LINKSYS®
A Division of Cisco Systems, Inc.

10/100 Switches

Use this guide to install the following products:

5-Port 10/100 Switch	SD205
8-Port 10/100 Switch	SD208
16-Port 10/100 Switch	SD216

User Guide

CISCO SYSTEMS

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Please direct all inquiries to: Linksys, P.O. Box 18558, Irvine, CA 92623.

FCC STATEMENT

Every 10/100 Switch has been tested and complies with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used according to the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which is found by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment or devices
- Connect the equipment to an outlet other than the receiver's
- Consult a dealer or an experienced radio/TV technician for assistance

Table of Contents

Chapter 1: Introduction

The 10/100 Switch

This newly redesigned Linksys 5-, 8-, or 16-Port 10/100 Switch can significantly increase your network traffic's speed. A switch serves the same function as a hub in a network design—tying your network equipment together. But unlike a simple-minded hub which divides the network's bandwidth among all the attached devices, a switch delivers full network speeds at each port. Installing this cost-effective 5-, 8-, or 16-Port 10/100 Switch can potentially increase your network speed by five, eight, or sixteen times!

It's the perfect way of integrating 10Mbps Ethernet and 100Mbps Fast Ethernet devices, too. All ports are auto speed negotiating, and have automatic MDI/MDI-X crossover detection, so you don't have to worry about the cable type. Each port independently negotiates for best speed and half- or full-duplex mode, for up to 200Mbps of bandwidth per port. Fast store-and-forward switching prevents damaged packets from being passed on into the network.

The new, ultra-compact case design is sure to fit into your workgroup environment. Let the Linksys 5, 8-, or 16-Port 10/100 Switch kick your 10/100 network into high gear.

Features

- Ideal for Integrating Your 10BaseT and 100BaseTX Network Hardware
- 5, 8, or 16 10/100 Ports Provide Dedicated Bandwidth in Half- or Full-Duplex Modes
- Each Port Supports Auto MDI/MDI-X Cable Detection
- Compatible with All Major Network Operating Systems
- Advanced Store-and-Forward Packet Switching Optimizes Data Transfers
- Auto Partitioning Protects PCs from Downed Network Lines
- Signal Regeneration Ensures Data Transfer Integrity
- Free Technical Support—24 Hours a Day, 7 Days a Week, Toll-Free US Calls
- Limited Lifetime Warranty

Chapter 2: Getting to Know the 10/100 Switch

Overview

The 5-, 8-, and 16-Port 10/100 Switches differ in number of LEDs and ports. Pictured here is the 5-Port 10/100 Switch; however, the other Switches are similar in form.

Front Panel LEDs

Figure 2-1

System *Green.* The System LED will light up when the Switch is powered on.

1-5, **1-8**, or **1-16** *Green.* Each LED will light up when there is a connection made through its corresponding port. It will flash when there is activity on its corresponding port.

Back and Side Panel Features

Figure 2-2

The network ports are located on the back panel of the Switch.

1-5, **1-8**, or **1-16** These ports are connection points for PCs and other network devices, such as additional switches.

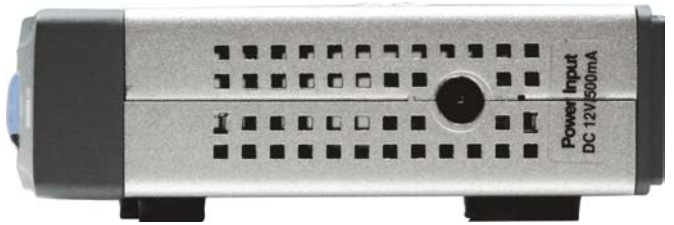

Figure 2-3

The power port is located on the side panel of the Switch (see Figure 2-3).

(power) The power port is where you will connect the included power adapter.

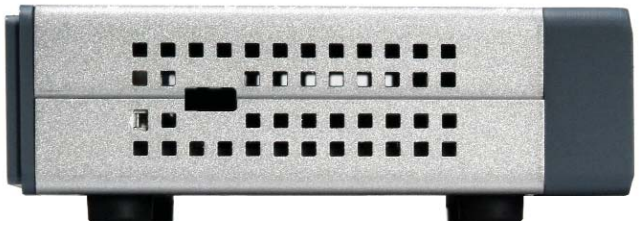

Figure 2-4

The security slot is located on the other side panel (see Figure 2-4).

(security slot) The security slot is where you can attach a lock so the Switch will be protected from theft.

Chapter 3: Connecting the 10/100 Switch

Overview

This chapter will explain how to connect network devices to the Switch. For an example of a typical network configuration, see the application diagram shown in Figure 3-1.

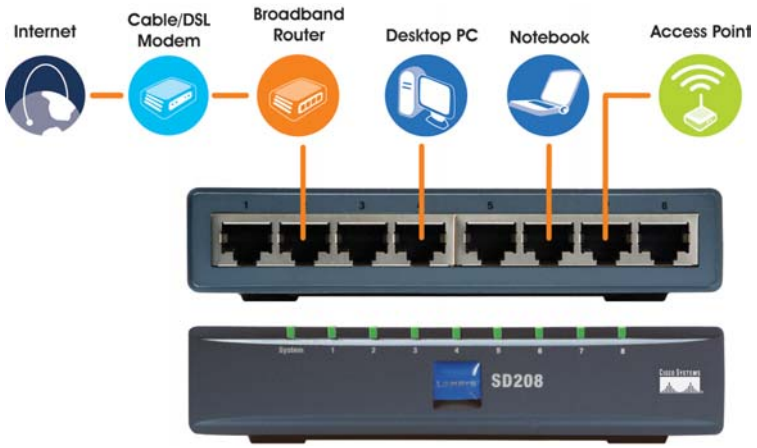

Figure 3-1

When you connect your network devices, make sure you don't exceed the maximum cabling distances, which are listed in the following table:

Maximum Cabling Distances

From	To	Maximum Distance
Switch	Switch or Hub*	100 meters (328 feet)
Hub	Hub	5 meters (16.4 feet)
Switch or Hub	Computer	100 meters (328 feet)

**A hub refers to any type of 100Mbps hub, including regular hubs and stackable hubs. A 10Mbps hub connected to another 10Mbps hub can span up to 100 meters (328 feet).*

Connecting Network Devices

Follow these instructions for the 5-, 8-, and 16-Port 10/100 Switches (the 5-Port 10/100 Switch is shown in Figures 3-2 and 3-3).

1. Make sure all the devices you will connect to the Switch are powered off.
2. Connect a Category 5 Ethernet network cable to one of the numbered ports on the Switch.
3. Connect the other end to a PC or other network device.
4. Repeat steps 2 and 3 to connect additional devices.

Figure 3-2

5. Connect the supplied power adapter to the power port on the Switch's side panel.

Figure 3-3

Note: Make sure you use the power adapter included with the Switch. Using a different power adapter may result in damage to the Switch.

6. Plug the other end of the adapter into a power outlet.
7. Power on the devices connected to the Switch. Each active port's corresponding LED will light up on the Switch.

Proceed to the following section, "Placement Options."

Placement Options

Set the Switch on its four rubber feet. For the 8- or 16-Port 10/100 Switch, you can choose to hang it on a wall using its wall-mount slots. To use this option, follow these instructions:

1. The wall-mount slots are two crisscross slots on the Switch's bottom panel, as shown in Figure 3-4. Attach two screws to the wall, so that the Switch's wall-mount slots line up with the two screws.

2. Maneuver the Switch so the screws are inserted into the two slots.

Congratulations!

The installation of the 10/100 Switch is complete.

Figure 3-4

Appendix A: Glossary

10BaseT - An Ethernet standard that uses twisted wire pairs.

100BaseTX - IEEE physical layer specification for 100 Mbps over two pairs of Category 5 UTP or STP wire.

Auto MDI/MDI-X - On a network hub or switch, an auto MDI/MDI-X port automatically senses if it needs to act as a MDI or MDI-X port. The auto-MDI/MDI-X capability eliminates the need for crossover cables.

Auto-negotiate - To automatically determine the correct settings. The term is often used with communications and networking. For example, Ethernet 10/100 cards, hubs and switches can determine the highest speed of the node they are connected to and adjust their transmission rate accordingly.

CAT 5 - ANSI/EIA (American National Standards Institute/Electronic Industries Association) Standard 568 is one of several standards that specify "categories" (the singular is commonly referred to as "CAT") of twisted pair cabling systems (wires, junctions, and connectors) in terms of the data rates that they can sustain. CAT 5 cable has a maximum throughput of 100 Mbps and is usually utilized for 100BaseTX networks.

CAT 5e - The additional cabling performance parameters of return loss and far-end crosstalk (FEXT) specified for 1000BASE-T and not specified for 10BASE-T and 100BASE-TX are related to differences in the signaling implementation. 10BASE-T and 100BASE-TX signaling is unidirectional-signals are transmitted in one direction on a single wire pair. In contrast, Gigabit Ethernet is bi-directional-signals are transmitted simultaneously in both directions on the same wire pair; that is, both the transmit and receive pair occupy the same wire pair.

Ethernet - IEEE standard network protocol that specifies how data is placed on and retrieved from a common transmission medium. Has a transfer rate of 10 Mbps. Forms the underlying transport vehicle used by several upper-level protocols, including TCP/IP and XNS.

Fast Ethernet - A 100 Mbps technology based on the 10Base-T Ethernet CSMA/CD network access method.

Hub - The device that serves as the central location for attaching wires from workstations. Can be passive, where there is no amplification of the signals; or active, where the hubs are used like repeaters to provide an extension of the cable that connects to a workstation.

Mbps (**M**ega**b**its **p**er **s**econd) - One million bits per second; unit of measurement for data transmission.

MDI (**M**edium **D**ependent **I**nterface) - On a network hub or switch, a MDI port, also known as an uplink port, connects to another hub or switch using a straight-through cable. To connect a MDI port to a computer, use a crossover cable.

MDI-X (**M**edium **D**ependent **I**nterface Crossed) - On a network hub or switch, a MDI-X port connects to a computer using a straight-through cable. To connect a MDI-X port to another hub or switch, use a crossover cable.

Network - A system that transmits any combination of voice, video and/or data between users.

Switch - 1. A data switch connects computing devices to host computers, allowing a large number of devices to share a limited number of ports. 2. A device for making, breaking, or changing the connections in an electrical circuit.

Topology - A network's topology is a logical characterization of how the devices on the network are connected and the distances between them. The most common network devices include hubs, switches, routers, and gateways. Most large networks contain several levels of interconnection, the most important of which include edge connections, backbone connections, and wide-area connections.

UTP - Unshielded twisted pair is the most common kind of copper telephone wiring. Twisted pair is the ordinary copper wire that connects home and many business computers to the telephone company. To reduce crosstalk or electromagnetic induction between pairs of wires, two insulated copper wires are twisted around each other. Each signal on twisted pair requires both wires. Since some telephone sets or desktop locations require multiple connections, twisted pair is sometimes installed in two or more pairs, all within a single cable.

Appendix B: Specifications

Model Number	SD205 5-Port 10/100 Switch SD208 8-Port 10/100 Switch SD216 16-Port 10/100 Switch
Standards	IEEE 802.3, IEEE 802.3u
Ports	
SD205	5 RJ-45 10/100
SD208	8 RJ-45 10/100
SD216	16 RJ-45 10/100
Cabling Type	Category 5 Ethernet
LEDs	
SD205	System, Port Status 1, 2, 3, 4, and 5
SD208	System, Port Status 1, 2, 3, 4, 5, 6, 7, and 8
SD216	System, Port Status 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, and 16

Environmental

Dimensions

SD205	3.66" x 1.18" x 3.54" (93 mm x 30 mm x 90 mm)
SD208	5.12" x 1.18" x 5.00" (130 mm x 30 mm x 127 mm)
SD216	5.12" x 1.57" x 5.00" (130 mm x 40 mm x 127 mm)

Unit Weight

SD205	8 oz. (0.23 kg)
SD208	15 oz. (0.43 kg)
SD216	19 oz. (0.54 kg)

Power

SD205	DC 12V, 500 mA
SD208	DC 12V, 500 mA
SD216	DC 12V, 1.5 A

Certifications	FCC Class B, CE Mark
Operating Temp.	32ºF to 122ºF (0ºC to 50ºC)
Storage Temp.	-40ºF to 158ºF (-40ºC to 70ºC)
Operating Humidity	20% to 95%, Non-Condensing
Storage Humidity	5% to 90%, Non-Condensing

Appendix C: Warranty Information

BE SURE TO HAVE YOUR PROOF OF PURCHASE AND A BARCODE FROM THE PRODUCT'S PACKAGING ON HAND WHEN CALLING. RETURN REQUESTS CANNOT BE PROCESSED WITHOUT PROOF OF PURCHASE.

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Appendix D: Contact Information

For help with the installation or operation of this 10/100 Switch, contact Linksys Technical Support at one of the phone numbers or Internet addresses below.

Sales Information	800-546-5797 (LINKSYS)
Technical Support	800-326-7114
RMA (Return Merchandise Authorization) Issues	www.linksys.com (or call 949-271-5461)
Fax	949-265-6655
E-mail	support@linksys.com
Web	http://www.linksys.com
FTP Site	ftp.linksys.com

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