

# LINKSYS®

A Division of Cisco Systems, Inc.



**USER GUIDE**

**BUSINESS SERIES**

## 5-Port and 8-Port 10/100/1000 Gigabit Smart Switch with PD and AC Power

Model: SLM2005, SLM2008

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# About This Guide

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## Icon Descriptions

While reading through the User Guide you may encounter various icons designed to call attention to a specific item. Below is a description of these icons:



**NOTE:** This checkmark indicates that there is a note of interest and is something that you should pay special attention to while using the product.

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**WARNING:** This exclamation point indicates that there is a caution or warning and it is something that could damage your property or product.

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**WEB:** This globe icon indicates a noteworthy website address or e-mail address.

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## Online Resources

Most web browsers allow you to enter the web address without adding the `http://` in front of the address. This User Guide will refer to websites without including `http://` in front of the address. Some older web browsers may require you to add it.

Resource	Website
Linksys	<a href="http://www.linksys.com">www.linksys.com</a>
Linksys International	<a href="http://www.linksys.com/international">www.linksys.com/international</a>
Glossary	<a href="http://www.linksys.com/glossary">www.linksys.com/glossary</a>
Network Security	<a href="http://www.linksys.com/security">www.linksys.com/security</a>

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## Chapter 1: Introduction

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The 5-port and 8-port 10/100/1000 Gigabit Smart Switches with PD and AC Power allow you to upgrade your existing 10/100 network by replacing your current workgroup hub or switch. At the same time, you can configure advanced features for security, QoS, and Spanning Tree using its web-based utility.

The Linksys Gigabit Smart Switches not only allow you to upgrade to Gigabit speeds, but also allow you to expand your network securely. The Gigabit Smart Switches with PD have virtual LAN (VLAN) capabilities to restrict the flow of multicast and broadcast traffic. Stations within a given VLAN can freely communicate using either unicast or multicast addressing. Communication between different VLANs is not possible.

Extensive QoS features make the solution ideal for real-time applications like Voice and Video. The 4 priority queues together with the Weighted Round Robin and Strict Priority scheduling techniques facilitate efficient coexistence of real-time traffic with data traffic allowing them each to meet their QoS needs. Individual users or applications can be prioritized above others using various Class of Service options - by port, layer 2 priority (802.1p), and layer 3 priority (TOS or DSCP). Intelligent broadcast and multicast storm controls minimize and contain the effects of these types of traffic on regular traffic. IGMP Snooping limits bandwidth-intensive video traffic to only the requestors without flooding all users. Incoming traffic can be policed and outgoing traffic can be shaped allowing you to control network access and traffic flow.

There are features that allow you to expand and grow your network of switches. Link aggregation allows multiple high-bandwidth trunks between switches to be setup. This also provides a level of reliability in that the system continues to operate if one of the links breaks. Spanning Tree (STP) allow you to build a mesh of switches increasing the availability of the system.



## Chapter 2: Product Overview

### Front Panel

The LEDs are located on the front panel of the Switch.



Front Panel - SLM2008


-  **System** (Green) Lights up green to indicate that power is being supplied to the Switch.
-  **1-5 or 1-8** (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 Panel


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



Back Panel - SLM2008

 **Ethernet 1** The Switch's first RJ-45 port supports the IEEE 802.3af Power-over-Ethernet (PoE) PD standard that enables DC power to be supplied to the Switch using wires in the connecting twisted-pair cable. Any 802.3af-compliant Power over Ethernet device attached to the port can directly supply power to the Switch over the twisted-pair cable without requiring its own separate power source.

To connect a device to a port, you will need to use Category 5e (or better) network cable.

 **Ethernet 1-5 or 1-8** These RJ-45 ports support network speeds of either 10Mbps, 100Mbps, or 1000Mbps and can operate in half and full-duplex modes. Auto-sensing technology enables each port to automatically detect the speed of the device connected to it and adjust its speed and duplex accordingly.

### Side Panels

The Reset button and Power port are located on the right side panel of the Switch.



Right Side Panel



**Reset Button** The Reset button can be used to reset or reboot the Switch.

- **Reboot** If the button is pressed for less than 10 seconds, the Switch will reboot.
- **Restore Factory Defaults** If the button is pressed for longer than 10 seconds, the Switch's settings will be restored to the factory defaults.

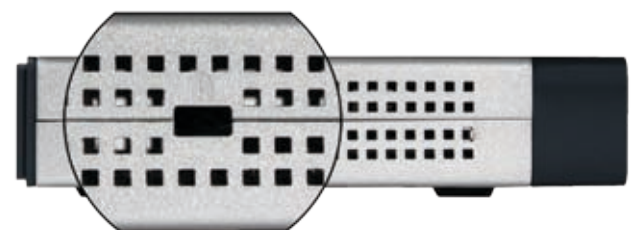


**NOTE:** The Switch can only be configured using the web-based utility. If you cannot access the web-based utility because of configuration changes you've made, you can reset the Switch to the factory defaults.



**Power** The Power port is where you will connect the AC power.

The security slot is located on the left side panel of the Switch.



Left Side Panel

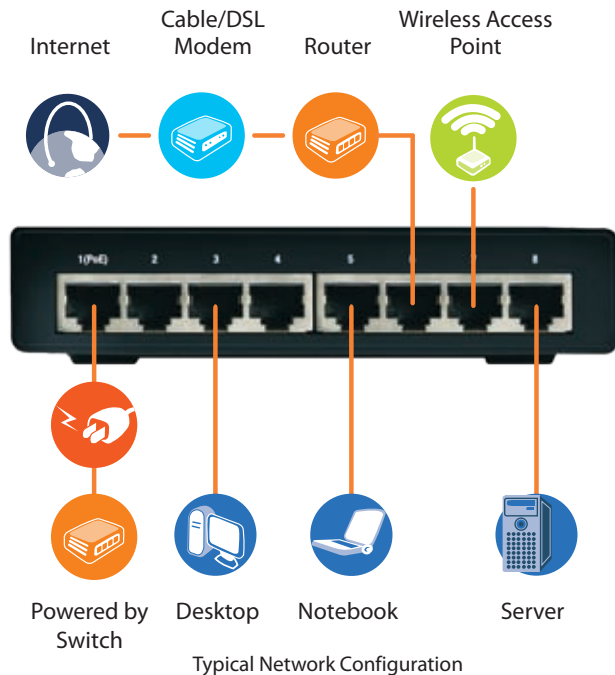


**Security Slot** The security slot can be utilized to attach a lock to the Switch.

## Chapter 3: Installation

### Overview

This chapter will explain how to connect network devices to the Switch. The following diagram shows a typical network configuration.



When you connect your network devices, make sure you don't exceed the maximum cabling distance of 100 meters (328 feet).

### Pre-Installation Considerations

#### Full-Duplex Considerations

The Switch provides full-duplex support for its RJ-45 ports. Full-duplex operation allows data to be sent and received simultaneously, doubling a port's potential data throughput. If you will be using the Switch in full-duplex mode, the maximum cable length using Category 5 cable is 328 feet (100 meters).

#### 100BASE-T Cable Requirements

All Category 5 UTP cables that are used for 100BASE-TX connections should also work for 100BASE-T, providing that all four wire pairs are connected. However, it is recommended that for all critical connections, or any new cable installations, Category 5e (enhanced Category 5) or Category 6 cable should be used. The Category 5e specification includes test parameters that are only recommendations for Category 5. Therefore, the first step in preparing existing Category 5 cabling for running 100BASE-T is a simple test of the cable installation to be sure that it complies with the IEEE 802.3ab standards.

#### Positioning the Switch

Before you choose a location for the Switch, observe the following guidelines:



- Make sure that the Switch is accessible and that the cables can be connected easily.
- Keep cabling away from sources of electrical noise, power lines, and fluorescent lighting fixtures.
- Position the Switch away from water and moisture sources.
- To ensure adequate air flow around the Switch, be sure to provide a minimum clearance of two inches (50mm).
- Do not stack free-standing Switches more than four units high.

## Placement Options

There are two ways to physically install the Switch, either hang the Switch on a wall using its wall-mount slots or place it on a desktop.

### Wall-Mount Placement

You will need 2 suitable screws to mount the Switch.

Suggested Mounting Hardware	
 4-5 mm	 1-2 mm 2.5-3 mm



**NOTE:** Linksys is not responsible for damages incurred by insecure wall-mounting hardware.

1. Determine where you want to mount the Switch. Ensure that the wall you use is smooth, flat, dry and sturdy and make sure the location is within reach of the power outlet.
2. Drill two holes into the wall. Make sure the holes are 2 ½ inches apart.
3. Insert a screw into each hole, and leave 3 mm of its head exposed.
4. Maneuver the Switch so the wall-mount slots line up with the two screws.
5. Place the wall-mount slots over the screws and slide the Switch down until the screws fit snugly into the wall-mount slots.

Congratulations! The Wall-Mount installation of the Switch is complete.



Print this page at 100% size, cut along the dotted line and place on the wall to drill precise spacing.

Wall Mounting Template

### Desktop Placement

- Place the Switch on a desktop near an AC power source.
- Keep enough ventilation space for the switch and check the environmental restrictions mentioned in "Appendix B: Specifications" as you are placing the Switch.
- Connect the Switch to network devices according to the Hardware Installation instructions below.

### Hardware Installation

To connect network devices to the Switch, follow these instructions:

1. Make sure all the devices you will connect to the Switch are powered off.
2. Connect a Category 5e Ethernet network cable to one of the numbered ports on the Switch.



**NOTE:** Reserve port 1 if you are using a network device to provide power to this Switch.

3. Connect the other end to a PC or other network device.
4. Repeat steps 2 and 3 to connect additional devices.
5. Provide power to the Switch in one of two ways:
  - Connect a Category 5e Ethernet network cable from port 1 of the Switch to a network device with the ability to provide Power over Ethernet.
  - Connect the supplied power cord to the Switch's power port, and plug the other end into an electrical outlet. When connecting power, always use a surge protector.
6. Power on the devices connected to the Switch. Each active port's corresponding LED will light up on the Switch.

Hardware installation is complete.



## Chapter 4: Advanced Configuration

Open your web browser and enter **http://192.168.1.254** into the *address* field. Press the **Enter** key and the *Password* screen will appear.



Address Bar



**NOTE:** The default IP address is **192.168.1.254**. If the IP address has been changed, enter the assigned IP address instead of the default.

The first time you open the web-based utility, enter **admin** (the default username) in the *username* field and leave the password blank. Click the **OK** button. You can set a password later from the *System > System Settings* screen.



Login Screen

### Setup

The first screen displayed upon login is the *System Settings* screen. There are 10 options across the top of the screen: **System, Port, VLAN, Security, QoS, STP, Statistics, Multicast, Admin** and **Logout**. Each option contains screens that will help you configure and manage the Switch.

### System > System Settings

The *System > System Settings* screen displays a summary of Switch information.



System > System Settings

**System Name** This field allows you to enter/modify the name of the Switch.

**System Location** This field allows you to enter/modify the location name of the Switch.

**MAC Address** The MAC address of the Switch is displayed here.

**S/W Version** The software version of the Switch is displayed here.

**IP Address** The IP address assigned to the Switch is displayed. The default IP address is **192.168.1.254**.

**Subnet Mask** The Subnet Mask assigned to the Switch is displayed. The default is **255.255.255.0**.

**Default Gateway** Displays the IP address of the gateway between this device and management stations that exist on other network segments. The default value is **0.0.0.0**.

**DHCP Server** The IP address of the DHCP server.

**Enable DHCP** When enabled, the Switch will attempt to obtain an IP address from a DHCP server on your network. If an IP address is not obtained, the Switch will use the IP address defined in the IP Address field below.

**IP Address** The IP address assigned to the Switch can be modified in this field. The default IP address is **192.168.1.254**.



**NOTE:** If the static IP address is changed, the Switch will automatically log you out of the web-based utility. To log back in, you must use the new Static IP address.

**Subnet Mask** The Subnet Mask assigned to the Switch can be modified in this field. The default is **255.255.255.0**.

**Default Gateway** The IP address of the gateway can be modified in this field. The default is **0.0.0.0**.

**Management VLAN** Enter the ID of the configured VLAN (1-4094, no leading zeroes). By default, all ports on the Switch are members of VLAN 1. However, the management station can be attached to a port belonging to any VLAN, as long as that VLAN has been assigned an IP address.

**Username** Specifies the username. The default username is **admin**. Only one admin user is allowed.

**Password** A new password can be entered in this field. The password is not displayed as it is entered. Each character is displayed as a bullet in the password field.

**Web Admin Timeout (secs)** As a security measure, the web-based utility will timeout after being idle for the amount of time defined in this field. If the Switch is idle for the amount of time defined here, login is required to return to the web-based utility. The time is entered in seconds. The default value is **300 seconds**.

Be sure to click **Save Settings** and reboot the Switch by going to *Admin > Reboot*.

## Port > Port Settings

You can manually configure the speed, duplex, and flow control settings used on specific ports, or use autonegotiation to allow the Switch to autodetect the connection settings used by the attached device. Full-duplex mode should be used on ports whenever possible to double the throughput of Switch connections. Flow control should also be enabled to control network traffic during periods of congestion and prevent the loss of packets when port buffer thresholds are exceeded. The Switch supports flow control based on the IEEE 802.3x standard.



Ports > Port Settings

**Port** Displays the port number.

**Link Status** Displays the link status of the port.

**Mode** The current speed and duplex mode settings are displayed here. Auto Speed is enabled by default to allow the Switch to autonegotiate the speed and duplex settings. The following capabilities are supported:

- **Auto Speed** This option enables autonegotiation. When autonegotiation is enabled, you do not need to specify the capabilities to be advertised.
- **10 Half** Supports 10 Mbps half-duplex operation.
- **10 Full** Supports 10 Mbps full-duplex operation.
- **100 Half** Supports 100 Mbps half-duplex operation.
- **100 Full** Supports 100 Mbps full-duplex operation.
- **1000 Full** Supports 1000 Mbps full-duplex operation.
- **Disabled** Disables the port.

**Flow Control** Indicates whether flow control is enabled or not.

**LAG** Indicates whether the port is a LAG member.

**Enable Jumbo Frames** Selecting this enables Jumbo Frame support (up to 9KB).

Be sure to click **Save Settings** to retain any changes.

## Port > Static Link Aggregation

You can create multiple links between devices that work as one virtual, aggregate link (LAG). An aggregated link offers a dramatic increase in bandwidth for network segments where bottlenecks exist, as well as providing a fault-tolerant link between two devices. You can create up to two LAGs on the Switch. Each LAG can contain up to five/eight ports.



Port > Link Aggregation

**LAG** Displays the LAG number. By selecting the Port numbers, the port can be added to the LAG group.

Click **Save Settings** to save any changes.

## Port > LACP Settings

Ports can be statically grouped into an aggregate link (that is, LAG) to increase the bandwidth of a network connection or to ensure fault recovery. Or you can use the Link Aggregation Control Protocol (LACP) to automatically negotiate a LAG link between the Switch and another network device. For dynamic LAGs, the switches have to comply with LACP. This Switch supports up to two LAGs. For example, a LAG consisting of two 1000 Mbps ports can support an aggregate bandwidth of 4 Gbps when operating at full duplex.

To avoid creating a loop in the network, be sure you enable LACP before connecting the ports, and also disconnect the ports before disabling LACP.



**NOTE:** LAG port members will have to be configured with the same speed and duplex mode. A user must ensure the LAG member's ports have the same speed and duplex settings before activating an LACP group.



Port > LACP Settings

**Port** Displays the port number.

**Enable LACP** Enables LACP.

**Admin Key** A channel will only be formed between ports having the same admin key. This only applies to ports located on the same switch. The default setting is **auto**.

Click **Save Settings** to save any changes.

## Port > LACP Status

From the *LACP Status* screen, you will see the LACP Status for each port, and its partner port number, and operational port key.



Port > LACP Status

**LACP Port Status** LACP Status on each interface since the device was last refreshed.

**Protocol Active** Indicates if the LACP is disabled or enabled on the interface.

**Partner Port Number** Indicates the port that is in the same LAG group.

**Operational Port Key** A channel will only be formed between ports having the same operational port key. This only applies to ports located on the same switch.

## VLAN > VLAN Settings

A VLAN is a group of ports that can be located anywhere in the network, but communicate as though they belong to the same physical segment. VLANs help to simplify network management by allowing you to move devices to a new VLAN without having to change any physical connections. VLANs can be easily organized to reflect departmental groups (such as Marketing or R&D), usage groups (such as e-mail), or multicast groups (used for multimedia applications such as videoconferencing). You can create up to 16 VLANs on the Switch.

To create a single VLAN, enter the VLAN ID, and click **Add**. Use the *VLAN ID* screen to configure port members or LAG members for a specific VLAN index.



VLAN > VLAN Settings

**VLAN ID** ID of configured VLAN (1-4094, no leading zeroes).

To remove a VLAN, select the VLANs in the VLAN list, then click **Delete**.

Click **Save Settings** to save any changes.

## VLAN > VLAN Port Settings

You can configure VLAN behavior for specific interfaces, including the mode, accepted frame type, VLAN identifier (PVID), and ingress filtering.



VLAN > VLAN Port Settings

**Enable Tx Force Untag** When this option is enabled, all egress frames from this port become untagged. The default value is **Disable**. When this function is disabled, only frames with the VLAN ID equal to the PVID will become untagged, otherwise, frames are sent with a VLAN tag.

**Enable Ingress Filter** Determines how to process frames tagged for VLANs for which the ingress port is not a member. The default value is **enabled**. Ingress filtering only affects tagged frames. If ingress filtering is disabled and a port receives frames with a VLAN tag that uses a different PVID than the receiving port, the packet types will be forwarded to the port belonging to the appropriate VLAN (determined by the VLAN tag). If ingress filtering is enabled and a port receives frames tagged for VLANs for which it is not a member, these frames will be discarded.

**Acceptable Frame Type** Sets the interface to accept all frame types, including tagged or untagged frames, or only tagged frames. When set to receive all frame types, any received frames that are untagged are forwarded to the VLAN based on the PVID of its ingress port. All frame types are selected by default.

**PVID (Port VLAN identifier)** VLAN ID assigned to untagged frames received on the interface. The default value is 1. For all other VLANs, an interface must first be configured as an untagged member before you can assign its PVID to that group.

Fill in the required settings for each interface, then click **Save Settings**.

## Security > 802.1X Settings

Network switches can provide open and easy access to network resources by simply attaching a client PC. Although this automatic configuration and access is a desirable feature, it also allows unauthorized personnel to easily intrude and possibly gain access to sensitive network data.



Security > 802.1X Settings

The IEEE 802.1X (dot1X) standard defines a port-based access control procedure that prevents unauthorized access to a network by requiring users to first submit credentials for authentication. Access to all switch ports in a network can be centrally controlled from a server, which means that authorized users can use the same credentials for authentication from any point within the network.

This Switch uses the Extensible Authentication Protocol over LANs (EAPOL) to exchange authentication protocol messages with the client, and a remote RADIUS authentication server to verify user identity and access rights. When a client connects to a switch port, the Switch responds with an EAPOL identity request. The client provides its identity (such as a user name) in an EAPOL response to the Switch, which it forwards to the RADIUS server. The RADIUS server verifies the client identity and sends an access challenge back to the client. The EAP packet from the RADIUS server contains not only the challenge, but the authentication method to be used. The client can reject the authentication method and request another, depending on the configuration of the client software and the RADIUS server. The authentication method must be MD5. The client responds to the appropriate method with its credentials, such as a password or certificate. The RADIUS server verifies the client credentials and responds with an accept or reject packet. If authentication is successful, the Switch allows the client to access the network. Otherwise, network access is denied and the port remains blocked.

The operation of 802.1X on the Switch requires the following:

- The Switch must have an IP address assigned.
- RADIUS authentication must be enabled on the Switch and the IP address of the RADIUS server specified.
- 802.1X must be enabled globally for the Switch.
- Each Switch port that will be used must be set to dot1X "Auto" mode.
- Each client that needs to be authenticated must have dot1X client software installed and properly configured.
- The RADIUS server and 802.1X client support EAP. (The Switch only supports EAPOL in order to pass the EAP packets from the server to the client.)
- The RADIUS server and client also have to support the same EAP authentication type – MD5. (Some clients have native support in Windows, otherwise the dot1x client must support it.)

**802.1X Mode** Enables or disables 802.1X mode.

**RADIUS IP** Enter the IP address of the server.



**RADIUS UDP Port** Enter the UDP Port of the server. The UDP port is used to verify the RADIUS server authentication. The default value is **1812**.

**Key String** Enter the secret key string as defined on the RADIUS server. The secret key string is used for authenticating and encrypting communications between the device and the RADIUS server.

**Admin State** Sets the authentication mode to one of the following options:

- **Auto** Requires a dot1x-aware client to be authorized by the authentication server. Clients that are not dot1x-aware will be denied access.
- **Force-Authorized** Forces the port to grant access to all clients, either dot1x-aware or otherwise. (This is the default setting.)
- **Force-Unauthorized** Forces the port to deny access to all clients, either dot1x-aware or otherwise.

**Port State** Displays the state of the 802.1X for each port.

**Re-authenticate** It will trigger the switch to ask a connected client to restart authentication process.

**Force Reinitialize** It will trigger the specific port of the switch to restart 802.1X process.

**Statistics** The Switch can display statistics for 802.1X protocol exchanges for any port.

Click **Save Settings** to save any changes.

## Security > 802.1X Parameter

When 802.1X is enabled, you need to configure the parameters for the authentication process that runs between the client and the Switch. The client identity lookup process that runs between the Switch and authentication server also needs to be configured. These parameters are described in this section.



Security > 802.1X Parameter

**Enable Reauthentication** Enables re-authentication.

**Reauthentication Period (1-3600 seconds)** Sets the time period after which a connected client must be re-authenticated. The default value is **3600 seconds**.

**EAP Timeout (1-255 seconds)** Sets the time period during an authentication session that the Switch waits before retransmitting an EAP packet. The default value is **30 seconds**.

Click **Save Settings** to save any changes.

## Security > Static MAC Address

Static MAC Address allows you to configure a switch port with the MAC address of one or more devices that are authorized to access the network through that port. The MAC address is bound to the ingress port specified on the list and does not allow the MAC address to change ports. Only incoming traffic with source addresses already stored in the static address table will be accepted as authorized to access the network through that port. MAC addresses on the list do not age out.



Security > Static MAC Address

**MAC Address** Enter the specific MAC address for the system to store and decide the destination port to forward.

**VLAN ID** Enter the VLAN ID associated with the specific MAC address.

**Port** Select the port associated with the specific MAC address.

Click **Save Settings** to save any changes.

## Security > Management Access List

Management Access List specifies which Source IP addresses can manage the device.



Security > Management Access List

**Enable Management Access List** Enable IP Access List.

**Management IP address 1** Enter the IP address of a device that you wish to allow manage the Switch.

**Management IP address 2** Enter the IP address of a second device that you wish to allow manage the Switch.

**Management IP address 3** Enter the IP address of a third device that you wish to allow manage the Switch.

**Management IP address 4** Enter the IP address of a fourth device that you wish to allow manage the Switch.

**Management IP address 5** Enter the IP address of a fifth device that you wish to allow manage the Switch.

Click **Save Settings** to save any changes.

## Security > Storm Control

### Rate Threshold

The maximum rate (packets per second) at which unknown packets are forwarded.



Security > Storm Control

**Broadcast Rate** You can select the storm control broadcast rate threshold from the list or select the default value, **No Limit**.

**Multicast Rate** You can select the storm control multicast rate threshold from the list or select the default value, **No Limit**.

Click **Save Settings** to save any changes.

## QoS > QoS Settings

Network traffic is usually unpredictable and the only basic assurance that can be offered is best effort traffic delivery. To overcome this challenge, Quality of Service (QoS) is applied throughout the network. This ensures that network traffic is prioritized according to specified criteria, and that specific traffic receives preferential treatment. QoS in the network optimizes network performance and entails two basic facilities:

Classifying incoming traffic into handling classes, based on an attribute, including:

- The ingress interface

- Packet content
- A combination of these attributes

Providing various mechanisms for determining the allocation of network resources to different handling classes, including:

- The assignment of network traffic to a particular hardware queue
- The assignment of internal resources

You can set the Switch to service the queues based on a strict rule that requires all traffic in a higher priority queue to be processed before lower priority queues are serviced, or use Weighted Round-Robin (WRR) queuing that specifies a relative weight of each queue. WRR uses a pre-defined relative weight for each queue that determines the percentage of service time the Switch services each queue before moving on to the next queue. This prevents the head-of-line blocking that can occur with strict priority queuing.



QoS > QoS Settings

### Queue Mode

Set the Queue Mode to Strict Priority or WRR.

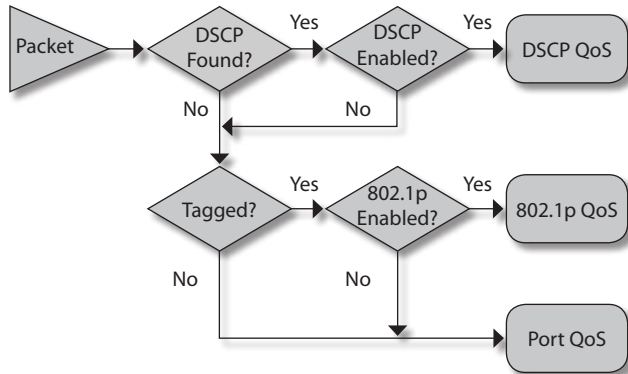
**Strict Priority** Services the egress queues in sequential order, transmitting all traffic in the higher priority queues before servicing lower priority queues.

**WRR** Weighted Round-Robin shares bandwidth at the egress ports by using scheduling weights 1, 2, 4, 8 for queues 1 through 4 respectively.

**WRR Weight** Displays the WRR weights to queues.

## QoS Mode

Set the QoS Mode to QoS Disabled, 802.1p, Port Based, or DSCP.



QoS Mode Priority Diagram

## 802.1p

802.1p QoS Mode allows you to specify data packet priority based on the 802.1p value in VLAN priority tag of the packet. Users can map 802.1p to one of 4 priority queues.

### Prioritize Traffic

Allows you to select a traffic prioritization setting. The default value is **Custom**.

### 802.1p Settings

The default 802.1p settings are shown in the following table:

Default 802.1p Settings

802.1p Value	Priority Level
0	normal
1	low
2	low
3	normal
4	medium
5	medium
6	high
7	high

## Port-Based

Port-Based QoS mode allows you to set priority levels for each port.

## Port-Based Settings

This allows customization of priority levels for specific ports. By default, all ports are set to high priority.

## DSCP

The Switch supports a common method of prioritizing IP traffic to meet application requirements. Traffic priorities can be mapped to one of 4 priority queues based on the DSCP (Differentiated Services Code Point) value.

### DSCP Settings

DSCP Settings enable mapping DSCP values to specific priority levels. The default DSCP settings are shown in the following table:

DSCP Settings

DSCP Value (0-63)	Priority
46	high
34	medium
24	normal
All others	low

**DSCP Value** Indicates the Differentiated Services Code Point value in the incoming packet.

**Priority** Maps the DSCP value to the selected priority level.

Click **Save Settings** to save any changes.

## STP > STP Settings

The Spanning Tree Algorithm (STA) can be used to detect and disable network loops, and to provide backup links between switches, bridges or routers. This allows the Switch to interact with other bridging devices (that is, an STA-compliant switch, bridge or router) in your network to ensure that only one route exists between any two stations on the network, and provide backup links which automatically take over when a primary link goes down.



STP > STP Settings

**System Priority** Bridge priority is used in selecting the root device, root port, and designated port. The device with the highest priority becomes the STA root device. However, if all devices have the same priority, the device with the lowest MAC address will then become the root device. The default value is **32768**. The range is 0 to 61440 in steps of 4096.

**Hello Time** Interval (in seconds) at which the root device transmits a configuration message. The default is **2** seconds. The range is 0 to 10 seconds.

**Max Age** The maximum time (in seconds) a device can wait without receiving a configuration message before attempting to reconfigure. The default max age is **20** seconds. The range is 6 to 40 seconds.

**Forward Delay** The maximum time (in seconds) this device will wait before changing states (i.e., discarding to learning to forwarding). The default is **15** seconds. The range is 4 to 30 seconds.

## STP Port Settings

**Port** Displays the port number.

**Enable STP** Indicates if STP is enabled on the port.

**Port Fast** Indicates if Port Fast is enabled on the port. If Port Fast mode is enabled for a port, the Port State is automatically placed in the Forwarding state when the port link is up. Port Fast optimizes the STP protocol convergence.

**Path Cost** The path cost is used to determine the best path between devices. The default value is **auto**.

Click **Save Settings** to save any changes.

## STP > STP Status

From the *STP Status* screen, you will see the STP Status for each VLAN Bridge, and for each port.



STP > STP Status

## STP VLAN Bridge Overview

**VLAN ID** The VLAN ID that has been assigned to the interface.

**Bridge ID** A unique identifier for this bridge, consisting of the bridge priority and MAC address (where the address is taken from the Switch system).

**Hello Time** Displays the Hello Time value as defined on the *STP > STP Settings* screen.

**Max Age** Displays the Max Age value as defined on the *STP > STP Settings* screen.

**Fwd Delay** Displays the Forward Delay value as defined on the *STP > STP Settings* screen.

**Topology** Displays the topology.

**Root ID** The Root ID is displayed here.

## STP Port Status

STP Status on each interface since the device was last refreshed.

**Port** The number of the port.

**VLAN** The VLAN that has been assigned to the port.

**Path Cost** The best path between devices.

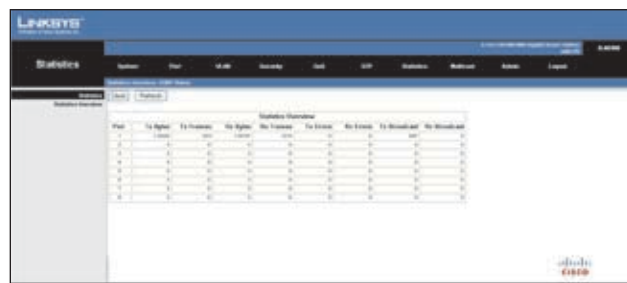
**Port Fast** Indicates the device is the end for a switch connection.

**Port State** Indicates if the STP is disabled or enabled on the interface.

## Statistics > Statistics Overview

You can display standard statistics on network traffic for each port of the device.

From the *Statistics Overview* screen, you will see the standard statistics for each port of the device. Use the **Refresh** button to update the statistics.



Statistics > Statistics Overview

**Port** Displays the port that the data applies to.

**Tx Byte** Displays the number of octets transmitted on the port since the device was last refreshed.

**Tx Frames** Displays the number of frames transmitted on the port since the device was last refreshed.

**Rx Bytes** Displays the number of octets received on the port since the device was last refreshed.



**Rx Frames** Displays the number of frames received on the port since the device was last refreshed.

**Tx Errors** Displays the number of transmitted packets with errors that have occurred on the port since the device was last refreshed.

**Rx Errors** Displays the number of received packets with errors that have occurred on the port since the device was last refreshed.

**Tx Broadcast** Displays the number of good broadcast packets transmitted on the port since the device was last refreshed.

**Rx Broadcast** Displays the number of good broadcast packets received on the port since the device was last refreshed.

## Statistics > IGMP Status

From the *IGMP Status* screen, you will see the IGMP Status for each VLAN interface.



Statistics > IGMP Status

**VLAN ID** Displays the VLAN ID .

**Querier** Indicates the IGMP router is active or idle.

**Queries Transmitted** Displays the number of queries that have been transmitted.

**Queries Received** Displays the number of queries that have been received.

**v1 Reports** Displays the number of IGMP v1 report packets that have been received by the Switch.

**v2 Reports** Displays the number of IGMP v2 report packets that have been received by the Switch.

**v2 Leaves** Displays the number of IGMP v2 leave packets that have been received by the Switch.

## Multicast > IGMP Settings

When IGMP Snooping is enabled globally, all IGMP packets are forwarded to the CPU. The CPU analyzes the incoming packets and determines:

- The ports that want to join which Multicast groups and issue the IGMP join packet

- The ports that have Multicast routers generating IGMP queries

Ports requesting to join a specific Multicast group issue an IGMP report, specifying that Multicast group is accepting members. This results in the creation of the Multicast filtering database.



Multicast > IGMP Settings



**NOTE:** All functions listed on the *Multicast > IGMP Settings* screen require “Enable IGMP Snooping” to be enabled before settings will take effect.

**Enable IGMP Snooping** Indicates if IGMP Snooping is enabled on the device.

**Enable Unregistered IP Multicast Flooding** Indicates if Unregistered IP Multicast Flooding is enabled on the device.

**VLAN ID** Displays the VLAN ID number.

**Enable IGMP Snooping** Indicates if IGMP Snooping is enabled on each VLAN interface.

**Enable IGMP Querying** Indicates if IGMP Querying is enabled on each VLAN interface.

Click **Save Settings** to save any changes.

## Admin > Ping

You can use a ping to see if another site on the network can be reached. Ping sends ICMP echo request packets to another node on the network.



Admin > Ping

## Ping Parameters

**Target IP Address** Enter the IP Address of the device you want to ping.

**Count** Set the maximum count to the target IP Address for each attempt.

**Time Out** Set the time out (in seconds) interval if the device does not respond.

Click **Save Settings** to save any changes.

## Admin > Port Mirror

You can mirror traffic from any source port to a target port for real-time analysis. The target port speed should match or exceed source port speed, otherwise traffic may be dropped from the monitor port. The Switch supports only one mirror session.



Admin > Port Mirror

**Source Port** The port whose traffic will be monitored.

**Target Port** The port that will mirror the traffic on the source port.



**NOTE:** The Switch supports bi-directional port mirroring (transmit and receive).

Click **Save Settings** to save any changes.

## Admin > Factory Default

Restores the Switch's factory default settings.



Admin > Factory Default

Click the **Restore to Default** button, then it will restore the factory default settings to the switch.

## Admin > Reboot

Restarts the Switch retaining the current configuration settings.



Admin > Reboot

Click the **Reboot** button, then it will restart the Switch.

## Admin > Save Configuration

This *Save Configuration* screen is used to save and retrieve the Switch's configuration information using your Web browser.



**Configuration Upload** Select this option to load a previously saved configuration file (.cfg). To do so, perform the following steps:

1. Click the **Browse** button.
2. Locate the appropriate file and click **Open**.
3. Click the **Upload** button to load the file.

**Configuration Backup** Select this option to save the Switch settings to a configuration file (.cfg).

1. Click the **Save** button.
2. Click **Save** when prompted to open, save, or cancel.
3. Select the location where the file should be saved and click **Save**.

### Admin > Firmware Upgrade

Allows you to upgrade the firmware using your Web browser.



Admin > Firmware Upgrade

**Firmware Upgrade** To do so, perform the following steps:

1. Click the **Browse** button.
2. Locate the appropriate file and click **Open**.
3. Click the **Proceed** button to load the file.

## Appendix A: Glossary

This glossary contains some basic networking terms you may come across when using this product.



**WEB:** For additional terms, please visit the glossary at [www.linksys.com/glossary](http://www.linksys.com/glossary)

**Access Mode** Specifies the method by which user access is granted to the system.

**Access Point** A device that allows wireless-equipped computers and other devices to communicate with a wired network. Also used to expand the range of a wireless network.

**Access Profiles** Allows network managers to define profiles and rules for accessing the device. Access to management functions can be limited to user groups, which are defined by the following criteria:

- Ingress interfaces
- Source IP address and/or Source IP subnets.

**ACE** Filters in Access Control Lists (ACL) that determine which network traffic is forwarded. An ACE is based on the following criteria:

- Protocol
- Protocol ID
- Source Port
- Destination Port
- Wildcard Mask
- Source IP Address
- Destination IP Address

**ACL (Access Control List)** Access Control Lists are used to grant, deny, or limit access devices, features, or applications.

**Auto-negotiation** Allows 10/100 Mbps or 10/100/1000 Mbps Ethernet ports to automatically establish the optimal duplex mode, flow control, and speed.

**Back Pressure** A mechanism used with Half Duplex mode that enables a port not to receive a message.

**Bandwidth** The transmission capacity of a given device or network.

**Bandwidth Assignments** Indicates the amount of bandwidth assigned to a specific application, user, and/or interface.

**Baud** Indicates the number of signaling elements transmitted each second.

**Best Effort** Indicates that traffic is assigned to the lowest priority queue, and packet delivery is not guaranteed.

**Bit** A binary digit.

**Boot** To start a device and cause it to start executing instructions.

**Browser** An application program that provides a way to look at and interact with all the information on the World Wide Web.

**Bridge** A device that connect two networks. Bridges are hardware specific, however they are protocol independent. Bridges operate at Layer 1 and Layer 2 levels.

**Broadcast Domain** Devices sets that receive broadcast frames originating from any device within a designated set. Routers bind Broadcast domains, because routers do not forward broadcast frames.

**Broadcast Storm** An excessive amount of broadcast messages simultaneously transmitted across a network by a single port. Forwarded message responses are heaped onto the network, overloading network resources or causing the network to time out.

**Burst** A packet transmission at faster than normal rates. Bursts are limited in time and only occur under specific conditions.

**Burst Size** Indicates the burst size transmitted at a faster than normal rate.

**Byte** A unit of data that is usually eight bits long

**Cable Modem** A device that connects a computer to the cable television network, which in turn connects to the Internet.

**CBS (Committed Burst Size)** Indicates the maximum number of data bits transmitted within a specific time interval.

**CIR (Committed Information Rate)** The data rate is averaged over a minimum time increment.

**Class Maps** An aspect of Quality of Service system that is comprised of an IP ACL and/or a MAC ACL. Class maps are configured to match packet criteria, and are matched to packets in a first-fit fashion.

**Combo Ports** A single logical port with two physical connections, including an RJ-45 connection and a SFP connection.

**Communities** Specifies a group of users which retain the same system access rights.

**CoS (Class of Service)** The 802.1p priority scheme. CoS provides a method for tagging packets with priority information. A CoS value between 0-7 is added to the Layer II header of packets, where zero is the lowest priority and seven is the highest.

**DDNS (Dynamic Domain Name System)** Allows the hosting of a website, FTP server, or e-mail server with a fixed domain name (e.g., www.xyz.com) and a dynamic IP address.

**Default Gateway** A device that forwards Internet traffic from your local area network.

**DHCP (Dynamic Host Configuration Protocol)** A networking protocol that allows administrators to assign temporary IP addresses to network computers by “leasing” an IP address to a user for a limited amount of time, instead of assigning permanent IP addresses.

**DHCP Clients** An Internet host using DHCP to obtain configuration parameters, such as a network address.

**DHCP Server** An Internet host that returns configuration parameters to DHCP clients.

**DNS (Domain Name Server)** The IP address of your ISP’s server, which translates the names of websites into IP addresses.

**Domain** A specific name for a network of computers.

**Download** To receive a file transmitted over a network.

**DSL (Digital Subscriber Line)** An always-on broadband connection over traditional phone lines.

**DSCP (DiffServ Code Point)** Provides a method of tagging IP packets with QoS priority information.

**Dynamic IP Address** A temporary IP address assigned by a DHCP server.

**EIGRP (Enhanced Interior Gateway Routing Protocol)** Provides fast convergence, support for variable-length subnet mask, and supports multiple network layer protocols.

**Encryption** Encoding data transmitted in a network.

**Ethernet** IEEE standard network protocol that specifies how data is placed on and retrieved from a common transmission medium.

**Firmware** The programming code that runs a networking device.

**Flow Control** Enables lower speed devices to communicate with higher speed devices. This is implemented by the higher speed device refraining from sending packets.

**FTP (File Transfer Protocol)** A protocol used to transfer files over a TCP/IP network.

**Full Duplex** The ability of a networking device to receive and transmit data simultaneously.

**GARP (General Attributes Registration Protocol)** Registers client stations into a multicast domain.

**Gateway** A device that interconnects networks with different, incompatible communications protocols.

**GBIC (GigaBit Interface Converter)** A hardware module used to attach network devices to fiber-based transmission systems. GBIC converts the serial electrical signals to serial optical signals and vice versa.

**GVRP (GARP VLAN Registration Protocol)** Registers client stations into a VLANs.

**Half Duplex** Data transmission that can occur in two directions over a single line, but only one direction at a time.

**HTTP (HyperText Transport Protocol)** The communications protocol used to connect to servers on the World Wide Web.

**HTTPS (HyperText Transport Protocol Secure)** An extension to the standard HTTP protocol that provides confidentiality by encrypting the traffic from the website. By default this protocol uses TCP port 443.

**ICMP (Internet Control Message Protocol)** Allows the gateway or destination host to communicate with the source host. For example, to report a processing error.

**IGMP (Internet Group Management Protocol)** Allows hosts to notify their local switch or router that they want to receive transmissions assigned to a specific multicast group.

**IP (Internet Protocol)** A protocol used to send data over a network.

**IP Address** The address used to identify a computer or device on a network.

**IPCONFIG** A Windows 2000 and XP utility that displays the IP address for a particular networking device.

**IPSec (Internet Protocol Security)** A VPN protocol used to implement secure exchange of packets at the IP layer.

**ISP (Internet Service Provider)** A company that provides access to the Internet.

**Jumbo Frames** Enable transporting identical data in fewer frames. Jumbo Frames reduce overhead, lower processing time, and ensure fewer interrupts.

**LAG (Link Aggregated Group)** Aggregates ports or VLANs into a single virtual port or VLAN.

**LAN** The computers and networking products that make up your local network.



**MAC (Media Access Control) Address** The unique address that a manufacturer assigns to each networking device.

**Mask** A filter that includes or excludes certain values, for example parts of an IP address.

**Mbps (MegaBits Per Second)** One million bits per second; a unit of measurement for data transmission.

**MD5 (Message Digest 5)** An algorithm that produces a 128-bit hash. MD5 is a variation of MD4, and increases MD4 security. MD5 verifies the integrity of the communication and authenticates the origin of the communication.

**MDI (Media Dependent Interface)** A cable used for end stations.

**MDIX (Media Dependent Interface with Crossover)** A cable used for hubs and switches.

**MIB (Management Information Base)** MIBs contain information describing specific aspects of network components.

**Multicast** Transmits copies of a single packet to multiple ports.

**Network** A series of computers or devices connected for the purpose of data sharing, storage, and/or transmission between users.

**NMS (Network Management System)** An interface that provides a method of managing a system.

**OID (Object Identifier)** Used by SNMP to identify managed objects. In the SNMP Manager/Agent network management paradigm, each managed object must have an OID to identify it.

**Packet** A unit of data sent over a network.

**Ping (Packet Internet Groper)** An Internet utility used to determine whether a particular IP address is online.

**Policing** Determines if traffic levels are within a specified profile. Policing manages the maximum traffic rate used to send or receive packets on an interface.

**Port** The connection point on a computer or networking device used for plugging in cables or adapters.

**Port Mirroring** Monitors and mirrors network traffic by forwarding copies of incoming and outgoing packets from one port to a monitoring port.

**Power over Ethernet (PoE)** A technology enabling an Ethernet network cable to deliver both data and power.

**QoS (Quality of Service)** Provides policies that contain sets of filters (rules). QoS allows network managers to decide how and what network traffic is forwarded according to priorities, application types, and source and destination addresses.

**RADIUS (Remote Authentication Dial-In User Service)** A protocol that uses an authentication server to control network access.

**RJ-45 (Registered Jack-45)** An Ethernet connector that holds up to eight wires.

**RMON (Remote Monitoring)** Provides network information to be collected from a single workstation.

**Router** A networking device that connects multiple networks together.

**RSTP (Rapid Spanning Tree Protocol)** Detects and uses network topologies that allow a faster convergence of the spanning tree, without creating forwarding loops.

**Server** Any computer whose function in a network is to provide user access to files, printing, communications, and other services.

**SMTP (Simple Mail Transfer Protocol)** The standard e-mail protocol on the Internet.

**SNMP (Simple Network Management Protocol)** A widely used network monitoring and control protocol.

**SSH** Secure Shell. A utility that uses strong authentication and secure communications to log in to another computer over a network.

**SSL (Secure Socket Layer)** Encryption technology for the Internet used to provide secure transactions, such as the transmission of credit card numbers for e-commerce.

**Static IP Address** A fixed address assigned to a computer or device that is connected to a network.

**STP (Spanning Tree Protocol)** Prevents loops in network traffic. The Spanning Tree Protocol (STP) provides tree topography for any arrangement of bridges. STP provides one path between end stations on a network, eliminating loops.

**Subnet (Sub-network)** Subnets are portions of a network that share a common address component. In TCP/IP networks, devices that share a prefix are part of the same subnet. For example, all devices with a prefix of 157.100.100.100 are part of the same subnet.

**Subnet Mask** An address code that determines the size of the network.

**Switch** Filters and forwards packets between LAN segments. Switches support any packet protocol type.

**TACACS+ (Terminal Access Controller Access Control System Plus)** Proprietary Cisco enhancement to Terminal Access Controller Access Control System (TACACS). Provides additional support for authentication, authorization, and accounting.

**TCP (Transmission Control Protocol)** A network protocol for transmitting data that requires acknowledgement from the recipient of data sent.

**TCP/IP (Transmission Control Protocol/Internet Protocol)** A set of instructions PCs use to communicate over a network.

**Telnet** A user command and TCP/IP protocol used for accessing remote PCs.

**TFTP (Trivial File Transfer Protocol)** A version of the TCP/IP FTP protocol that has no directory or password capability.

**Throughput** The amount of data moved successfully from one node to another in a given time period.

**Trunking** Link Aggregation. Optimizes port usage by linking a group of ports together to form a single trunk (aggregated groups).

**TX Rate** Transmission Rate.

**UDP (User Data Protocol)** Communication protocol that transmits packets but does not guarantee their delivery.

**Upgrade** To replace existing software or firmware with a newer version.

**Upload** To transmit a file over a network.

**URL (Uniform Resource Locator)** The address of a file located on the Internet.

**VLAN (Virtual Local Area Networks)** Logical subgroups that constitute a Local Area Network (LAN). This is done in software rather than defining a hardware solution.

**WAN (Wide Area Network)** Networks that cover a large geographical area.

**Wildcard Mask** Specifies which IP address bits are used, and which bits are ignored. A wild card mask of 255.255.255.255 indicates that no bit is important. A wildcard of 0.0.0.0 indicates that all the bits are important.

For example, if the destination IP address is 149.36.184.198 and the wildcard mask is 255.36.184.00, the first two bits of the IP address are used, while the last two bits are ignored.

## Appendix B: Specifications

### SLM2005

#### Specifications

Ports 5 RJ-45 Connectors for 10BASE-T/100BASE-TX/1000BASE-T Auto MDI/MDI-X Autonegotiate/Manual Setting

Buttons Reset

Cabling Type UTP CAT 5 or Better for 10BASE-T/100BASE-TX, UTP CAT 5e or Better for 1000BASE-T

LEDs Link/Act, System

#### PoE

802.3af PoE-PD Compatible on Port 1. Supply System Power Without an External Power Adapter

#### Performance

Switching Capacity 10 Gbps, Non-Blocking

Forwarding Rate 7.44 Mpps Wire-Speed Performance

#### Layer 2

MAC table size 8K

Number of VLANs 16 Active VLANs (4096 Range)

VLAN Port-Based and 802.1Q Tag-Based VLANs

HOL Blocking Head of Line Blocking Prevention

#### Management

Web User Interface Built-in Web UI for Easy Browser-Based Configuration

Firmware Upgrade Web Browser Upgrade (HTTP)

Port Mirroring Traffic on a Port can be Mirrored to Another Port for Analysis with a Network Analyzer

#### Other Management

RADIUS  
Port Mirroring  
DHCP Client  
PING

#### Security

IEEE 802.1X 802.1X - RADIUS Authentication. MD5 Encryption

#### Availability

Link Aggregation Link Aggregation using IEEE 802.3ad LACP Up to 5 Ports in up to 2 Groups

Storm Control Broadcast and Multicast

Spanning Tree IEEE 802.1D Spanning Tree

IGMP Snooping IGMP (v1/v2) Snooping Limits Bandwidth-Intensive Video Traffic to only the Requestors. Supports 16 Multicast Groups

#### QoS

Priority levels 4 Hardware Queues

Scheduling Priority Queuing and Weighted Round Robin (WRR)

Class of Service Port-Based 802.1p VLAN Priority Based IPv4/v6 IP DSCP Based

#### Standards

802.3 10BASE-T Ethernet, 802.3u 100BASE-TX Fast Ethernet, 802.3ab 1000BASE-T Gigabit Ethernet, 802.3z Gigabit Ethernet, 802.3x Flow Control, 802.3 ad LACP, 802.3af PoE, 802.1D STP, 802.1Q/p VLAN, 802.1X Port Access Authentication

#### Environmental

Dimensions 5.12" x 1.12" x 5.12"

W x H x D 130 x 28.5 x 130 mm

Unit Weight 0.84 lb (0.382 kg)

Power External AC Power Adapter and IEEE 802.3af Compatible PoE-PD

Certification FCC Part15 Class B, CE Class A, UL, cUL, CE Mark, CB

Operating Temp. 32 to 104°F (0 to 40°C)

Storage Temp. -4 to 158°F (-20 to 70°C)

Operating Humidity 10 to 90%

Storage Humidity 10 to 95%



## SLM2008

### Specifications

Ports	8 RJ-45 Connectors for 10BASE-T/100BASE-TX/1000BASE-T Auto MDI/MDI-X Autonegotiate/Manual setting
Buttons	Reset
Cabling Type	UTP CAT 5 or Better for 10BASE-T/100BASE-TX, UTP CAT 5e or Better for 1000BASE-T
LEDs	Link/Act, System

### PoE

802.3af PoE-PD Compatible on Port 1. Supply System Power Without an External Power Adapter

### Performance

Switching Capacity	16 Gbps, Non-Blocking
Forwarding Rate	11.9 Mpps Wire-Speed Performance

### Layer 2

MAC table size	8K
Number of VLANs	16 Active VLANs (4096 Range)
VLAN	Port-Based and 802.1Q Tag-Based VLANs
HOL Blocking	Head of Line Blocking Prevention

### Management

Web User Interface	Built-in Web UI for Easy Browser-Based Configuration
Firmware Upgrade	Web Browser Upgrade (HTTP)
Port Mirroring	Traffic on a Port can be Mirrored to Another Port for Analysis with a Network Analyzer

### Other Management

RADIUS  
Port Mirroring  
DHCP Client  
PING

### Security

IEEE 802.1X	802.1X - RADIUS Authentication. MD5 Encryption
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### Availability

Link Aggregation	Link Aggregation using IEEE 802.3ad LACP Up to 8 Ports in up to 2 Groups
Storm Control	Broadcast and Multicast
Spanning Tree	IEEE 802.1D Spanning Tree
IGMP Snooping	IGMP (v1/v2) Snooping Limits Bandwidth-Intensive Video Traffic to Only the Requestors. Supports 16 Multicast Groups.

### QoS

Priority levels	4 Hardware Queues
Scheduling	Priority Queuing and Weighted Round Robin (WRR)
Class of Service	Port-Based 802.1p VLAN Priority Based IPv4/v6 IP DSCP Based
Standards	802.3 10BASE-T Ethernet, 802.3u 100BASE-TX Fast Ethernet, 802.3ab 1000BASE-T Gigabit Ethernet, 802.3z Gigabit Ethernet, 802.3x Flow Control, 802.3 ad LACP, 802.3af PoE, 802.1D STP, 802.1Q/p VLAN, 802.1X Port Access Authentication

### Environmental

Dimensions	5.12" x 1.12" x 5.12"
W x H x D	130 x 28.5 x 130 mm
Unit Weight	0.91 lb (0.4139 kg)
Power	External AC Power Adapter and IEEE 802.3af Compatible PoE-PD
Certification	FCC Part15 Class B, CE Class A, UL, cUL, CE Mark, CB
Operating Temp.	32 to 104°F (0 to 40°C)
Storage Temp.	-4 to 158°F (-20 to 70°C)
Operating Humidity	10 to 90%
Storage Humidity	10 to 95%

## Appendix C: Warranty and Regulatory Information

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### Limited Warranty

Linksys warrants to You that, for a period of five years (the "Warranty Period"), your Linksys Product will be substantially free of defects in materials and workmanship under normal use. Your exclusive remedy and Linksys' entire liability under this warranty will be for Linksys at its option to repair or replace the Product or refund Your purchase price less any rebates. This limited warranty extends only to the original purchaser.

If the Product proves defective during the Warranty Period call Linksys Technical Support in order to obtain a Return Authorization Number, if applicable. BE SURE TO HAVE YOUR PROOF OF PURCHASE ON HAND WHEN CALLING. If You are requested to return the Product, mark the Return Authorization Number clearly on the outside of the package and include a copy of your original proof of purchase. RETURN REQUESTS CANNOT BE PROCESSED WITHOUT PROOF OF PURCHASE. You are responsible for shipping defective Products to Linksys. Linksys pays for UPS Ground shipping from Linksys back to You only. Customers located outside of the United States of America and Canada are responsible for all shipping and handling charges.

ALL IMPLIED WARRANTIES AND CONDITIONS OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED TO THE DURATION OF THE WARRANTY PERIOD. ALL OTHER EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF NON-INFRINGEMENT, ARE DISCLAIMED. Some jurisdictions do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to You. This warranty gives You specific legal rights, and You may also have other rights which vary by jurisdiction.

This warranty does not apply if the Product (a) has been altered, except by Linksys, (b) has not been installed, operated, repaired, or maintained in accordance with instructions supplied by Linksys, or (c) has been subjected to abnormal physical or electrical stress, misuse, negligence, or accident. In addition, due to the continual development of new techniques for intruding upon and attacking networks, Linksys does not warrant that the Product will be free of vulnerability to intrusion or attack.

TO THE EXTENT NOT PROHIBITED BY LAW, IN NO EVENT WILL LINKSYS BE LIABLE FOR ANY LOST DATA, REVENUE OR PROFIT, OR FOR SPECIAL, INDIRECT, CONSEQUENTIAL, INCIDENTAL OR PUNITIVE DAMAGES, REGARDLESS OF THE THEORY OF LIABILITY (INCLUDING NEGLIGENCE), ARISING OUT OF OR RELATED TO THE USE OF OR INABILITY TO USE THE PRODUCT (INCLUDING ANY SOFTWARE), EVEN IF LINKSYS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO EVENT WILL LINKSYS' LIABILITY EXCEED THE AMOUNT PAID BY YOU FOR THE PRODUCT. The foregoing limitations will apply even if any warranty or remedy provided under this Agreement fails of its essential purpose. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to You.

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

## FCC Statement

This product has been tested and complies with the specifications 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

## Safety Notices

Caution: To reduce the risk of fire, use only No.26 AWG or larger telecommunication line cord.

Do not use this product near water, for example, in a wet basement or near a swimming pool.

Avoid using this product during an electrical storm. There may be a remote risk of electric shock from lightning.



**WARNING:** This product contains lead, known to the State of California to cause cancer, and birth defects or other reproductive harm. Wash hands after handling.

## Industry Canada Statement

This device complies with Industry Canada ICES-003 rule.

Operation is subject to the following two conditions:

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

## Règlement d'Industry Canada

Cet appareil est conforme à la norme NMB003 d'Industrie Canada.

Le fonctionnement est soumis aux conditions suivantes :


1. Ce périphérique ne doit pas causer d'interférences;
2. Ce périphérique doit accepter toutes les interférences reçues, y compris celles qui risquent d'entraîner un fonctionnement indésirable.

## User Information for Consumer Products Covered by EU Directive 2002/96/EC on Waste Electric and Electronic Equipment (WEEE)


This document contains important information for users with regards to the proper disposal and recycling of Linksys products. Consumers are required to comply with this notice for all electronic products bearing the following symbol:




### English - Environmental Information for Customers in the European Union

European Directive 2002/96/EC requires that the equipment bearing this symbol  on the product and/or its packaging must not be disposed of with unsorted municipal waste. The symbol indicates that this product should be disposed of separately from regular household waste streams. It is your responsibility to dispose of this and other electric and electronic equipment via designated collection facilities appointed by the government or local authorities. Correct disposal and recycling will help prevent potential negative consequences to the environment and human health. For more detailed information about the disposal of your old equipment, please contact your local authorities, waste disposal service, or the shop where you purchased the product.


### Български (Bulgarian) - Информация относно опазването на околната среда за потребители в Европейския съюз

Европейска директива 2002/96/EC изисква уредите, носещи този символ  върху изделието и/или опаковката му, да не се изхвърлят с несортирани битови отпадъци. Символът обозначава, че изделието трябва да се изхвърля отделно от сметосъбирането на обикновените битови отпадъци. Вашата отговорност е този и другите електрически и електронни уреди да се изхвърлят в предварително определени от държавните или общински органи специализирани пунктове за събиране. Правилното изхвърляне и рециклиране ще спомогнат да се предотвратят евентуални вредни за околната среда и здравето на населението последствия. За по-подробна информация относно изхвърлянето на вашите стари уреди се обърнете към местните власти, службите за сметосъбиране или магазина, от който сте закупили уреда.


### Čeština (Czech) - Informace o ochraně životního prostředí pro zákazníky v zemích Evropské unie

Evropská směrnice 2002/96/ES zakazuje, aby zařízení označené tímto symbolem  na produktu anebo na obalu bylo likvidováno s netříděným komunálním odpadem. Tento symbol udává, že daný produkt musí být likvidován odděleně od běžného komunálního odpadu. Odpovídáte za likvidaci tohoto produktu a dalších elektrických a elektronických zařízení prostřednictvím určených sběrných míst stanovených vládou nebo místními úřady. Správná likvidace a recyklace pomáhá předcházet potenciálním negativním dopadům na životní prostředí a lidské zdraví. Podrobnější informace o likvidaci starého vybavení si laskavě vyžádejte od místních úřadů, podniku zabývajícího se likvidací komunálních odpadů nebo obchodu, kde jste produkt zakoupili.


### Dansk (Danish) - Miljøinformation for kunder i EU

EU-direktiv 2002/96/EF kræver, at udstyr der bærer dette symbol  på produktet og/eller emballagen ikke må bortskaffes som usorteret kommunalt affald. Symbolet betyder, at dette produkt skal bortskaffes adskilt fra det almindelige husholdningsaffald. Det er dit ansvar at bortskaffe dette og andet elektrisk og elektronisk udstyr via bestemte indsamlingssteder udpeget af staten eller de lokale myndigheder. Korrekt bortskaffelse og genvinding vil hjælpe med til at undgå mulige skader for miljøet og menneskers sundhed. Kontakt venligst de lokale myndigheder, renovationstjenesten eller den butik, hvor du har købt produktet, angående mere detaljeret information om bortskaffelse af dit gamle udstyr.


### Deutsch (German) - Umweltinformation für Kunden innerhalb der Europäischen Union

Die Europäische Richtlinie 2002/96/EC verlangt, dass technische Ausrüstung, die direkt am Gerät und/oder an der Verpackung mit diesem Symbol versehen ist , nicht zusammen mit unsortiertem Gemeindeabfall entsorgt werden darf. Das Symbol weist darauf hin, dass das Produkt von regulärem Haushaltsmüll getrennt entsorgt werden sollte. Es liegt in Ihrer Verantwortung, dieses Gerät und andere elektrische und elektronische Geräte über die dafür zuständigen und von der Regierung oder örtlichen Behörden dazu bestimmten Sammelstellen zu entsorgen. Ordnungsgemäßes Entsorgen und Recyceln trägt dazu bei, potentielle negative Folgen für Umwelt und die menschliche Gesundheit zu vermeiden. Wenn Sie weitere Informationen zur Entsorgung Ihrer Altgeräte benötigen, wenden Sie sich bitte an die örtlichen Behörden oder städtischen Entsorgungsdienste oder an den Händler, bei dem Sie das Produkt erworben haben.


### Eesti (Estonian) - Keskkonnaalane informatsioon Euroopa Liidus asuvatele klientidele

Euroopa Liidu direktiivi 2002/96/EÜ nõuete kohaselt on seadmeid, millel on tootel või pakendil käesolev sümbol , keelatud kõrvaldada koos sorteerimata olmejäätmetega. See sümbol näitab, et toode tuleks kõrvaldada eraldi tavalistest olmejäätmevoogudest. Olete kohustatud kõrvaldama käesoleva ja ka muud elektri- ja elektroonikaseadmed riigi või kohalike ametiasutuste poolt ette nähtud kogumispunktide kaudu. Seadmete korrektne kõrvaldamine ja ringlussevõtt aitab vältida võimalikke negatiivseid tagajärgi keskkonnale ning inimeste tervisele. Vanade seadmete kõrvaldamise kohta täpsema informatsiooni saamiseks võtke palun ühendust kohalike ametiasutustega, jäätmekäitlusfirmaga või kauplusega, kust te toote ostsite.


### Español (Spanish) - Información medioambiental para clientes de la Unión Europea

La Directiva 2002/96/CE de la UE exige que los equipos que lleven este símbolo  en el propio aparato y/o en su embalaje no deben eliminarse junto con otros residuos urbanos no seleccionados. El símbolo indica que el producto en cuestión debe separarse de los residuos domésticos convencionales con vistas a su eliminación. Es responsabilidad suya desechar este y cualesquiera otros aparatos eléctricos y electrónicos a través de los puntos de recogida que ponen a su disposición el gobierno y las autoridades locales. Al desechar y reciclar correctamente estos aparatos estará contribuyendo a evitar posibles consecuencias negativas para el medio ambiente y la salud de las personas. Si desea obtener información más detallada sobre la eliminación segura de su aparato usado, consulte a las autoridades locales, al servicio de recogida y eliminación de residuos de su zona o pregunte en la tienda donde adquirió el producto.


### Ελληνικά (Greek) - Στοιχεία περιβαλλοντικής προστασίας για πελάτες εντός της Ευρωπαϊκής Ένωσης

Η Κοινοτική Οδηγία 2002/96/ΕΚ απαιτεί ότι ο εξοπλισμός ο οποίος φέρει αυτό το σύμβολο  στο προϊόν και/ή στη συσκευασία του δεν πρέπει να απορρίπτεται μαζί με τα μικτά κοινотικά απορρίμματα. Το σύμβολο υποδεικνύει ότι αυτό το προϊόν θα πρέπει να απορρίπτεται ξεχωριστά από τα συνήθη οικιακά απορρίμματα. Είστε υπεύθυνος για την απόρριψη του παρόντος και άλλου ηλεκτρικού και ηλεκτρονικού εξοπλισμού μέσω των καθορισμένων εγκαταστάσεων συγκέντρωσης απορριμμάτων οι οποίες παρέχονται από το κράτος ή τις αρμόδιες τοπικές αρχές. Η σωστή απόρριψη και ανακύκλωση συμβάλλει στην πρόληψη πιθανών αρνητικών συνεπειών για το περιβάλλον και την υγεία. Για περισσότερες πληροφορίες σχετικά με την απόρριψη του παλιού σας εξοπλισμού, παρακαλώ επικοινωνήστε με τις τοπικές αρχές, τις υπηρεσίες απόρριψης ή το κατάστημα από το οποίο αγοράσατε το προϊόν.


### Français (French) - Informations environnementales pour les clients de l'Union européenne

La directive européenne 2002/96/CE exige que l'équipement sur lequel est apposé ce symbole  sur le produit et/ou son emballage ne soit pas jeté avec les autres ordures ménagères. Ce symbole indique que le produit doit être éliminé dans un circuit distinct de celui pour les déchets des ménages. Il est de votre responsabilité de jeter ce matériel ainsi que tout autre matériel électrique ou électronique par les moyens de collecte indiqués par le gouvernement et les pouvoirs publics des collectivités territoriales. L'élimination et le recyclage en bonne et due forme ont pour but de lutter contre l'impact néfaste potentiel de ce type de produits sur l'environnement et la santé publique. Pour plus d'informations sur le mode d'élimination de votre ancien équipement, veuillez prendre contact avec les pouvoirs publics locaux, le service de traitement des déchets, ou l'endroit où vous avez acheté le produit.

### Italiano (Italian) - Informazioni relative all'ambiente per i clienti residenti nell'Unione Europea


La direttiva europea 2002/96/EC richiede che le apparecchiature contrassegnate con questo simbolo  sul prodotto e/o sull'imballaggio non siano smaltite insieme ai rifiuti urbani non differenziati. Il simbolo indica che questo prodotto non deve essere smaltito insieme ai normali rifiuti domestici. È responsabilità del proprietario smaltire sia questi prodotti sia le altre apparecchiature elettriche ed elettroniche mediante le specifiche strutture di raccolta indicate dal governo o dagli enti pubblici locali. Il corretto smaltimento ed il riciclaggio aiuteranno a prevenire conseguenze potenzialmente negative per l'ambiente e per la salute dell'essere umano. Per ricevere informazioni più dettagliate circa lo smaltimento delle vecchie apparecchiature in Vostro possesso, Vi invitiamo a contattare gli enti pubblici di competenza, il servizio di smaltimento rifiuti o il negozio nel quale avete acquistato il prodotto.

### Latviešu valoda (Latvian) - Ekoloģiska informācija klientiem Eiropas Savienības jurisdikcijā


Direktīvā 2002/96/EK ir prasība, ka aprīkojumu, kam pievienota zīme  uz paša izstrādājuma vai uz tā iesaiņojuma, nedrīkst izmest nešķīrotā veidā kopā ar komunālajiem atkritumiem (tiem, ko rada vietēji iedzīvotāji un uzņēmumi). Šī zīme nozīmē to, ka šī ierīce ir jāizmest atkritumos tā, lai tā nenonāktu kopā ar parastiem mājāsaimniecības atkritumiem. Jūsu pienākums ir šo un citas elektriskas un elektroniskas ierīces izmest atkritumos, izmantojot īpašus atkritumu savākšanas veidus un līdzekļus, ko nodrošina valsts un pašvaldību iestādes. Ja izmešana atkritumos un pārstrāde tiek veikta pareizi, tad mazinās iespējamais kaitējums dabai un cilvēku veselībai. Sīkākas ziņas par novecojuša aprīkojuma izmešanu atkritumos jūs varat saņemt vietējā pašvaldībā, atkritumu savākšanas dienestā, kā arī veikalā, kur iegādājāties šo izstrādājumu.




### Lietuvškai (Lithuanian) - Aplinkosaugos informacija, skirta Europos Sąjungos vartotojams

Europos direktyva 2002/96/EC numato, kad įrangos, kuri ir  kurios pakuotė yra pažymėta šiuo simboliu (įveskite simbolį), negalima šalinti kartu su nerūšiuotomis komunalinėmis atliekomis. Šis simbolis rodo, kad gaminį reikia šalinti atskirai nuo bendro buitinių atliekų srauto. Jūs privalote užtikrinti, kad ši ir kita elektros ar elektroninė įranga būtų šalinama per tam tikras nacionalinės ar vietinės valdžios nustatytas atliekų rinkimo sistemas. Tinkamai šalinant ir perdirbant atliekas, bus išvengta galimos žalos aplinkai ir žmonių sveikatai. Daugiau informacijos apie jūsų senos įrangos šalinimą gali pateikti vietinės valdžios institucijos, atliekų šalinimo tarnybos arba parduotuvės, kuriose įsigijote tą gaminį.


### Malti (Maltese) - Informazzjoni Ambjentali għal Kliġenti fl-Unjoni Ewropea

Id-Direttiva Ewropea 2002/96/KE titlob li t-tagħmir li jkun fi h simbolu  fuq il-prodott u/jew fuq l-ippakkjar ma jistax jintrema ma' skart municipali li ma giex isseparat. Is-simbolu jindika li dan il-prodott għandu jintrema separatament minn ma' l-iskart domestiku regolari. Hija responsabbiltà tiegħek li tarmi dan it-tagħmir u kull tagħmir ieħor ta' l-elettriku u elettroniku permezz ta' faċilitajiet ta' għbir appuntati apposta mill-gvern jew mill-awtoritajiet lokali. Ir-rimi b'mod korrett u r-riċiklaġġ jgħin jipprevjeni konsegwenzi negattivi potenzjali għall-ambjent u għas-saħħa tal-bniedem. Għal aktar informazzjoni dettaljata dwar ir-rimi tat-tagħmir antik tiegħek, jekk jogħġbok ikkuntattja lill-awtoritajiet lokali tiegħek, is-servizzi għar-rimi ta' l-iskart, jew il-ħanut minn fejn xtrajt il-prodott.


### Magyar (Hungarian) - Környezetvédelmi információ az európai uniós vásárlók számára

A 2002/96/EC számú európai uniós irányelv megkívánja, hogy azokat a termékeket, amelyeken, és/vagy amelyek csomagolásán az alábbi címke  megjelenik, tilos a többi szelektálatlan lakossági hulladékkal együtt kidobni. A címke azt jelöli, hogy az adott termék kidobásakor a szokványos háztartási hulladékészállítási rendszerektől elkülönített eljárást kell alkalmazni. Az Ön felelőssége, hogy ezt, és más elektromos és elektronikus berendezéseit a kormányzati vagy a helyi hatóságok által kijelölt gyűjtőrendszerben keresztül számolja fel. A megfelelő hulladékfeldolgozás segít a környezetre és az emberi egészségre potenciálisan ártalmas negatív hatások megelőzésében. Ha elavult berendezéseinek felszámolásához további részletes információra van szüksége, kérjük, lépjen kapcsolatba a helyi hatóságokkal, a hulladékfeldolgozási szolgálattal, vagy azzal üzlettel, ahol a terméket vásárolta.


### Nederlands (Dutch) - Milieu-informatie voor klanten in de Europese Unie

De Europese Richtlijn 2002/96/EC schrijft voor dat apparatuur die is voorzien van dit symbool  op het product of de verpakking, niet mag worden ingezameld met niet-gescheiden huishoudelijk afval. Dit symbool geeft aan dat het product apart moet worden ingezameld. U bent zelf verantwoordelijk voor de vernietiging van deze en andere elektrische en elektronische apparatuur via de daarvoor door de landelijke of plaatselijke overheid aangewezen inzamelingskanalen. De juiste vernietiging en recycling van deze apparatuur voorkomt mogelijke negatieve gevolgen voor het milieu en de gezondheid. Voor meer informatie over het vernietigen van uw oude apparatuur neemt u contact op met de plaatselijke autoriteiten of afvalverwerkingsdienst, of met de winkel waar u het product hebt aangeschaft.


### Norsk (Norwegian) - Miljøinformasjon for kunder i EU

EU-direktiv 2002/96/EF krever at utstyr med følgende symbol  avbildet på produktet og/eller pakningen, ikke må kastes sammen med usortert avfall. Symbolet indikerer at dette produktet skal håndteres atskilt fra ordinær avfallsinnsamling for husholdningsavfall. Det er ditt ansvar å kvitte deg med dette produktet og annet elektrisk og elektronisk avfall via egne innsamlingsordninger slik myndighetene eller kommunene bestemmer. Korrekt avfallshåndtering og gjenvinning vil være med på å forhindre mulige negative konsekvenser for miljø og helse. For nærmere informasjon om håndtering av det kasserte utstyret ditt, kan du ta kontakt med kommunen, en innsamlingsstasjon for avfall eller butikken der du kjøpte produktet.


### Polski (Polish) - Informacja dla klientów w Unii Europejskiej o przepisach dotyczących ochrony środowiska

Dyrektywa Europejska 2002/96/EC wymaga, aby sprzęt oznaczony symbolem  znajdującym się na produkcie i/lub jego opakowaniu nie był wyrzucany razem z innymi niesortowanymi odpadami komunalnymi. Symbol ten wskazuje, że produkt nie powinien być usuwany razem ze zwykłymi odpadami z gospodarstw domowych. Na Państwu spoczywa obowiązek wyrzucania tego i innych urządzeń elektrycznych oraz elektronicznych w punktach odbioru wyznaczonych przez władze krajowe lub lokalne. Pozbywanie się sprzętu we właściwy sposób i jego recykling pomogą zapobiec potencjalnie negatywnym konsekwencjom dla środowiska i zdrowia ludzkiego. W celu uzyskania szczegółowych informacji o usuwaniu starego sprzętu, prosimy zwrócić się do lokalnych władz, służb oczyszczania miasta lub sklepu, w którym produkt został nabyty.


## Português (Portuguese) - Informação ambiental para clientes da União Europeia

A Directiva Europeia 2002/96/CE exige que o equipamento que exibe este símbolo  no produto e/ou na sua embalagem não seja eliminado junto com os resíduos municipais não separados. O símbolo indica que este produto deve ser eliminado separadamente dos resíduos domésticos regulares. É da sua responsabilidade eliminar este e qualquer outro equipamento eléctrico e electrónico através das instalações de recolha designadas pelas autoridades governamentais ou locais. A eliminação e reciclagem correctas ajudarão a prevenir as consequências negativas para o ambiente e para a saúde humana. Para obter informações mais detalhadas sobre a forma de eliminar o seu equipamento antigo, contacte as autoridades locais, os serviços de eliminação de resíduos ou o estabelecimento comercial onde adquiriu o produto.


## Română (Romanian) - Informații de mediu pentru clienții din Uniunea Europeană

Directiva europeană 2002/96/CE impune ca echipamentele care prezintă acest simbol  pe produs și/sau pe ambalajul acestuia să nu fie casate împreună cu gunoiul menajer municipal. Simbolul indică faptul că acest produs trebuie să fie casat separat de gunoiul menajer obișnuit. Este responsabilitatea dvs. să cașati acest produs și alte echipamente electrice și electronice prin intermediul unităților de colectare special desemnate de guvern sau de autoritățile locale. Casarea și reciclarea corecte vor ajuta la prevenirea potențialelor consecințe negative asupra sănătății mediului și a oamenilor. Pentru mai multe informații detaliate cu privire la casarea acestui echipament vechi, contactați autoritățile locale, serviciul de salubritate sau magazinul de la care ați achiziționat produsul.


## Slovenčina (Slovak) - Informácie o ochrane životného prostredia pre zákazníkov v Európskej únii

Podľa európskej smernice 2002/96/ES zariadenie s týmto symbolom  na produkte a/alebo jeho balení nesmie byť likvidované spolu s netriedeným komunálnym odpadom. Symbol znamená, že produkt by sa mal likvidovať oddelene od bežného odpadu z domácností. Je vašou povinnosťou likvidovať toto i ostatné elektrické a elektronické zariadenia prostredníctvom špecializovaných zberných zariadení určených vládou alebo miestnymi orgánmi. Správna likvidácia a recyklácia pomôže zabrániť prípadným negatívnym dopadom na životné prostredie a zdravie ľudí. Ak máte záujem o podrobnejšie informácie o likvidácii starého zariadenia, obráťte sa, prosím, na miestne orgány, organizácie zaoberajúce sa likvidáciou odpadov alebo obchod, v ktorom ste si produkt zakúpili.


## Slovenčina (Slovene) - Okoljske informacije za stranke v Evropski uniji

Evropska direktiva 2002/96/EC prepoveduje odlaganje opreme, označene s tem simbolom  – na izdelku in/ali na embalaži – med običajne, nerazvrščene odpadke. Ta simbol opozarja, da je treba izdelek odvreči ločeno od preostalih gospodinjskih odpadkov. Vaša odgovornost je, da to in preostalo električno in elektronsko opremo odnesete na posebna zbirališča, ki jih določijo državne ustanove ali lokalna uprava. S pravilnim odlaganjem in recikliranjem boste preprečili morebitne škodljive vplive na okolje in zdravje ljudi. Če želite izvedeti več o odlaganju stare opreme, se obrnite na lokalno upravo, odpad ali trgovino, kjer ste izdelek kupili.

## Suomi (Finnish) - Ympäristöä koskevia tietoja EU-alueen asiakkaille

EU-direktiivi 2002/96/EY edellyttää, että jos laitteistossa on tämä symboli  itse tuotteessa ja/tai sen pakkauksessa, laitteistoa ei saa hävittää lajittelemattoman yhdyskuntajätteen mukana. Symboli merkitsee sitä, että tämä tuote on hävitettävä erillään tavallisesta kotitalousjätteestä. Sinun vastuullasi on hävittää tämä elektroniikkatuote ja muut vastaavat elektroniikkatuotteet viemällä tuote tai tuotteet viranomaisten määräämään keräyspisteeseen. Laitteiston oikea hävittäminen estää mahdolliset kielteiset vaikutukset ympäristöön ja ihmisten terveyteen. Lisätietoja vanhan laitteiston oikeasta hävitystavasta saa paikallisilta viranomaisilta, jätteenhävityspalvelusta tai siitä myymälästä, josta ostit tuotteen.

## Svenska (Swedish) - Miljöinformation för kunder i Europeiska unionen

Det europeiska direktivet 2002/96/EC kräver att utrustning med denna symbol  på produkten och/eller förpackningen inte får kastas med osorterat kommunalt avfall. Symbolen visar att denna produkt bör kastas efter att den avskiljts från vanligt hushållsavfall. Det faller på ditt ansvar att kasta denna och annan elektrisk och elektronisk utrustning på fastställda insamlingsplatser utsedda av regeringen eller lokala myndigheter. Korrekt kassering och återvinning skyddar mot eventuella negativa konsekvenser för miljön och personhälsa. För mer detaljerad information om kassering av din gamla utrustning kontaktar du dina lokala myndigheter, avfallshanteringen eller butiken där du köpte produkten.



**WEB:** For additional information, please visit [www.linksys.com](http://www.linksys.com)

## Appendix D: Contact Information

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Linksys Contact Information	
Website	<a href="http://www.linksys.com">http://www.linksys.com</a>
E-Mail	<a href="mailto:support@linksys.com">support@linksys.com</a>
FTP Site	<a href="ftp.linksys.com">ftp.linksys.com</a>
Advice Line	800-546-5797 (LINKSYS)
Support	800-326-7114
RMA (Return Merchandise Authorization)	949-823-3000
Fax	949-823-3002



**NOTE:** Details on warranty and RMA issues can be found in the Warranty and Regulatory Information section of this Guide.

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