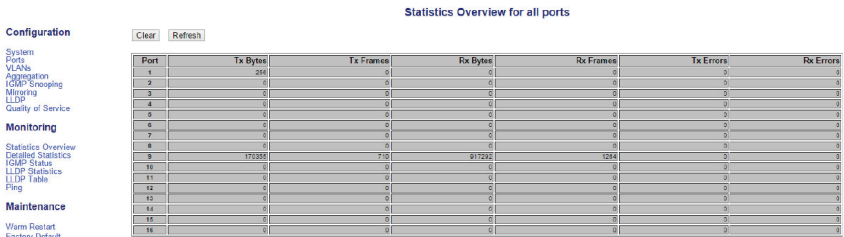


Figure 4-1 Statistics Overview for All Ports screen.

You can read statistics for all ports.

4.2 Monitoring: Detailed Statistics

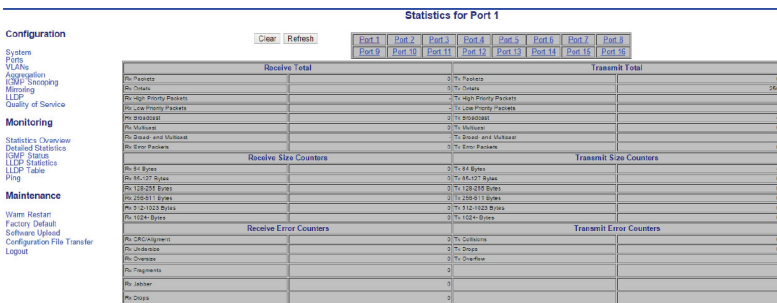


Figure 4-2. Detailed Statistics screen.

For detailed statistics for each port, click the port number.

4.3 Monitoring: IGMP Status

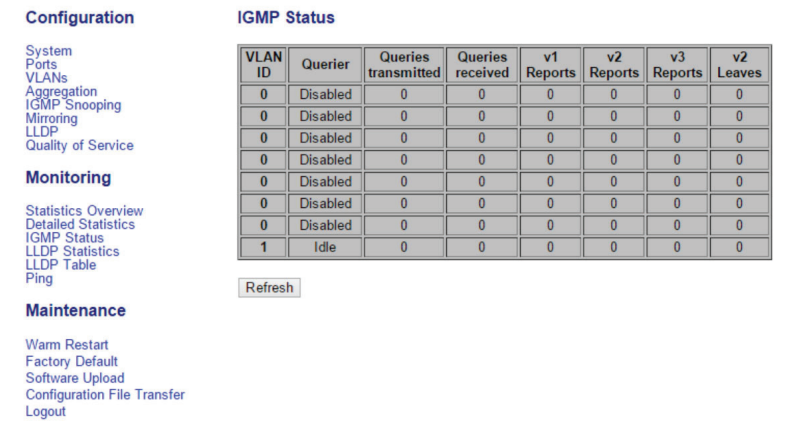


Figure 4-3. IGMP Status screen.

You can read IGMP status for IGMP ports.

4.4 Monitoring: LLDP Status

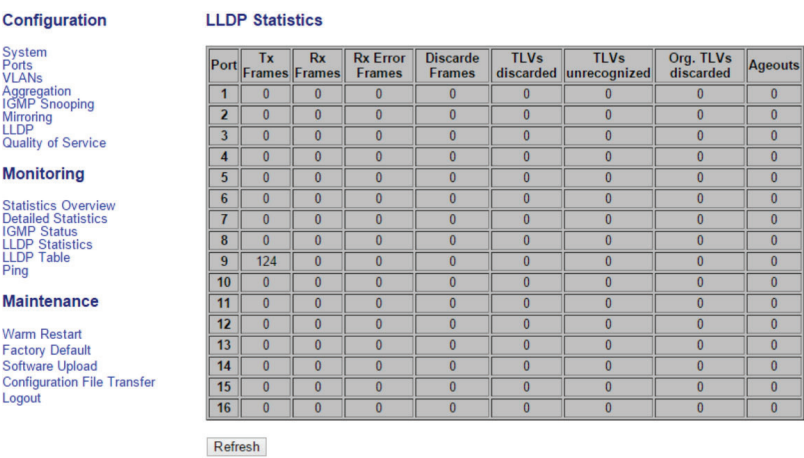


Figure 4-4. LLDP Status screen.

You can read LLDP status for LACP ports.

4.5 Monitoring: LLDP Table

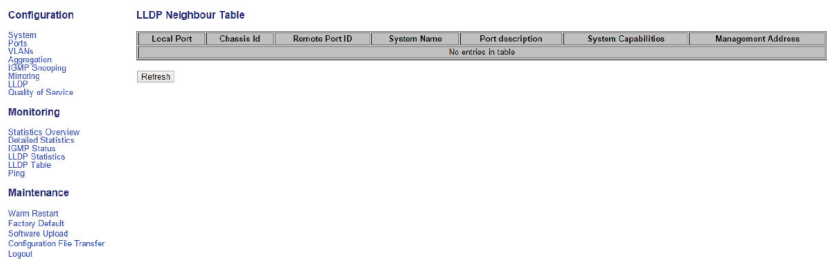


Figure 4-5. LLDP Table screen.

You can view the LLDP table in this screen.

4.6 Monitoring: Ping Parameters

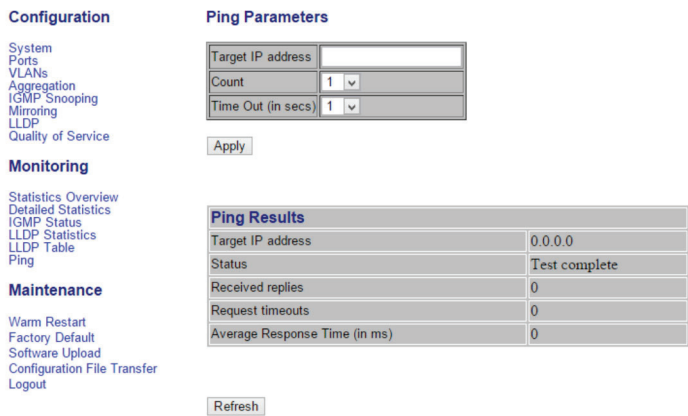


Figure 4-6. Ping Parameters screen.

You can set a target IP address in the Ping Parameters screen.

5. Maintenance

5.1 Maintenance: Warm Restart

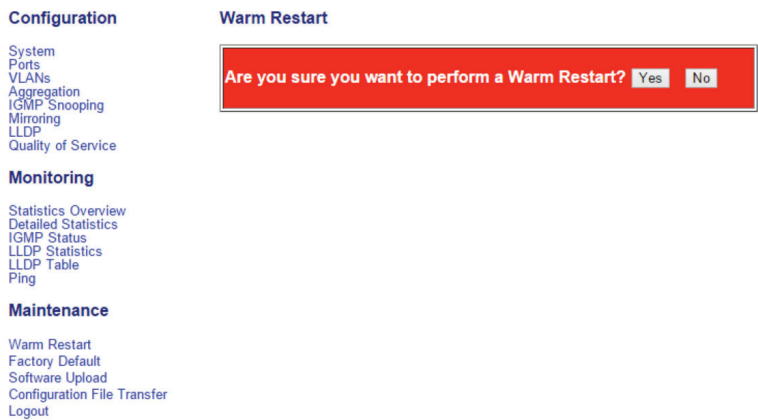


Figure 5-1. Warm Restart screen.

To restart while keeping the switch power on, select “yes” in this screen.

5.2 Maintenance: Factory Default

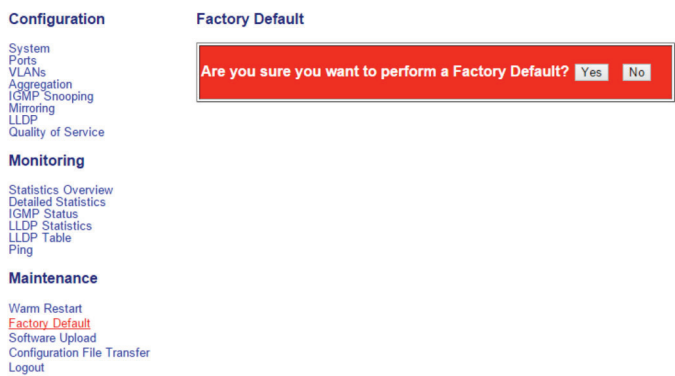


Figure 5-2. Factory Default screen.

To reset the switch to its factory default settings, click “yes” in this screen.

5.3 Maintenance: Software Upload

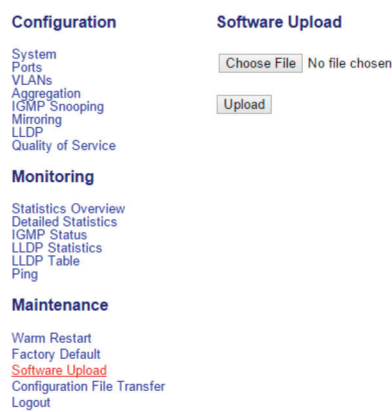


Figure 5-3. Software Upload screen.

Follow the instructions on this screen to upload the new software.

5.4 Maintenance: Configuration Upload

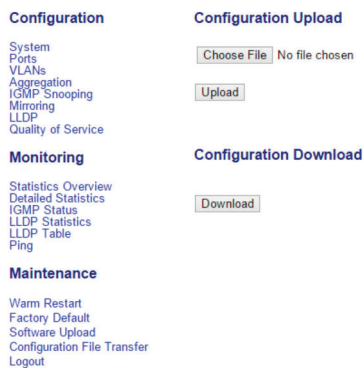


Figure 4-1.Configuration Upload screen.

Follow the instructions on this screen to upload or download the new configuration.

Chapter 6: Reset Button

6. Reset Button

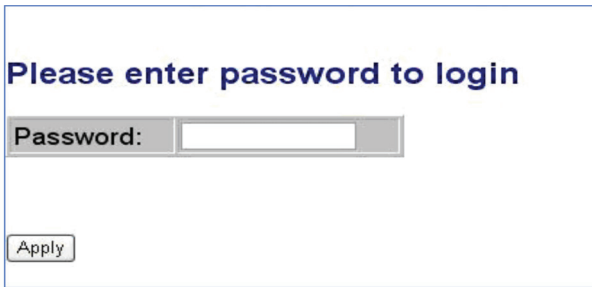
If you forgot your IP or password, use the Reset button to reset the switch to factory defaults.

Follow these steps:

Step 1: Turn on the Web Smart Switch.

Step 2: Press and hold the reset button continuously for 15 seconds and release the reset button.

Step 3: The switch will reboot for 20 seconds, and the configuration of the switch will go back to the default setting.



The screenshot shows a web interface for password entry. At the top, the text "Please enter password to login" is displayed in a bold, dark blue font. Below this, there is a label "Password:" in a bold, dark grey font, followed by a text input field. At the bottom left of the form, there is a button labeled "Apply".

Figure 5-1. Enter Password screen.

Key in the password to pass the authentication; the default password is "admin."

IP: 192.168.2.1

Password: admin

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