1. Overview

The iPECS ES-4028G and ES-4052G switches are fully managed Layer 2 switches that support enterprise-class Layer 2 switching features, including advanced QoS, security, and simplified and intuitive management features, allowing network administrators to build high performing robust networks affordably.

The iPECS ES-4028G and ES-4052G switches have 24 or 48 10/100/1000BASE-TX ports plus four 10 Gigabit Ethernet SFP+ ports. The device has two management interfaces on the front panel, a serial console port and an RJ-45 out-of-band management port. On the rear panel a removable fan tray provides a cooling airflow from the front to the rear of the device. Two rear-panel power supply slots accommodate up to two power supply units that also support a front-to-rear cooling airflow.

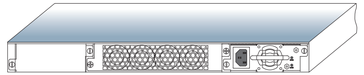
2. Installing the Switch

2.1 Selecting a Site

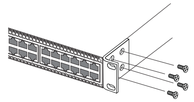
- The site should :
  - be at the center of all the devices you want to link and near a power outlet.
  - be able to maintain its temperature within 0 to 40°C (32 to104°F) and its humidity within 5% to 95%, non-condensing.
  - provide adequate space (approximately three inches) on all sides for air flow.
  - be accessible for installing, cabling and maintaining the devices.
  - allow the status LEDs to be clearly visible.
- Make sure twisted-pair cable is always routed away from power lines, fluorescent lighting fixtures and other sources of electrical interference, such as radios and transmitters.
- Make sure that the units is connected to a separate grounded power outlet that provides 110 to 240 VAC, 50 to 60 Hz, is within 2 m (6.6 feet) of each device and is powered from an independent circuit breaker. As with equipment, using a filter or surge suppressor is recommended.

2.2 Rack Mounting

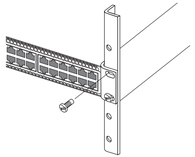
The switch can be mounted in a standard 19-inch equipment rack.
Before rack mounting the switch, pay particular attention to the following factors:
- Temperature: Since the temperature within a rack assembly may be higher than the ambient room temperature, check that the rack-environment temperature is within the specified operating temperature range. (0°C to 40°C)
- Mechanical Loading: Do not place any equipment on top of therack-mounted unit.
- Circuit Overloading: Be sure that the supply circuit to the rack assembly is not overloaded.
- Grounding: Rack-mounted equipment should be properly grounded. Particular attention should be given to supply connections other than direct connections to the main.



To rack-mount devices :
Step 1: Attach the brackets to the device using the screws provided in the Bracket Mounting Kit.

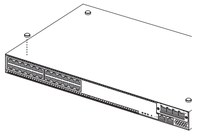


Step 2: Mount the device in the rack, using four rack-mounting screws (not provided). Be sure to secure the lower rackmounting screws first to prevent the brackets being bent by the weight of the switch.
Step 3: If installing a single switch only, go to “3. Powering Up”.
Step 4: If installing multiple switches, mount them in the rack, one below the other.



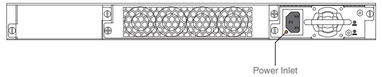
2.3 Desktop or Shelf Mounting

Step 1: Attach the four adhesive foot pads to the bottom of the first switch.
Step 2: Set the device on a flat surface near an AC power source, making sure there are at least three inches of space on all sides for proper air flow.
Step 3: If installing a single switch only, go to “3. Powering Up”.
Step 4: If installing multiple switches,attach four adhesive foot pads to each one. Place each device squarely on top of the one below.



3. Powering Up

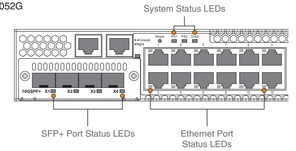
Connect the AC power cord to the back of the switch, and then connect the cord to an AC power outlet.



4. Port and System Status LEDs

The switch includes a display panel for system status and port indications that simplify installation and network troubleshooting. The LEDs, which are located on the front panel for easy viewing, are shown below and described in the following tables.

ES-4052G

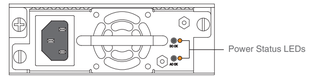


Port Status LEDs of ES-4028G / ES-4052G Gigabit Ethernet Switches

LED	CONDITION	STATUS
Ethernet Ports (1 – 24/48)		
	Green	Port has established a valid 10/100/1000 Mbps network connection.
	Green Flashing	Flashing indicates activity.
	Off	There is no valid link on the port.
SFP+ Ethernet Ports (1 – 4)		
LNK/ACT	Green	Port has established a valid 10 Gbps network connection.
	Green Flashing	Flashing indicates activity.
	Off	There is no valid link on the port.

System Status LEDs of ES-4028G / ES-4052G Gigabit Ethernet Switches

LED	CONDITION	STATUS
PS1	Green	The unit’s internal power supply is operating normally.
PS2	Amber	Power supply fault.
	Off	The unit has no power connected.
DIAG	Amber Flashing (continuous)	Continuous flashing of the LED indicates that the diagnostics test has detected a fault.
	Green	The system diagnostic test has completed.
	Green Flashing	The system diagnostic test is in progress.
Management	Green	Port has established a valid 10/100/1000 Mbps network connection.
	Green Flashing	Flashing indicates activity.
	Off	There is no valid link on the port.



Power Status LEDs of ES-4028G / ES-4052G Gigabit Ethernet Switches

LED	CONDITION	STATUS
DC OK	Green	DC output ok.
	Red	DC output fault.
AC OK	Green	AC input ok.
	Off	AC input fault.

5. Connecting to the Switch

5.1 Using the Console Port

Attach a VT100-compatible terminal, or a PC running a terminal emulation program to the switch. It is recommended to the console cable provided with the switch. To connect a terminal to the console port, complete the following steps:

Step 1: Connect the console cable to the serial port on a terminal, or a PC running terminal emulation software, and tighten the screws on the DB-9 connector.
Step 2: Connect the other end of the cable to the console port on the switch.
Step 3: Make sure the terminal emulation software is set as follows:
- Select the appropriate serial port (COM port 1, or COM port 2, …).
- Select the baud rates to 115200 bps.
- Select the data format to 8 data bits, 1 stop bit, and no parity.
- Set the emulation mode to VT100.
- When using HyperTerminal, select Terminal keys, not Windows keys.

5.2 Accessing the CLI

To access the switch through the console port, perform the following steps:

Step 1: At the console prompt, enter the user name and password. (The default user names are “admin” and no password.) When the administrator user name and password is entered, the CLI displays the “console#” prompt and enters privileged access mode. But when the guest user name and password is entered, the CLI displays the“console>” prompt and enters normal access mode.
Step 2: Enter the necessary commands to complete your desired asks.
Step 3: When finished, exit the session with the “quit” or “exit” ommand. After connecting to the system through the console port, the login screen displays:

```
User Name: admin
Console#
```

5.3 Setting the IP Address

You must establish IP address information for the switch to obtain management access through the network. This can be done in either of the following ways:

- Manual: You have to input the information, including IP address and subnet mask. If your management station is not in the same IP subnet as the switch, you will also need to specify the default gateway.
- Dynamic: The switch can send IPv4 configuration requests to BOOTP or DHCP address allocation servers on the network. (Default is DHCP)

To assign an IPv4 address to the switch, complete the following steps:

Step 1: From the Global Configuration mode prompt, type "interface vlan 1" to access the interface-configuration mode. Press <Enter>.
Step 2: Type "ip address [ip-address] [netmask] netmask", wher "ip-address" is the switch IP address and "netmask" is the network mask for the network. Press <Enter>.
Step 3: Type "exit" to return to the global configuration mode prompt. Press <Enter>.
Step 4: To set the IP address of the default gateway for the network to which the switch belongs, type "ip default-gateway [gateway]", where "gateway" is the IP address of the default gateway. Press <Enter>.
Step 5: Save the configuration. Type "copy running-config startup-config".

```
(config)#interface vlan 1
console(config-if)#ip address 10.1.0.254 255.255.255.0
console(config-if)#exit
console(config)#ip default-gateway 10.1.0.1
console(config)#copy running-config startup-config
```

5.4 Setting the Password

Passwords can consist of up to 159 alphanumeric characters and are case sensitive. To prevent unauthorized access to the switch, set the passwords as follows:

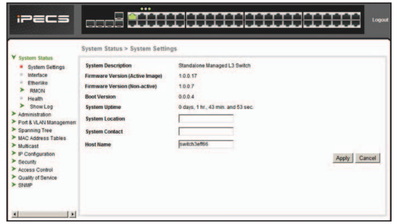
Step 1: Open the console interface with the default user name and no password "admin" to access the privileged access mode.
Step 2: Type "configure" and press <Enter>.
Step 3: Type "username guest privilege 1 password [password]", for the normal access mode, where "[password]" is your new password. Press <Enter>.
Step 4: Type "username admin privilege 15 password [password]", for the privileged access mode, where "[password]" is your new password. Press <Enter>.

```
Username: admin
console#configure
console(config)#username guest privilege 1 password [password]
console(config)#username admin privilege 15 password [password]
console(config)#
```

5.5 Connecting to the Web Interface

Prior to accessing the switch from a web browser, be sure you have first performed the following tasks:

Step 1: Configure the switch with a valid IP address, subnet mask, and default gateway using an out-of-band serial connection, BOOTP, or DHCP protocol. (See "5.3 Setting the IP Address")
Step 2: Set user names and passwords using a serial connection. Access to the web agent is controlled by the same user names and passwords as the onboard configuration program. (See "5.4 Setting the Password")
Step 3: After you enter a user name and password, you will have access to the system configuration program. When your web browser connects with the switch's web agent, the home page is displayed as shown below. The home page displays the Main Menu on the left side of the screen and System Information on the right side. The Main Menu links are used to navigate to other menus, and display configuration parameters and statistics.



6. Compliances

FCC CLASS A

This device complies with Part 15 rules. Operation is subject to the following two conditions;

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

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.

INDUSTRY CANADA - CLASS A

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled "Digital Apparatus," ICES-003 of the Department of Communications

CE MARK DECLARATION OF CONFORMANCE FOR EMI AND SAFETY (EEC)

This information technology equipment complies with the requirements of the Council Directive 2004/108/EC on the Approximation of the laws of the Member States relating to Electromagnetic Compatibility and 2006/95/EC for electrical equipment used within certain voltage limits and the Amendment Directive 93/68/EEC.

Warranty Information and Technical Support

- Local warranty policy is applied in all countries except USA.
- The following warranty is only applied in USA.

To register LG-Ericsson products and to review the detailed warranty statement, please refer to the LG-Ericsson US Website at http://www.lgericssonus.com

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iPECS Ethernet Switch
ES-4028G/4052G Series

Quick Installation Guide

Package Contents

- ES-4028G/4052G Series Switch
- RJ-45 to RS232 Console Cable
- Four Adhesive Foot Pads
- Two Brackets and Eight Screws
- Power Cord
- Quick Installation Guide (QIG)
- Manual CD

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